

Agilent E5070B/E5071B ENA Series RF Network Analyzers

VBA Programmer's Guide

Sixth Edition

FIRMWARE REVISIONS

This manual applies directly to instruments that have the firmware revision A.06.00.

For additional information about firmware revisions, see Appendix A.



Agilent Part No. E5070-90083

November 2005

Notices

The information contained in this document is subject to change without notice.

This document contains proprietary information that is protected by copyright. All rights are reserved. No part of this document may be photocopied, reproduced, or translated to another language without the prior written consent of Agilent Technologies.

Microsoft®, MS-DOS®, Windows®, Visual C++®, Visual Basic®, VBA® and Excel® are registered

UNIX is a registered trademark in U.S. and other countries, licensed exclusively through X/Open Company Limited.

Portions ©Copyright 1996, Microsoft Corporation. All rights reserved.

© Copyright 2002, 2003, 2004, 2005 Agilent Technologies

Manual Printing History

The manual's printing date and part number indicate its current edition. The printing date changes when a new edition is printed (minor corrections and updates that are incorporated at reprint do not cause the date to change). The manual part number changes when extensive technical changes are incorporated.

August 2002	First Edition(part number: E5070-90033)
March 2003	Second Edition(part number: E5070-90043, changes for firmware version A.03.50)
January 2004	Third Edition(part number: E5070-90053, changes for firmware version A.03.60)
August 2004	Fourth Edition(part number: E5070-90063, changes for firmware version A.04.00)
May 2005	Fifth Edition(part number: E5070-90073, changes for firmware version A.05.00)
November 2005	Sixth Edition(part number: E5070-90083, changes for firmware version A.06.00)

Typeface Conventions

Sample (bold)	Boldface type is used when a term is defined or emphasized.
<i>Sample (Italic)</i>	Italic type is used for emphasis and for titles of manuals and other publications.
[Sample]	Indicates the hardkey whose key label is “Sample”.
[Sample] - Item	Indicates a series of key operations in which you press the [Sample] key, make the item called “Item” on the displayed menu blink by using the [↓] or in other ways, and then press the [Enter] key.

Sample Program Disk

A VBA sample program disk (Agilent part number: E5070-180x1) is furnished with this manual. The disk contains the sample programs used in this manual.

The customer shall have the personal, non-transferable rights to use, copy, or modify SAMPLE PROGRAMS in this manual for the customer’s internal operations. The customer shall use the SAMPLE PROGRAMS solely and exclusively for their own purposes and shall not license, lease, market, or distribute the SAMPLE PROGRAMS or modification of any part thereof.

Agilent Technologies shall not be liable for the quality, performance, or behavior of the SAMPLE PROGRAMS. Agilent Technologies especially disclaims any responsibility for the operation of the SAMPLE PROGRAMS to be uninterrupted or error-free. The SAMPLE PROGRAMS are provided AS IS.

AGILENT TECHNOLOGIES DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Agilent Technologies shall not be liable for any infringement of any patent, trademark, copyright, or other proprietary right by the SAMPLE PROGRAMS or their use. Agilent Technologies does not warrant that the SAMPLE PROGRAMS are free from infringements of such rights of third parties. However, Agilent Technologies will not knowingly infringe or deliver software that infringes the patent, trademark, copyright, or other proprietary right of a third party.

E5070B/E5071B Documentation Map

The following manuals are available for the E5070B/E5071B.

- ***User's Guide (Part Number: E5070-900x0, attached to option ABA)***

This manual describes most of the basic information necessary to use the E5070B/E5071B. It provides a function overview, detailed operation procedure for each function (from preparation for measurement to analysis of measurement results), measurement examples, specifications, and supplemental information. For programming guidance on performing automatic measurement with the E5070B/E5071B, please see the *Programming Manual*.

- ***Installation and Quick Start Guide (Part Number: E5070-900x1, attached to option ABA)***

This manual describes installation after it is delivered and the basic operation procedures for applications and analysis. Refer to this manual when you use the E5070B/E5071B for the first time.

- ***Programmer's Guide (Part Number: E5070-900x2, attached to option ABA)***

This manual provides programming information for performing automatic measurement with the E5070B/E5071B. It includes an outline of remote control, procedures for detecting measurement start (trigger) and end (sweep end), application programming examples, command reference, and related information.

- ***VBA Programmer's Guide (Part Number: E5070-900x3, attached to option ABA)***

This manual describes programming information for performing automatic measurement with internal controller. It includes an outline of VBA programming, some sample programming examples, a COM object reference, and related information.

NOTE

The number position shown by "x" in the part numbers above indicates the edition number. This convention is applied to each manual, CD-ROM (for manuals), and sample programs disk issued.

1. Making Effective Use of This Manual	
Contents of This Manual	22
How To Use This Manual	24
Looking Up COM Objects	24
Using Sample Programs	24
2. Introduction to VBA Programming	
Introduction of the E5070B/E5071B Macro Function	28
An Overview of a Control System Based on the Macro Function	29
Implementing a Control System	29
Control Methods	30
Overview of E5070B/E5071B COM Object	31
About COM Object	31
Using COM Object to Control the E5070B/E5071B	31
Major Control Difference between COM Object and SCPI Command	32
3. Operation Basics of the E5070B/E5071B's VBA	
Displaying Visual Basic Editor	34
Initial Screen of Visual Basic Editor	34
Closing Visual Basic Editor	36
Switching to the E5070B/E5071B Measurement Screen	36
Making a Preparation Before Coding	37
A Project and Three Types of Module	37
Displaying a Code Window	38
Coding a VBA Program	42
User Interface Elements of a Code Window	42
Creating a Simple VBA Program	43
Auto-complete Feature	45
Saving a VBA program	46
Saving a Project	46
Saving a Module (Exporting)	47
Loading a VBA Program	49
Loading a Project	49
Loading a Module (Importing)	50
Running a VBA Program	52
Running a previous loaded VBA program	52
Loading and executing program in batch process	54
Stopping a VBA Program	55
Stopping with the Dialog Box Appeared	55
Abruptly Terminating the VBA Program	56
Errors and Debugging	57
Types of Error	57
Using a Debug Tool	58
Printing Output Values in the Echo Window	63
Entering Values Output to the Echo Window	63
Opening the Echo Window	63
Clearing Values Output in the Echo Window	63
Using VBA Online Help	64

Accessing VBA Online Help	64
Uses Advanced Techniques	66
Accessing a List of E5070B/E5071B COM Objects	66
Using Automatic Library References	67
4. Controlling the E5070B/E5071B	
Detecting the End of Measurement	70
Using the Status Register	70
Using the SCPI.TRIGger.SEquence.SINGLE Object	73
Reading/Writing Measurement Data	75
Executing a Procedure with a Softkey (User Menu Function)	80
Preparation for Using the User Menu Function	80
How to Use the User Menu Function	81
Simple Example	82
5. Controlling Peripherals	
Overview	86
Preparation	86
Programming with VISA	87
STEP 1. Starting Up VISA System	88
STEP 2. Connection	88
STEP 3. Communication	89
STEP 4. Disconnection	90
Example Program to Read Out the Product Information of Peripheral (Instrument)	91
6. Application Programs	
Basic Measurement (measuring a band-pass filter)	94
Overview of the program	94
Description of the program	94
Measuring a Multi-port Device	102
Overview of the program	102
Description of the program	104
Measurement Using E5091A (measuring FEM)	116
Executing Power Calibration	124
Program overview	124
Program description	125
Connecting Hard Disk of External PC (shared folder)	130
Using VBA program	130
Description of operation in VBA program	131
7. COM Object Reference	
COM Object Model	134
Application Objects	134
SCPI Objects	135
COM Object List	136
List by Function	136
List by Front Panel Key	156
COM Object Tree	173

Notational Rules of COM Objects	190
Object Type	190
Syntax	190
Description	190
Variable	191
Examples	191
Related Objects	191
Equivalent Key	191
Application Objects	192
ECHO	192
NAME	193
Parse	194
Prompt	195
UserMenu.Item(Key_id).Caption	196
UserMenu.Item(Key_id).Enabled	197
UserMenu_OnPress(ByVal Key_id As Long)	198
UserMenu.PRESet	198
UserMenu.Press(Key_id)	199
UserMenu.Show	199
VBAVersion	200
WaitOnSRQ	201
SCPI Objects	202
SCPI.ABORT	202
SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).IMAGinary	203
SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).REAL	205
SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).Z0.R	206
SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. STATE	207
SCPI.CALCulate(Ch).FSIMulator.BALun.DEVICE	208
SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.C	209
SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.G	210
SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.L	211
SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.R	212
SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).TYPE	213
SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).USER.FILEName	214
SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. STATE	215
SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).IMAGinary	216
SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).REAL	217
SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).Z0.R	218
SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. STATE	219
SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr).BBALanced.DEFIne	220
SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr). SBALanced.DEFIne	221
SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr). SSBALanced.DEFIne	222
SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr). STATE	223
SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology. BBALanced.PPORTs	224
SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology. PROPerTy.STATE	225
SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology. SBALanced.PPORTs	226
SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology. SSBALanced.PPORTs	227
SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk). FILEName	228
SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk). TYPE	229

SCPI.CALCulate(Ch).FSIMulator.EMBed.STATe	230
SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.A. PORTs	231
SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.B. PORTs	232
SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.C. PORTs	233
SCPI.CALCulate(Ch).FSIMulator.EMBed.TYPE	234
SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed. PORT(Pt).TYPE	235
SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed. PORT(Pt).USER.FILename	237
SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed. STATe	238
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.C	239
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.G	240
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.L	241
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.R	242
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).TYPE	243
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).USER.FILename	244
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. STATe	245
SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).IMAGinary	246
SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).REAL	247
SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).Z0.R	248
SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. STATe	249
SCPI.CALCulate(Ch).FSIMulator.STATe	250
SCPI.CALCulate(Ch).PARAmeter.COUNT	251
SCPI.CALCulate(Ch).PARAmeter(Tr).DEFine	252
SCPI.CALCulate(Ch).PARAmeter(Tr).SELect	253
SCPI.CALCulate(Ch).PARAmeter(Tr).SPORT	254
SCPI.CALCulate(Ch).SELected.BLIMit.DB	255
SCPI.CALCulate(Ch).SELected.BLIMit.DISPlay.MARKer	256
SCPI.CALCulate(Ch).SELected.BLIMit.DISPlay.VALue	257
SCPI.CALCulate(Ch).SELected.BLIMit.FAIL	258
SCPI.CALCulate(Ch).SELected.BLIMit.MAXimum	259
SCPI.CALCulate(Ch).SELected.BLIMit.MINimum	260
SCPI.CALCulate(Ch).SELected.BLIMit.REPort.DATA	261
SCPI.CALCulate(Ch).SELected.BLIMit.STATe	262
SCPI.CALCulate(Ch).SELected.CONVersion.FUNcTION	263
SCPI.CALCulate(Ch).SELected.CONVersion.STATe	264
SCPI.CALCulate(Ch).SELected.CORRection.EDELay. MEdium	265
SCPI.CALCulate(Ch).SELected.CORRection.EDELay. TIME	266
SCPI.CALCulate(Ch).SELected.CORRection.EDELay. WGCutoff	267
SCPI.CALCulate(Ch).SELected.CORRection.OFFSet. PHASe	268
SCPI.CALCulate(Ch).SELected.DATA.FDATA	269
SCPI.CALCulate(Ch).SELected.DATA.FMEMory	270
SCPI.CALCulate(Ch).SELected.DATA.SDATA	271
SCPI.CALCulate(Ch).SELected.DATA.SMEMory	272
SCPI.CALCulate(Ch).SELected.FILTer.GATE.TIME. CENTer	273
SCPI.CALCulate(Ch).SELected.FILTer.GATE.TIME. SHAPe	274
SCPI.CALCulate(Ch).SELected.FILTer.GATE.TIME. SPAN	275
SCPI.CALCulate(Ch).SELected.FILTer.GATE.TIME. STARt	276
SCPI.CALCulate(Ch).SELected.FILTer.GATE.TIME. STATe	277
SCPI.CALCulate(Ch).SELected.FILTer.GATE.TIME. STOP	278
SCPI.CALCulate(Ch).SELected.FILTer.GATE.TIME. TYPE	279

SCPI.CALCulate(Ch).SElected.FORMat	280
SCPI.CALCulate(Ch).SElected.FUNcTION.DATa	281
SCPI.CALCulate(Ch).SElected.FUNcTION.DOMain.COUPLe	282
SCPI.CALCulate(Ch).SElected.FUNcTION.DOMain.STARt	283
SCPI.CALCulate(Ch).SElected.FUNcTION.DOMain.STATe	284
SCPI.CALCulate(Ch).SElected.FUNcTION.DOMain.STOP	285
SCPI.CALCulate(Ch).SElected.FUNcTION.EXECute	286
SCPI.CALCulate(Ch).SElected.FUNcTION.PEXcursion	287
SCPI.CALCulate(Ch).SElected.FUNcTION.POINts	288
SCPI.CALCulate(Ch).SElected.FUNcTION.PPOLarity	289
SCPI.CALCulate(Ch).SElected.FUNcTION.TARGet	290
SCPI.CALCulate(Ch).SElected.FUNcTION.TTRansition	291
SCPI.CALCulate(Ch).SElected.FUNcTION.TYPE	292
SCPI.CALCulate(Ch).SElected.LIMit.DATa	293
SCPI.CALCulate(Ch).SElected.LIMit.DISPlay.STATe	295
SCPI.CALCulate(Ch).SElected.LIMit.FAIL	296
SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.AMPLitude	297
SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.MARKer	298
SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.STIMulus	299
SCPI.CALCulate(Ch).SElected.LIMit.REPort.ALL	300
SCPI.CALCulate(Ch).SElected.LIMit.REPort.DATa	301
SCPI.CALCulate(Ch).SElected.LIMit.REPort.POINts	302
SCPI.CALCulate(Ch).SElected.LIMit.STATe	303
SCPI.CALCulate(Ch).SElected.MARKer(Mk).ACTivate	304
SCPI.CALCulate(Ch).SElected.MARKer(Mk).BWIDth.DATa	305
SCPI.CALCulate(Ch).SElected.MARKer.Mk.BWIDth.STATe	306
SCPI.CALCulate(Ch).SElected.MARKer(Mk).BWIDth.THReShold	307
SCPI.CALCulate(Ch).SElected.MARKer.COUPLe	308
SCPI.CALCulate(Ch).SElected.MARKer(Mk).DISCrete	309
SCPI.CALCulate(Ch).SElected.MARKer.FUNcTION.DOMain.COUPLe	310
SCPI.CALCulate(Ch).SElected.MARKer.FUNcTION.DOMain.STARt	311
SCPI.CALCulate(Ch).SElected.MARKer.FUNcTION.DOMain.STATe	312
SCPI.CALCulate(Ch).SElected.MARKer.FUNcTION.DOMain.STOP	313
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTION.EXECute	314
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTION.PEXcursion	315
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTION.PPOLarity	316
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTION.TARGet	317
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTION.TRACKing	318
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTION.TTRansition	319
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTION.TYPE	320
SCPI.CALCulate(Ch).SElected.MARKer.REFerence.STATe	322
SCPI.CALCulate(Ch).SElected.MARKer(Mk).SET	323
SCPI.CALCulate(Ch).SElected.MARKer(Mk).STATe	324
SCPI.CALCulate(Ch).SElected.MARKer(Mk).X	325
SCPI.CALCulate(Ch).SElected.MARKer(Mk).Y	326
SCPI.CALCulate(Ch).SElected.MATH.FUNcTION	327
SCPI.CALCulate(Ch).SElected.MATH.MEMorize	328
SCPI.CALCulate(Ch).SElected.MIXer.XAXis	329
SCPI.CALCulate(Ch).SElected.MSTATistics.DATa	330

Contents

SCPI.CALCulate(Ch).SElected.MSTatistics.STATE	331
SCPI.CALCulate(Ch).SElected.OFFset.XAXis	332
SCPI.CALCulate(Ch).SElected.RLIMit.DATA	333
SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.LINE	335
SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.SELect	336
SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.VAlue.	337
SCPI.CALCulate(Ch).SElected.RLIMit.FAIL	338
SCPI.CALCulate(Ch).SElected.RLIMit.REPort.DATA	339
SCPI.CALCulate(Ch).SElected.RLIMit.STAtE	340
SCPI.CALCulate(Ch).SElected.SMOothing.APERture	341
SCPI.CALCulate(Ch).SElected.SMOothing.STAtE.	342
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.CENTer	343
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.IMPulse.WIDTh	344
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.KBESsel	345
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.LPFRequency	346
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.SPAN	347
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STARt.	348
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STAtE.	349
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STEP.RTImE	350
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STImulus	351
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STOP	352
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.TYpE	353
SCPI.CONTRol.HANDler.A.DATA	354
SCPI.CONTRol.HANDler.B.DATA	355
SCPI.CONTRol.HANDler.C.DATA	356
SCPI.CONTRol.HANDler.C.MODE.	357
SCPI.CONTRol.HANDler.D.DATA	358
SCPI.CONTRol.HANDler.D.MODE.	359
SCPI.CONTRol.HANDler.E.DATA	360
SCPI.CONTRol.HANDler.EXTension.INDEx.STATE.	361
SCPI.CONTRol.HANDler.EXTension.RTRigger.STATE	362
SCPI.CONTRol.HANDler.F.DATA	363
SCPI.CONTRol.HANDler.OUTPUT(Num).DATA	364
SCPI.DISPlay.ANNotation.FREQuency.STATE.	365
SCPI.DISPlay.CCLear	365
SCPI.DISPlay.CLOCK	366
SCPI.DISPlay.COLOr(Dnum).BACK.	367
SCPI.DISPlay.COLOr(Dnum).GRATicule(Gnum)	368
SCPI.DISPlay.COLOr(Dnum).LIMit(Lnum)	369
SCPI.DISPlay.COLOr(Dnum).RESet	370
SCPI.DISPlay.COLOr(Dnum).TRACe(Tr).DATA	371
SCPI.DISPlay.COLOr(Dnum).TRACe(Tr).MEMory	372
SCPI.DISPlay.ECHO.CLEar	373
SCPI.DISPlay.ECHO.DATA	373
SCPI.DISPlay.ENABLE.	374
SCPI.DISPlay.FSIGn	375
SCPI.DISPlay.IMAGe	376
SCPI.DISPlay.MAXimize.	377
SCPI.DISPlay.SKEY.STATE.	378

SCPI.DISPlay.SPLit	379
SCPI.DISPlay.TABLe.STATe	381
SCPI.DISPlay.TABLe.TYPE	382
SCPI.DISPlay.UPDate.IMMediate	383
SCPI.DISPlay.WINDow(Ch).ACTivate	383
SCPI.DISPlay.WINDow(Ch).ANNotation.MARKer.ALIgn. STATe	384
SCPI.DISPlay.WINDow(Ch).ANNotation.MARKer.SINGle. STATe	385
SCPI.DISPlay.WINDow(Ch).LABel	386
SCPI.DISPlay.WINDow(Ch).MAXimize.	387
SCPI.DISPlay.WINDow(Ch).SPLit	388
SCPI.DISPlay.WINDow(Ch).TITLe.DATa	389
SCPI.DISPlay.WINDow(Ch).TITLe.STATe.	390
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNotation.MARKer.POSition.X	391
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNotation.MARKer.POSition.Y	392
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).MEMory. STATe	393
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).STATe.	394
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.AUTO	394
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe. PDIVision	395
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.RLEVel	396
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe. RPOSITION.	397
SCPI.DISPlay.WINDow(Ch).X.SPACing	398
SCPI.DISPlay.WINDow(Ch).Y.SCALe.DIVisions	399
SCPI.FORMat.BORDer	400
SCPI.FORMat.DATa	401
SCPI.HCOPy.ABORt	403
SCPI.HCOPy.IMAGe	403
SCPI.HCOPy.IMMediate	404
SCPI.IEEE4882.CLS	405
SCPI.IEEE4882.ESE.	406
SCPI.IEEE4882.ESR	407
SCPI.IEEE4882.IDN.	407
SCPI.IEEE4882.OPC	408
SCPI.IEEE4882.OPT	409
SCPI.IEEE4882.RST	409
SCPI.IEEE4882.SRE	410
SCPI.IEEE4882.STB	411
SCPI.IEEE4882.TRG	411
SCPI.IEEE4882.WAI	411
SCPI.INITiate(Ch).CONtinuous	412
SCPI.INITiate(Ch).IMMediate	413
SCPI.MMEMory.CATalog(Dir)	414
SCPI.MMEMory.COpy	415
SCPI.MMEMory.DElete	416
SCPI.MMEMory.LOAD.ASCFactor	417
SCPI.MMEMory.LOAD.BSCFactor	418
SCPI.MMEMory.LOAD.CHANnel. STATe	419
SCPI.MMEMory.LOAD.CKIT(Ckit).	420
SCPI.MMEMory.LOAD.LIMit.	421
SCPI.MMEMory.LOAD.PLOSs(Pt).	422

SCPI.MMEMory.LOAD.RLIMit	423
SCPI.MMEMory.LOAD.SEGMent	424
SCPI.MMEMory.LOAD.STATe	425
SCPI.MMEMory.MDIRectory	426
SCPI.MMEMory.STORe.ASCFactor	427
SCPI.MMEMory.STORe.BSCFactor	428
SCPI.MMEMory.STORe.CHANnel.CLEar	429
SCPI.MMEMory.STORe.CHANnel.STATe	429
SCPI.MMEMory.STORe.CKIT(Ckit)	430
SCPI.MMEMory.STORe.FDATa	431
SCPI.MMEMory.STORe.IMAGe	432
SCPI.MMEMory.STORe.LIMit	433
SCPI.MMEMory.STORe.PLOSs(Pt)	434
SCPI.MMEMory.STORe.RLIMit	435
SCPI.MMEMory.STORe.SALL	436
SCPI.MMEMory.STORe.SEGMent	437
SCPI.MMEMory.STORe.STATe	438
SCPI.MMEMory.STORe.STYPe	439
SCPI.OUTPut.STATe	440
SCPI.SENSE(Ch).AVERAge.CLEar	441
SCPI.SENSE(Ch).AVERAge.COUNT	441
SCPI.SENSE(Ch).AVERAge.STATe	442
SCPI.SENSE(Ch).BANDwidth.RESolution	443
SCPI.SENSE(Ch).BWIDTH.RESolution	444
SCPI.SENSE(Ch).CORRection.CLEar	445
SCPI.SENSE(Ch).CORRection.COEfficient.DATA	446
SCPI.SENSE(Ch).CORRection.COEfficient.METHod.ERESponse	448
SCPI.SENSE(Ch).CORRection.COEfficient.METHod.RESponse.OPEN	449
SCPI.SENSE(Ch).CORRection.COEfficient.METHod.RESponse.SHORT	449
SCPI.SENSE(Ch).CORRection.COEfficient.METHod.RESponse.THRU	450
SCPI.SENSE(Ch).CORRection.COEfficient.METHod.SOLT1	451
SCPI.SENSE(Ch).CORRection.COEfficient.METHod.SOLT2	452
SCPI.SENSE(Ch).CORRection.COEfficient.METHod.SOLT3	453
SCPI.SENSE(Ch).CORRection.COEfficient.METHod.SOLT4	454
SCPI.SENSE(Ch).CORRection.COEfficient.SAVE	455
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.ISOLation	456
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.LOAD	457
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.OPEN	458
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.SHORT	458
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.SUBClass	459
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.THRU	460
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.TRLLine	461
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.TRLReflect	462
SCPI.SENSE(Ch).CORRection.COLLEct.ACQuire.TRLThru	463
SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.LABel	464
SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER.LOAD(Cpt)	465
SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER.OPEN(Cpt)	467
SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER.SELect	468
SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER.SHORT(Cpt)	469

SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDer. THRU(Cpt_m,Cpt_n)	470
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDer. TRLLine(Cpt_m,Cpt_n)	472
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDer. TRLReflect	473
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDer. TRLThru(Cpt_m,Cpt_n)	474
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.RESet	475
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.SELect	475
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).ARBitrary	477
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).C0	478
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).C1	479
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).C2	480
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).C3	481
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).CHARacter	482
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).DELay	483
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).FMAXimum	484
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).FMINimum	485
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).L0	486
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).L1	487
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).L2	488
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).L3	489
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).LABel	490
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).LOSS	491
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).TYPE	492
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).Z0	493
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.TRLoption. IMPedance	494
SCPI.SENSE(Ch).CORRection.COLLect.CKIT.TRLoption. RPLane	495
SCPI.SENSE(Ch).CORRection.COLLect.CLEAR	496
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.CCHeck. ACQuire	497
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.ERESponse	498
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.ISOLation.STATE	499
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.ORIentation .STATe	500
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.PATH(Cpt)	501
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.SOLT1	502
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.SOLT2	503
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.SOLT3	504
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.SOLT4	505
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.THRU	506
SCPI.SENSE(Ch).CORRection.COLLect.ECAL.UCHar	507
SCPI.SENSE(Ch).CORRection.COLLect.METHod.ERESponse	508
SCPI.SENSE(Ch).CORRection.COLLect.METHod. RESPonse.OPEN	509
SCPI.SENSE(Ch).CORRection.COLLect.METHod. RESPonse.SHORT	509
SCPI.SENSE(Ch).CORRection.COLLect.METHod. RESPonse.THRU	510
SCPI.SENSE(Ch).CORRection.COLLect.METHod. SOLT1	510
SCPI.SENSE(Ch).CORRection.COLLect.METHod. SOLT2	511
SCPI.SENSE(Ch).CORRection.COLLect.METHod. SOLT3	512
SCPI.SENSE(Ch).CORRection.COLLect.METHod. SOLT4	513
SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL2	514
SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL3	515
SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL4	516
SCPI.SENSE(Ch).CORRection.COLLect.METHod.TYPE	517

SCPI.SENSE(Ch).CORRection.COLLect.SAVE	518
SCPI.SENSE(Ch).CORRection.COLLect.SIMPLified.SAVE	519
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.CONFig	520
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOFfset	521
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.LOSS	522
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.MEASure	523
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.PORT(Pt)	524
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.RESet	525
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STARt	526
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STOP	527
SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).FREQuency(Fq)	528
SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).INCLude(II).STATe	530
SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).LDC	532
SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).LOSS(Loss)	533
SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).TIME	535
SCPI.SENSE(Ch).CORRection.EXTension.STATe	536
SCPI.SENSE(Ch).CORRection.IMPedance.INPut.MAGNitude	537
SCPI.SENSE(Ch).CORRection.OFFSet.CLEar	538
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.LOAD	539
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.OPEN	540
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.PMETer	541
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.SHORT	543
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.THRU	544
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.CLEar	545
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ECAL.SMIX2	546
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ECAL.SOLT1	547
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.METHod.SMIX2	548
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.METHod.SOLT1	549
SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.SAVE	550
SCPI.SENSE(Ch).CORRection.PROPerTy	551
SCPI.SENSE(Ch).CORRection.RECeiver(Pt).COLLect.ACQuire	552
SCPI.SENSE(Ch).CORRection.RECeiver(Pt).STATe	553
SCPI.SENSE(Ch).CORRection.RVELocity.COAX	554
SCPI.SENSE(Ch).CORRection.STATe	555
SCPI.SENSE(Ch).CORRection.TYPE(Tr)	556
SCPI.SENSE(Ch).FREQuency.CENTer	558
SCPI.SENSE(Ch).FREQuency.CW	559
SCPI.SENSE(Ch).FREQuency.DATA	560
SCPI.SENSE(Ch).FREQuency.FIXed	561
SCPI.SENSE(Ch).FREQuency.SPAN	562
SCPI.SENSE(Ch).FREQuency.STARt	563
SCPI.SENSE(Ch).FREQuency.STOP	564
SCPI.SENSE.MULTiplexer.CATalog	565
SCPI.SENSE(Ch).MULTiplexer(Id).COUNT	566
SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATe	567
SCPI.SENSE.MULTiplexer(Id).INCCount	568
SCPI.SENSE.MULTiplexer(Id).NAME	569
SCPI.SENSE(Ch).MULTiplexer(Id).OUTPut.DATA	570
SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog	571

SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).SElect	572
SCPI.SENSE(Ch).MULTiplexer(Id).STATe	574
SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.OUTPut.DATA	575
SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT1	576
SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2	577
SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3	578
SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4	579
SCPI.SENSE(Ch).OFFSet.ASPurious	580
SCPI.SENSE(Ch).OFFSet.LOCal.CONTRol.STATe	581
SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.DATA	582
SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.DIVisor	583
SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.MULTIplier	584
SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.OFFSet	585
SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.START	586
SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.STOP	587
SCPI.SENSE(Ch).OFFSet.LOCal.POWER.LEVel.IMMEDIATE.AMPLitude	588
SCPI.SENSE(Ch).OFFSet.LOCal.POWER.LEVel.SLOPe.DATA	589
SCPI.SENSE(Ch).OFFSet.LOCal.POWER.LEVel.SLOPe.STATe	590
SCPI.SENSE(Ch).OFFSet.LOCal.STATe	591
SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.DATA	592
SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.DIVisor	593
SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.MULTIplier	594
SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.OFFSet	595
SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.START	596
SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.STOP	597
SCPI.SENSE(Ch).OFFSet.STATe	598
SCPI.SENSE(Ch).ROSCillator.SOURce	599
SCPI.SENSE(Ch).SEGMENT.DATA	600
SCPI.SENSE(Ch).SEGMENT.SWEep.POINts	602
SCPI.SENSE(Ch).SEGMENT.SWEep.TIME.DATA	602
SCPI.SENSE(Ch).SWEep.ASPurious	603
SCPI.SENSE(Ch).SWEep.DELay	604
SCPI.SENSE(Ch).SWEep.GENERation	605
SCPI.SENSE(Ch).SWEep.POINts	606
SCPI.SENSE(Ch).SWEep.TIME.AUTO	607
SCPI.SENSE(Ch).SWEep.TIME.DATA	608
SCPI.SENSE(Ch).SWEep.TYPE	609
SCPI.SERVICE.CHANnel.ACTive	610
SCPI.SERVICE.CHANnel.COUNT	610
SCPI.SERVICE.CHANnel(Ch).TRACe.ACTive	611
SCPI.SERVICE.CHANnel.TRACe.COUNT	611
SCPI.SERVICE.PORT.COUNT	612
SCPI.SERVICE.SREVision	612
SCPI.SOURCE(Ch).POWER.ATTenuation.DATA	613
SCPI.SOURCE(Ch).POWER.ATTenuation.AUTO	614
SCPI.SOURCE(Ch).POWER.CENTer	616
SCPI.SOURCE(Ch).POWER.LEVel.IMMEDIATE.AMPLitude	617
SCPI.SOURCE(Ch).POWER.LEVel.SLOPe.DATA	618
SCPI.SOURCE(Ch).POWER.LEVel.SLOPe.STATe	619

SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.COLLEct.ACQuire	620
SCPI.SOURce.POWer.PORT.CORRection.COLLEct.ASEnSor.RCFactor	621
SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.COLLEct.AVERAge.COUNT	622
SCPI.SOURce.POWer.PORT.CORRection.COLLEct.BSEnSor.RCFactor	623
SCPI.SOURce.POWer.PORT.CORRection.COLLEct.TABLe.ASEnSor.DATA	624
SCPI.SOURce.POWer.PORT.CORRection.COLLEct.TABLe.BSEnSor.DATA	625
SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.COLLEct.TABLe.LOSS.DATA	626
SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.COLLEct.TABLe.LOSS.STATe	627
SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.DATA	628
SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.STATe	629
SCPI.SOURce(Ch).POWer.PORT.COUPle	630
SCPI.SOURce(Ch).POWer.PORT(Pt).LEVel.IMMEdiate.AMPLitude	631
SCPI.SOURce(Ch).POWer.SPAN	632
SCPI.SOURce(Ch).POWer.STARt	633
SCPI.SOURce(Ch).POWer.STOP	634
SCPI.STATus.OPERation.CONDItion	635
SCPI.STATus.OPERation.ENABLE	635
SCPI.STATus.OPERation.EVENT	636
SCPI.STATus.OPERation.NTRansiion	636
SCPI.STATus.OPERation.PTRansiion	637
SCPI.STATus.PRESet	637
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).CONDItion	638
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.CONDItion	639
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.ENABLE	640
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.EVENT	641
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.NTRansiion	642
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.PTRansiion	643
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ENABLE	644
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).EVENT	645
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).NTRansiion	646
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).PTRansiion	647
SCPI.STATus.QUEStionable.BLIMit.CONDItion	648
SCPI.STATus.QUEStionable.BLIMit.ELIMit.CONDItion	648
SCPI.STATus.QUEStionable.BLIMit.ELIMit.ENABLE	649
SCPI.STATus.QUEStionable.BLIMit.ELIMit.EVENT	649
SCPI.STATus.QUEStionable.BLIMit.ELIMit.NTRansiion	650
SCPI.STATus.QUEStionable.BLIMit.ELIMit.PTRansiion	651
SCPI.STATus.QUEStionable.BLIMit.ENABLE	652
SCPI.STATus.QUEStionable.BLIMit.EVENT	652
SCPI.STATus.QUEStionable.BLIMit.NTRansiion	653
SCPI.STATus.QUEStionable.BLIMit.PTRansiion	654
SCPI.STATus.QUEStionable.CONDItion	655
SCPI.STATus.QUEStionable.ENABLE	656
SCPI.STATus.QUEStionable.EVENT	657
SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).CONDItion	657
SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.CONDItion	658
SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.ENABLE	659
SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.EVENT	660
SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.NTRansiion	661

SCPI.STATUS.QUEStionable.LIMit.CHANnel(Ch). ECHannel.PTRansition	662
SCPI.STATUS.QUEStionable.LIMit.CHANnel(Ch).ENABLE.	663
SCPI.STATUS.QUEStionable.LIMit.CHANnel(Ch).EVENT.	664
SCPI.STATUS.QUEStionable.LIMit.CHANnel(Ch). NTRansition.	665
SCPI.STATUS.QUEStionable.LIMit.CHANnel(Ch). PTRansition	666
SCPI.STATUS.QUEStionable.LIMit.CONDition	667
SCPI.STATUS.QUEStionable.LIMit.ELIMit.CONDition	667
SCPI.STATUS.QUEStionable.LIMit.ELIMit.ENABLE	668
SCPI.STATUS.QUEStionable.LIMit.ELIMit.EVENT	668
SCPI.STATUS.QUEStionable.LIMit.ELIMit.NTRansition	669
SCPI.STATUS.QUEStionable.LIMit.ELIMit.PTRansition	670
SCPI.STATUS.QUEStionable.LIMit.ENABLE	671
SCPI.STATUS.QUEStionable.LIMit.EVENT	671
SCPI.STATUS.QUEStionable.LIMit.NTRansition	672
SCPI.STATUS.QUEStionable.LIMit.PTRansition	673
SCPI.STATUS.QUEStionable.NTRansition.	674
SCPI.STATUS.QUEStionable.PTRansition	675
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).CONDition	676
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.CONDition	677
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.ENABLE	678
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.EVENT	679
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.NTRansition	680
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.PTRansition	681
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).ENABLE	682
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).EVENT	683
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).NTRansition	684
SCPI.STATUS.QUEStionable.RLIMit.CHANnel(Ch).PTRansition	685
SCPI.STATUS.QUEStionable.RLIMit.CONDition	686
SCPI.STATUS.QUEStionable.RLIMit.ELIMit.CONDition.	686
SCPI.STATUS.QUEStionable.RLIMit.ELIMit.ENABLE	687
SCPI.STATUS.QUEStionable.RLIMit.ELIMit.EVENT	687
SCPI.STATUS.QUEStionable.RLIMit.ELIMit.NTRansition.	688
SCPI.STATUS.QUEStionable.RLIMit.ELIMit.PTRansition	689
SCPI.STATUS.QUEStionable.RLIMit.ENABLE.	690
SCPI.STATUS.QUEStionable.RLIMit.EVENTt.	690
SCPI.STATUS.QUEStionable.RLIMit.NTRansition	691
SCPI.STATUS.QUEStionable.RLIMit.PTRansition.	692
SCPI.SYSTem.BACKlight	693
SCPI.SYSTem.BEEPer.COMPLete.IMMEdiate	694
SCPI.SYSTem.BEEPer.COMPLete.STATe	694
SCPI.SYSTem.BEEPer.WARNing.IMMEdiate	695
SCPI.SYSTem.BEEPer.WARNing.STATe	695
SCPI.SYSTem.COMMunicate.GPIB.PMETer.ADDRess	696
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.ADDRess	697
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency	698
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWER.	699
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet	700
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON	701
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.DWELI	702

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE	703
SCPI.SYSTem.CORRection.STATe	704
SCPI.SYSTem.DATE	705
SCPI.SYSTem.ERRor	706
SCPI.SYSTem.ISPC.PORT	707
SCPI.SYSTem.ISPC.STAT	708
SCPI.SYSTem.KLOCK.KBD	709
SCPI.SYSTem.KLOCK.MOUSe	710
SCPI.SYSTem.POFF	710
SCPI.SYSTem.PRESet	711
SCPI.SYSTem.SECurity.LEVel	712
SCPI.SYSTem.SERVice	713
SCPI.SYSTem.TEMPerature.HIGH	714
SCPI.SYSTem.TEMPerature.STATe	715
SCPI.SYSTem.TIME	716
SCPI.SYSTem.UPReset	717
SCPI.TRIGger.SEQuence.IMMEDIATE	718
SCPI.TRIGger.SEQuence.POINt	719
SCPI.TRIGger.SEQuence.SINGle	720
SCPI.TRIGger.SEQuence.SOURce	721

8. Waveform Analysis Library

Ripple Analysis Library	724
Flow of Programming Using the Ripple Analysis Library	724
Condition Setting Before Using the Ripple Analysis Library	724
List of the Ripple Analysis Library	725
Simple Use Example	726
Procedure Reference	727
FirstLeftGap(Chan)	727
FirstLeftInterval(Chan)	728
FirstRightGap(Chan)	729
FirstRightInterval(Chan)	730
GapMean(Chan)	731
MaxEnvelopeGap(Chan)	732
MaxGap(Chan)	733
MaxLeftGap(Chan)	734
MaxPeakToPeak(Chan)	735
MaxRightGap(Chan)	736
MaxRipplePoint(Chan,Stim)	737
MaxRippleValue(Chan)	738
Pole(Chan,D,I,LeftStim,LeftValue,RightStim,RightValue)	739

9. Complex Operation Library

Complex operation library	742
Data of the complex type	742
List of procedures	742
Procedure Reference	743
ComplexAbs(x)	743

ComplexAdd(x,y)	743
ComplexArg(x)	743
ComplexConj(x)	744
ComplexCos(x)	744
ComplexCosh(x)	744
ComplexDiv(x,y)	744
ComplexExp(x)	745
ComplexLog(x)	745
ComplexLog10(x)	745
ComplexMul(x,y)	745
ComplexNorm(x)	746
ComplexPolar(x,y)	746
ComplexSet(x,y)	746
ComplexSetArray(x)	747
ComplexSin(x)	747
ComplexSinh(x)	747
ComplexSqrt(x)	748
ComplexSub(x,y)	748
Sample Program	749

A. Manual Changes

Manual Changes	752
Change 7	753
Change 6	755
Change 5	755
Change 4	759
Change 3	761
Change 2	761
Change 1	761

1 Making Effective Use of This Manual

This chapter provides an overview of this manual as well as useful information to help you navigate through the manual. It also briefly describes how to use this manual, focusing on how you can look up particular COM object.

Contents of This Manual

This is a VBA programming guide with Agilent E5070B/E5071B.

This guide describes programming method mainly aiming at learning how to write a program that controls the E5070B/E5071B using COM objects, focusing on the macro function of the E5070B/E5071B and sample usage with the built-in VBA.

Controlling the E5070B/E5071B using an external controller is not covered by this guide; it is described in *Programmer's Guide*. For remote control using an external controller, see *Programmer's Guide*.

Description in this guide assumes that the reader has learned manual operation of the E5070B/E5071B. Thus, this guide does not describe each feature of the E5070B/E5071B in detail. For detailed information on each feature, see *User's Guide*.

The chapter-by-chapter contents of this manual are as follows.

Chapter 1, "Making Effective Use of This Manual."

This chapter provides an overview of this manual as well as useful information to help you navigate through the manual. It also briefly describes how to use this manual, focusing on how you can look up particular COM object.

Chapter 2, "Introduction to VBA Programming."

This chapter introduces you to the E5070B/E5071B's VBA macro function, describes how you can implement your system using the VBA macro function, and provides an overview of the COM objects that come with the E5070B/E5071B.

Chapter 3, "Operation Basics of the E5070B/E5071B's VBA."

This chapter provides descriptive information on basic operations for creating VBA programs within the E5070B/E5071B's VBA environment; topics include launching Visual Basic Editor, creating, saving, and running VBA programs, and so on.

Chapter 4, "Controlling the E5070B/E5071B."

This chapter describes how to use the E5070B/E5071B's VBA to control the E5070B/E5071B itself.

Chapter 5, "Controlling Peripherals."

This chapter explains how to control peripherals connected to the E5070B/E5071B with GPIB by using the software (VISA library) installed in the E5070B/E5071B.

Chapter 6, "Application Programs."

This chapter describes sample programs (VBA programs) based on actual measurement examples.

Chapter 7, "COM Object Reference."

This chapter describes the COM object model of the Agilent E5070B/E5071B and the COM object reference in alphabetical order. If you want to look up COM objects by their function, see "COM object list by function."

Chapter 8, “Waveform Analysis Library.”

This chapter describes how to use the ripple analysis library and the procedures in the ripple analysis library.

Chapter 9, “Complex Operation Library.”

This chapter describes the complex operation library.

Appendix A, “Manual Changes.”

This appendix contains the information required to adapt this manual to versions or configurations of the E5070B/E5071B manufactured earlier than the current printing date of this manual.

How To Use This Manual

Chapter 3 provides the basic operation of VBA when coding VBA programs, and Chapter 4 provides the description of controlling the E5070B/E5071B and sample program examples that you can use to develop your custom programs. For more information on individual COM object, see Chapter 7, “COM Object Reference.”

Looking Up COM Objects

Chapter 7, “COM Object Reference.” contains a complete reference of COM objects. You can look up a particular COM object in any of the following ways:

Lookup by Abbreviated COM Object Name

The COM object reference is organized alphabetically according to the abbreviated name used as the title for each COM object’s description.

Lookup by COM Object Function

Table 7-1 on page 136 provides a complete list of COM objects by function and indicates the page numbers where the COM objects appear in the COM object reference.

Lookup by Front panel key

Table 7-2 on page 156 provides a complete list of COM objects that correspond to the front panel key tree and indicates the page numbers where the COM objects appear in the COM object reference.

Using Sample Programs

The manual comes with a sample program disk, which contains the source files of the sample programs described in this manual. The disk is DOS-formatted.

Loading a Sample Program

For the method to load a sample program into the E5070B/E5071B VBA, see Section “Loading a VBA Program” on page 49 in the Chapter 3 “Operation Basics of the E5070B/E5071B's VBA”.

List of the Sample Programs

Table 1-1 shows the file list contained with the VBA sample program disk. To look up the description of a sample program, see the listings under “Sample program” in the index.

Table 1-1 List of the sample programs

Project	Object names of modules in the project	Module type	Content
apl_bsc.vba	mdlBscMeas	Standard module	Program for the basic measurement of the bandpass filter
apl_fem.vba	mdlFemMeas	Standard module	Application program for the measurement using the E5091A
apl_sys.vba	mdlDupMeas frmDupMeas	Standard module UserForm	Application program for the duplexer measurement
ctrl_ext.vba	mdlVisa Module1 Module2	Standard module Standard module Standard module	Program for reading out the product information of the peripheral
map_drive.vba	Module1 frmMapDrive	Standard module UserForm	Program for connecting a hard disk (a shared folder) of an external PC to the E5070B/E5071B.
meas_sing.vba	mdlSingMeas frmSingMeas	Standard module UserForm	Program for detecting the end of the measurement using SCPI.TRIGger.SEQuence.SINGle object and SCPI.IEEE4882.OPC object.
meas_srq.vba	mdlSrqMeas frmSrqMeas	Standard module UserForm	Program for detecting the end of the measurement through the status register
meas_user.vba	mdlUserMenu	Standard module	Program for utilizing the user menu function (interrupt processing by the assigned softkey)
pow_cal.vba	mdlPowCal Module1 Module2	Standard module Standard module Standard module	Program for performing the power calibration
read_write.vba	mdlReadWrite frmReadWrite	Standard module UserForm	Program for reading / displaying / writing a formatted data array

NOTE

The sample program disk also contains two definition file for controlling peripherals with VISA library, named “visa32.bas” and “vpptype.bas.”

Making Effective Use of This Manual
How To Use This Manual

2

Introduction to VBA Programming

This chapter introduces you to the E5070B/E5071B's VBA macro function, describes how you can implement your system using the VBA macro function, and provides an overview of the COM objects that come with the E5070B/E5071B.

Introduction of the E5070B/E5071B Macro Function

The E5070B/E5071B has a built-in macro function that allows a single instruction to substitute for multiple instructions. You can have the E5070B/E5071B automatically execute your own macro program that contains a series of VBA (Visual Basic for Application) statements. The macro function allows you to run a variety of applications; you can control not only the E5070B/E5071B but also various peripherals from your own macro code.

The VBA is based on the VB (Visual Basic) programming language. Although the VBA is similar to the VB, they are not the same. The VBA is decreased some of the VB's features and added characteristic features for each application. The E5070B/E5071B VBA is added features for controlling the E5070B/E5071B. For details of difference between the VBA and the VB, refer to Microsoft official guides, and various books on VBA.

For information on the basic operating procedures for the E5070B/E5071B's VBA, see Chapter 3, "Operation Basics of the E5070B/E5071B's VBA," on page 33. This manual is not meant to be an in-depth guide to VBA programming basics and the syntax of VBA functions and commands. Such in-depth information is covered in VBA Help, Microsoft official guides, and various books on VBA.

The macro function allows you to control the E5070B/E5071B itself as well as various peripherals. You can do the following:

1. Automate repetitive tasks

You can use the E5070B/E5071B's macro function to combine several processes into one. Automating repetitive tasks provides higher efficiency and eliminates human error. Once you have contained repetitive tasks in Sub procedures, you can later call the procedures from other programs, thus allowing effective reuse of programming assets.

2. Implement a user interface

The E5070B/E5071B VBA supports user forms (see "User Form" on page 37) that simplify creating a visual user interface. User forms guide users through common tasks such as performing measurement and entering data, without requiring familiarity with the E5070B/E5071B, thus minimizing the possibility of human error.

NOTE

When more than 1601 measurement points is set for 1 channel and 4 traces, the E5070B/E5071B VBA macro function may not operate.

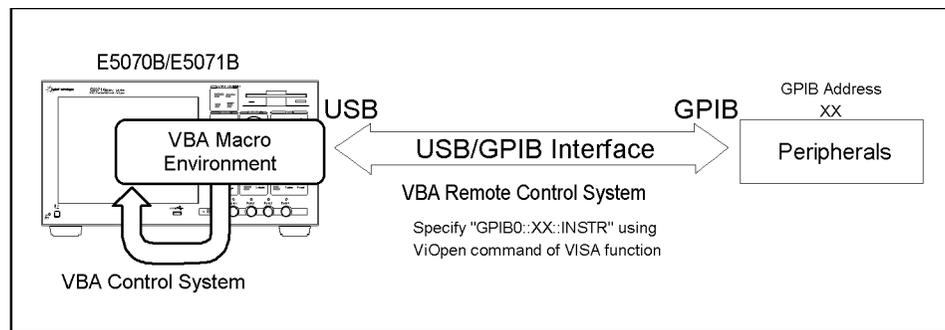
An Overview of a Control System Based on the Macro Function

This section describes how you can use the E5070B/E5071B's built-in VBA macro function to implement a system that controls the E5070B/E5071B and peripherals, and what command sets are available for such purposes.

Implementing a Control System

Macro-based control systems are classified into two types: As shown in Figure 2-1, a VBA control system controls the E5070B/E5071B itself while a VBA remote control system controls peripherals. When you use the macro function to control peripherals, you must connect the E5070B/E5071B with the peripherals through USB/GPIB interface, and configure them to communicate over VISA (Virtual Instrument Software Architecture). For information on programming using the VISA library, refer to “Programming with VISA” on page 87.

Figure 2-1 Configuration example of control system using macro environment



e5070bve013

Required Equipment

1. E5070B/E5071B
2. Peripherals and/or other instruments that serve your purpose
3. USB/GPIB interface

NOTE To use the VBA remote control system, you need to set the USB/GPIB interface correctly. For detail, refer to *User's Guide*.

NOTE Do not connect two or more USB/GPIB interfaces.

Control Methods

The command set you can use differs depending on whether you use the macro function to control the E5070B/E5071B or a peripheral.

Controlling the E5070B/E5071B

When you want to control the E5070B/E5071B itself, you can create a program using COM objects within the E5070B/E5071B VBA environment. COM objects that come with the E5070B/E5071B include seven objects specific to the COM interface and COM objects that correspond to SCPI commands.

For information on using E5070B/E5071B's COM objects, see Chapter 7, “COM Object Reference,” on page 133. For information on using SCPI commands, see the “SCPI Command Reference” in the *E5070B/E5071B Programmer's Guide*.

Controlling a Peripheral

When you want to control a peripheral, you can create a program using VISA library functions within the E5070B/E5071B VBA environment.

For information on using the VISA library, see Chapter 5, “Controlling Peripherals,” on page 85. For a complete description of VISA functions, refer to the VISA library's online help. You can access this online help by double-clicking a file named visa.hlp contained in the CD-ROM (Agilent part No. E5070-905xx).

For information on the GPIB commands available with a particular peripheral, refer to the documentation that comes with the peripheral.

Overview of E5070B/E5071B COM Object

The E5070B/E5071B VBA environment provides COM objects that support controlling the E5070B/E5071B. This section provides an overview of COM objects as well as considerations for using the E5070B/E5071B's COM objects. For more information on the E5070B/E5071B's COM objects and the comparison with SCPI commands, refer to Chapter 7, “COM Object Reference,” on page 133.

The definitions and specifications of COM are beyond the scope of this guide. Such in-depth information is covered in a variety of books on COM.

About COM Object

When you control the E5070B/E5071B through the macro function, you can use COM objects as components of your application. The functionality of the E5070B/E5071B's COM objects is exposed through properties and methods.

Property

A property allows you to read or write a setting or attribute of an object. With the E5070B/E5071B, you can use properties to set or read the settings of the E5070B/E5071B.

You can find properties in the list of object types in Chapter 7, “COM Object Reference,” on page 133.

Method

A method allows you to manipulate an object in a particular way. With the E5070B/E5071B, you can use methods to perform specific tasks.

You can find methods in the list of object types in Chapter 7, “COM Object Reference,” on page 133.

Event

An event means an operation from outside that the program can recognize such as clicking a mouse. The E5070B/E5071B detects events that a specific softkey is pressed using the `UserMenu_OnPress(ByVal Key_id As Long)` on page 198 procedure to execute the assigned procedure.

Using COM Object to Control the E5070B/E5071B

When you want to control the E5070B/E5071B, you can use COM objects alone or in conjunction with SCPI commands and the `Parse` on page 194 object. The latter method is a little slower than the former method because the `Parse` on page 194 object is used to parse the messages of SCPI commands. For instructions on using the E5070B/E5071B's VBA Editor to create a program that uses COM objects, refer to Chapter 3, “Operation Basics of the E5070B/E5071B's VBA,” on page 33.

Major Control Difference between COM Object and SCPI Command

While the control using SCPI commands allows SRQ (Service Request) interrupts through the status reporting mechanism, the control using COM objects does not support SRQ interrupts. Instead of SRQ interrupts, you can use the **WaitOnSRQ** object to suspend the program until the E5070B/E5071B is put into the desired state. For a detailed example of use, see “WaitOnSRQ” on page 201.

3

Operation Basics of the E5070B/E5071B's VBA

This chapter provides descriptive information on basic operations for creating VBA programs within the E5070B/E5071B's VBA environment; topics include launching Visual Basic Editor, creating, saving, and running VBA programs, and so on.

Displaying Visual Basic Editor

This section describes how to launch Visual Basic Editor.

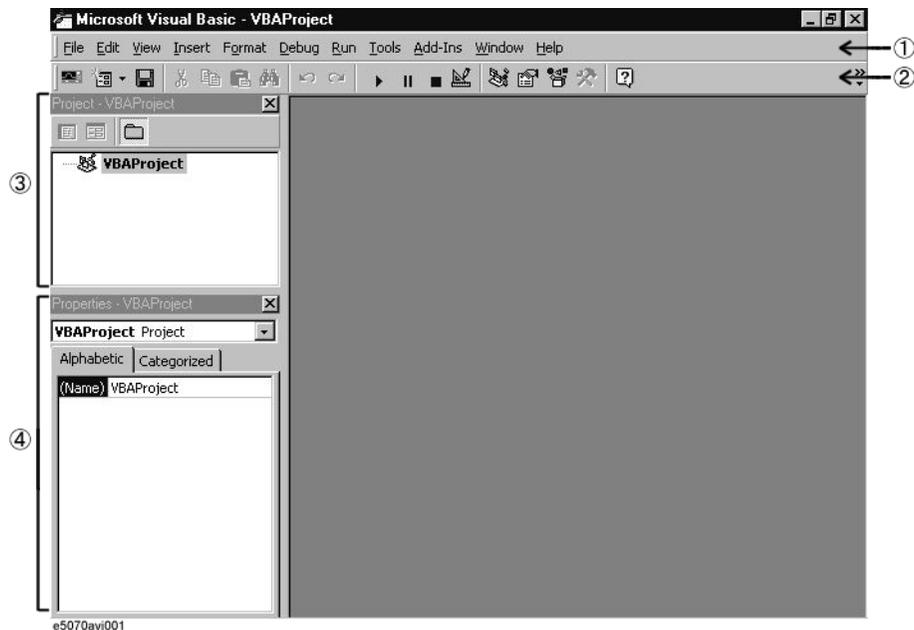
Step 1. From the E5070B/E5071B measurement screen, launch Visual Basic Editor using one of the following methods:

- **[Macro Setup] - VBA Editor**
- Press **[Alt] + [F11]** on the keyboard.

Initial Screen of Visual Basic Editor

When you launch Visual Basic Editor, it displays the initial screen, which contains a number of windows as shown in Figure 3-1. The initial screen provides the following GUI elements:

Figure 3-1 Example of Visual Basic Editor initial screen



1. Menu Bar

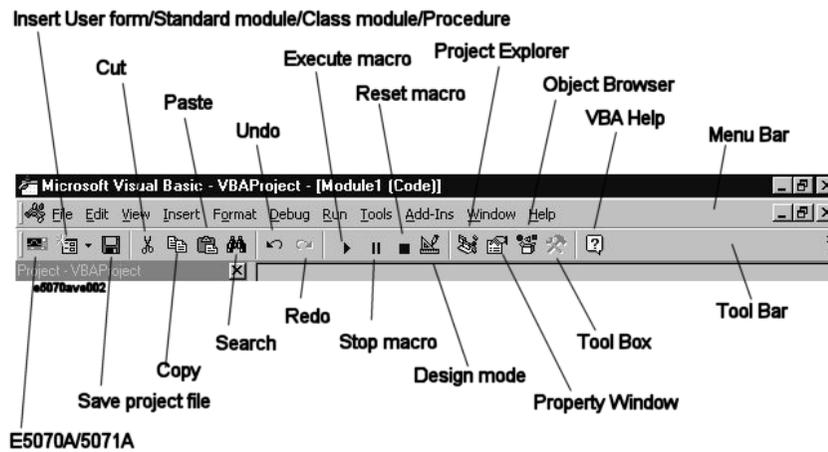
Clicking one of the menu labels brings up the corresponding menu. The menu bar can be used as the primary method to navigate through E5070B/E5071B's VBA environment.

2. Toolbar

The toolbar provides access to commonly used commands via icon buttons; these commands are a subset of the commands accessible from the menu bar. For the description of the buttons on the standard toolbar, see Figure 3-2.

Figure 3-2

Buttons on the standard toolbar



3. Project Explorer

Within the E5070B/E5071B's VBA environment, you can develop your application as a project that consists of a number of files (modules). Project Explorer shows a list of all files (modules) that make up a project. The list also includes files (modules) created or loaded in Visual Basic Editor. For information on modules, refer to “A Project and Three Types of Module” on page 37.

Step 1. To display the project explorer, do one of the following:

- On the **View** menu, click **Project Explorer**.
- Press **[Ctrl] + [R]** on the keyboard.
- On the toolbar, click “Project Explorer” icon (Figure 3-2).

4. Property Window

A property window shows the settings (label, font, color, size, etc.) of a control (such as a command button or text box) placed on the user form. For information on user forms, refer to “User Form” on page 37.

You can also set properties by programming in the code window.

Step 1. To display the project explorer, do one of the following:

- On the **View** menu, click **Properties Window**.
- Press **[F4]** on the keyboard.
- On the toolbar, click “Property Window” icon (Figure 3-2).

Closing Visual Basic Editor

This section describes how to quit Visual Basic Editor.

- Step 1.** Close the Visual Basic Editor using one of the following methods:
- On Visual Basic Editor's **File** menu, click **Close and Return to E5070**.
 - Within Visual Basic Editor, press **[Alt] + [Q]** on the keyboard.
 - **[Macro Setup] - Close Editor**(E5070B/E5071B measurement screen)

NOTE

Whenever you launch Visual Basic Editor, it automatically displays the project files you were working with in the previous session. However, once you turn off the power to the E5070B/E5071B, the project files kept in memory will be lost; therefore, it is strongly recommended to save your VBA programs before you turn off the power.

Switching to the E5070B/E5071B Measurement Screen

You can switch to the E5070B/E5071B measurement screen without closing Visual Basic Editor.

- Step 1.** To switch to the E5070B/E5071B measurement screen, do one of the following:
- On the **View** menu, click **E5070**.
 - Press **[Alt] + [F11]** on the keyboard.
 - On the toolbar, click “E5070B/E5071B” icon (Figure 3-2).
 - Press the **[Focus]** key on the E5070B/E5071B front panel.

Making a Preparation Before Coding

A Project and Three Types of Module

Project Explorer (Figure 3-1) displays a list of files (modules) that are used in the E5070B/E5071B VBA. This section describes a project composed of a number of files (modules) and three types of modules (“user form”, “standard,” and “class”). Each type of module serves its own purposes as described below.

Project

When you develop an application within the E5070B/E5071B's VBA environment, you use a number of VBA program files (modules), and manage them as one project. The project is saved with the file extension “.vba”.

User Form

A user form contains controls such as buttons and text boxes. You can code event-driven procedures that are invoked when a particular event occurs on a particular control, thereby creating a user interface. The user form is saved with the file extension “.frm”.

Standard module

A standard module contains a collection of one or more procedures (subprograms enclosed between Sub and End Sub). One typical use of a standard module is to contain shared subroutines and globally called functions. The standard module is saved with the file extension “.bas”.

Class Module

A class module contains both data and procedures and acts as one object. Once you have created a class module that serves as an object, you can create any number of instances of that object by naming each instance as an object variable. While each procedure must be unique in a standard module, you can have multiple instances of an object created through a class module. The class module is saved with the file extension “.cls”.

Displaying a Code Window

The code windows appear on the Visual Basic Editor by inserting the modules in a project. You can do coding (programming) on this code windows practically.

The E5070B/E5071B's VBA environment does not allow you to manage multiple projects. When the current project is existing in the Visual Basic Editor by loading the saved project file, you can replace the current project with a new project by the following method from the E5070B/E5071B measurement screen.

- **[Macro Setup] - New Project**

NOTE

When you replace the current project with a new project, the message whether or not the current project is saved may appear. If you want to save the project, click **Yes** button to display a dialog box for saving (Figure 3-6 on page 46). For saving the project, see “Saving a Project” on page 46.

Inserting the User Form

Within Visual Basic Editor, do one of the following to add a user form to your project (this brings up such a window as shown in Figure 3-3):

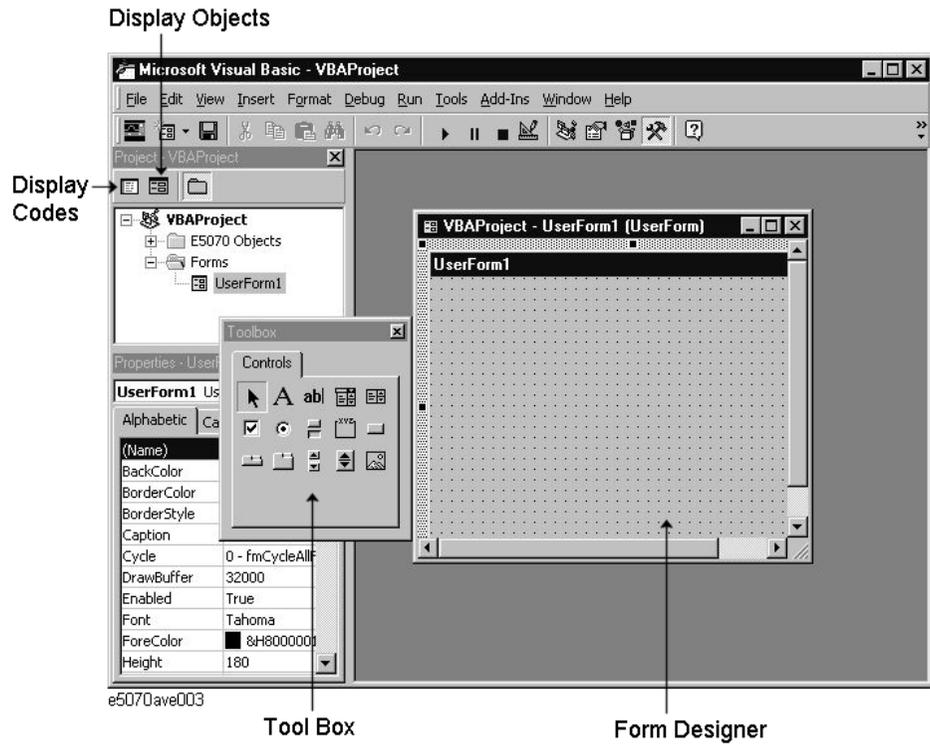
- On the **Insert** menu, click **UserForm**.
- On the toolbar, click “Insert User Form/Standard Module/Class Module/Procedure” icon (Figure 3-2), and click **UserForm**.
- In Project Explorer (Figure 3-1), right-click the “VBAProject” icon, and click **Insert - UserForm**.

NOTE

Adding a user form does not automatically open the code window for that user form. To open the code window, click the “Show Code” icon (Figure 3-3) in Project Explorer (Figure 3-1) or double-click a control placed on the user form.

Figure 3-3

Adding a user form



3. Operation Basics of the
E5070B/E5071B's VBA

Operation Basics of the E5070B/E5071B's VBA

Making a Preparation Before Coding

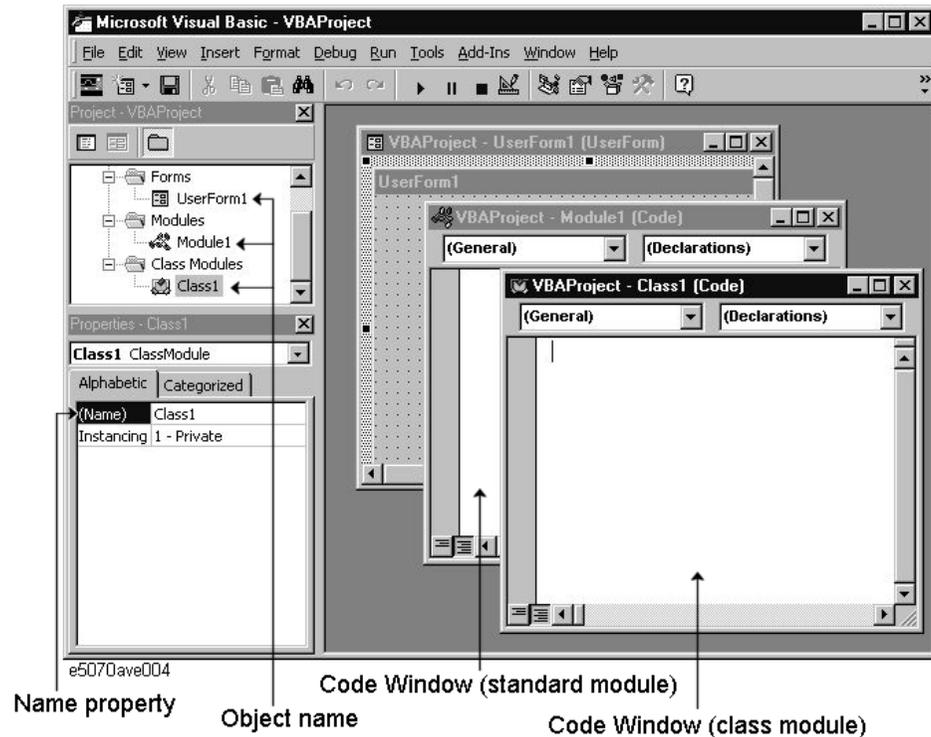
Inserting the Standard Module

Within Visual Basic Editor, do one of the following to add a standard module to your project (this brings up such a window as shown in Figure 3-4):

- On the **Insert** menu, click **Module**.
- On the toolbar, click “Insert User Form/Standard Module/Class Module/Procedure” icon (Figure 3-2), and click **Module**.
- In Project Explorer (Figure 3-1), right-click the “VBAProject” icon, and click **Insert - Module**.

Figure 3-4

Adding a standard module/class module



Inserting the Class Module

Within Visual Basic Editor, do one of the following to add a class module to your project (this brings up such a window as shown in Figure 3-4):

- On the **Insert** menu, click **ClassModule**.
- On the toolbar, click “Insert User Form/Standard Module/Class Module/Procedure” icon (Figure 3-2), and click **ClassModule**.
- In Project Explorer (Figure 3-1), right-click the “VBAProject” icon, and click **Insert - ClassModule**.

Deleting Modules

You can delete any unnecessary module from the project within Visual Basic Editor. The following procedure assumes that you want to delete a class module named “Class1”.

- Step 1.** In Project Explorer (Figure 3-1), click the “Class1” class module under the “Class Modules” icon to highlight it.
- Step 2.** Delete the “Class1” class module using one of the following methods:
 - On the **File** menu, click **Remove Class1...**
 - Click the right mouse button, and click **Remove Class1...**
- Step 3.** When you are prompted to confirm whether to export (save) “Class1”, click **No**. Alternatively, you can click **Yes** if you want to save the module.

Coding a VBA Program

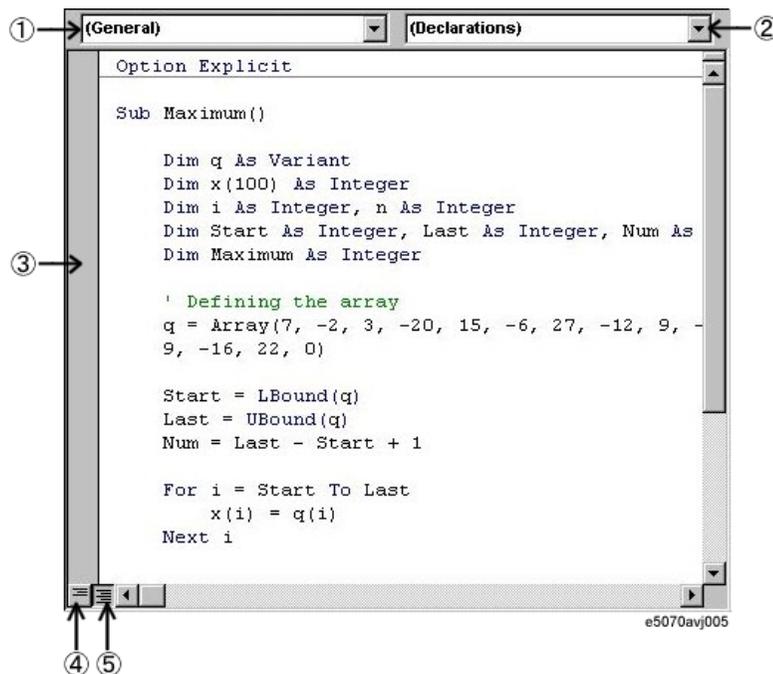
This section provides descriptive information on the user interface elements of a code window that lets you code a VBA program, and walks through a sample program (procedure) that finds the maximum value contained in an array so you can gain insight into how to create your own programs.

User Interface Elements of a Code Window

A code window is where you code a VBA program. When you are working with a user form, you can open the code window for that user form by double-clicking a control (such as a button or text box) placed on the form. Similarly, when you are working with a standard or class module, you can open the code window associated with that module by double-clicking the module's icon in Project Explorer (Figure 3-1).

Figure 3-5

Code window for a standard module



1. Object box

Provides a list of objects currently used within the code window.

2. Procedure box

Provides a list of procedures that reside within the code window. When you are working with a user form, this provides a list of events (actions such as click or double-click).

3. Margin indicator bar

Primarily intended for use when debugging a program.

4. Show Procedure button

Displays only the procedure at the cursor position.

5. Show Module button

Displays the entire program contained in the code window.

Creating a Simple VBA Program

This section walks through a sample program that finds the maximum value contained in an array while breaking down the code into a number of blocks and describing what they do. Line numbers are added for description purpose only, and do not appear in the actual program source code.

Example 3-1

Sample program that finds the maximum value contained in an array

```
10| Option Explicit
20|
30| Sub Maximum()
40|
50|     Dim q As Variant
60|     Dim x(100) As Integer
70|     Dim i As Integer, n As Integer
80|     Dim Start As Integer, Last As Integer, Num As Integer
90|     Dim Maximum As Integer
100|
110|     ' Defining the array
120|     q = Array(7, -2, 3, -20, 15, -6, 27, -12, 9, -5, 18, 23, _
130|         9, -16, 22, 0)
140|
150|     Start = LBound(q)
160|     Last = UBound(q)
170|     Num = Last - Start + 1
180|
190|     For i = Start To Last
200|         x(i) = q(i)
210|     Next i
220|
230|     Maximum = x(Start)
240|
250|     For n = Start + 1 To Last
260|         If x(n) > Maximum Then Maximum = x(n)
270|     Next n
280|
290|     MsgBox Maximum
300|
310| End Sub
```

Operation Basics of the E5070B/E5071B's VBA Coding a VBA Program

Let us break down the code into a number of blocks and see what they do.

Line 10	This instruction mandates explicit declaration of variables.
Lines 30 to 310	The code enclosed between Sub Maximum() and End Sub will be executed within the E5070B/E5071B's macro environment. Thus enclosed code is called a procedure. In this example, "Maximum" is the procedure name.
Lines 50 to 90	These lines declare data types of variables using Dim statements. A statement is the minimum instruction unit based on the syntax. The sample program declares the variable "q" as Variant, and the variables "x(100)", "i", "n", "Start", "Last", "Num", and "Maximum" as Integer. For a complete list of statements and data types supported by VBA, see VBA Online Help.
Line 110	Any text preceded by a comment indicator (') is treated as a comment.
Lines 120 to 130	These lines use VBA's Array function to initialize the array. The q() array contains elements delimited with commas in the ascending order of index numbers (zero-based). A combination of a space and underscore () is used to continue the statement across two or more lines.
Line 150	Stores the starting index number of the q array into the Start variable.
Line 160	Stores the last index number of the q array into the Last variable.
Line 170	Stores the number of elements in the q array into the Num variable.
Lines 190 to 210 and Lines 250 to 270	The code within each For ...Next statement is iterated until the counter reaches the specific number.
Line 200	Stores the contents of the q array (Variant) into the x variable (Integer).
Line 230	Uses the first element of the x array as the tentative maximum value.
Line 260	Compares the tentative maximum value with each of elements that follow; if an element is larger than the tentative maximum value, then that element is used as the tentative maximum value.
Line 290	Uses a message box function to display the maximum value. For a complete list of functions supported by VBA, see VBA Online Help.

NOTE

The sample program in Example 3-1 consists of a single procedure contained in a single module. However, when you deal with procedures and variables across multiple modules, you should be aware of the scope of variables and procedures.

Auto-complete Feature

When you use COM objects in Visual Basic Editor, the editor's auto-complete feature allows you to easily type in keywords without misspelling them.

The following procedure assumes that you are entering the SCPI.INITiate(Ch).CONTinuous on page 412 object.

- Step 1.** In a standard module, type **sub main** and press the **[Enter]** key. **End Sub** is automatically added.
- Step 2.** Typing **scpi** followed by a dot (.) brings up a list of classes under the SCPI class.
- Step 3.** Typing **in** automatically moves focus to **INITiate** in the list box.
- Step 4.** Typing **(** brings up a list of indexes.
- Step 5.** Typing **1).** brings up a list of classes under the INITiate class.
- Step 6.** Typing **c** automatically moves focus to **CONTinuous** in the list box.
- Step 7.** Typing **=** brings up a list box for setting a Boolean value (**True/False**).
- Step 8.** Typing **t** automatically moves focus to **True**.
- Step 9.** Pressing the **[Enter]** key completes the statement: SCPI.INITiate(1).CONTinuous = True.

Saving a VBA program

- 3. Save as type:** Select the type of the module you are saving. The type that corresponds to the module you are saving is selected by default. Normally, you should use the default.
- 4. Save:** Clicking this button saves the module.
- 5. Cancel:** Clicking this button closes the Export File dialog box and brings you back to the main screen.
- 6. Help:** Clicking this button brings up VBA Online Help.

Loading a VBA Program

Once you have saved a project or module file, you can load it later whenever necessary.

Loading a Project

You can load a saved project file either from the E5070B/E5071B measurement screen or by specifying that the project file be automatically loaded when the power is turned on.

Loading a Project from the E5070B/E5071B Measurement Screen

Step 1. Access the Open dialog box using the following key sequence:

- **[Macro Setup] - Load Project**

NOTE

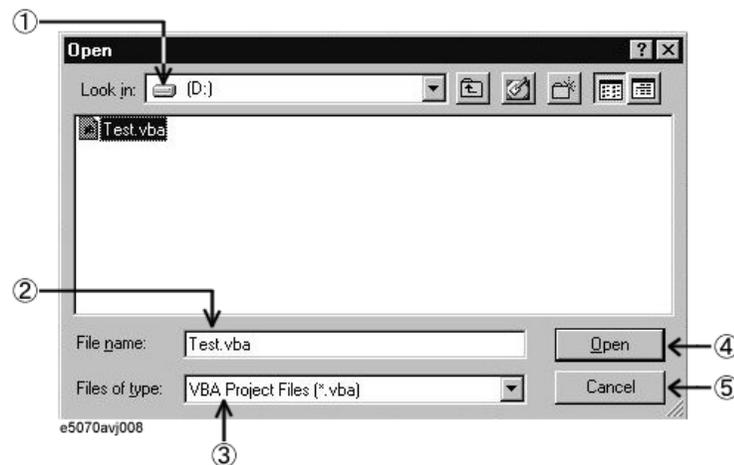
When the another project has already been loaded on the Visual Basic Editor, the message whether or not the current project is saved may appear. If you want to save the project, click **Yes** button to display a dialog box for saving (Figure 3-6 on page 46). For saving the project, see “Saving a Project” on page 46.

Step 2. The Open dialog box (Figure 3-8) appears. Specify the file name and location (drive or folder) of the file you want to load and click **Open**.

The Open dialog box has the following user interface elements:

Figure 3-8

Open dialog box



- 1. Look in:** Specify the location (drive or folder) where the project resides.
- 2. File name:** Specify the file name of the project you want to load.
- 3. Files of type:** Select the type of the file you want load. Normally, you should select **VBA Project Files (*.vba)**.
- 4. Open:** Clicking this button loads the project.
- 5. Cancel:** Clicking this button closes the Open dialog box and brings you back to the main screen.

Operation Basics of the E5070B/E5071B's VBA

Loading a VBA Program

Automatically Loading a Project at Power-On

Once you have saved a project file that satisfies the following conditions, the project will be automatically loaded whenever the power is turned ON.

Auto-loaded project	Conditions
Directory where the project resides.	A:\ or D:\
Project file name	autoload.vba* ¹

*1. Upper/lower case insensitive.

NOTE

If there is the file named “autoload.vba” in both the A drive and the D drive, the file in the A drive is used.

Loading a Module (Importing)

To load a saved module into a project, you must use Visual Basic Editor.

Step 1. In Project Explorer (Figure 3-1), click the file name that appears under the desired module icon to highlight it.

Step 2. Open the Import File dialog box by doing one of the following:

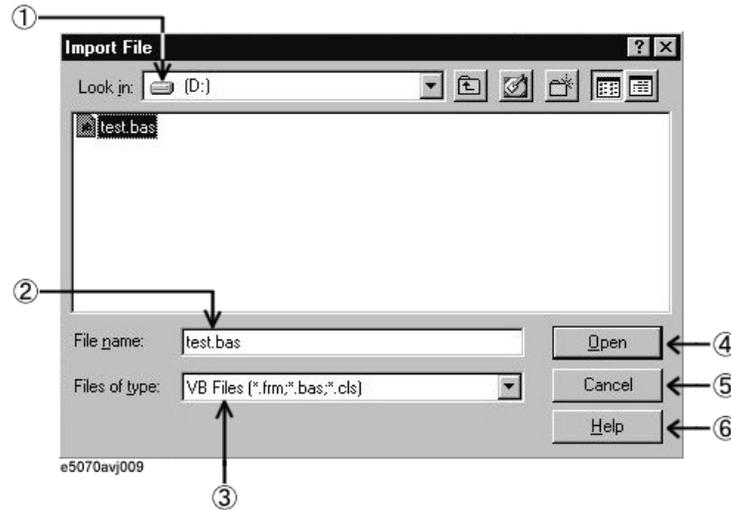
- On the **File** menu, click **Import File...**
- In Project Explorer (Figure 3-1), right-click the “VBAProject” icon, and click **Import File...**
- Press **[Ctrl] + [M]** on the keyboard.

Step 3. The Import File dialog box (Figure 3-9) appears. Specify the file name and location (drive or folder) of the file (module) you want to load and click **Open**.

The Import File dialog box has the following user interface elements:

Figure 3-9

Import File dialog box



1. **Look in:** Specify the location (drive or folder) where the module resides.
2. **File name:** Specify the file name of the module you want to load.
3. **Files of type:** Select the type of the file you want load. Normally, you should select **VB Files [*.frm;*.bas;*.cls]**.
4. **Open:** Clicking this button loads the module.
5. **Cancel:** Clicking this button closes the Import File dialog box and brings you back to the main screen.
6. **Help:** Clicking this button brings up VBA Online Help.

Running a VBA Program

The E5070B/E5071A provides 2 methods to execute a VBA program: executing a program that you previously loaded and loading and executing a program in a batch process. The execution status of the VBA program is indicated in the instrument status bar, as shown in Figure 3-10. “Run” indicates that the program is running while “Stop” indicates that the program is stopped.

Figure 3-10

Instrument status bar indicating the status of the VBA program



Running a previous loaded VBA program

The E5070B/E5071B allows you to run a previous loaded VBA program using one of the four methods listed below.

Running a Program from Visual Basic Editor

Step 1. Open the Macros dialog (Figure 3-11) box by doing one of the following:

- On the **Run** menu, click **Run Macro**.
- On the **Tools** menu, click **Macros...**
- On the toolbar, click “Run Macro” icon (Figure 3-2).
- Press **[F5]** on the keyboard.

NOTE

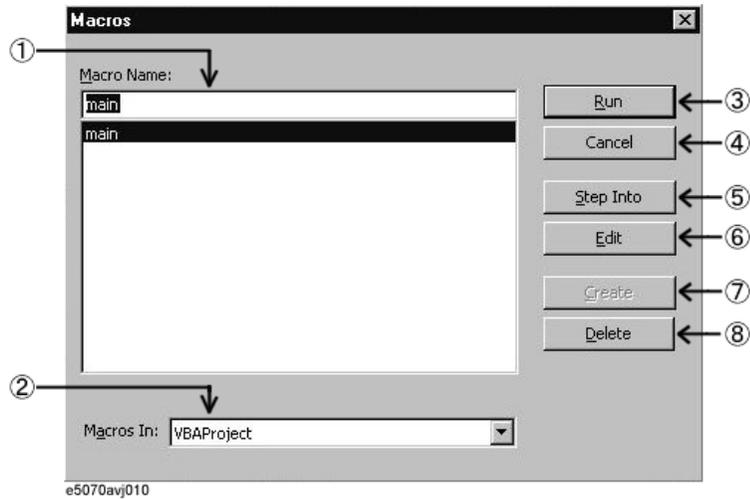
Doing the above steps with the cursor positioned within a procedure in the code window immediately runs the program without displaying the Macros dialog box.

Step 2. In the Macros dialog box, select the VBA program (procedure name) you want to run, and click the **Run** button.

The Macros dialog box has the following user interface elements:

Figure 3-11

Macros dialog box



- 1. Macro Name:** Select the VBA program (procedure name) you want to run from the list box so its name appears here.
- 2. Macro In:** Specify the project that contains the VBA program you want to run. Normally, use the default.
- 3. Run:** Clicking this button runs the selected VBA program (procedure).
- 4. Cancel:** Clicking this button closes the Macros dialog box and brings you back to the main screen.
- 5. Step Into:** Clicking this button brings up Visual Basic Editor and put it into step-in mode, where the selected VBA program is run step by step. This mode is primarily intended for use when debugging a VBA program. For more information on step-in mode, see “Debug Toolbar” on page 58.
- 6. Edit:** Displays the code of the selected VBA program. You can use this for re-editing your code.
- 7. Create:** This button is normally dimmed.
- 8. Delete:** Clicking this button deletes the selected VBA program. Take care not to inadvertently delete your VBA program before saving it.

NOTE

The Macros dialog provides access to subprograms (procedures enclosed between Sub and End Sub) created in a standard module.

Operation Basics of the E5070B/E5071B's VBA

Stopping a VBA Program

1. **Continue:** Resumes the execution of the program.
2. **End:** Terminates the VBA program.
3. **Debug:** Displays a run-time error.
4. **Help:** Brings up VBA Online Help.

Abruptly Terminating the VBA Program

This section describes how to abruptly terminate a running procedure. When abruptly terminating the VBA program by the below methods, the “Program interrupted” message is shown in the instrument status bar on the bottom of the LCD display.

Step 1. To terminate the running VBA program, do one of the following:

- On the **Run** menu, click **Reset**.
- On the toolbar, click “Reset Macro” icon (Figure 3-2).
- Insert an *End* statement into your code.

Errors and Debugging

Types of Error

Errors in VBA programs are classified into the following two types:

Syntax errors

A syntax error is generated when Visual Basic Editor detects an invalid statement that violates the Visual Basic syntax rules. For example, misspelled keywords generate syntax errors. An error dialog box appears that indicates the error message, and highlight the invalid statement in red. To get detailed information on the error, click the **HELP** button in the error dialog box to display the help topic on the error. You cannot run the macro until you correct the syntax error.

The E5070B/E5071B VBA environment is by default configured to automatically check for syntax errors, but you can disable the auto syntax check feature using the following steps:

- Step 1.** On the **Tools** menu, click **Options...**
- Step 2.** On the **Editor** tab, clear the **Auto Syntax Check** check box.
- Step 3.** Click the **OK** button.

Run-time Errors

A run-time error is generated when a VBA program attempts to execute an invalid statement at run time. When a run-time error is generated, the program is stopped at the invalid statement, and an error dialog box as shown in Figure 3-12 appears. You can terminate the program by clicking the **END** button in the error dialog box. Also, you can click the **DEBUG** button in the error dialog box to identify the statement that caused the error. In this case, the statement in question is highlighted in yellow.

NOTE

Some run-time errors occur under particular conditions, even though a program run without occurring the errors under normal conditions. For example, the “Target value not found” error that occurs when a program that analyzes the results using the Marker Bandwidth Search feature fail to perform bandwidth search because the marker is not in the appropriate position, the “Ecal module not in RF path” error that occurs when a program that performs calibrations using a ECal module fail to measure the calibration data because the ECal module is not appropriately connected to test ports, and so on. To avoid interruption of the program by these errors, you can handle these errors like lines 730 to 960 in Example 6-1 on page 97.

Using a Debug Tool

The E5070B/E5071B's VBA environment provides a variety of debug tools that help you identify logical errors. Detailed information on using the debug tools is covered in VBA Online Help and books on VBA.

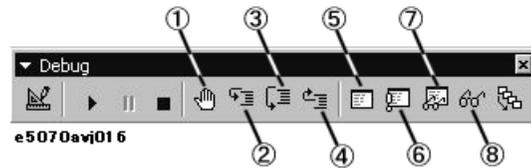
Debug Toolbar

The debug toolbar (Figure 3-13) provides tool buttons that allow you to easily access various debug tools. To display the debug toolbar, do the following:

- Step 1.** On the **View** menu, click **Toolbars - Debug**.

Figure 3-13

Debug toolbar



1. Set/clear break points (keyboard: **[F9]**)
Puts a break point at the cursor position or clears an existing break point.
2. Step-in (keyboard: **[F8]**)
Runs the VBA program step by step. If the current program contains a call to another procedure, that procedure is also run step by step.
3. Step-over (keyboard: **[Shift]+[F8]**)
Runs the VBA program step by step. If the current program contains a call to another procedure, that procedure is run as one line.
4. Step-out (keyboard: **[Ctrl]+[Shift]+[F8]**)
Executes the remaining lines of the function where the execution point is currently placed.
5. Local window
Opens the local window that shows the current values of local variables.
6. Immediate window (keyboard: **[Ctrl]+[G]**)
Opens the immediate window that evaluates entered values of variables or expressions.
7. Watch window
Opens the watch window that displays the current value of a specified expression.
8. (keyboard: **[Shift]+[F9]**)
Displays the current value of a specified expression in a dialog box.

Setting a Break Point

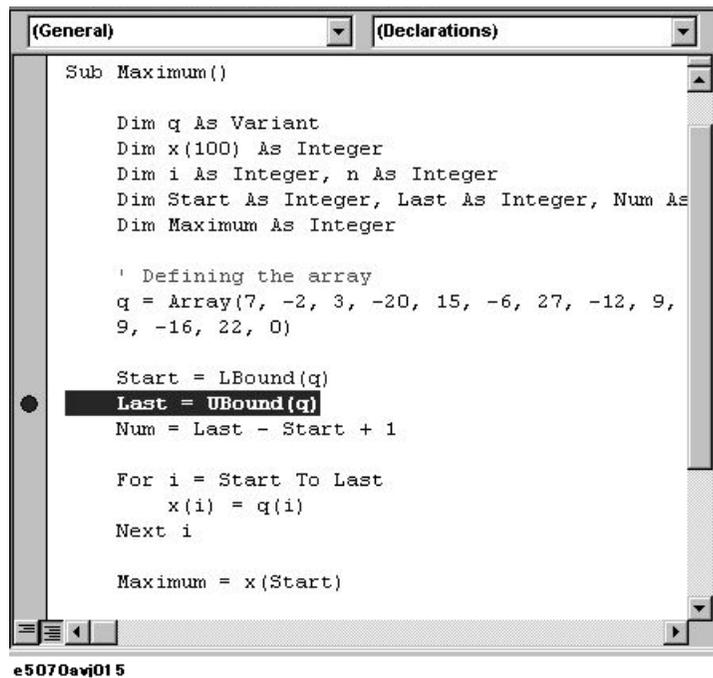
By placing a break point at a particular statement in a VBA program, you can automatically suspend the program when it is executed to that statement.

Step 1. When you put a break point at a line, the line is highlighted in amber as shown in Figure 3-14. To set a break point do one of the following:

- Place the cursor at the desired line of code, and click the “Set/clear break points” button (Figure 3-13: 1) on the debug toolbar.
- Click anywhere in the margin indicator bar of the code window.

Figure 3-14

Setting a break point



Monitoring Variable or Property Values

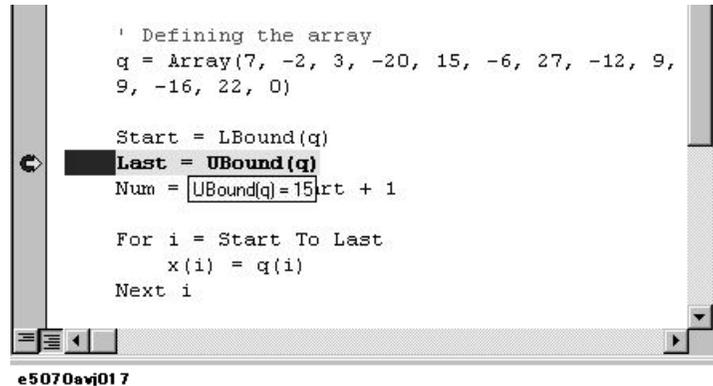
With your VBA program suspended, you can use the following debug tool to monitor variables or properties. To do this, you must set a break point, run the VBA program, and suspend it.

Data Hint

When you point to the variable or expression of interest, Data Hint shows the current value as shown in Figure 3-15.

Figure 3-15

Data Hint



Immediate Window

To display the immediate window, click the “Immediate Window” button (Figure 3-13:6) on the debug toolbar.

In the immediate window, enter a question mark (?) followed by the variable or expression whose value you want to check, and press the Enter key, as shown in Figure 3-16. The current value appears in the line that follows.

Figure 3-16

Immediate window

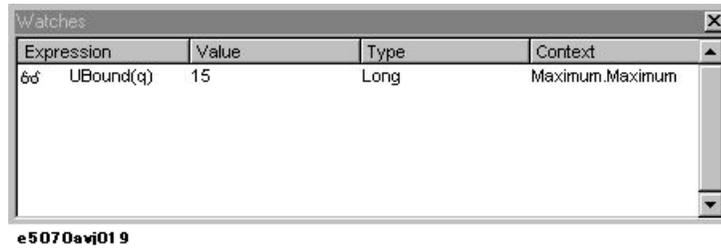


Watch Window

To display the watch window (Figure 3-17), click the “Watch Window” button (Figure 3-13: 7) on the debug toolbar.

Figure 3-17

Watch window



Step 1. To open the Add Watch dialog box (Figure 3-18), do the following:

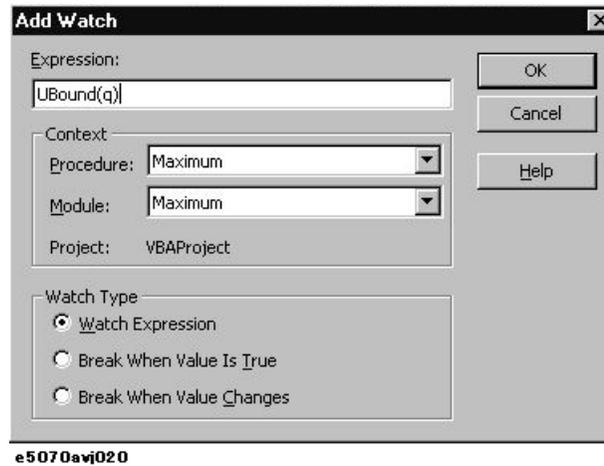
- On the **Debug** menu, click **Add Watch...**

Step 2. As shown in Figure 3-18, you can specify an expression of interest as a watch expression to always monitor its value.

Step 3. Click the **OK** button.

Figure 3-18

Add Watch dialog box



Quick Watch

In the code window, select a variable or expression whose value you want to watch. On the debug toolbar, click the “Quick Watch” button (Figure 3-13:8) to open the Quick Watch dialog box (Figure 3-19). The dialog box displays the current value of your specified variable or expression.

Also, you can click the **Add** button in the Quick Watch dialog box to specify the current expression as a watch expression.

Figure 3-19

Quick watch



e5070avi021

Using the Contents Tab

Step 1. Clicking the **Contents** tab in the VBA Online Help screen brings up the items listed below. The E5070B/E5071B VBA Online Help has a hierarchical table of contents. Click an item to expand it, and then find a topic of interest.

- Visual Basic User Interface Help
- Visual Basic Conceptual Topics
- Visual Basic How-To Topics
- Visual Basic Language Reference
- Visual Basic Add-In Model
- Microsoft Forms Reference

When you need information on using Visual Basic Editor, use User Interface Help and How-To Topics as primary sources of information. Formats of VBA programs are covered in Visual Basic Conceptual Topics. Properties and methods supported by VBA are covered in Visual Basic Language Reference and Visual Basic Add-In Model. Information on using user forms is covered in Microsoft Forms Reference.

Using the Index Tab

Step 1. In the VBA Online Help screen, click the **Index** tab, and enter a keyword(s) into the text box. For example, you may wish to search for “Sub” or “With” when you are writing your own code.

Looking up a Keyword in the Code within Visual Basic Editor

When you want to know the usage or meaning of a keyword contained in a sample program or some other code, you can quickly access the help topic on that keyword by moving the cursor to the keyword and pressing **[F1]**.

Operation Basics of the E5070B/E5071B's VBA
Uses Advanced Techniques

4

Controlling the E5070B/E5071B

This chapter describes how to use the E5070B/E5071B's VBA to control the E5070B/E5071B itself.


```
660|         .AddItem "CH4"  
670|         .AddItem "CH5"  
680|         .AddItem "CH6"  
690|         .AddItem "CH7"  
700|         .AddItem "CH8"  
710|         .AddItem "CH9"  
720|     End With  
730|  
740|     With cboGet  
750|         .AddItem "Trace 1"  
760|         .AddItem "Trace 2"  
770|         .AddItem "Trace 3"  
780|         .AddItem "Trace 4"  
790|         .AddItem "Trace 5"  
800|         .AddItem "Trace 6"  
810|         .AddItem "Trace 7"  
820|         .AddItem "Trace 8"  
830|         .AddItem "Trace 9"  
840|     End With  
850|  
860|     With cboPut  
870|         .AddItem "Trace 1"  
880|         .AddItem "Trace 2"  
890|         .AddItem "Trace 3"  
900|         .AddItem "Trace 4"  
910|         .AddItem "Trace 5"  
920|         .AddItem "Trace 6"  
930|         .AddItem "Trace 7"  
940|         .AddItem "Trace 8"  
950|         .AddItem "Trace 9"  
960|     End With  
970|  
980|     cboCh.ListIndex = 0  
990|     cboGet.ListIndex = 0  
1000|     cboPut.ListIndex = 0  
1010|  
1020| End Sub
```




5

Controlling Peripherals

This chapter explains how to control peripherals connected to the E5070B/E5071B with GPIB by using the software (VISA library) installed in the E5070B/E5071B.

Programming with VISA

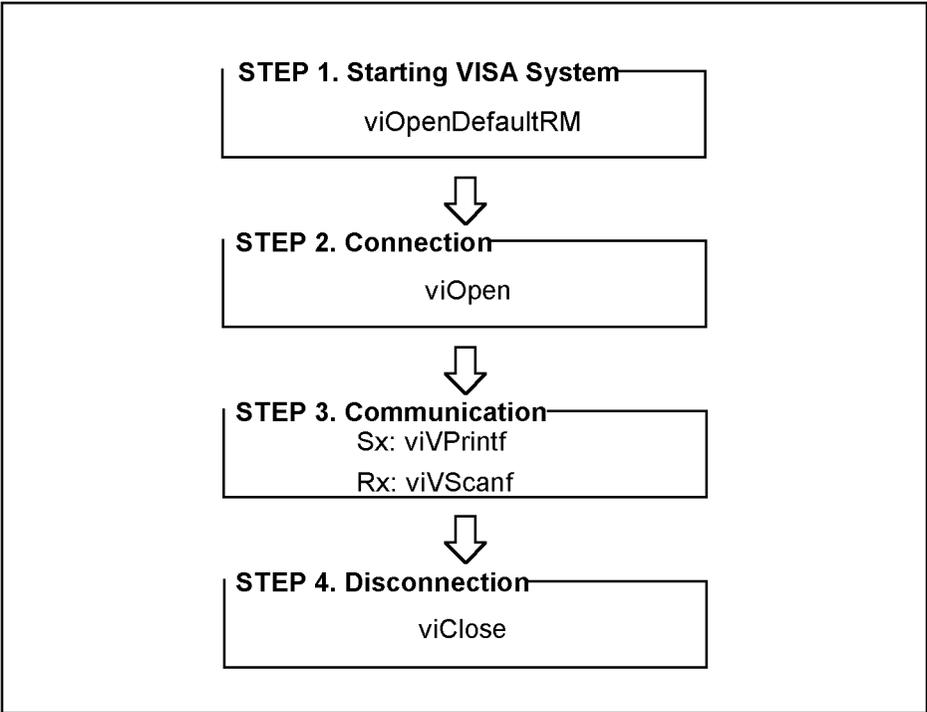
Figure 5-1 shows the flow of controlling the instrument with VISA. When developing a VISA program in the Visual Basic language, a special programming notice (in the readme text file listed below) must be reviewed.

For details on the use of the VISA library and the programming notice for using the VISA library with the E5070B/E5071B macro (E5070B/E5071B VBA), refer to the following files contained on the CD-ROM (Agilent part number: E5070-905xx).

- visa.hlp (on-line help for the VISA library)
- vbreadme.txt (notes on using the VISA library with VB)

Figure 5-1

Flow of instrument control with VISA



e4991ape033

Controlling Peripherals Programming with VISA

Example 5-1

Sample program to read out the product information

```
10| Sub Main()
20|
30| Dim status As Long          'VISA function status return
code
40| Dim Defrm As Long          'Session to Default Resource
Manager
50| Dim Equip As Long          'Session to instrument
60| Dim Prod As String * 100   'String to receive the result
70|
80| ' Initializes the VISA system.
90| status = viOpenDefaultRM(Defrm)
100| If (status <> VI_SUCCESS) Then GoTo VisaErrorHandler
110|
120| ' Opens the session to the specified instrument.
130| status = viOpen(Defrm, "GPIB0::17::INSTR", 0, 0, Equip)
140| If (status <> VI_SUCCESS) Then GoTo VisaErrorHandler
150|
160| ' Asks for the instrument's product information.
170| status = viVPrintf(Equip, "*IDN?" & Chr$(10), 0)
180| If (status <> VI_SUCCESS) Then GoTo VisaErrorHandler
190|
200| ' Reads the result.
210| status = viVScanf(Equip, "%t", Prod)
220| If (status <> VI_SUCCESS) Then GoTo VisaErrorHandler
230|
240| ' Displays the result.
250| MsgBox Prod
260|
270| ' Closes the resource manager session (which closes
everything)
280| Call viClose(Defrm)
290|
300| GoTo Prog_end
310|
320| VisaErrorHandler:
330| Dim VisaErr As String * 200
340| Call viStatusDesc(Defrm, status, VisaErr)
350| MsgBox "Error : " & VisaErr, vbExclamation
360| Exit Sub
370|
380| Prog_end:
390|
400| End Sub
```

6 **Application Programs**

This chapter describes sample programs (VBA programs) based on actual measurement examples.

Application Programs

Basic Measurement (measuring a band-pass filter)

on the Calib_Solt procedure, see the description later.

- Lines 520 to 530 Save the instrument setting and the calibration coefficient into a file whose name is specified with the File variable.
- Line 580 Displays a message that prompts you to connect a DUT (Device Under Test) in the instrument status bar in the lower part of the LCD display and waits for the operation of **[Macro Setup] - Continue** after the connection.
- Lines 620 to 630 Generate a trigger to start a single sweep and wait until the measurement finishes (1 is read out with the **SCPI.IEEE4882.OPC** object).
- Line 650 For trace 1 of channel 1, executes auto scale to set the optimum scale.
- Lines 690 to 710 Display marker 1 and move it so that the stimulus value becomes equal to the value of the Center variable. Then, these lines read out the response value of marker 1 and store it into the MkrVal variable.
- Line 730 Enables the error handling routine starting from Bw_Err (lines 890 to 950). If a runtime error occurs, the program goes to the error handling routine.
- Lines 750 to 770 Set the bandwidth definition value to -3 dB and the bandwidth search result display to on, read out the bandwidth search result (bandwidth, center frequency, Q value, and insertion loss), and store it into the BwData variable.
- Lines 790 to 840 Based on the bandwidth search result, these lines store the bandwidth to the Bw variable, the center frequency to the Cent variable, the Q value to the Qfac variable, and the insertion loss to the Loss variable. Then, the program goes to the processing starting from Skip_Bw_Err.
- Lines 880 to 960 Define a runtime error handler. These lines read out and display the error number and error message of the error that occurred and store 0 to the Bw, Cent, and Qfac variables and the response value of marker 1 (MkrVal(0) variable) to the Loss variable. Then, the program finishes the error handling and proceeds to the next processing.
- Lines 1000 to 1010 Calculate the 2 (higher and lower) cutoff frequencies from the values in the Bw and Cent variables and store them into the CutLow and CutHigh variables.
- Lines 1030 to 1110 Display the search result (the values of the Bw, Cent, CutLow, CutHigh, Qfac, and Loss variables) in the echo window.
- Lines 1130 to 1160 Display the message asking whether you want to perform measurement again. Click the **Yes** button to return to the DUT connection section. Click the **No** button to terminate the program.
- Procedure: Calib_Solt (lines 1200 to 2130).
- Lines 1260 to 1300 Display the message that prompts for the execution of the full n-port calibration (specified with the SoltType variable). Click the **Cancel** button to cancel the calibration.
- Lines 1320 to 1410 Set the calibration type to the full n-port calibration for the port specified with the Port variable.
- Lines 1450 to 1520 Display the message that prompts for connecting the open standard to

Measuring a Multi-port Device

Example 6-2 shows a sample program (VBA program) that demonstrates how to measure a (3-terminal) duplexer. You can find the source file of this program, named “apl_sys.vba”, on the sample program disk. This VBA program consists of the following modules:

NOTE

For the E5070B/E5071B with Option 213 or 214 (2-port S-parameter test set), a runtime error occurs because there are parameters that it cannot measure.

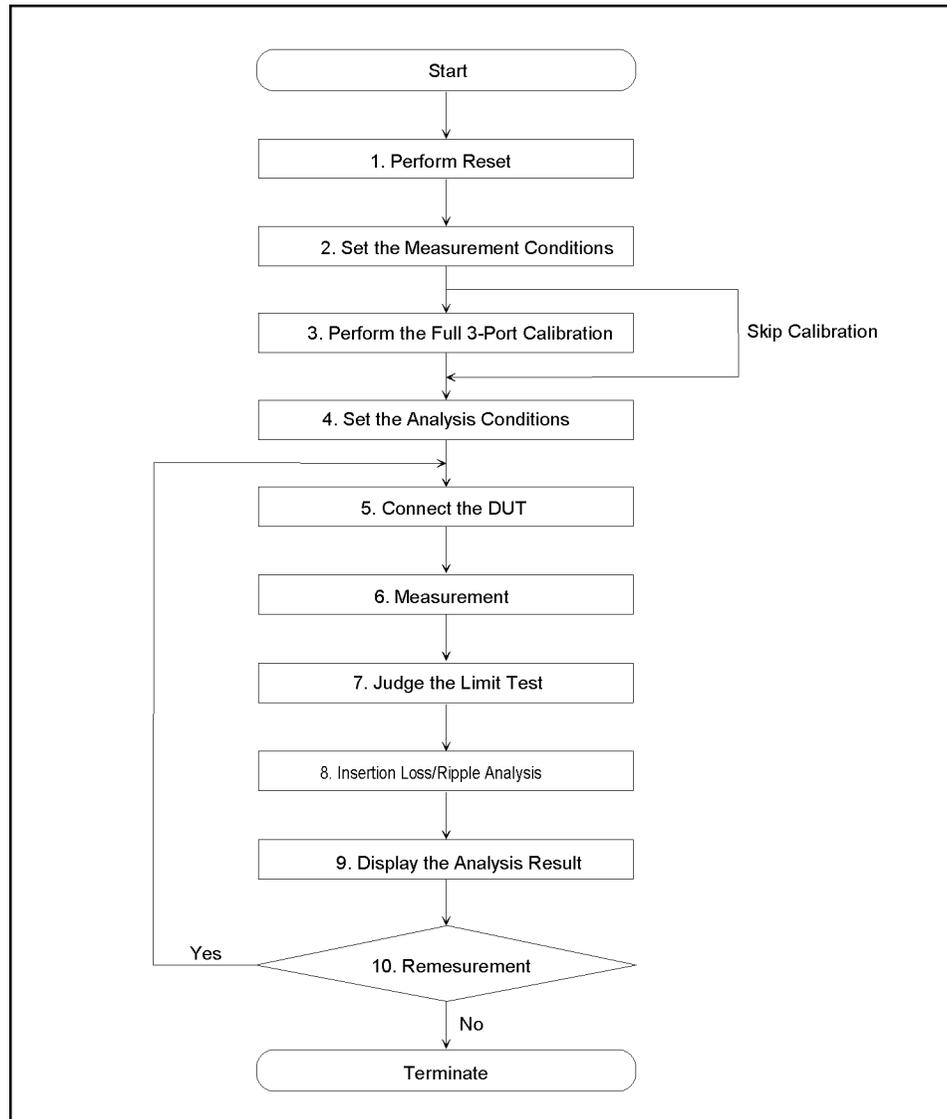
Object name	Module type	Description
frmDupRes	User form	Displays the analysis result
mdlDupMeas	Standard module	Performs duplexer measurement

Overview of the program

The program performs full 3-port calibration using the 85032F calibration kit, measures a (3-terminal) duplexer, and calculates and displays the limit test result, insertion loss, and band-pass ripple. Figure 6-2 shows the simple flow of the (3-terminal) duplexer measurement program.

Figure 6-2

Flow of duplexer measurement



e5070ave035

Application Programs

Measuring a Multi-port Device

```
IlossRx, RipTx, RipRx
800|
810|     frmDupRes.Show
820|
830|     Buff = MsgBox("Do you make another measurement?", vbYesNo,
"Duplexer Measurement")
840|
850|     If Buff = vbYes Then
860|         GoTo Meas_Start
870|     End If
880|
890| End Sub
900|
910| Private Sub Setup_Parameter()
920|
930|     Dim I As Long
940|     Dim ChDisp As String, TracDisp As String
950|     Dim Par(1) As String, Fmt(1) As String
960|
970|     ChDisp = "D1"
980|     TracDisp = "D1_2"
990|     Par(0) = "S13"
1000|    Par(1) = "S21"
1010|    Fmt(0) = "MLOG"
1020|    Fmt(1) = "MLOG"
1030|
1040|    SCPI.CALCulate(1).PARAMeter.Count = 2
1050|    SCPI.DISPlay.Split = ChDisp
1060|    SCPI.DISPlay.WINDOW(1).Split = TracDisp
1070|
1080|    For I = 1 To 2
1090|        SCPI.CALCulate(1).PARAMeter(I).DEFine = Par(I - 1)
1100|        SCPI.CALCulate(1).PARAMeter(I).Select
1110|        SCPI.CALCulate(1).SElected.Format = Fmt(I - 1)
1120|    Next I
1130|
1140| End Sub
1150|
1160| Private Sub Setup_Segment()
1170|
1180|     Dim SegmData(21) As Variant
1190|
1200|     SegmData(0) = 5                'Anytime 5 is set at seg
ment settings
1210|     SegmData(1) = 0                'Allows stimulus range
to be set using Start/Stop frequency
1220|     SegmData(2) = 0                'Not allows IF bandwidth
to be set
1230|     SegmData(3) = 0                'Not allows power to be
set
1240|     SegmData(4) = 0                'Not allows delay time
to be set
1250|     SegmData(5) = 0                'Not allows sweep time
to be set
1260|     SegmData(6) = 5                'Number of segments
1270|
1280|     '''Segment 1
1290|     SegmData(7) = 1730000000#      'Start frequency
```

```

1300| SegmData(8) = 1830000000#           'Stop frequency
1310| SegmData(9) = 50                   'Number of points
1320| '''Segment 2
1330| SegmData(10) = 1830000000#        'Start frequency
1340| SegmData(11) = 2030000000#        'Stop frequency
1350| SegmData(12) = 400                 'Number of points
1360| '''Segment 3
1370| SegmData(13) = 2030000000#        'Start frequency
1380| SegmData(14) = 2130000000#        'Stop frequency
1390| SegmData(15) = 50                 'Number of points
1400| '''Segment 4
1410| SegmData(16) = 3650000000#        'Start frequency
1420| SegmData(17) = 4030000000#        'Stop frequency
1430| SegmData(18) = 38                 'Number of points
1440| '''Segment 5
1450| SegmData(19) = 5500000000#        'Start frequency
1460| SegmData(20) = 6020000000#        'Stop frequency
1470| SegmData(21) = 52                 'Number of points
1480|
1490| SCPI.SENSE(1).SEGMENT.DATA = SegmData
1500| SCPI.SENSE(1).SWEep.TYPE = "SEGM"
1510| SCPI.DISplay.WINDow(1).X.SPACing = "OBAS"
1520|
1530| End Sub
1540|
1550| Private Sub Calib_Solt(Chan As Long, SoltType As Long, Port As
Variant)
1560|
1570|     Dim Dmy As Long, I As Long, J As Long, Buff As Long
1580|
1590| Cal_Start:
1600|
1610|     Buff = MsgBox("Perform the full " & SoltType & "-port calib
ration.", vbOKCancel, "Full" & SoltType & "-port calibration")
1620|     If Buff = vbCancel Then
1630|         GoTo Cal_Skip
1640|     End If
1650|
1660|     Select Case SoltType
1670|         Case 1
1680|             SCPI.SENSE(Chan).CORRection.COLlect.METHOD.SOLT1 =
Port(0)
1690|         Case 2
1700|             SCPI.SENSE(Chan).CORRection.COLlect.METHOD.SOLT2 =
Port
1710|         Case 3
1720|             SCPI.SENSE(Chan).CORRection.COLlect.METHOD.SOLT3 =
Port
1730|         Case 4
1740|             SCPI.SENSE(Chan).CORRection.COLlect.METHOD.SOLT4 =
Port
1750|     End Select
1760|
1770|     For I = 1 To SoltType
1780|
1790|         Buff = MsgBox("Connect the Open standard to Port " & CS
tr(Port(I - 1)) & ".", vbOKCancel, "Full" & SoltType & "-port calibr
ation")

```

Application Programs

Measuring a Multi-port Device

```
1800|         If Buff = vbOK Then
1810|             SCPI.SENSE(Chan).CORREction.COLLECT.ACQUIRE.OPEN =
Port(I - 1)
1820|             Dmy = SCPI.IEEE4882.OPC
1830|         Else
1840|             GoTo Cal_Start
1850|         End If
1860|
1870|         Buff = MsgBox("Connect the Short standard to Port " & C
Str(Port(I - 1)) & ".", vbOKCancel, "Full" & SoltType & "-port calib
ration")
1880|         If Buff = vbOK Then
1890|             SCPI.SENSE(Chan).CORREction.COLLECT.ACQUIRE.Short =
Port(I - 1)
1900|             Dmy = SCPI.IEEE4882.OPC
1910|         Else
1920|             GoTo Cal_Start
1930|         End If
1940|
1950|         Buff = MsgBox("Connect the Load standard to Port " & CS
tr(Port(I - 1)) & ".", vbOKCancel, "Full" & SoltType & "-port calibr
ation")
1960|         If Buff = vbOK Then
1970|             SCPI.SENSE(Chan).CORREction.COLLECT.ACQUIRE.Load =
Port(I - 1)
1980|             Dmy = SCPI.IEEE4882.OPC
1990|         Else
2000|             GoTo Cal_Start
2010|         End If
2020|     Next I
2030|
2040|     For I = 1 To SoltType - 1
2050|         For J = I + 1 To SoltType
2060|             Buff = MsgBox("Connect the Thru standard between Por
t " & CStr(Port(I - 1)) & " and Port " & CStr(Port(J - 1)) & ".", vb
OKCancel, "Full" & SoltType & "-port calibration")
2070|             If Buff = vbOK Then
2080|
SCPI.SENSE(Chan).CORREction.COLLECT.ACQUIRE.THRU = Array(Port(I -
1), Port(J - 1))
2090|                 Dmy = SCPI.IEEE4882.OPC
2100|
SCPI.SENSE(Chan).CORREction.COLLECT.ACQUIRE.THRU = Array(Port(J -
1), Port(I - 1))
2110|                 Dmy = SCPI.IEEE4882.OPC
2120|             Else
2130|                 GoTo Cal_Start
2140|             End If
2150|         Next J
2160|     Next I
2170|
2180|     If SoltType <> 1 Then
2190|         Buff = MsgBox("Do you measure the Isolation (Optional)?
", vbYesNo, "Full" & SoltType & "-port calibration")
2200|         If Buff = vbYes Then
2210|             For I = 1 To SoltType - 1
2220|                 For J = I + 1 To SoltType
2230|                     Buff = MsgBox("Connect the Load standard to
```

```

Port " & Port(I - 1) & " and Port " & Port(J - 1) & ".", vbOKCancel,
"Full" & SoltType & "-port calibration")
2240|         If Buff = vbOK Then
2250|
SCPI.SENSE(Chan).CORRection.COLLECT.ACQUIRE.ISOLation = Array(Port (
I - 1), Port(J - 1))
2260|                 Dmy = SCPI.IEEE4882.OPC
2270|
SCPI.SENSE(Chan).CORRection.COLLECT.ACQUIRE.ISOLation = Array(Port (
J - 1), Port(I - 1))
2280|                 Dmy = SCPI.IEEE4882.OPC
2290|                 Else
2300|                     GoTo Cal_Start
2310|                 End If
2320|             Next J
2330|         Next I
2340|     End If
2350| End If
2360|
2370|     SCPI.SENSE(1).CORRection.COLLECT.SAVE
2380|     MsgBox "All calibration data completion."
2390|
2400| Cal_Skip:
2410|
2420| End Sub
2430|
2440| Private Sub Setup_Limitline()
2450|
2460|     Dim LimDataS13(25) As Variant, LimDataS21(20) As Variant
2470|
2480|     '''Limit line for S13
2490|     LimDataS13(0) = 5           'Number of segment
2500|     '''Limit_line 1
2510|     LimDataS13(1) = 1         'Maximum
2520|     LimDataS13(2) = 1730000000# 'Beginning of stimulus
2530|     LimDataS13(3) = 1930000000# 'End of stimulus
2540|     LimDataS13(4) = 0         'Beginning of response
2550|     LimDataS13(5) = 0         'End of response
2560|     '''Limit_line 2
2570|     LimDataS13(6) = 2         'Minimum
2580|     LimDataS13(7) = 1850000000# 'Beginning of stimulus
2590|     LimDataS13(8) = 1910000000# 'End of stimulus
2600|     LimDataS13(9) = -8       'Beginning of response
2610|     LimDataS13(10) = -8      'End of response
2620|     '''Limit_line 3
2630|     LimDataS13(11) = 1        'Maximum
2640|     LimDataS13(12) = 1930000000# 'Beginning of stimulus
2650|     LimDataS13(13) = 1990000000# 'End of stimulus
2660|     LimDataS13(14) = -35     'Beginning of response
2670|     LimDataS13(15) = -35    'End of response
2680|     '''Limit_line 4
2690|     LimDataS13(16) = 1        'Maximum
2700|     LimDataS13(17) = 1990000000# 'Beginning of stimulus
2710|     LimDataS13(18) = 2130000000# 'End of stimulus
2720|     LimDataS13(19) = -40    'Beginning of response
2730|     LimDataS13(20) = -40    'End of response
2740|     '''Limit_line 5
2750|     LimDataS13(21) = 1        'Maximum

```

Application Programs

Measuring a Multi-port Device

```
2760|     LimDataS13(22) = 2130000000#      'Beginning of stimulus
2770|     LimDataS13(23) = 6020000000#      'End of stimulus
2780|     LimDataS13(24) = -20              'Beginning of response
2790|     LimDataS13(25) = -20              'End of response
2800|
2810|     '''Limit line for S21
2820|     LimDataS21(0) = 4                  'Number of segment
2830|     '''Limit_line 1
2840|     LimDataS21(1) = 1                  'Maximum
2850|     LimDataS21(2) = 1730000000#      'Beginning of stimulus
2860|     LimDataS21(3) = 1850000000#      'End of stimulus
2870|     LimDataS21(4) = -40               'Beginning of response
2880|     LimDataS21(5) = -40               'End of response
2890|     '''Limit_line 2
2900|     LimDataS21(6) = 1                  'Maximum
2910|     LimDataS21(7) = 1850000000#      'Beginning of stimulus
2920|     LimDataS21(8) = 1910000000#      'End of stimulus
2930|     LimDataS21(9) = -40               'Beginning of response
2940|     LimDataS21(10) = -40              'End of response
2950|     '''Limit_line 3
2960|     LimDataS21(11) = 1                 'Maximum
2970|     LimDataS21(12) = 1910000000#     'Beginning of stimulus
2980|     LimDataS21(13) = 6020000000#     'End of stimulus
2990|     LimDataS21(14) = 0                 'Beginning of response
3000|     LimDataS21(15) = 0                 'End of response
3010|     '''Limit_line 4
3020|     LimDataS21(16) = 2                 'Minimum
3030|     LimDataS21(17) = 1930000000#     'Beginning of stimulus
3040|     LimDataS21(18) = 1990000000#     'End of stimulus
3050|     LimDataS21(19) = -10              'Beginning of response
3060|     LimDataS21(20) = -10              'End of response
3070|
3080|     SCPI.CALCulate(1).PARAMeter(1).Select
3090|     SCPI.CALCulate(1).SElected.LIMit.DATA = LimDataS13
3100|     SCPI.CALCulate(1).SElected.LIMit.DISPlay.STATE = True
3110|     SCPI.CALCulate(1).SElected.LIMit.STATE = True
3120|
3130|     SCPI.CALCulate(1).PARAMeter(2).Select
3140|     SCPI.CALCulate(1).SElected.LIMit.DATA = LimDataS21
3150|     SCPI.CALCulate(1).SElected.LIMit.DISPlay.STATE = True
3160|     SCPI.CALCulate(1).SElected.LIMit.STATE = True
3170|
3180| End Sub
3190|
3200| Private Sub Setup_Register()
3210|
3220|     SCPI.STATus.QUEStionable.LIMit.CHANnel(1).PTRansition = 6
3230|     SCPI.STATus.QUEStionable.LIMit.CHANnel(1).NTRansition = 0
3240|     SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ENABLE = 6
3250|
3260| End Sub
3270|
3280| Sub Display_Update(Test_Tr1 As Integer, Test_Tr2 As Integer,
Test_Ch1 As Integer, IlossTx As Variant, IlossRx As Variant, RipTx
As Variant, RipRx As Variant)
3290|
3300|     SCPI.DISPlay.UPDate.IMMediate
3310|
```

```

3320|   If Test_Tr1 = 2 Then
3330|       frmDupRes.lblJudgeS13.BackColor = RGB(255, 0, 0)
3340|       frmDupRes.lblJudgeS13.Caption = "Fail"
3350|   Else
3360|       frmDupRes.lblJudgeS13.BackColor = RGB(0, 0, 255)
3370|       frmDupRes.lblJudgeS13.Caption = "Pass"
3380|   End If
3390|
3400|   If Test_Tr2 = 4 Then
3410|       frmDupRes.lblJudgeS21.BackColor = RGB(255, 0, 0)
3420|       frmDupRes.lblJudgeS21.Caption = "Fail"
3430|   Else
3440|       frmDupRes.lblJudgeS21.BackColor = RGB(0, 0, 255)
3450|       frmDupRes.lblJudgeS21.Caption = "Pass"
3460|   End If
3470|
3480|   If Test_Ch1 = 2 Then
3490|       frmDupRes.lblResult.BackColor = RGB(255, 0, 0)
3500|       frmDupRes.lblResult.Caption = "Fail"
3510|   Else
3520|       frmDupRes.lblResult.BackColor = RGB(0, 0, 255)
3530|       frmDupRes.lblResult.Caption = "Pass"
3540|   End If
3550|
3560|       frmDupRes.txtIlossS13.Text = Format(IlossTx(0), "0.####
")
3570|       frmDupRes.txtIlossS21.Text = Format(IlossRx(0), "0.####
")
3580|
3590|       frmDupRes.txtRipS13.Text = Format(RipTx, "0.####")
3600|       frmDupRes.txtRipS21.Text = Format(RipRx, "0.####")
3610|
3620| End Sub

```

Measurement Using E5091A (measuring FEM)

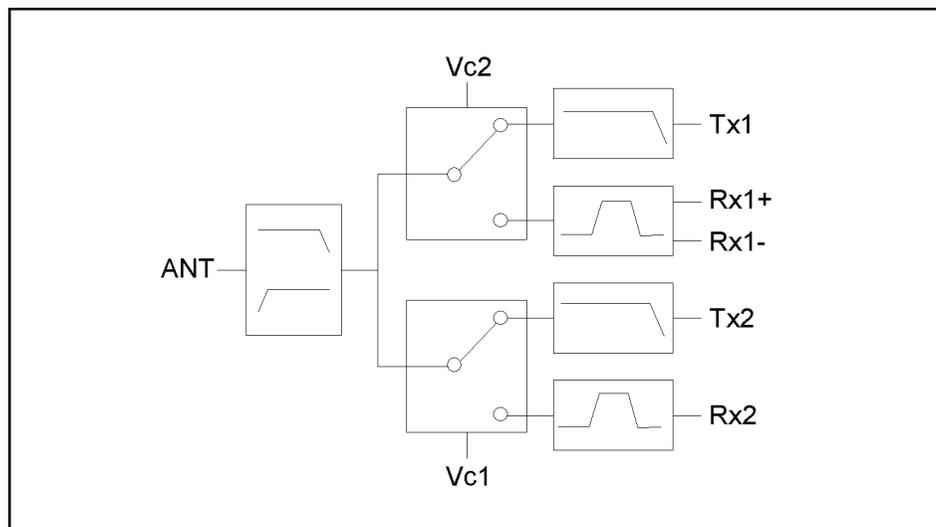
Example 6-3 shows front end module (FEM) measurement as a sample program of measurement using the E5091A. You can find the source file of this program, named apl_fem.vba, on the sample program disk.

NOTE If the E5070B/E5071B does not have Option 413 or 414 (4-port S parameter test set), a runtime error occurs because there are parameters that it cannot measure.

NOTE This VBA program cannot control the E5091A-016, the multiport test set.

Object name	Module type	Description
mdlFemMeas	Standard module	Performs measurement of FEM

This program calibrates each channel using the ECal module and then measures the transmission characteristics EGSM:Tx-Antenna (channel 1), EGSM:Antenna-Rx (channel 2), GSM1800:Tx-Antenna (channel 3), and GSM1800:Antenna-Rx (channel 4) of the 6-port dual-band FEM as shown in the below figure.



e5070bu073

When you start the program, “Connect A and T1 to ECal Module” is displayed. Connect the cables from A and T1 of the E5091A to the ECal module and then press the **OK** key to calibrate channel 1. If trouble occurs due to a problem in the connection to the ECal module, an error message is displayed. You can execute calibration again by clicking the **Retry** button. If you want to abort the program, click the **Cancel** button. For channels 2 to 4, execute the calibration in the same way.

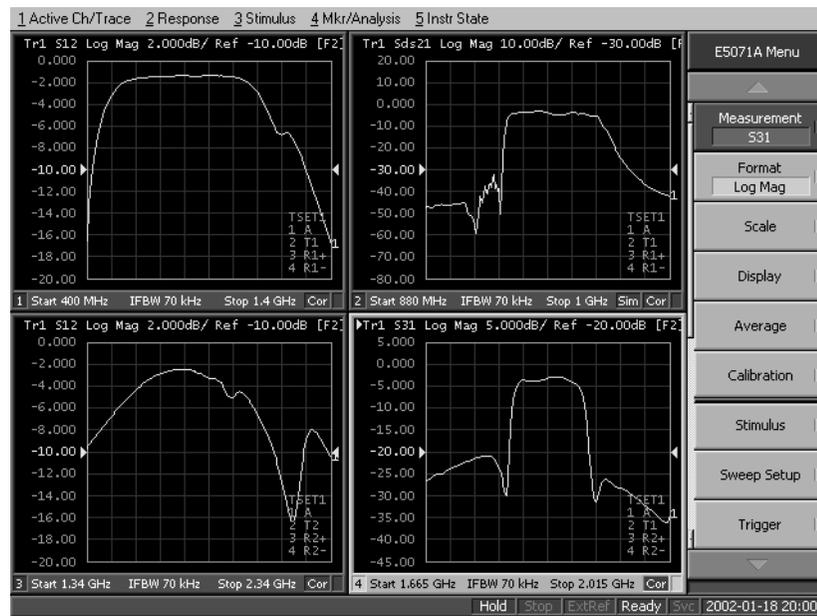
When calibration is complete, “Set DUT” is displayed. Connect the DUT (FEM) and the E5091A as shown below and click the **OK** button to start measurement.

FEM		E5091A
Antenna		A
EGSM	Tx	T1
	Rx+	R1+
	Rx-	R1-
GSM1800	Tx	T2
	Rx	R2+
Vc1		Control Line 1
Vc2		Control Line 2

Figure 6-4 shows a sample display of the LCD screen after the program exits execution.

Figure 6-4

Example of display after execution of program in Example 6-3



measurement parameter (mix mode S-parameter) to Trc(Ch-1).

Line 970: If the fixture simulator function is OFF (Fsim(i) is False), sets the measurement parameter (S-parameter) to Trc(Ch-1).

Lines 990 to 1010: Set the title label to Ttl(Ch-1), the title display to ON, and the continuous startup mode to ON.

- Line 1040 Sets the trigger source to “Bus.”
- Lines 1050 to 1060 For the E5091A whose ID is 1, set the property display to ON and the control to ON.
- Lines 1100 to 1120 Recall the Function procedure: ECal_solt (Lines 1410 to 1770) to execute the calibration of channel 1 with the ECal module (full 2-port calibration of ports A and T1). If the calibration is not completed correctly, these lines abort the program. For information on the Function procedure: ECal_solt, see the description later.
- Lines 1130 to 1210 Execute the calibration of channels 2 to 4 in the same way.
- Line 1260 Displays the message that prompts for connecting a DUT (Device Under Test) and waits for the **OK** button to be clicked after the connection.
- Lines 1280 to 1290 Generate a trigger to start a single sweep and wait until the measurement finishes (1 is read out with the **SCPI.IEEE4882.OPC** object).
- Lines 1310 to 1330 Execute auto scale for trace 1 of channels 1 to 4.
- Line 1350 Displays the message asking whether you want to perform measurement again.
- Line 1360 If the **Yes** button is clicked, returns to the DUT connection section.
- Function procedure: ECal_solt (lines 1410 to 1770).
- Line 1460 Clears the error queue.
- Lines 1460 to 1480 Display the message that prompts for connecting the Tset_Port of the E5091A to the ECal module and wait for the **OK** button to be clicked after the connection.
- Line 1500 Enables the error handling routine starting from Ecal_Err (lines 1670 to 1740). If a runtime error occurs, the program goes to the error handling routine.
- Line 1540 If solt is 1, executes the ECal command that performs 1-port calibration on port Ana_port(0) of channel Ch.
- Line 1560 If solt is 2, executes the ECal command that performs full 2-port calibration on port Ana_port of channel Ch.
- Line 1580 If solt is 3, executes the ECal command that performs full 3-port calibration on port Ana_port of channel Ch.
- Line 1600 If solt is 4, executes the ECal command that performs full 4-port calibration on port Ana_port of channel Ch.
- Line 1630 Sets the return value of ECal_solt to 0.
- Lines 1670 to 1740 Define a runtime error handler.


```
1670| Err_info = SCPI.SYSem.Error
1680| Buff = MsgBox("Error: " + Err_info(1), vbRetryCancel)
1690| If Buff = vbRetry Then
1700|     Resume Ecal_start
1710| Else
1720|     ECal_Solt = Err_info(0)
1730|     Resume Ecal_end
1740| End If
1750|
1760| Ecal_end:
1770| End Function
```

Executing Power Calibration

Example 6-4 shows a sample program (VBA program) for executing power calibration using the E4418B power meter and the E4412A power sensor. You can find the source file of this program, named pow_cal.vba, on the sample program disk. This VBA program consists of the following modules:

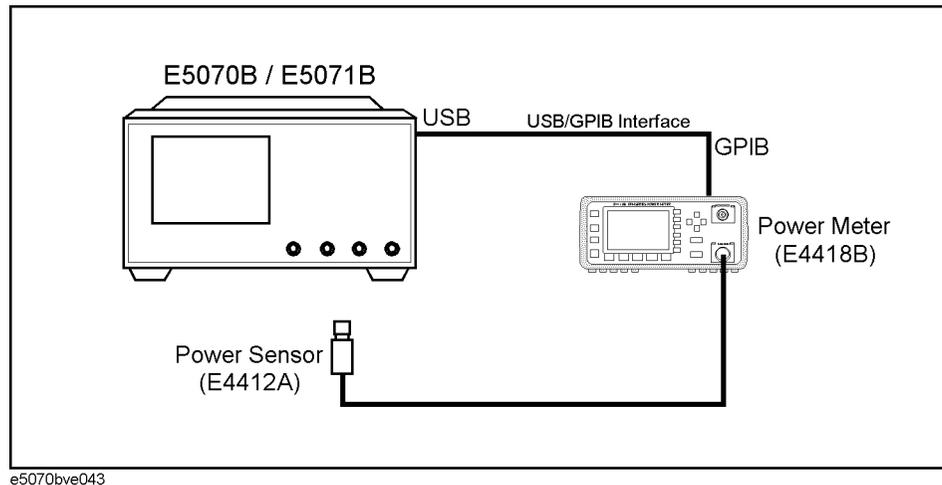
Object name	Module type	Description
mdlPowCal	Standard module	Executes power calibration
Module1 Module2	Standard module	Definition files for using VISA library

Program overview

The program connects the E5070B/E5071B and the E4418B (GPIB address: 13) through the USB/GPIB interface as shown in Figure 6-5. Then, the program executes the zero adjustment and calibration of the power sensor (E4412A) connected to the power meter (E4418B) as necessary. Finally, it executes the power calibration of the E5070B/E5071B and saves the obtained power calibration data array into a file.

Figure 6-5

Connection between E5070B/E5071B and power meter



Application Programs

Executing Power Calibration

- Lines 450 to 470 For port 1 of channel 1, these lines set the number of power calibration data measurements for each measurement point to the Num_avg variable and then start the measurement of the power calibration data and wait for the completion of the measurement.
- Line 500 Reads out an error that has occurred in the E5070B/E5071B during the measurement of the power calibration data and sets it in the Err variable.
- Lines 510 to 590 If no error has occurred, these lines read out the power calibration data array and set it in the Corr_data variable. In addition, the program uses the Limit_Test function to check whether the read out power calibration data array exceeds the specified limit value. If the limit value is exceeded, the return value of the Limit_Test function, False, is returned. Then, a message is displayed asking whether to perform the power calibration again. Click the **Yes** button to return to the start of the power calibration data measurement. Click the **No** button to terminate the program. For information on the Limit_Test function (Line 1360 to Line 1530), see the description later.
- Lines 610 to 660 If an error occurs, display an error message and a message asking whether to execute the power calibration again. Click the **Yes** button to return to the start of the power calibration data measurement. Click the **No** button to terminate the program.
- Lines 690 to 790 Write the read out power calibration data array into a file named "CORR_DATA." Then, these lines display a message that saving into a file has been successfully completed.
- Procedure: Control_PowerMeter (lines 900 to 1340).
- Lines 990 to 1000 Initialize and start up the VISA system and output the startup information to the Defrm variable. During this process, if an error occurs, the program goes to the error handling routine (Lines 1260 to 1300).
- Lines 1030 to 1040 Establish the connection to the power meter in use (GPIB address: 13) and output the connection information to the E4418 variable. During this process, if an error occurs, the program goes to the error handling routine (Lines 1260 to 1300).
- Lines 1070 to 1090 Return the power meter to the preset state through VISA and clear the status byte register and the standard event status register. Then, these lines enable the standard event status register's bit 0.
- Line 1100 Prompts you to connect the power sensor to the POWER REF port of the power meter and waits for the **OK** button to be clicked after the connection.
- Lines 1110 to 1120 Execute the zero adjustment and calibration of the power sensor through VISA. These lines make the setting so that 1 is set to bit 0 of the standard event status register when all pending operations are completed.

Description of operation in VBA program

The program (object name: frmMapDrive) is described in detail below:

Sub CommandButton1_Click

This procedure is called when the user clicks the **Map** button. It checks whether the drive letter is used by using the IsDriveNameInUse procedure. Then the procedure connects the shared folder using the MapDrive procedure if the drive letter is not used or otherwise displays a message to show the drive letter is used.

Sub CommandButton2_Click

This procedure is called when the user clicks the **Disconnect** button. The procedure disconnects the shared folder by using the DisconnectDrive procedure.

Function IsDriveNameInUse

This procedure checks if the txtDrive.Text (the drive letter specified by 1 in Figure 6-6) is used.

Sub MapDrive

This procedure connects the shared folder as the txtDrive.Text (the drive letter specified by 1 in Figure 6-6) drive by using the parameters: txtShare.Text (the share name specified by 2 in Figure 6-6), txtUser.Text (the user name specified by 3 in Figure 6-6), and txtPasswd.Text (the password specified by 4 in Figure 6-6).

Sub DisconnectDrive

This procedure disconnects the txtDrive.Text (the drive letter specified by 1 in Figure 6-6) drive.

Sub CommandButton3_Click

This procedure is called when the user clicks the **Exit** button. This procedure ends the program.

Application Programs
Connecting Hard Disk of External PC (shared folder)

Example 6-5

Connecting the hard disk of an external PC (Object name: frmMapDrive)

```
Private Sub CommandButton1_Click()  
    If Not IsDriveNameInUse Then  
        Call MapDrive  
    Else  
        MsgBox "Drive "" & txtDrive.Text & "" is Already used", vb  
Critical  
        End If  
    End Sub  
  
Private Sub CommandButton2_Click()  
    Call DisconnectDrive  
End Sub  
  
Private Function IsDriveNameInUse() As Boolean  
    Set fso = CreateObject("Scripting.FileSystemObject")  
    IsDriveNameInUse = fso.DriveExists(txtDrive.Text)  
End Function  
  
Private Sub MapDrive()  
    Set network = CreateObject("wscript.network")  
    Call network.MapNetworkDrive(txtDrive.Text, txtShare.Text, vbFal  
se, txtUser.Text, txtPasswd.Text)  
End Sub  
  
Private Sub DisconnectDrive()  
    Set network = CreateObject("wscript.network")  
    network.RemoveNetworkDrive txtDrive.Text  
End Sub  
  
Private Sub CommandButton3_Click()  
    Unload Me  
End Sub
```

7**COM Object Reference**

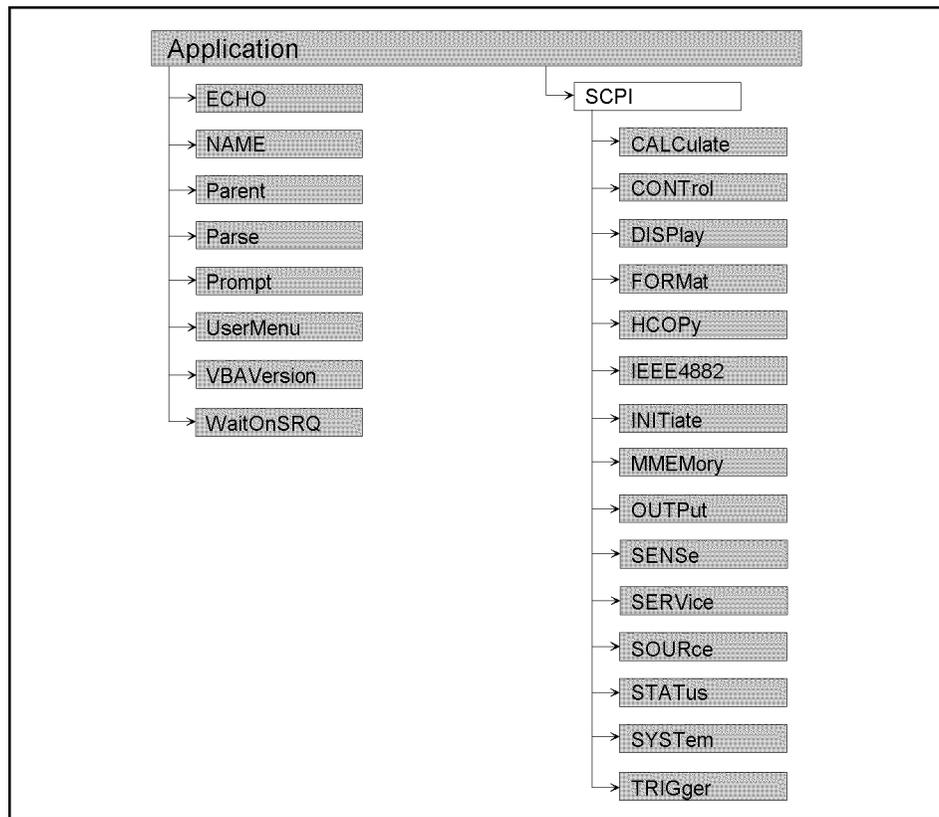
This chapter describes the COM object model of the Agilent E5070B/E5071B and the COM object reference in alphabetical order. If you want to look up COM objects by their function, see “COM object list by function.”

COM Object Model

The COM objects provided for the E5070B/E5071B are structured hierarchically as shown in Figure 7-1.

Figure 7-1

E5070B/E5071B COM object model



e5070bvj012

Application Objects

The Application objects are at the top of the hierarchy of the E5070B/E5071B COM object model. They consist of 7 objects dedicated to the COM interface and SCPI objects corresponding to SCPI commands. For information on the basic use of the 7 objects dedicated to the COM interface, see “Application Objects” on page 134.

SCPI Objects

The SCPI objects are created to realize the SCPI commands of the E5070B/E5071B with the COM interface. For information on the basic use of the SCPI objects, see “SCPI Objects” on page 135.

The conversion rules from the SCPI commands when writing SCPI object messages are as follows:

- SCPI. must be at the beginning. Notice that the IEEE common commands start with SCPI.IEEE4882. and "*" is omitted.
- Replace colons (:) used as the hierarchical separator symbol with dots (.).
- The number written in the object message is specified with ().
- You cannot omit the command message in the syntax.

SCPI command	COM object
OUTPUT 717;":SOUR1:POW -10"	→ SCPI.SOURce(1).POWer.LEVel.IMMediate.AMPLitude = -10
OUTPUT 717;":SENS1:CORR:COLL:METH:TYPE?" ENTER 717;A\$	→ A = SCPI.SENSe(1).CORRection.COLLect.METHod:TYPE
OUTPUT 717;":*CLS"	→ SCPI.IEEE4882.CLS

COM Object Reference
COM Object Tree

Table 7-3 E5070B/E5071B COM object tree

Object	Object type	Note
SCPI		
.IEEE4882		
.CLS	Method	[No read]
.ESE	Property(Data Type:Long)	
.ESR	Property(Data Type:Long)	[Read only]
.IDN	Property(Data Type:String)	[Read only]
.OPC	Property(Data Type:Long)	
.OPT	Property(Data Type:String)	[Read only]
.RST	Method	[No read]
.SRE	Property(Data Type:Long)	
.STB	Property(Data Type:Long)	[Read only]
.TRG	Method	[No read]
.WAI	Method	[No read]
.INITIate(Ch)		
.CONTInuous	Property(Data Type:Boolean)	
.IMMEdiate	Method	[No read]
.MMEMory		
.CATalog(Dir)	Property(Data Type:String)	[Read only]
.COPIY	Property(Data Type:Variant)	[No read]
.DELEte	Property(Data Type:String)	[No read]
.LOAd		
.ASCFactor	Property(Data Type:String)	[No read]
.BSCFactor	Property(Data Type:String)	[No read]
.CAHNnel		
.STATe	Property(Data Type:String)	[No read]
.CKIT(ckit)	Property(Data Type:String)	[No read]
.LIMit	Property(Data Type:String)	[No read]
.PLOsS	Property(Data Type:String)	[No read]
.RLIMit	Property(Data Type:String)	[No read]
.SEGMent	Property(Data Type:String)	[No read]
.STATe	Property(Data Type:String)	[No read]
.MDIRectory	Property(Data Type:String)	[No read]
.STORe		
.ASCFactor	Property(Data Type:String)	[No read]
.BSCFactor	Property(Data Type:String)	[No read]
.CAHNnel		
.CLEAr	Method	[No read]
.STATe	Property(Data Type:String)	[No read]
.CKIT(ckit)	Property(Data Type:String)	[No read]
.FDATa	Property(Data Type:String)	[No read]
.IMAGe	Property(Data Type:String)	[No read]
.LIMit	Property(Data Type:String)	[No read]
.PLOsS	Property(Data Type:String)	[No read]
.RLIMit	Property(Data Type:String)	[No read]
.SALL	Property(Data Type:Boolean)	
.SEGMent	Property(Data Type:String)	[No read]
.STATe	Property(Data Type:String)	[No read]
.STYPe	Property(Data Type:String)	
.OUTPut		
.STATe	Property(Data Type:Boolean)	

Table 7-3 E5070B/E5071B COM object tree

Object	Object type	Note
SCPI		
.SENSE(<i>Ch</i>)		
.AVERage		
.CLEar	Method	[No read]
.COUNT	Property(Data Type:Long)	
.STATe	Property(Data Type:Boolean)	
.BANDwidth		
.RESolution	Property(Data Type:Double)	
.BWIDth		
.RESolution	Property(Data Type:Double)	
.CORRection		
.CLEar	Method	[No read]
.COEFFicient		
.DATA	Property(Data Type:Variant)	
.METHod		
.ERESponse	Property(Data Type:Variant)	[No read]
.RESPonse		
.OPEN	Property(Data Type:Long)	[No read]
.SHORt	Property(Data Type:Long)	[No read]
.THRU	Property(Data Type:Variant)	[No read]
.SOLT1	Property(Data Type:Long)	[No read]
.SOLT2	Property(Data Type:Variant)	[No read]
.SOLT3	Property(Data Type:Variant)	[No read]
.SOLT4	Property(Data Type:Variant)	[No read]
.SAVE	Method	[No read]
.COLlect		
.ACQuire		
.ISOLation	Property(Data Type:Variant)	[No read]
.LOAD	Property(Data Type:Long)	[No read]
.OPEN	Property(Data Type:Long)	[No read]
.SHORt	Property(Data Type:Long)	[No read]
.SUBClass	Property(Data Type:Long)	
.THRU	Property(Data Type:Variant)	[No read]
.TRLLine	Property(Data Type:Long)	[No read]
.TRLReflect	Property(Data Type:Long)	[No read]
.TRLThru	Property(Data Type:Long)	[No read]
.CKIT		
.LABel	Property(Data Type:String)	
.ORDer		
.LOAD(<i>Cpt</i>)	Property(Data Type:Long)	
.OPEN(<i>Cpt</i>)	Property(Data Type:Long)	
.SELect	Property(Data Type:Long)	
.SHORt(<i>Cpt</i>)	Property(Data Type:Long)	
.THRU(<i>Cpt_m,Cpt_n</i>)	Property(Data Type:Long)	
.TRLLine(<i>Cpt_m,Cpt_n</i>)	Property(Data Type:Long)	
)		
.TRLReflect	Property(Data Type:Long)	
.TRLThru(<i>Cpt_m,Cpt_n</i>)	Property(Data Type:Long)	
)		
.RESet	Method	[No read]
.SELect	Property(Data Type:Long)	

Table 7-3 E5070B/E5071B COM object tree

Object	Object type	Note
SCPI		
.SENSE(<i>Ch</i>)		
.CORRection		
.COLLect		
.CKIT		
.STAN(<i>Std</i>)		
.ARBbitrary	Property(Data Type:Double)	
.C0	Property(Data Type:Double)	
.C1	Property(Data Type:Double)	
.C2	Property(Data Type:Double)	
.C3	Property(Data Type:Double)	
.CHARacter	Property(Data Type:String)	
.DELay	Property(Data Type:Double)	
.FMAXimum	Property(Data Type:Double)	
.FMINimum	Property(Data Type:Double)	
.L0	Property(Data Type:Double)	
.L1	Property(Data Type:Double)	
.L2	Property(Data Type:Double)	
.L3	Property(Data Type:Double)	
.LABel	Property(Data Type:String)	
.LOSS	Property(Data Type:Double)	
.TYPE	Property(Data Type:String)	
.Z0	Property(Data Type:Double)	
.TRLoption		
.IMPedance	Property(Data Type:String)	
.RPLane	Property(Data Type:String)	
.CLEar	Method	[No read]
.ECAL		
.CCHeck		
.ACQUIRE	Method	[No read]
.ERESponse	Property(Data Type:Variant)	[No read]
.ISOLation		
.STATe	Property(Data Type:Boolean)	
.ORIentation		
.STATe	Property(Data Type:Boolean)	
.PATH(<i>Cpt</i>)	Property(Data Type:Long)	
.SOLT1	Property(Data Type:Long)	[No read]
.SOLT2	Property(Data Type:Variant)	[No read]
.SOLT3	Property(Data Type:Variant)	[No read]
.SOLT4	Property(Data Type:Variant)	[No read]
.THRU	Property(Data Type:Variant)	[No read]
.UCHar	Property(Data Type:String)	

Table 7-3 E5070B/E5071B COM object tree

Object	Object type	Note
SCPI		
.SENSE(<i>Ch</i>)		
.CORREction		
.COLLECT		
.METHOD		
.ERESponse	Property(Data Type:Variant)	[No read]
.RESponse		
.OPEN	Property(Data Type:Long)	[No read]
.SHORT	Property(Data Type:Long)	[No read]
.THRU	Property(Data Type:Variant)	[No read]
.SOLT1	Property(Data Type:Long)	[No read]
.SOLT2	Property(Data Type:Variant)	[No read]
.SOLT3	Property(Data Type:Variant)	[No read]
.SOLT4	Property(Data Type:Variant)	[No read]
.TRL2	Property(Data Type:Variant)	
.TRL3	Property(Data Type:Variant)	
.TRL4	Property(Data Type:Variant)	
.TYPE	Property(Data Type:String)	[Read only]
.SAVE	Method	[No read]
.EXTension		
.AUTO		
.CONFig	Property(Data Type:String)	
.DCOFset	Property(Data Type:Boolean)	
.LOSS	Property(Data Type:Boolean)	
.MEASure	Property(Data Type:String)	
.PORT(<i>Pt</i>)	Property(Data Type:Boolean)	
.RESet	Method	[No read]
.START	Property(Data Type:Double)	
.STOP	Property(Data Type:Double)	
.PORT(<i>Pt</i>)		
.FREQuency	Property(Data Type:Double)	
.INCLude	Property(Data Type:Boolean)	
.LDC	Property(Data Type:Double)	
.LOSS(<i>Loss</i>)	Property(Data Type:Double)	
.TIME	Property(Data Type:Double)	
.STATe	Property(Data Type:Boolean)	
.IMPedance.INPut.MAGNitude		
.OFFSet		
.CLEar	Method	[No read]
.COLLECT		
.ACQUIRE		
.LOAD	Property(Data Type:Variant)	[No read]
.OPEN	Property(Data Type:Variant)	[No read]
.PMETer	Property(Data Type:Variant)	[No read]
.SHORT	Property(Data Type:Variant)	[No read]
.THRU	Property(Data Type:Variant)	[No read]
.CLEar	Method	[No read]
.ECAL		
.SMIX2	Property(Data Type:Variant)	[No read]
.SOLT1	Property(Data Type:Long)	[No read]
.METHOD		
.SMIX2	Property(Data Type:Variant)	[No read]
.SOLT1	Property(Data Type:Long)	[No read]
.SAVE	Method	[No read]

Table 7-3 E5070B/E5071B COM object tree

Object	Object type	Note
SCPI		
.SOURCE(<i>Ch</i>)		
.POWER		
.ATTenuation		
.DATA	Property(Data Type:Long)	
.CENTer	Property(Data Type:Double)	
.LEVEL		
.IMMediate		
.AMPLitude	Property(Data Type:Double)	
.SLOPe		
.DATA	Property(Data Type:Double)	
.STATe	Property(Data Type:Boolean)	
.PORT(<i>Pt</i>)		
.CORRection		
.COLLECT		
.ACQUIRE	Property(Data Type:String)	[No read]
.ASEnsor		
.RCFactor	Property(Data Type:Double)	
.AVERAge		
.COUNt	Property(Data Type:Long)	
.BSEnsor		
.RCFactor	Property(Data Type:Double)	
.TABLe		
.ASEnsor		
.DATA	Property(Data Type:Variant)	
.BSEnsor		
.DATA	Property(Data Type:Variant)	
.LOSS		
.DATA	Property(Data Type:Variant)	
.STATe	Property(Data Type:Boolean)	
.DATA	Property(Data Type:Variant)	
.STATe	Property(Data Type:Boolean)	
.COUPLE	Property(Data Type:Boolean)	
.LEVEL		
.IMMediate		
.AMPLitude	Property(Data Type:Double)	
.SPAN	Property(Data Type:Double)	
.STARt	Property(Data Type:Double)	
.STOP	Property(Data Type:Double)	
.STATUs		
.OPERation		
.CONDItion	Property(Data Type:Long)	[Read only]
.ENABLE	Property(Data Type:Long)	
.EVENT	Property(Data Type:Long)	[Read only]
.NTRAnsiion	Property(Data Type:Long)	
.PTRAnsiion	Property(Data Type:Long)	
.PRESet	Method	[No read]
.QUEStionable		
.BLIMit		
.CHANnel(<i>Ch</i>)		
.CONDItion	Property(Data Type:Long)	[Read only]

Table 7-3 E5070B/E5071B COM object tree

Object	Object type	Note
SCPI		
.STATus		
.QUESTionable		
.NTRansition	Property(Data Type:Long)	
.PTRansition	Property(Data Type:Long)	
.RLIMit		
.CHANnel(<i>Ch</i>)		
.CONDITION	Property(Data Type:Long)	[Read only]
.ECHannel		
.CONDITION	Property(Data Type:Long)	[Read only]
.ENABLE	Property(Data Type:Long)	
.EVENT	Property(Data Type:Long)	[Read only]
.NTRansition	Property(Data Type:Long)	
.PTRansition	Property(Data Type:Long)	
.ENABLE	Property(Data Type:Long)	
.EVENT	Property(Data Type:Long)	[Read only]
.NTRansition	Property(Data Type:Long)	
.PTRansition	Property(Data Type:Long)	
.CONDITION	Property(Data Type:Long)	[Read only]
.ELIMit		
.CONDITION	Property(Data Type:Long)	[Read only]
.ENABLE	Property(Data Type:Long)	
.EVENT	Property(Data Type:Long)	[Read only]
.NTRansition	Property(Data Type:Long)	
.PTRansition	Property(Data Type:Long)	
.ENABLE	Property(Data Type:Long)	
.EVENT	Property(Data Type:Long)	[Read only]
.NTRansition	Property(Data Type:Long)	
.PTRansition	Property(Data Type:Long)	
.SYSTEM		
.BACKlight	Property(Data Type:Boolean)	
.BEEPer		
.COMPLete		
.IMMEDIATE	Method	[No read]
.STATE	Property(Data Type:Boolean)	
.WARNing		
.IMMEDIATE	Method	[No read]
.STATE	Property(Data Type:Boolean)	
.COMMunicate		
.GPIB		
.PMETer		
.ADDRESS	Property(Data Type:Long)	
.SGENERator		
.ADDRESS	Property(Data Type:Long)	
.CCOMmand		
.FREQuency	Property(Data Type:String)	
.POWer	Property(Data Type:String)	
.PRESet	Property(Data Type:String)	
.RFON	Property(Data Type:String)	
.DWELI	Property(Data Type:Double)	
.TYPE	Property(Data Type:Long)	
.CORRection		
.STATE	Property(Data Type:Boolean)	

Table 7-3 E5070B/E5071B COM object tree

Object	Object type	Note
SCPI		
.SYSTEM		
.DATE	Property(Data Type:Variant)	
.ERROR	Property(Data Type:Variant)	[Read only]
.ISPCONTROL		
.PORT		
.STATE		
.KLOCK		
.KBD	Property(Data Type:Boolean)	
.MOUSE	Property(Data Type:Boolean)	
.POFF	Method	[No read]
.PRESET	Method	[No read]
.SECURITY		
.LEVEL	Property(Data Type:String)	
.SERVICE	Property(Data Type:Boolean)	[Read only]
.TEMPERATURE		
.HIGH	Property(Data Type:Boolean)	
.STATE	Property(Data Type:Boolean)	[Read only]
.TIME	Property(Data Type:Variant)	
UPRESET	Method	[No read]
.TRIGGER		
.SEQUENCE		
.IMMEDIATE	Method	[No read]
.POINT	Property(Data Type:Boolean)	
.SINGLE	Method	[No read]
.SOURCE	Property(Data Type:String)	

7. COM Object Reference

Notational Rules of COM Objects

This section describes the rules for the description of the COM objects in this chapter.

Object Type

Part with heading "Object type" describes the type of the E5070B/E5071B COM object. The E5070B/E5071B provides properties and methods as the types of COM objects. In the E5070B/E5071B COM objects, COM objects to set (send)/read (return) the state of the E5070B/E5071B using variables are defined as property and ones to prompt some kind of processing as method.

Syntax

Part with heading "Syntax" describes the syntax to send a COM object from the E5070B/E5071B VBA to the E5070B/E5071B. The syntax consists of the object part and the set/read part, with an equal "=" inserted between them. Variables are indicated by italicized letters. Variables with () are indices. For indices with () having their preset values, you can omit "(*variable*)," and, if omitted, the preset values are automatically set.

There are the following 3 types of syntax for coding using objects.

"Object (property) = *variable*": to set the stat of the E5070B/E5071B.

variable=object (property): to read the stat of the E5070B/E5071B.

"Object (method)": to make the E5070B/E5071B perform some processing.

Description

Part with heading "Description" describes how to use the COM object or the operation when executed. COM objects used only to read the state of the E5070B/E5071B are indicated with "Read only" and ones used only to set the state of the E5070B/E5071B "No read."

Application Objects

The Application objects are at the top of the hierarchy of the E5070B/E5071B COM object model. They consist of 7 objects dedicated to the E5070B/E5071B COM interface and SCPI objects corresponding to SCPI commands. This section describes the objects dedicated to the E5070B/E5071B COM interface.

ECHO

Object type	Method						
Syntax	ECHO <i>V1,V2,...,V10</i> ECHO <i>SCPI object</i>						
Description	Provides display in the echo window. (No read) There is the following difference from the display with the SCPI.DISPLAY.ECHO.DATA object. <ul style="list-style-type: none"> • Up to 10 data items can be displayed. • Data is displayed as the declared data type without a cast. 						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td><i>V1,V2,...,V10</i></td> </tr> <tr> <td>Description</td> <td>Data you want to display in the echo window.</td> </tr> <tr> <td>Data type</td> <td>Variant type (Variant)</td> </tr> </table>		<i>V1,V2,...,V10</i>	Description	Data you want to display in the echo window.	Data type	Variant type (Variant)
	<i>V1,V2,...,V10</i>						
Description	Data you want to display in the echo window.						
Data type	Variant type (Variant)						
Examples	<pre>Dim Nop As Long Dim i As Integer Dim Fdata As Variant Nop = SCPI.SENSE(1).SWEep.POINts Fdata = SCPI.CALCulate(1).SElected.DATA.FDATA ECHO "Test Results" For i=1 to Nop ECHO i, Fdata(2*i-2), Fdata(2*i-1) Next i ECHO SCPI.SYSTEM.ERROR</pre>						
Related objects	SCPI.DISPLAY.ECHO.DATA on page 373						
Equivalent key	No equivalent key is available on the front panel.						

NAME

Object type	Property						
Syntax	<i>App</i> = NAME						
Description	Reads out the application name of VBA. “E5070B” or “E5071B” is always read out. (Read only)						
Variable	<table border="1"> <tr> <td></td> <td><i>App</i></td> </tr> <tr> <td>Description</td> <td>Application name</td> </tr> <tr> <td>Data type</td> <td>Character string type (String)</td> </tr> </table>		<i>App</i>	Description	Application name	Data type	Character string type (String)
	<i>App</i>						
Description	Application name						
Data type	Character string type (String)						
Examples	<pre>Dim Inst As String Inst = NAME ECHO Inst</pre>						
Equivalent key	No equivalent key is available on the front panel.						

Parse

Object type

Method

Syntax

Parse(*Scpi*)*Return* = Parse(*Scpi*?)

Description

Executes an SCPI command of the E5070B/E5071B. For information on the SCPI commands, see Chapter “SCPI Command Reference” in the *E5070B/E5071B Programmer’s Guide*.

The **Parse** object is a little slower in the execution speed than the COM object which has the same function as the SCPI command because it must parse the message string of the SCPI command.

Variable

	<i>Scpi</i>
Description	SCPI command
Data type	Character string type (String)

	<i>Return</i>
Description	Response (query) of the SCPI command
Data type	Character string type (String)

Examples

```
Dim Start As String
Parse(":SENS1:FREQ:STAR 100E6")
Start = Parse(":SENS1:FREQ:STAR?")
```

```
Dim TtlLbl As String
Parse(":DISP:WIND1:TITL:DATA ""filter"")
TtlLbl = Parse(":DISP:WIND1:TITL:DATA?")
```

```
Dim Fmt As String
Parse(":CALC1:PAR2:SEL")
Parse(":CALC1:FORM SMIT")
Fmt = Parse(":CALC1:FORM?")
```

```
Dim BckLght As String
Parse(":SYST:BACK OFF")
BckLght = Parse(":SYST:BACK?")
```

Equivalent key

No equivalent key is available on the front panel.

Prompt

Object type Method

Syntax Prompt(*Mes*)

Description Displays the message you specify on the instrument status bar (at the bottom of the LCD display) and suspends the program until the **[Macro Setup] - Continue** button is pressed. (No read)

NOTE When using this object, execute the program with the Visual Basic closed since you need to press the **[Macro Setup] - Continue**. For more information, see “Running a Program from the E5070B/E5071B Measurement Screen” on page 54. If you need to abort the program, see “Stopping with the Dialog Box Appeared” on page 55.

Variable

	<i>Mes</i>
Description	Message
Data type	Character string type (String)

Examples Prompt("Connect DUT, and then press [Continue]")

Equivalent key No equivalent key is available on the front panel.

UserMenu.Item(Key_id).Caption

Object type	Property
Syntax	UserMenu.Item(<i>Key_id</i>).Caption = <i>Lbl</i> <i>Lbl</i> = UserMenu.Item(<i>Key_id</i>).Caption
Description	Sets the label name of the user menu function softkeys 1 to 10 (<i>Key_id</i>).

Variable

Table 7-5 Variable (*Key_id*)

	<i>Key_id</i>
Description	Softkey number for the user menu function
Data type	Long integer type (Long)
Range	1 to 10
Note	You cannot omit this because it does not have a preset value. If the specified variable is out of the valid setting range, an error occurs when executed.

	<i>Lbl</i>
Description	Softkey label name for the user menu function
Data type	Character string type (String)
Preset value	Varies depending on the specified softkey number.

Examples

```
Dim KeyLbl As String  
UserMenu.Item(1).Caption = "Meas"  
KeyLbl = UserMenu.Item(1).Caption
```

Equivalent key No equivalent key is available on the front panel.

UserMenu.Item(Key_id).Enabled

Object type Property

Syntax UserMenu.Item(Key_id).Enabled = *Status*
Status = UserMenu.Item(Key_id).Enabled

Description Makes the user menu function softkeys 1 to 10 (*Key_id*) enabled/disabled. The softkey label enabled is displayed with the grey color and its softkey cannot be pressed.

Variable

	<i>Status</i>
Description	Enabled/disabled for the user menu function softkey
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Makes the softkey enabled. • False or 0 Makes the softkey disabled.
Preset value	True or -1

For information on the variable (*Key_id*), see Table 7-5, "Variable (Key_id)," on page 196.

Examples

```
Dim KeyEna As Boolean
UserMenu.Item(10).Enabled = False
KeyEna = UserMenu.Item(10).Enabled
```

Related objects UserMenu.Press(Key_id) on page 199

Equivalent key No equivalent key is available on the front panel.

UserMenu_OnPress(ByVal *Key_id* As Long)

Object type	Event
Description	Executes the processing when one of the user menu function softkeys 1 to 10 (<i>Key_id</i>) is pressed. Write the processing in the "UserMenu" object. For more information on its use, see "Executing a Procedure with a Softkey (User Menu Function)" on page 80.
Variable	For information on the variable (<i>Key_id</i>), see Table 7-5, "Variable (Key_id)," on page 196.
Examples	<pre>Private Sub UserMenu_OnPress (ByVal id As Long) If id = 1 Then MsgBox "Button 1 was pressed." ElseIf id = 10 Then MsgBox "Button 10 was pressed." End If End Sub</pre>
Equivalent key	No equivalent key is available on the front panel.

UserMenu.PRESet

Object type	Method
Syntax	UserMenu.PRESet
Description	Presets the label name and enabled/disabled settings for the user menu softkeys. (No read)
Examples	<pre>UserMenu.PRESet</pre>
Related objects	UserMenu.Item(Key_id).Caption on page 196 UserMenu.Item(Key_id).Enabled on page 197
Equivalent key	[Macro Setup] - Preset User Menu

UserMenu.Press(*Key_id*)

Object type	Method
Syntax	<code>UserMenu.Press(<i>Key_id</i>)</code>
Description	Presses one of the user menu function softkeys 1 to 10 (<i>id</i>). (No read)
Variable	For information on the variable (<i>Key_id</i>), see Table 7-5, “Variable (Key_id),” on page 196.
Examples	<code>UserMenu.Press(1)</code>
Related objects	<code>UserMenu.Item(Key_id).Enabled</code> on page 197
Equivalent key	[Macro Setup] - User Menu - Button 1 Button 2 Button 3 Button 4 Button 5 Button 6 Button 7 Button 8 Button 9 Button 10

UserMenu.Show

Object type	Method
Syntax	<code>UserMenu.Show</code>
Description	Displays the user menu function softkeys in the softkey area. (No read)
Examples	<code>UserMenu.Show</code>
Equivalent key	[Macro Setup] - User Menu

VBAVersion

- Object type Property
- Syntax *Vers* = VBAVersion
- Description Reads out the version information of VBA installed in the E5070B/E5071B. (Read only)
- Variable

	<i>Vers</i>
Description	VBA version information
Data type	Character string type (String)

- Examples
- ```
Dim Version As String
Version = VBAVersion
ECHO Version
```

- Equivalent key From the **Help** menu of the Visual Basic editor, click **About Microsoft Visual Basic...**

## WaitOnSRQ

Object type Method

Syntax WaitOnSRQ *Status, Timeout*

Description Suspends the program for specified time until the RQS/MSS bit (bit 6) of the status byte register changes to 1. For information on the structure of the status register, see Appendix “Status Reporting System” in the *E5070B/E5071B Programmer’s Guide*. (No read)

Variable

|             | <i>Status</i>                                                                                                                                                                                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | State of the RQS/MSS bit (read only)                                                                                                                                                                                                                                                  |
| Data type   | Boolean type (Boolean)                                                                                                                                                                                                                                                                |
| Range       | One of the following is returned. <ul style="list-style-type: none"> <li>• True or -1                    1 has been received within the specified time.</li> <li>• False or 0                   1 has not been received within the specified time due to timeout or abort.</li> </ul> |

|              | <i>Timeout</i>                                                                                                                                                                                               |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Timeout time                                                                                                                                                                                                 |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 0 to 2,147,483,647                                                                                                                                                                                           |
| Preset value | -1 (infinity)                                                                                                                                                                                                |
| Unit         | ms (millisecond)                                                                                                                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

Examples

```
Dim Stat As Boolean
SCPI.IEEE4882.CLS
SCPI.STATUS.OPERation.PTRansition = 0
SCPI.STATUS.OPERation.NTRansition = 16
SCPI.STATUS.OPERation.ENABLE = 16
SCPI.IEEE4882.SRE = 128
SCPI.TRIGger.SEquence.SOURce = "bus"
SCPI.INITiate(1).CONTinuous = True
SCPI.TRIGger.SEquence.IMMediate
WaitOnSRQ Stat, 10000
If Stat = True Then
 MsgBox "Done"
End If
```

Equivalent key

No equivalent key is available on the front panel.

## SCPI Objects

SCPI objects are a collection of the COM interface having one-on-one correspondence with the SCPI commands. This section describes the SCPI objects provided for the E5070B/E5071B.

### SCPI.ABORT

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Syntax          | SCPI.ABORT                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Description     | <p>Aborts the measurement and changes the trigger sequence for all channels to idle state.</p> <p>The channels for which the continuous startup mode is set to ON (setting to start up the trigger system continuously) change into the startup state immediately after the change to the idle state.</p> <p>For details about the trigger system, see Section “Trigger System” in the <i>E5070B/E5071B Programmer’s Guide</i>. (No read)</p> |
| Examples        | SCPI.ABORT                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Related objects | <p>SCPI.INITiate(Ch).IMMEDIATE on page 413</p> <p>SCPI.INITiate(Ch).CONTInuous on page 412</p>                                                                                                                                                                                                                                                                                                                                                |
| Equivalent key  | <b>[Trigger] - Restart</b>                                                                                                                                                                                                                                                                                                                                                                                                                    |

**SCPI.CALCulate(*Ch*).FSIMulator.BALun.CZConversion.  
 BPORT(*Bpt*).IMAGinary**

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).FSIMulator.BALun.CZConversion.BPORT(*Bpt*).IMAGinary = *Value*  
*Value* = SCPI.CALCulate(*Ch*).FSIMulator.BALun.CZConversion.BPORT(*Bpt*).IMAGinary

**Description** For balance ports 1 and 2 (*Bpt*) of channels 1 to 16 (*Ch*), sets the impedance value (imaginary part) for the common port impedance conversion function.

**Variable**

**Table 7-6**                      **Variable (*Ch*)**

|              | <i>Ch</i>                                                                                     |
|--------------|-----------------------------------------------------------------------------------------------|
| Description  | Channel number                                                                                |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 1 to 16                                                                                       |
| Preset value | 1                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed. |

**Table 7-7**                      **Variable (*Bpt*)**

|              | <i>Bpt</i>                                                                                    |
|--------------|-----------------------------------------------------------------------------------------------|
| Description  | Balance port number*1                                                                         |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 1 to 2                                                                                        |
| Preset value | 1                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed. |

\*1. Specify the balance ports assigned with the SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology. BBALanced.PPORTs object, the SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology. SBALanced.PPORTs object, and the SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology. SSBALanced.PPORTs object on the order base. For more information on assigning the balance ports, see Figure 7-2 on page 208.

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Impedance value (imaginary part) for the common port impedance conversion function                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E+18 to 1E+18                                                                                                                                                                                              |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | $\Omega$ (ohm)                                                                                                                                                                                               |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

**Examples**

```
Dim CImag As Double
SCPI.CALCulate(1).FSIMulator.BALun.CZConversion.BPORT(1).IMAGinary
= 1E5
CImag =
SCPI.CALCulate(1).FSIMulator.BALun.CZConversion.BPORT(1).IMAGinary
```

**Related objects**

SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).REAL on page 205

SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).Z0.R on page 206

SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. STATE on page 207

SCPI.CALCulate(Ch).FSIMulator.STATE on page 250

**Equivalent key**

**[Analysis] - Fixture Simulator - Cmn ZConversion - Port1(bal) ImagPort2(bal)  
ImagPort3(bal) Imag**

## SCPI.CALCulate(*Ch*).FSIMulator.BALun.CZConversion. BPORT(*Bpt*).REAL

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).FSIMulator.BALun.CZConversion.BPORT(*Bpt*).REAL = *Value*  
*Value* = SCPI.CALCulate(*Ch*).FSIMulator.BALun.CZConversion.BPORT(*Bpt*).REAL

**Description** For balance ports 1 and 2 (*Bpt*) of channels 1 to 16 (*Ch*), sets the impedance value (real part) for the common port impedance conversion function.

**NOTE** This command performs in the same way as “SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).Z0.R” on page 206

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Impedance value (real part) for the common port impedance conversion function                                                                                                                                |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 1E-3 to 1E7                                                                                                                                                                                                  |
| Preset value | 25                                                                                                                                                                                                           |
| Unit         | $\Omega$ (ohm)                                                                                                                                                                                               |
| Resolution   | 0.001                                                                                                                                                                                                        |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

**Examples**  
 Dim CReal As Double  
 SCPI.CALCulate(1).FSIMulator.BALun.CZConversion.BPORT(1).REAL = 30  
 CReal =  
 SCPI.CALCulate(1).FSIMulator.BALun.CZConversion.BPORT(1).REAL

**Related objects**  
 SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).IMAGinary on page 203  
 SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).Z0.R on page 206  
 SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. STATE on page 207  
 SCPI.CALCulate(Ch).FSIMulator.STATE on page 250

**Equivalent key** **[Analysis] - Fixture Simulator - Cmn ZConversion - Port1(bal) Real|Port2(bal) Real|Port3(bal) Real**

**SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORTt(Bpt).Z0.R**

Object type Property

Syntax `SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion.BPORTt(Bpt).Z0.R = Value`  
*Value* = `SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion.BPORTt(Bpt).Z0.R`

Description For balance ports 1 and 2 (*Bpt*) of channels 1 to 16 (*Ch*), sets the impedance value for the common port impedance conversion function.

---

**CAUTION** This command clears setting value of “SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORTt(Bpt).IMAGinary” on page 203

---

## Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Impedance value for the common port impedance conversion function                                                                                                                                            |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 1E-3 to 1E7                                                                                                                                                                                                  |
| Preset value | 25                                                                                                                                                                                                           |
| Unit         | $\Omega$ (ohm)                                                                                                                                                                                               |
| Resolution   | 0.001                                                                                                                                                                                                        |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

Examples `Dim CZ0 As Double`  
`SCPI.CALCulate(1).FSIMulator.BALun.CZConversion.BPORTt(1).Z0.R = 30`  
`CZ0 = SCPI.CALCulate(1).FSIMulator.BALun.CZConversion.BPORTt(1).Z0.R`

Related objects `SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORTt(Bpt).IMAGinary` on page 203

`SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORTt(Bpt).REAL` on page 205

`SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. STATE` on page 207

`SCPI.CALCulate(Ch).FSIMulator.STATE` on page 250

Equivalent key **[Analysis] - Fixture Simulator - Cmn ZConversion - Port1(bal) Real|Port2(bal) Real|Port3(bal) Real**

## SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. STATE

- Object type** Property
- Syntax** SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion.STATE = *Status*  
*Status* = SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion.STATE
- Description** For all the balance ports of channels 1 to 16 (*Ch*), turns ON/OFF the common port impedance conversion function when the fixture simulator function is ON.
- Variable**

|              |                                                                                                                                                                                                                                                                               |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Status</i>                                                                                                                                                                                                                                                                 |
| Description  | ON/OFF of the common port impedance conversion function                                                                                                                                                                                                                       |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                                                        |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the common port impedance conversion function.</li> <li>• False or 0                      Turns OFF the common port impedance conversion function.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                                                                    |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim ComZcon As Boolean
SCPI.CALCulate(1).FSIMulator.BALun.CZConversion.STATE = True
ComZcon = SCPI.CALCulate(1).FSIMulator.BALun.CZConversion.STATE
```
- Related objects**
- SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).IMAGinary on page 203
- SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).REAL on page 205
- SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).Z0.R on page 206
- SCPI.CALCulate(Ch).FSIMulator.STATE on page 250
- Equivalent key** **[Analysis] - Fixture Simulator - Cmn ZConversion - Cmn ZConversion**

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).PARAmeters.C

Object type

Property

Syntax

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit.BPORT(*Bpt*).PARAmeters.C = *Value*
Value = SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit.BPORT(*Bpt*).PARAmeters.C

Description

For balance port 1 and balance port 2 (*Bpt*) of channel 1 to 9 (*Ch*), sets the C value of the differential matching circuit consisting of shunt L and shunt C (PLPC is specified with the SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).TYPE object).

Variable

	<i>Value</i>
Description	C value of the differential matching circuit
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	0
Unit	F (farad)
Resolution	1E-18
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Bpt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-7, “Variable (Bpt),” on page 203, respectively.

Examples

```
Dim DmcC As Double
SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).PARAmeters.C = 12E-12
DmcC = SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).PARAmeters.C
```

Related objects

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).PARAmeters.G on page 210

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).PARAmeters.L on page 211

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).PARAmeters.R on page 212

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).TYPE on page 213

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. STAtE on page 215

Equivalent key

[Analysis] - Fixture Simulator - Diff Matching - C

COM Object Reference
**SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit.
 BPORT(*Bpt*).PARAmeters.G**

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).PARAmeters.G

Object type Property

Syntax SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit.BPORT(*Bpt*).PARAmeters.G = *Value*
Value = SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit.BPORT(*Bpt*).PARAmeters.G

Description For balance port 1 and balance port 2 (*Bpt*) of channel 1 to 9 (*Ch*), sets the G value of the differential matching circuit consisting of shunt L and shunt C (PLPC is specified with the SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).TYPE object).

Variable

	<i>Value</i>
Description	G value of the differential matching circuit
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	0
Unit	S (siemens)
Resolution	1E-18
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Bpt*), see Table 7-6, “Variable (*Ch*),” on page 203 and Table 7-7, “Variable (*Bpt*),” on page 203, respectively.

Examples

```
Dim DmcG As Double
SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).PARAmeters.G = 12E-12
DmcG = SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).PARAmeters.G
```

Related objects

- SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).PARAmeters.C on page 209
- SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).PARAmeters.L on page 211
- SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).PARAmeters.R on page 212
- SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).TYPE on page 213
- SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. STATE on page 215

Equivalent key **[Analysis] - Fixture Simulator - Diff Matching - G**

SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.L

Object type Property

Syntax SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).PARAmeters.L = *Value*
Value = SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).PARAmeters.L

Description For balance port 1 and balance port 2 (*Bpt*) of channel 1 to 9 (*Ch*), sets the L value of the differential matching circuit consisting of shunt L and shunt C (PLPC is specified with the SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).TYPE object).

Variable

	<i>Value</i>
Description	L value of the differential matching circuit
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	0
Unit	H (henry)
Resolution	1E-18
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Bpt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-7, “Variable (Bpt),” on page 203, respectively.

Examples `Dim DmcL As Double`
`SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).PARAmeters.L`
`= 12E-12`
`DmcL =`
`SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).PARAmeters.L`

Related objects SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.C on page 209
 SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.G on page 210
 SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.R on page 212
 SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).TYPE on page 213
 SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. STATE on page 215

Equivalent key **[Analysis] - Fixture Simulator - Diff Matching - L**

**SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.
BPORT(Bpt).PARAmeters.R**

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).PARAmeters.R = <i>Value</i> <i>Value</i> = SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).PARAmeters.R

Description For balance port 1 and balance port 2 (*Bpt*) of channel 1 to 9 (*Ch*), sets the R value of the differential matching circuit consisting of shunt L and shunt C (PLPC is specified with the SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).TYPE object).

Variable

	<i>Value</i>
Description	R value of the differential matching circuit
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	0
Unit	Ω (ohm)
Resolution	1E-18
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Bpt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-7, “Variable (Bpt),” on page 203, respectively.

Examples

```
Dim DmcR As Double
SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).PARAmeters.R = 12E-12
DmcR = SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).PARAmeters.R
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.C on page 209

SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.G on page 210

SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).PARAmeters.L on page 211

SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. BPORT(Bpt).TYPE on page 213

SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit. STATE on page 215

Equivalent key

[Analysis] - Fixture Simulator - Diff Matching - R

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DMCircuit. BPORT(*Bpt*).USER.FILename

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DMCircuit.BPORT(<i>Bpt</i>).USER.FILename = <i>File</i> <i>File</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DMCircuit.BPORT(<i>Bpt</i>).USER.FILename
Description	<p>For balance ports 1 and 2 (<i>Bpt</i>) of channels 1 to 16 (<i>Ch</i>), specifies the file in which the information on the user-defined differential matching circuit is saved (2-port touchstone file with the .s2p extension).</p> <p>Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names (folder names) and file name, separate them with "\" (back slash), or "/" (slash).</p> <p>Even if the specified file does not exist, no error occurs when you execute this object. However, when you set the type of the differential matching circuit to the user-defined circuit with the SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DMCircuit.BPORT(<i>Bpt</i>).TYPE object, an error occurs when executed.</p>

Variable

	<i>File</i>
Description	2-port touchstone file name (extension: .s2p) for the differential matching circuit
Data type	Character string type (String)
Range	254 characters or less
Preset value	""

For information on the variable (*Ch*) and the variable (*Bpt*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-7, "Variable (Bpt)," on page 203, respectively.

Examples	<pre>Dim DmcUser As String SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).USER.FILename = "dmc.s2p" DmcUser = SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).USER.FILename SCPI.CALCulate(1).FSIMulator.BALun.DMCircuit.BPORT(1).TYPE = "user"</pre>
Related objects	<p>SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DMCircuit. BPORT(<i>Bpt</i>).TYPE on page 213</p> <p>SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DMCircuit. STATE on page 215</p>
Equivalent key	[Analysis] - Fixture Simulator - Diff Matching - User File

**SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.
BPORT(Bpt).IMAGinary**

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.BPORT(Bpt).IMAGinary = <i>Value</i> <i>Value</i> = SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.BPORT(Bpt).IMAGinary
Description	For balance ports 1 and 2 (<i>Bpt</i>) of channels 1 to 16 (<i>Ch</i>), sets the impedance value (imaginary part) for the differential port impedance conversion function.
Variable	

	<i>Value</i>
Description	Impedance value (imaginary part) for the differential port impedance conversion function
Data type	Double precision floating point type (Double)
Range	-1E+18 to 1E+18
Preset value	0
Unit	Ω (ohm)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Bpt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-7, “Variable (Bpt),” on page 203, respectively.

Examples	<pre>Dim DImag As Double SCPI.CALCulate(1).FSIMulator.BALun.DZConversion.BPORT(1).IMAGinary = 200 DImag = SCPI.CALCulate(1).FSIMulator.BALun.DZConversion.BPORT(1).IMAGinary</pre>
----------	--

Related objects	<p>SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).REAL on page 217</p> <p>SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).Z0.R on page 218</p> <p>SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. STATE on page 219</p> <p>SCPI.CALCulate(Ch).FSIMulator.STATE on page 250</p>
-----------------	---

Equivalent key	[Analysis] - Fixture Simulator - Diff ZConversion - Port1(bal) Imag Port2(bal) Imag Port3(bal) Imag
----------------	--

SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).REAL

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.BPORT(Bpt).REAL = <i>Value</i> <i>Value</i> = SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.BPORT(Bpt).REAL
Description	For balance ports 1 and 2 (<i>Bpt</i>) of channels 1 to 16 (<i>Ch</i>), sets the impedance value (real part) for the differential port impedance conversion function.

NOTE	This command performs in the same way as “SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).Z0.R” on page 218
-------------	--

Variable

	<i>Value</i>
Description	Impedance value (real part) for the differential port impedance conversion function
Data type	Double precision floating point type (Double)
Range	1E-3 to 1E7
Preset value	100
Unit	Ω (ohm)
Resolution	0.001
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Bpt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-7, “Variable (Bpt),” on page 203, respectively.

Examples	Dim DReal As Double SCPI.CALCulate(1).FSIMulator.BALun.DZConversion.BPORT(1).REAL = 200 DReal = SCPI.CALCulate(1).FSIMulator.BALun.DZConversion.BPORT(1).REAL
----------	--

Related objects	SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).IMAGinary on page 216 SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).Z0.R on page 218 SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. STATE on page 219 SCPI.CALCulate(Ch).FSIMulator.STATE on page 250
-----------------	---

Equivalent key	[Analysis] - Fixture Simulator - Diff ZConversion - Port1(bal) Real Port2(bal) Real Port3(bal) Real
----------------	--

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DZConversion. BPORT(*Bpt*).Z0.R

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DZConversion.BPORT(<i>Bpt</i>).Z0.R = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DZConversion.BPORT(<i>Bpt</i>).Z0.R
Description	For balance ports 1 and 2 (<i>Bpt</i>) of channels 1 to 16 (<i>Ch</i>), sets the impedance value for the differential port impedance conversion function.

CAUTION This command clears setting value of “SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).IMAGinary” on page 216

Variable

	<i>Value</i>
Description	Impedance value for the differential port impedance conversion function
Data type	Double precision floating point type (Double)
Range	1E-3 to 1E7
Preset value	100
Unit	Ω (ohm)
Resolution	0.001
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Bpt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-7, “Variable (Bpt),” on page 203, respectively.

Examples	Dim DZ0 As Double SCPI.CALCulate(1).FSIMulator.BALun.DZConversion.BPORT(1).Z0.R = 200 DZ0 = SCPI.CALCulate(1).FSIMulator.BALun.DZConversion.BPORT(1).Z0.R
Related objects	SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).IMAGinary on page 216 SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).REAL on page 217 SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. STATE on page 219 SCPI.CALCulate(Ch).FSIMulator.STATE on page 250
Equivalent key	[Analysis] - Fixture Simulator - Diff ZConversion - Port1(bal) Real Port2(bal) Real Port3(bal) Real

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DZConversion. STATE

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DZConversion.STATE = <i>Status</i> <i>Status</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DZConversion.STATE
Description	For all the balance ports of channels 1 to 16 (<i>Ch</i>), turns ON/OFF the differential port impedance conversion function when the fixture simulator function is ON.
Variable	

	<i>Status</i>
Description	ON/OFF of the differential port impedance conversion function
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the differential port impedance conversion function. • False or 0 Turns OFF the differential port impedance conversion function.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim DifZcon As Boolean SCPI.CALCulate(1).FSIMulator.BALun.DZConversion.STATE = True DifZcon = SCPI.CALCulate(1).FSIMulator.BALun.DZConversion.STATE</pre>
Related objects	<p>SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DZConversion. BPORT(<i>Bpt</i>).IMAGinary on page 216</p> <p>SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DZConversion. BPORT(<i>Bpt</i>).REAL on page 217</p> <p>SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.DZConversion. BPORT(<i>Bpt</i>).Z0.R on page 218</p> <p>SCPI.CALCulate(<i>Ch</i>).FSIMulator.STATE on page 250</p>
Equivalent key	[Analysis] - Fixture Simulator - Diff ZConversion - Diff ZConversion

SCPI.CALCulate(*Ch*).FSIMulator.BALun.PARAmeter(*Tr*).BBALanced.DEFINE

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.PARAmeter(<i>Tr</i>).BBALanced.DEFINE = <i>Param</i> <i>Param</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.PARAmeter(<i>Tr</i>).BBALanced.DEFINE
Description	For traces 1 to 16 (<i>Tr</i>) of channels 1 to 16 (<i>Ch</i>), sets the measurement parameter when the balance device type is "balance-balance."

Variable

	<i>Param</i>
Description	Measurement parameter
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"SDD11" Specifies Sdd11. •"SDD21" Specifies Sdd21. •"SDD12" Specifies Sdd12. •"SDD22" Specifies Sdd22. •"SCD11" Specifies Scd11. •"SCD21" Specifies Scd21. •"SCD12" Specifies Scd12. •"SCD22" Specifies Scd22. •"SDC11" Specifies Sdc11. •"SDC21" Specifies Sdc21. •"SDC12" Specifies Sdc12. •"SDC22" Specifies Sdc22. •"SCC11" Specifies Scc11. •"SCC21" Specifies Scc21. •"SCC12" Specifies Scc12. •"SCC22" Specifies Scc22. •"IMB1" Specifies Imbalance1. •"IMB2" Specifies Imbalance2. •"CMRR" Specifies CMRR (Sdd21/Sc21).
Preset value	"SDD11"

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-10, "Variable (Tr)," on page 253, respectively.

Examples

```
Dim BbalPara As String
SCPI.CALCulate(1).FSIMulator.BALun.DEVICE = "bbal"
SCPI.CALCulate(1).FSIMulator.BALun.PARAmeter(1).BBALanced.DEFINE = "sdd21"
BbalPara = SCPI.CALCulate(1).FSIMulator.BALun.PARAmeter(1).BBALanced.DEFINE
```

Related objects SCPI.CALCulate(Ch).FSIMulator.BALun.DEVICE on page 208

Equivalent key **[Analysis] - Fixture Simulator[Meas] - Sdd11|Sdd21|Sdd12|Sdd22|Scd11|Scd21|Scd12|Scd22|Sdc11| Sdc21|Sdc12|Sdc22|Scc11|Scc21|Scc12|Scc22|Imbalance1|Imbalance2|Sdd21|Scc21**

SCPI.CALCulate(*Ch*).FSIMulator.BALun.PARAmeter(*Tr*).SBALanced.DEFIne

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.PARAmeter(<i>Tr</i>).SBALanced.DEFIne = <i>Param</i> <i>Param</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.BALun.PARAmeter(<i>Tr</i>).SBALanced.DEFIne
Description	For traces 1 to 16 (<i>Tr</i>) of channels 1 to 16 (<i>Ch</i>), sets the measurement parameter when the balance device type is "balance-balance."

Variable

	<i>Param</i>
Description	Measurement parameter
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"SSS11" Specifies Sss11. •"SDS21" Specifies Sds21. •"SSD12" Specifies Ssd12. •"SCS21" Specifies Scs21. •"SSC12" Specifies Ssc12. •"SDD22" Specifies Sdd22. •"SCD22" Specifies Scd22. •"SDC22" Specifies Sdc22. •"SCC22" Specifies Scc22. •"IMB" Specifies Imbalance. •"CMRR" Specifies CMRR (Sds21/Scs21). •"CMRR2" Specifies CMRR2 (Ssd12/Scs12).
Preset value	"SSS11"

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-10, "Variable (Tr)," on page 253, respectively.

Examples

```
Dim SbalPara As String
SCPI.CALCulate(1).FSIMulator.BALun.DEVice = "sbal"
SCPI.CALCulate(1).FSIMulator.BALun.PARAmeter(1).SBALanced.DEFIne = "scs21"
SbalPara = SCPI.CALCulate(1).FSIMulator.BALun.PARAmeter(1).SBALanced.DEFIne
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.BALun.DEVice on page 208

Equivalent key

[Analysis] - Fixture Simulator|[Meas] - Sss11|Sds21|Ssd12|Scs21|Ssc12|Sdd22|Scd22|Sdc22|Scc22|Imbalance|Sds21/Scs21|Ssd12/Scs12

SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr).SSBalanced.DEFINE

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr).SSBalanced.DEFINE = <i>Param</i> <i>Param</i> = SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr).SSBalanced.DEFINE
Description	For traces 1 to 16 (<i>Tr</i>) of channels 1 to 16 (<i>Ch</i>), sets the measurement parameter when the balance device type is "unbalance-unbalance-balance."

Variable

	<i>Param</i>
Description	Measurement parameter
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"SSS11" Specifies Sss11. •"SSS21" Specifies Sss21. •"SSS12" Specifies Sss12. •"SSS22" Specifies Sss22. •"SDS31" Specifies Sds31. •"SDS32" Specifies Sds32. •"SSD13" Specifies Ssd13. •"SSD23" Specifies Ssd23. •"SCS31" Specifies Scs31. •"SCS32" Specifies Scs32. •"SSC13" Specifies Ssc13. •"SSC23" Specifies Ssc23. •"SDD33" Specifies Sdd33. •"SCD33" Specifies Scd33. •"SDC33" Specifies Sdc33. •"SCC33" Specifies Scc33. •"IMB1" Specifies Imbalance1. •"IMB2" Specifies Imbalance2. •"IMB3" Specifies Imbalance3. •"IMB4" Specifies Imbalance4. •"CMRR1" Specifies CMRR (Sds31/Scs31). •"CMRR2" Specifies CMRR (Sds32/Scs32).
Preset value	"SSS11"

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-10, "Variable (Tr)," on page 253, respectively.

Examples

```
Dim SsbPara As String
SCPI.CALCulate(1).FSIMulator.BALun.DEVICE = "ssb"
SCPI.CALCulate(1).FSIMulator.BALun.PARAmeter(1).SSBalanced.DEFINE = "sds31"
SsbPara = SCPI.CALCulate(1).FSIMulator.BALun.PARAmeter(1).SSBalanced.DEFINE
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.BALun.DEVICE on page 208

Equivalent key **[Analysis] - Fixture Simulator|[Meas] - Sss11|Sss21|Sss12|Sss22|Sds31|Sds32|Ssd13|Ssd23|Scs31|Scs32|Ssc13|Ssc23|Sdd33|Scd33|Sdc33|Scc33|Imbalance1|Imbalance2|Imbalance3|Imbalance4|Sds31|Scs31|Sds32|Scs32**

SCPI.CALCulate(*Ch*).FSIMulator.BALun.PARAmeter(*Tr*).STATE

Object type Property

Syntax SCPI.CALCulate(*Ch*).FSIMulator.BALun.PARAmeter(*Tr*).STATE = *Status*
Status = SCPI.CALCulate(*Ch*).FSIMulator.BALun.PARAmeter(*Tr*).STATE

Description For traces 1 and 9 (*Tr*) of channels 1 to 16 (*Ch*), turns ON/OFF the balance-unbalance conversion function when the fixture simulator function is ON.

Variable

	<i>Status</i>
Description	ON/OFF of the balance-unbalance conversion function
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the balance-unbalance conversion function. • False or 0 Turns OFF the balance-unbalance conversion function.
Preset value	False or 0

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

Examples

```
Dim BalMode As Boolean
SCPI.CALCulate(1).FSIMulator.BALun.PARAmeter(1).STATE = True
BalMode = SCPI.CALCulate(1).FSIMulator.BALun.PARAmeter(1).STATE
```

Related objects SCPI.CALCulate(Ch).FSIMulator.STATE on page 250

Equivalent key **[Analysis] - Fixture Simulator - BalUn**

SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.BBALanced.PPORTs

Object type Property

Syntax SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.BBALanced.PPORTs = *Ports*
Ports = SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.BBALanced.PPORTs

Description For channels 1 to 16 (*Ch*), assigns each port when the balance device type is "balance-balance."
 To set the balance device type to "balance-balance," specify BBAL with the SCPI.CALCulate(*Ch*).FSIMulator.BALun.DEVice object.

Variable

	<i>Ports</i>
Description	Indicates 4-element array data (port number). <ul style="list-style-type: none"> • <i>Ports(0)</i> Port number assigned to port a in Figure 7-2 on page 208. • <i>Ports(1)</i> Port number assigned to port b in Figure 7-2 on page 208. • <i>Ports(2)</i> Port number assigned to port c in Figure 7-2 on page 208. • <i>Ports(3)</i> Port number assigned to port d in Figure 7-2 on page 208. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Preset value	Ports(0):1 / Ports(1):2 / Ports(2):3 / Ports(3):4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 or more port numbers, an error occurs when executed.

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim BbalPort As Variant
SCPI.CALCulate(1).FSIMulator.BALun.DEVice = "bbal"
SCPI.CALCulate(1).FSIMulator.BALun.TOPology.BBALanced.PPORTs = Array(3,4,1,2)
BbalPort = SCPI.CALCulate(1).FSIMulator.BALun.TOPology.BBALanced.PPORTs
```

```
Dim BbalPort(3) As Variant
Dim Ref As Variant
BbalPort(0) = 3
BbalPort(1) = 4
BbalPort(2) = 1
BbalPort(3) = 2
SCPI.CALCulate(1).FSIMulator.BALun.DEVice = "bbal"
SCPI.CALCulate(1).FSIMulator.BALun.TOPology.BBALanced.PPORTs = BbalPort
Ref = SCPI.CALCulate(1).FSIMulator.BALun.TOPology.BBALanced.PPORTs
```

Related objects SCPI.CALCulate(*Ch*).FSIMulator.BALun.DEVice on page 208

Equivalent key **[Analysis] - Fixture Simulator - Topology - Port1(bal)**
[Analysis] - Fixture Simulator - Topology - Port2(bal)

NOTE When performing the operation from the front panel, set each port separately.

SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.PROPerTy.STATe

- Object type Property
- Syntax SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.PROPerTy.STATe = *Status*
Status = SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.PROPerTy.STATe
- Description For channels 1 to 16 (*Ch*), turns on/off the property display for the topology setting when using the balance-unbalance conversion.

Variable

	<i>Status</i>
Description	On/off of the property display of the topology setting
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> •True or -1 Turns on the property display. •False or 0 Turns off the property display.
Preset value	False or 0

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

- Examples Dim TopProp As Boolean
SCPI.CALCulate(1).FSIMulator.BALun.TOPology.PROPerTy.STATe = True
TopProp = SCPI.CALCulate(1).FSIMulator.BALun.TOPology.PROPerTy.STATe

- Equivalent key **[Analysis] - Fixture Simulator - Topology - Property**

SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology. SBALanced.PPORts

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology.SBALanced.PPORts = <i>Ports</i> <i>Ports</i> = SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology.SBALanced.PPORts
Description	For channels 1 to 16 (<i>Ch</i>), assigns each port when the balance device type is "unbalance-balance." To set the balance device type to "unbalance-balance," specify SBAL with the SCPI.CALCulate(Ch).FSIMulator.BALun.DEVice object.

Variable

	<i>Ports</i>
Description	Indicates 3-element array data (port number). <ul style="list-style-type: none">• <i>Ports(0)</i> Port number assigned to port a in Figure 7-2 on page 208.• <i>Ports(1)</i> Port number assigned to port b in Figure 7-2 on page 208.• <i>Ports(2)</i> Port number assigned to port c in Figure 7-2 on page 208. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Preset value	Ports(0):1 / Ports(1):2 / Ports(2):3
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. If you specify the same port number to 2 or more port numbers, an error occurs when executed.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim SbalPort As Variant SCPI.CALCulate(1).FSIMulator.BALun.DEVice = "sbal" SCPI.CALCulate(1).FSIMulator.BALun.TOPology.SBALanced.PPORts = Array(1,3,4) SbalPort = SCPI.CALCulate(1).FSIMulator.BALun.TOPology.SBALanced.PPORts</pre>
-----------------	---

Related objects SCPI.CALCulate(Ch).FSIMulator.BALun.DEVice on page 208

Equivalent key **[Analysis] - Fixture Simulator - Topology - Port1(se)**
[Analysis] - Fixture Simulator - Topology - Port2(bal)

NOTE When performing the operation from the front panel, set each port separately.

SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.SSBalanced.PPORts

Object type Property

Syntax SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.SSBalanced.PPORts = *Ports*
Ports = SCPI.CALCulate(*Ch*).FSIMulator.BALun.TOPology.SSBalanced.PPORts

Description For channels 1 to 16 (*Ch*), assigns each port when the balance device type is "unbalance-unbalance-balance."
 To set the balance device type to "unbalance-unbalance-balance," specify SSB with the SCPI.CALCulate(*Ch*).FSIMulator.BALun.DEVICE object.

Variable

	<i>Ports</i>
Description	Indicates 4-element array data (port number). <ul style="list-style-type: none"> • <i>Ports(0)</i> Port number assigned to port a in Figure 7-2 on page 208. • <i>Ports(1)</i> Port number assigned to port b in Figure 7-2 on page 208. • <i>Ports(2)</i> Port number assigned to port c in Figure 7-2 on page 208. • <i>Ports(3)</i> Port number assigned to port d in Figure 7-2 on page 208. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Preset value	Ports(0):1 / Ports(1):2 / Ports(2):3 / Ports(3):4
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. If you specify the same port number to 2 or more port numbers, an error occurs when executed.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim SsbPort As Variant
SCPI.CALCulate(1).FSIMulator.BALun.DEVICE = "ssb"
SCPI.CALCulate(1).FSIMulator.BALun.TOPology.SSBalanced.PPORts = Array(1,4,2,3)
SsbPort = SCPI.CALCulate(1).FSIMulator.BALun.TOPology.SSBalanced.PPORts
```

Related objects

SCPI.CALCulate(*Ch*).FSIMulator.BALun.DEVICE on page 208

Equivalent key

[Analysis] - Fixture Simulator - Topology - Port1(se)
[Analysis] - Fixture Simulator - Topology - Port2(se)
[Analysis] - Fixture Simulator - Topology - Port3(bal)

NOTE

When performing the operation from the front panel, set each port separately.

7. COM Object Reference

SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk).FILename

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk).FILename = <i>File</i> <i>File</i> = SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk).FILename
Description	For channels 1 to 16 (<i>Ch</i>), specifies a file in which the information of networks 1 to 2 (<i>Nwk</i>) you want to embed/de-embed using the 4-port network embedding/de-embedding feature is saved (4-port touchstone file with the ".s4p" extension). Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names (folder names) and file name, separate them with "\" (back slash) or "/" (slash). For information on network numbers, refer to Figure 7-3 on page 234.

NOTE This function is available with the firmware version 3.50 or greater.

Variable

Table 7-8

Variable (*Nwk*)

	<i>Nwk</i>
Description	Number of network
Data type	Long integer type (Long)
Range	1 to 2
Preset value	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

	<i>File</i>
Description	4-port touchstone file name (extension: .s4p) for the 4-port network embedding/de-embedding feature
Data type	Character string type (String)
Range	254 characters or less
Preset value	""
Note	When the processing type is set to NONE, even if the specified file does not exist, no error occurs when you execute this object. However, when you set the processing type to embedding/de-embedding with the SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk).TYPE object, an error occurs.

For information on the variable (*Ch*), refer to Table 7-6, "Variable (Ch)," on page 203.

Examples

```
Dim Emb As String
SCPI.CALCulate(1).FSIMulator.EMBed.NETWork(1).FILename = "network.s4p"
Emb = SCPI.CALCulate(1).FSIMulator.EMBed.NETWork(1).FILename
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk).TYPE on page 229
SCPI.CALCulate(Ch).FSIMulator.EMBed.STATE on page 230

Equivalent key

[Analysis] - Fixture Simulator - De-Embedding S4P - Topology - User File (nw1)|User File (nw2)

**SCPI.CALCulate(*Ch*).FSIMulator.EMBed.NETWork(*Nwk*).
TYPE**

- Object type** Property
- Syntax** SCPI.CALCulate(*Ch*).FSIMulator.EMBed.NETWork(*Nwk*).TYPE = *File*
File = SCPI.CALCulate(*Ch*).FSIMulator.EMBed.NETWork(*Nwk*).TYPE
- Description** For the 4-port network embedding/de-embedding feature for channels 1 to 16 (*Ch*), selects the processing type for networks 1 and 2 (*Nwk*).

NOTE This function is available with the firmware version 3.50 or greater.

Variable

	<i>Param</i>
Description	Processing type
Data type	Character string type (String)
Range	Select from the following. •"NONE" Specifies no-processing. •"EMBed" Specifies embedding. •"DEEMbed" Specifies de-embedding.
Preset value	"NONE"
Note	Before selecting embedding/de-embedding, use the SCPI.CALCulate(<i>Ch</i>).FSIMulator.EMBed.NETWork(<i>Nwk</i>).FILENAME object to specify the 4-port touchstone file in which the information on the network is saved. If you do not specify the appropriate file and you select embedding/de-embedding, a runtime error occurs and NONE is automatically selected.

For information on the variable (*Ch*) and the variable (*Nwk*), refer to Table 7-6, "Variable (*Ch*)," on page 203 and Table 7-8, "Variable (*Nwk*)," on page 228, respectively.

Examples

```
Dim EmbType As String
SCPI.CALCulate(1).FSIMulator.EMBed.NETWork(1).FILENAME = "network.s4p"
SCPI.CALCulate(1).FSIMulator.EMBed.NETWork(1).TYPE = "deem"
EmbType = SCPI.CALCulate(1).FSIMulator.EMBed.NETWork(1).TYPE
```

Related objects SCPI.CALCulate(*Ch*).FSIMulator.EMBed.NETWork(*Nwk*).FILENAME on page 228
 SCPI.CALCulate(*Ch*).FSIMulator.EMBed.STATe on page 230

Equivalent key [Analysis] - Fixture Simulator - De-Embedding S4P - Topology - Type (nwk1)|Type (nwk2) - None|Embed|De-Embed

SCPI.CALCulate(Ch).FSIMulator.EMBed.STATe

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.EMBed.STATe = <i>Status</i> <i>Status</i> = SCPI.CALCulate(Ch).FSIMulator.EMBed.STATe
Description	For channels 1 to 16 (<i>Ch</i>), turns ON/OFF the 4-port network embedding/de-embedding feature when the fixture simulator feature is ON.

NOTE This function is available with the firmware version 3.50 or greater.

Variable

	<i>Status</i>
Description	Turns ON/OFF the 4-port network embedding/de-embedding feature.
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none">• True or -1 Turns ON the 4-port network embedding/de-embedding feature.• False or 0 Turns OFF the 4-port network embedding/de-embedding feature.
Preset value	False or 0

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim Emb As Boolean
SCPI.CALCulate(1).FSIMulator.EMBed.STATe = True
Emb = SCPI.CALCulate(1).FSIMulator.EMBed.STATe
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk). FILEname on page 228
SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk). TYPE on page 229
SCPI.CALCulate(Ch).FSIMulator.STATe on page 250

Equivalent key **[Analysis] - Fixture Simulator - De-Embedding S4P - De-Embedding S4P**

SCPI.CALCulate(*Ch*).FSIMulator.EMBed.TOPology.A. PORTs

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.EMBed.TOPology.A.PORTs = <i>Ports</i> <i>Ports</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.EMBed.TOPology.A.PORTs
Description	For the 4-port network embedding/de-embedding feature for channels 1 to 16 (<i>Ch</i>), specifies test port assignment when the connection type (Topology) is set to A. For information on the connection type (Topology), refer to Figure 7-3 on page 234.

NOTE This function is available with the firmware version 3.50 or greater.

Variable

	<i>Ports</i>
Description	Indicates 2-element array data (port numbers). <ul style="list-style-type: none"> • <i>Ports(0)</i> Port number assigned to port a in Figure 7-3. • <i>Ports(1)</i> Port number assigned to port b in Figure 7-3. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Preset value	Ports(0):1 / Ports(1):2
Resolution	1
Note	If the specified variable is out of the allowable setting range, an error occurs when executed. If you specify an identical port number to multiple ports, a runtime error occurs.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim EnbPort As Variant
SCPI.CALCulate(1).FSIMulator.ENBed.TYPE = "a"
SCPI.CALCulate(1).FSIMulator.ENBed.TOPology.A.PORTs = Array(2,1)
EnbPort = SCPI.CALCulate(1).FSIMulator.ENBed.TOPology.A.PORTs
```

Related objects SCPI.CALCulate(Ch).FSIMulator.EMBed.TYPE on page 234

Equivalent key **[Analysis] - Fixture Simulator - De-Embedding S4P - Topology - Ports - 1-2|1-3|1-4|2-1|2-3|2-4|3-1|3-2|3-4|4-1|4-2|4-3**

SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.B. PORTs

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.B.PORTs = <i>Ports</i> <i>Ports</i> = SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.B.PORTs
Description	For the 4-port network embedding/de-embedding feature for channels 1 to 16 (<i>Ch</i>), specifies test port assignment when the connection type (Topology) is set to B. For information on the connection type (Topology), refer to Figure 7-3 on page 234.

NOTE This function is available with the firmware version 3.50 or greater.

Variable

	<i>Ports</i>
Description	Indicates 3-element array data (port numbers). <ul style="list-style-type: none"> • <i>Ports(0)</i> Port number assigned to port a in Figure 7-3. • <i>Ports(1)</i> Port number assigned to port b in Figure 7-3. • <i>Ports(2)</i> Port number assigned to port c in Figure 7-3. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Preset value	Ports(0):1 / Ports(1):2 / Ports(2):3
Resolution	1
Note	If the specified variable is out of the allowable setting range, an error occurs when executed. If you specify an identical port number to multiple ports, a runtime error occurs.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim EnbPort As Variant
SCPI.CALCulate(1).FSIMulator.ENBed.TYPE = "b"
SCPI.CALCulate(1).FSIMulator.ENBed.TOPology.B.PORTs = Array(1, 3, 2)
EnbPort = SCPI.CALCulate(1).FSIMulator.ENBed.TOPology.B.PORTs
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.EMBed.TYPE on page 234

Equivalent key

[Analysis] - Fixture Simulator - De-Embedding S4P - Topology - Ports -
1-2-3|1-2-4|1-3-2|1-3-4|1-4-2|1-4-3|2-1-3|2-1-4|2-3-1|2-3-4|2-4-1|2-4-3|
3-1-2|3-1-4|3-2-1|3-2-4|3-4-1|3-4-2|4-1-2|4-1-3|4-2-1|4-2-3|4-3-1|4-3-2

SCPI.CALCulate(*Ch*).FSIMulator.EMBed.TOPology.C. PORTs

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.EMBed.TOPology.C.PORTs = <i>Ports</i> <i>Ports</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.EMBed.TOPology.C.PORTs
Description	For the 4-port network embedding/de-embedding feature for channels 1 to 16 (<i>Ch</i>), specifies test port assignment when the connection type (Topology) is set to C. For information on the connection type (Topology), refer to Figure 7-3 on page 234.

NOTE This function is available with the firmware version 3.50 or greater.

Variable

	<i>Ports</i>
Description	Indicates 4-element array data (port numbers). <ul style="list-style-type: none"> • <i>Ports</i>(0) Port number assigned to port a in Figure 7-3. • <i>Ports</i>(1) Port number assigned to port b in Figure 7-3. • <i>Ports</i>(2) Port number assigned to port c in Figure 7-3. • <i>Ports</i>(3) Port number assigned to port d in Figure 7-3. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Preset value	<i>Ports</i> (0):1 / <i>Ports</i> (1):2 / <i>Ports</i> (2):3 / <i>Ports</i> (3):4
Resolution	1
Note	If the specified variable is out of the allowable setting range, an error occurs when executed. If you specify an identical port number to multiple ports, a runtime error occurs.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim EnbPort As Variant
SCPI.CALCulate(1).FSIMulator.ENBed.TYPE = "c"
SCPI.CALCulate(1).FSIMulator.ENBed.TOPology.C.PORTs = Array(1, 4, 2, 3)
EnbPort = SCPI.CALCulate(1).FSIMulator.ENBed.TOPology.C.PORTs
```

Related objects SCPI.CALCulate(Ch).FSIMulator.EMBed.TYPE on page 234

Equivalent key **[Analysis] - Fixture Simulator - De-Embedding S4P - Topology - Ports -**
1-2-3-4|1-2-4-3|1-3-2-4|1-3-4-2|1-4-2-3|1-4-3-2|2-1-3-4|2-1-4-3|2-3-1-4|2-3-4-1|
2-4-1-3|2-4-3-1|3-1-2-4|3-1-4-2|3-2-1-4|3-2-4-1|3-4-1-2|3-4-2-1|4-1-2-3|4-1-3-2|
4-2-1-3|4-2-3-1|4-3-1-2|4-3-2-1

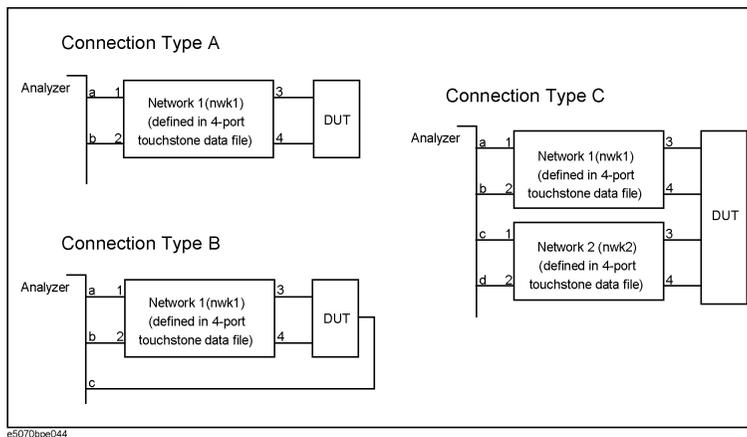
SCPI.CALCulate(Ch).FSIMulator.EMBed.TYPE

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.EMBed.TYPE = <i>File</i> <i>File</i> = SCPI.CALCulate(Ch).FSIMulator.EMBed.TYPE
Description	For the 4-port network embedding/de-embedding feature for channels 1 to 16 (<i>Ch</i>), selects a connection type (Topology).

NOTE This function is available with the firmware version 3.50 or greater.

Figure 7-3

Connection type



Variable

	<i>Param</i>
Description	Connection type (refer to Figure 7-3)
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> • "A" Specifies connection type A. • "B" Specifies connection type B. • "C" Specifies connection type C.
Preset value	"A"

(For information on *Ch*, refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim EmbType As String
SCPI.CALCulate(1).FSIMulator.EMBed.TYPE = "b"
EmbType = SCPI.CALCulate(1).FSIMulator.EMBed.TYPE
```

Related objects

- SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.A. PORTs on page 231
- SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.B. PORTs on page 232
- SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.C. PORTs on page 233

Equivalent key

[Analysis] - Fixture Simulator - De-Embedding S4P - Topology - Select Topology - A|B|C

COM Object Reference

SCPI.CALCulate(Ch).FSIMulator.SENDeD.DEEMbed. PORT(Pt).TYPE

Equivalent key

[Analysis] - Fixture Simulator - De-Embedding - Select Type

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.DEEMbed. PORT(*Pt*).USER.FILename

Object type Property

Syntax SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.DEEMbed.PORT(*Pt*).USER.FILename = *File*
File = SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.DEEMbed.PORT(*Pt*).USER.FILename

Description For ports 1 and 4 (*Pt*) of channels 1 to 16 (*Ch*), specifies the file in which the information on the user-defined network for the network de-embedding function is saved (2-port touchstone file with the .s2p extension).

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names (folder names) and file name, separate them with "\" (back slash), or "/" (slash).

Even if the specified file does not exist, no error occurs when you execute this object. However, when you set the type of the network de-embedding to the user-defined network with the SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.DEEMbed. PORT(*Pt*).TYPE object, an error occurs.

Variable

	<i>File</i>
Description	2-port touchstone file name (extension: .s2p) for the network de-embedding function
Data type	Character string type (String)
Range	254 characters or less
Preset value	""

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-9, "Variable (Pt)," on page 235, respectively.

Examples

```
Dim DeemUser As String
SCPI.CALCulate(1).FSIMulator.SENDEd.DEEMbed.PORT(1).USER.FILename = "network.s2p"
DeemUser = SCPI.CALCulate(1).FSIMulator.SENDEd.DEEMbed.PORT(1).USER.FILename
SCPI.CALCulate(1).FSIMulator.SENDEd.DEEMbed.PORT(1).TYPE = "user"
```

Related objects SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.DEEMbed. PORT(*Pt*).TYPE on page 235

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.DEEMbed. STATE on page 238

Equivalent key **[Analysis] - Fixture Simulator - De-Embedding - User File**

SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed. STATE

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed.STATe = <i>Status</i> <i>Status</i> = SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed.STATe
Description	For all the ports of channel 1 to 9 (<i>Ch</i>), turns ON/OFF the network de-embedding function when the fixture simulator function is ON.
Variable	

	<i>Status</i>
Description	ON/OFF of the network de-embedding function
Data type	Boolean type (Boolean)
Range	Select from the following. •True or -1 Turns ON the network de-embedding function. •False or 0 Turns OFF the network de-embedding function.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Deemb As Boolean SCPI.CALCulate(1).FSIMulator.SENDEd.DEEMbed.STATe = True Deemb = SCPI.CALCulate(1).FSIMulator.SENDEd.DEEMbed.STATe</pre>
Related objects	SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed. PORT(Pt).USER.FILename on page 237 SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed. PORT(Pt).TYPE on page 235 SCPI.CALCulate(Ch).FSIMulator.STATe on page 250
Equivalent key	[Analysis] - Fixture Simulator - De-Embedding - De-Embedding

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. PORT(*Pt*).PARAmeters.C

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.PORT(<i>Pt</i>).PARAmeters.C = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.PORT(<i>Pt</i>).PARAmeters.C
Description	For ports 1 and 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), sets the C value of the matching circuit specified with the SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(<i>Pt</i>).TYPE object.

Variable

	<i>Value</i>
Description	C value of the matching circuit
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	0
Unit	F (farad)
Resolution	1E-18
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples	<pre>Dim PmcC As Double SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).PARAmeters.C = 12E-12 PmcC = SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).PARAmeters.C</pre>
Related objects	SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).TYPE on page 243 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.G on page 240 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.L on page 241 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.R on page 242 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. STATE on page 245
Equivalent key	[Analysis] - Fixture Simulator - Port Matching - C

COM Object Reference
**SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.
PORT(Pt).PARAmeters.G**

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. PORT(*Pt*).PARAmeters.G

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.PORT(<i>Pt</i>).PARAmeters.G = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.PORT(<i>Pt</i>).PARAmeters.G
Description	For ports 1 and 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), sets the G value of the matching circuit specified with the SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).TYPE object.

Variable

	<i>Value</i>
Description	G value of the matching circuit
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	0
Unit	S (siemens)
Resolution	1E-18
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples
Dim PmcG As Double
SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).PARAmeters.G = 12E-12
PmcG = SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).PARAmeters.G

Related objects
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).TYPE on page 243
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.C on page 239
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.L on page 241
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.R on page 242
SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. STATE on page 245

Equivalent key **[Analysis] - Fixture Simulator - Port Matching - G**

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. PORT(*Pt*).PARAMeters.L

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.PORT(<i>Pt</i>).PARAMeters.L = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.PORT(<i>Pt</i>).PARAMeters.L
Description	For ports 1 and 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), sets the L value of the matching circuit specified with the SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.PORT(<i>Pt</i>).TYPE object.

Variable

	<i>Value</i>
Description	L value of the matching circuit
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	0
Unit	H (henry)
Resolution	1E-18
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples

```
Dim PmcL As Double
SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).PARAMeters.L = 12E-12
PmcL = SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).PARAMeters.L
```

Related objects

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. PORT(*Pt*).TYPE on page 243
 SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. PORT(*Pt*).PARAMeters.C on page 239
 SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. PORT(*Pt*).PARAMeters.G on page 240
 SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. PORT(*Pt*).PARAMeters.R on page 242
 SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. STATE on page 245

Equivalent key

[Analysis] - Fixture Simulator - Port Matching - L

**SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.
 PORT(Pt).PARAmeters.R**

Object type Property

Syntax SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).PARAmeters.R = *Value*
Value = SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).PARAmeters.R

Description For ports 1 and 4 (*Pt*) of channels 1 to 16 (*Ch*), sets the R value of the matching circuit specified with the SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).TYPE object.

Variable

	<i>Value</i>
Description	R value of the matching circuit
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	0
Unit	Ω (ohm)
Resolution	1E-18
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples

```
Dim PmcR As Double
SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).PARAmeters.R = 12E-12
PmcR = SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).PARAmeters.R
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).TYPE on page 243
 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.C on page 239
 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.G on page 240
 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAmeters.L on page 241
 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. STAtE on page 245

Equivalent key

[Analysis] - Fixture Simulator - Port Matching - R

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).TYPE

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).TYPE = <i>Param</i> <i>Param</i> = SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).TYPE
Description	For ports 1 and 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), selects the type of the matching circuit. For information on the model of the matching circuit, see Section “Determining Characteristics After Adding a Matching Circuit” in the <i>E5070B/E5071B User’s Guide</i> .

Variable

	<i>Param</i>
Description	Type of the matching circuit
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"NONE" Specifies no-circuit. •"SLPC" Specifies the circuit that consists of series L and shunt C. •"PCSL" Specifies the circuit that consists of shunt C and series L. •"PLSC" Specifies the circuit that consists of shunt L and series C. •"SCPL" Specifies the circuit that consists of series C and shunt L. •"PLPC" Specifies the circuit that consists of shunt L and shunt C. •"USER" Specifies the user-defined circuit*¹.
Preset value	"NONE"
Note	If you want to select the user-defined circuit, you must specify the 2-port touchstone file in which the proper information on the user-defined circuit is saved in advance. If you do not specify the appropriate file and you select the user-defined circuit, an error occurs when executed and NONE is automatically selected.

*1. The information on the circuit is read out from the 2-port touchstone file specified with the SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).USER.FILEname object.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples

```
Dim CirType As String
SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).TYPE = "slpc"
CirType = SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).TYPE
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAMeters.C on page 239

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAMeters.G on page 240

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAMeters.L on page 241

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAMeters.R on page 242

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).USER.FILEname on page 244

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. STATE on page 245

Equivalent key

[Analysis] - Fixture Simulator - Port Matching - Select Circuit

**SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.
PORT(Pt).USER.FILename**

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).USER.FILename = <i>File</i> <i>File</i> = SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).USER.FILename
Description	<p>For ports 1 and 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), specifies the file in which the information on the user-defined matching circuit is saved (2-port touchstone file).</p> <p>Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names (folder names) and file name, separate them with "\" (back slash), or "/" (slash).</p> <p>Even if the specified file does not exist, no error occurs when you execute this object. However, when you set the type of the matching circuit to the user-defined circuit with the SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).TYPE object, an error occurs.</p>

Variable

	<i>File</i>
Description	2-port touchstone file name (extension: .s2p) for the matching circuit
Data type	Character string type (String)
Range	254 characters or less
Preset value	""

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-9, "Variable (Pt)," on page 235, respectively.

Examples

```
Dim PmcUser As String
SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).USER.FILename = "match.s2p"
PmcUser = SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).USER.FILename
SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.PORT(1).TYPE = "user"
```

Related objects	SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).TYPE on page 243 SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. STATE on page 245
-----------------	--

Equivalent key	[Analysis] - Fixture Simulator - Port Matching - User File
----------------	---

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.PMCircuit. STATE

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.STATE = <i>Status</i> <i>Status</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.PMCircuit.STATE
Description	For all the ports of channel 1 to 9 (<i>Ch</i>), turns ON/OFF the matching circuit embedding function when the fixture simulator function is ON.
Variable	

	<i>Status</i>
Description	ON/OFF of the matching circuit embedding function
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the matching circuit embedding function. • False or 0 Turns OFF the matching circuit embedding function.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim Pmcir As Boolean
SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.STATE = True
Pmcir = SCPI.CALCulate(1).FSIMulator.SENDEd.PMCircuit.STATE
```

Related objects

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).TYPE on page 243

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAMeters.C on page 239

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAMeters.G on page 240

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAMeters.L on page 241

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).PARAMeters.R on page 242

SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit. PORT(Pt).USER.FILEname on page 244

SCPI.CALCulate(Ch).FSIMulator.STATE on page 250

Equivalent key **[Analysis] - Fixture Simulator - Port Matching - Port Matching**

SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).IMAGinary

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion.PORT(Pt).IMAGinary = <i>Value</i> <i>Value</i> = SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion.PORT(Pt).IMAGinary
Description	For ports 1 and 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), sets the impedance value (imaginary part) for the port impedance conversion function.

Variable

	<i>Value</i>
Description	Impedance value (imaginary part) for the port impedance conversion function
Data type	Double precision floating point type (Double)
Range	-1E+18 to 1E+18
Preset value	0
Unit	Ω (ohm)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples	<pre>Dim ZImag As Double SCPI.CALCulate(1).FSIMulator.SENDEd.ZCONversion.PORT(1).IMAGinary = -9.2E10 ZImag = SCPI.CALCulate(1).FSIMulator.SENDEd.ZCONversion.PORT(1).IMAGinary</pre>
----------	--

Related objects	<p>SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).REAL on page 247</p> <p>SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).Z0.R on page 248</p> <p>SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. STATE on page 249</p>
-----------------	--

Equivalent key	<p>SCPI.CALCulate(Ch).FSIMulator.STATE on page 250</p> <p>[Analysis] - Fixture Simulator - Port ZConversion - Port1 Z0 Imag Port2 Z0 Imag Port3 Z0 Imag Port4 Z0 Imag</p>
----------------	--

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.ZCONversion. PORT(*Pt*).REAL

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.ZCONversion.PORT(<i>Pt</i>).REAL = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).FSIMulator.SENDEd.ZCONversion.PORT(<i>Pt</i>).REAL
Description	For ports 1 and 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), sets the impedance value (real part) for the port impedance conversion function.

NOTE This command performs in the same way as “SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).Z0.R” on page 248

Variable

	<i>Value</i>
Description	Impedance value (real part) for the port impedance conversion function
Data type	Double precision floating point type (Double)
Range	0.001 to 1E7
Preset value	50
Unit	Ω (ohm)
Resolution	0.001
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples	Dim ZReal As Double SCPI.CALCulate(1).FSIMulator.SENDEd.ZCONversion.PORT(1).REAL = 3.7E5 ZReal = SCPI.CALCulate(1).FSIMulator.SENDEd.ZCONversion.PORT(1).REAL
Related objects	SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).IMAGinary on page 246 SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).Z0.R on page 248 SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. STATE on page 249
Equivalent key	SCPI.CALCulate(Ch).FSIMulator.STATE on page 250 [Analysis] - Fixture Simulator - Port ZConversion - Port1 Z0 Real Port2 Z0 Real Port3 Z0 Real Port4 Z0 Real

SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).Z0.R

Object type	Property
Syntax	SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion.PORT(Pt).Z0.R = <i>Value</i> <i>Value</i> = SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion.PORT(Pt).Z0.R
Description	For ports 1 and 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), sets the impedance value for the port impedance conversion function.

CAUTION This command clears setting value of “SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).IMAGinary” on page 246

Variable

	<i>Value</i>
Description	Impedance value for the port impedance conversion function
Data type	Double precision floating point type (Double)
Range	0.001 to 1E7
Preset value	50
Unit	Ω (ohm)
Resolution	0.001
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples	Dim ZconR As Double SCPI.CALCulate(1).FSIMulator.SENDEd.ZCONversion.PORT(1).Z0.R = 75 ZconR = SCPI.CALCulate(1).FSIMulator.SENDEd.ZCONversion.PORT(1).Z0.R
Related objects	SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).IMAGinary on page 246 SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).REAL on page 247 SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. STATE on page 249 SCPI.CALCulate(Ch).FSIMulator.STATE on page 250
Equivalent key	[Analysis] - Fixture Simulator - Port ZConversion - Port1 Z0 Real Port2 Z0 Real Port3 Z0 Real Port4 Z0 Real

SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.ZCONversion. STATE

- Object type** Property
- Syntax** SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.ZCONversion.STATE = *Status*
Status = SCPI.CALCulate(*Ch*).FSIMulator.SENDEd.ZCONversion.STATE
- Description** For all the ports of channel 1 to 9 (*Ch*), turns ON/OFF the port impedance conversion function when the fixture simulator function is ON.
- Variable**

	<i>Status</i>
Description	ON/OFF of the port impedance conversion function
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the port impedance conversion function. • False or 0 Turns OFF the port impedance conversion function.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim Zcon As Boolean
SCPI.CALCulate(1).FSIMulator.SENDEd.ZCONversion.STATE = True
Zcon = SCPI.CALCulate(1).FSIMulator.SENDEd.ZCONversion.STATE
```
- Related objects**
- SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).IMAGinary on page 246
- SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).REAL on page 247
- SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).Z0.R on page 248
- SCPI.CALCulate(Ch).FSIMulator.STATE on page 250
- Equivalent key** **[Analysis] - Fixture Simulator - Port ZConversion - Port ZConversion**

## SCPI.CALCulate(*Ch*).FSIMulator.STATe

|             |                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                     |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).FSIMulator.STATe = <i>Status</i><br><i>Status</i> = SCPI.CALCulate( <i>Ch</i> ).FSIMulator.STATe |
| Description | Turns ON/OFF the fixture simulator function of channels 1 to 16 ( <i>Ch</i> ).                                               |
| Variable    |                                                                                                                              |

|              | <i>Status</i>                                                                                                                                                                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the fixture simulator function                                                                                                                                                                                                        |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                          |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the fixture simulator function.</li> <li>• False or 0                      Turns OFF the fixture simulator function.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                                      |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|          |                                                                                                                        |
|----------|------------------------------------------------------------------------------------------------------------------------|
| Examples | <pre>Dim FxtSim As Boolean SCPI.CALCulate(1).FSIMulator.STATe = True FxtSim = SCPI.CALCulate(1).FSIMulator.STATe</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------|

|                |                                                           |
|----------------|-----------------------------------------------------------|
| Equivalent key | <b>[Analysis] - Fixture Simulator - Fixture Simulator</b> |
|----------------|-----------------------------------------------------------|

## SCPI.CALCulate(*Ch*).PARAmeter.COUNT

|             |                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                 |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).PARAmeter.COUNT = <i>Value</i><br><i>Value</i> = SCPI.CALCulate( <i>Ch</i> ).PARAmeter.COUNT |
| Description | Sets the number of traces of channels 1 to 16 ( <i>Ch</i> ).                                                             |
| Variable    |                                                                                                                          |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Number of traces                                                                                                                                                                                             |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | Varies depending on the upper limit setting for the channel/trace number.                                                                                                                                    |
| Preset value | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim TraceNum As Long
SCPI.CALCulate(1).PARAmeter.COUNT = 4
TraceNum = SCPI.CALCulate(1).PARAmeter.COUNT
```

**Equivalent key**     **[Display] - Num of Traces**

## SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).DEFine

|             |                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                             |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).PARAmeter( <i>Tr</i> ).DEFine = <i>Param</i><br><i>Param</i> = SCPI.CALCulate( <i>Ch</i> ).PARAmeter( <i>Tr</i> ).DEFine |
| Description | For channels 1 to 16 ( <i>Ch</i> ), sets the measurement parameter of traces 1 to 16 ( <i>Tr</i> ).                                                  |
| Variable    |                                                                                                                                                      |

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Measurement parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"S11"                Specifies S11.</li> <li>•"S21"                Specifies S21.</li> <li>•"S31"                Specifies S31.</li> <li>•"S41"                Specifies S41.</li> <li>•"S12"                Specifies S12.</li> <li>•"S22"                Specifies S22.</li> <li>•"S32"                Specifies S32.</li> <li>•"S42"                Specifies S42.</li> <li>•"S13"                Specifies S13.</li> <li>•"S23"                Specifies S23.</li> <li>•"S33"                Specifies S33.</li> <li>•"S43"                Specifies S43.</li> <li>•"S14"                Specifies S14.</li> <li>•"S24"                Specifies S24.</li> <li>•"S34"                Specifies S34.</li> <li>•"S44"                Specifies S44.</li> <li>•"A"                    Specifies A.</li> <li>•"B"                    Specifies B.</li> <li>•"C"                    Specifies C.</li> <li>•"D"                    Specifies D.</li> <li>•"R1"                  Specifies R1.</li> <li>•"R2"                  Specifies R2.</li> <li>•"R3"                  Specifies R3.</li> <li>•"R4"                  Specifies R4.</li> </ul> |
| Preset value | "S11"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

### Examples

```
Dim MeasPara As String
SCPI.CALCulate(1).PARAmeter(1).DEFine = "s21"
MeasPara = SCPI.CALCulate(1).PARAmeter(1).DEFine
```

Equivalent key **[Meas] - S11|S21|S31|S41|S12|S22|S32|S42|S13|S23|S33|S43|S14|S24|S34|S44|A|B|C|D|R1|R2|R3|R4**

### **SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect**

Object type Method

Syntax SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect

Description Sets traces 1 to 16 (*Tr*) of channels 1 to 16 (*Ch*) to the active trace.  
 You can set only a trace displayed to the active trace. If this object is used to set a trace not displayed to the active trace, an error occurs when executed and the object is ignored. (No read)

Variable

**Table 7-10 Variable (*Tr*)**

|              | <i>Tr</i>                                                                                     |
|--------------|-----------------------------------------------------------------------------------------------|
| Description  | Trace number                                                                                  |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 1 to 16                                                                                       |
| Preset value | 1                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples SCPI.CALCulate(2).PARAmeter(2).SElect

Related objects SCPI.CALCulate(Ch).SElected.CORRection.EDELay. MEDium on page 265  
 SCPI.CALCulate(Ch).SElected.CORRection.EDELay. TIME on page 266  
 SCPI.CALCulate(Ch).SElected.CORRection.EDELay. WGCutoff on page 267  
 SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOffset on page 521

Equivalent key **[Trace Prev] / [Trace Next]**

## SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SPORT

|                |                                                                                                                                                    |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                           |
| Syntax         | SCPI.CALCulate( <i>Ch</i> ).PARAmeter( <i>Tr</i> ).SPORT = <i>Value</i><br><i>Value</i> = SCPI.CALCulate( <i>Ch</i> ).PARAmeter( <i>Tr</i> ).SPORT |
| Description    | For traces 1 to 16 ( <i>Tr</i> ) of channels 1 to 16 ( <i>Ch</i> ), sets the output port used for absolute measurement.                            |
| Variable       |                                                                                                                                                    |

|              | <i>Value</i>                                                                                                                               |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of the output port                                                                                                                 |
| Data type    | Long integer type (Long)                                                                                                                   |
| Range        | 1 to 4                                                                                                                                     |
| Preset value | 1                                                                                                                                          |
| Note         | You need to set the measurement parameter for absolute measurement with the “SCPI.CALCulate(Ch).PARAmeter(Tr).DEFine” on page 252 command. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Tr*), refer to Table 7-10, “Variable (Tr),” on page 253.

|                |                                                                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example of use | <pre>Dim Sport As Long SCPI.CALCulate(1).PARAmeter(1).DEFine = "B" SCPI.CALCulate(1).PARAmeter(1).SPORT = 4 Sport = SCPI.CALCulate(1).PARAmeter(1).SPORT</pre> |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                 |                                                     |
|-----------------|-----------------------------------------------------|
| Related objects | SCPI.CALCulate(Ch).PARAmeter(Tr).DEFine on page 252 |
|-----------------|-----------------------------------------------------|

|                |                                                                              |
|----------------|------------------------------------------------------------------------------|
| Equivalent key | <b>[Meas] - Absolute - A(1)~A(4)...D(1)~D(4)...R1(1)~R1(4)...R4(1)~R4(4)</b> |
|----------------|------------------------------------------------------------------------------|

## SCPI.CALCulate(*Ch*).SElected.BLIMit.DB

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.BLIMit.DB = *Value*  
*Value* = SCPI.CALCulate(*Ch*).SElected.BLIMit.DB

**Description** For channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect command), sets the bandwidth threshold value (attenuation from the peak) of the bandwidth test.

**Variable**

|              | <i>Value</i>                                  |
|--------------|-----------------------------------------------|
| Description  | Bandwidth N dB points.                        |
| Data type    | Double precision floating point type (Double) |
| Range        | 0 to 5E8                                      |
| Preset value | 0                                             |
| Unit         | dB                                            |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples**

```
Dim BLimDB As Double
SCPI.CALCulate(1).SElected.BLIMit.DB = 3
BLimDB = SCPI.CALCulate(1).SElected.BLIMit.DB
```

**Related objects** SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect on page 253  
 SCPI.CALCulate(*Ch*).SElected.BLIMit.STATe on page 262

**Equivalent key** **[Analysis] - Bandwidth Limit - N dB Points**

## SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.MARKer

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.MARKer = *Status*  
*Status* = SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.MARKer

**Description** For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect command), turns ON/OFF the marker display of the bandwidth test.

**Variable**

|              |                                                                                                                                                                                                                           |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Status</i>                                                                                                                                                                                                             |
| Description  | ON/OFF of the bandwidth marker.                                                                                                                                                                                           |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                    |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•True or -1                      Turns ON the bandwidth marker.</li> <li>•False or 0                      Turns OFF the bandwidth marker.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim BLimMk As Boolean
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.BLIMit.DISPlay.MARKer = True
BLimMk = SCPI.CALCulate(1).SElected.BLIMit.DISPlay.MARKer
```

**Related objects** SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect on page 253  
SCPI.CALCulate(*Ch*).SElected.BLIMit.STATe on page 262  
SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.VALue on page 257

**Equivalent key** **[Analysis] - Bandwidth Limit - BW Marker**

## SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.VALue

**Object type** Property

**Syntax** SCPI.CALCulate(*CH*).SElected.BLIMit.DISPlay.VALue = *Status*  
*Status* = SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.VALue

**Description** For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect command), turns ON/OFF the bandwidth value display of the bandwidth test.

**Variable**

|              |                                                                                                                                                                                                                               |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                          |
| Description  | ON/OFF of the bandwidth display of the bandwidth test.                                                                                                                                                                        |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                        |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the bandwidth display.</li> <li>• False or 0                      Turns OFF the bandwidth display.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                    |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim BLimVal As Boolean
SCPI.CALCulate(1).PARAmeter(1).SElectSCPI.CALCulate(1).SElected.BLI
Mit.DISPlay.VALue = True
BLimVal = SCPI.CALCulate(1).SElected.BLIMit.DISPlay.VALue
```

**Related objects**

SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect on page 253

SCPI.CALCulate(*Ch*).SElected.BLIMit.STATe on page 262

SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.MARKer on page 256

**Equivalent key** **[Analysis] - Bandwidth Limit - BW Display**

## SCPI.CALCulate(Ch).SElected.BLIMit.FAIL

**Object type** Property

**Syntax** *Status* = SCPI.CALCulate(*Ch*).SElected.BLIMit.FAIL

**Description** For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAMeter(Tr).SElect command), reads out the bandwidth limit test result. (Read only)

**Variable**

|             | <i>Status</i>                                                                                                                                                                                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | The bandwidth limit test result                                                                                                                                                                                                                                 |
| Data type   | Boolean type (Boolean)                                                                                                                                                                                                                                          |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•True or -1                      Turns ON the bandwidth limit test result is FAIL.</li> <li>•False or 0                      Turns OFF the bandwidth limit test result is PASS.</li> </ul> |
| Note        | When the bandwidth limit test if set to OFF, False or 0 is always read out.                                                                                                                                                                                     |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim Result As Boolean
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.BLIMit.STATe = True
Result = SCPI.CALCulate(1).SElected.BLIMit.FAIL
```

**Related objects** SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253  
 SCPI.CALCulate(Ch).SElected.BLIMit.STATe on page 262

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CALCulate(*Ch*).SElected.BLIMit.MAXimum

|             |                                                                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                            |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.BLIMit.MAXimum = <i>Value</i><br><i>Value</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.BLIMit.MAXimum            |
| Description | For channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAmeter(Tr).SElect command), sets the upper limit value of the bandwidth test. |

### Variable

|              | <i>Value</i>                                  |
|--------------|-----------------------------------------------|
| Description  | Maximum bandwidth                             |
| Data type    | Double precision floating point type (Double) |
| Range        | 0 to 1E12                                     |
| Preset value | 0                                             |
| Unit         | Hz (hertz), dBm or second                     |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

### Examples

```
Dim BLimMax As Double
SCPI.CALCulate(1).SElected.BLIMit.MAXimum = 1E9
BLimMax = SCPI.CALCulate(1).SElected.BLIMit.MAXimum
```

### Related objects

SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
 SCPI.CALCulate(Ch).SElected.BLIMit.STATe on page 262  
 SCPI.CALCulate(Ch).SElected.BLIMit.MINimum on page 260

### Equivalent key

**[Analysis] - Bandwidth Limit - Max Bandwidth**

## SCPI.CALCulate(*Ch*).SElected.BLIMit.MINimum

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.BLIMit.MINimum = *Value*  
*Value* = SCPI.CALCulate(*Ch*).SElected.BLIMit.MINimum

**Description** For channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect command), sets the lower limit value of the bandwidth test.

**Variable**

|              | <i>Value</i>                                  |
|--------------|-----------------------------------------------|
| Description  | Minimum bandwidth                             |
| Data type    | Double precision floating point type (Double) |
| Range        | 0 to 1E12                                     |
| Preset value | 0                                             |
| Unit         | Hz (hertz), dBm or second                     |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim BLimMin As Double
SCPI.CALCulate(1).SElected.BLIMit.MINimum = 1E6
BLimMin = SCPI.CALCulate(1).SElected.BLIMit.MINimum
```

**Related objects** SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect on page 253  
 SCPI.CALCulate(*Ch*).SElected.BLIMit.STATe on page 262  
 SCPI.CALCulate(*Ch*).SElected.BLIMit.MAXimum on page 259

**Equivalent key** **[Analysis] - Bandwidth Limit - Min Bandwidth**

## SCPI.CALCulate(*Ch*).SElected.BLIMit.REPort.DATA

|             |                                                                                                                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                     |
| Syntax      | <i>Data</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.BLIMit.REPort.DATA                                                                                                                        |
| Description | For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate( <i>Ch</i> ).PARAmeter( <i>Tr</i> ).SElect command), reads out the bandwidth value of the bandwidth test. |

### Variable

|             | <i>Data</i>                                   |
|-------------|-----------------------------------------------|
| Description | The bandwidth value of the bandwidth          |
| Data type   | Double precision floating point type (Double) |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim BWData As Double SCPI.CALCulate(1).PARAmeter(1).SElect BWData = SCPI.CALCulate(1).SElected.BLIMit.REPort.DATA</pre>                |
| Related objects | <p>SCPI.CALCulate(<i>Ch</i>).PARAmeter(<i>Tr</i>).SElect on page 253</p> <p>SCPI.CALCulate(<i>Ch</i>).SElected.BLIMit.STAtE on page 262</p> |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                          |

## SCPI.CALCulate(*Ch*).SElected.BLIMit.STATe

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.BLIMit.STATe = *Status*  
*Status* = SCPI.CALCulate(*Ch*).SElected.BLIMit.STATe

**Description** For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect command), turns ON/OFF the bandwidth test function.

**Variable**

|              | <i>Status</i>                                                                                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF the bandwidth test function.                                                                                                                                                                                                     |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                  |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•True or -1                      Turns ON the bandwidth test function.</li> <li>•False or 0                      Turns OFF the bandwidth test function.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                              |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim BLimTest As Boolean
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.BLIMit.STATe = True
BLimTest = SCPI.CALCulate(1).SElected.BLIMit.STATe
```

**Related objects**

- SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect on page 253
- SCPI.CALCulate(*Ch*).SElected.BLIMit.DB on page 255
- SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.MARKer on page 256
- SCPI.CALCulate(*Ch*).SElected.BLIMit.DISPlay.VALue on page 257
- SCPI.CALCulate(*Ch*).SElected.BLIMit.FAIL on page 258
- SCPI.CALCulate(*Ch*).SElected.BLIMit.MAXimum on page 259
- SCPI.CALCulate(*Ch*).SElected.BLIMit.MINimum on page 260
- SCPI.CALCulate(*Ch*).SElected.BLIMit.REPort.DATA on page 261

**Equivalent key**

**[Analysis] - Bandwidth Limit - BW Test**

## SCPI.CALCulate(*Ch*).SElected.CONVersion.FUNCTION

|             |                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                           |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.CONVersion.FUNCTION = <i>Param</i><br><i>Param</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.CONVersion.FUNCTION |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), select the parameter after conversion using the parameter conversion function.             |
| Variable    |                                                                                                                                                    |

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | The parameter after conversion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Range        | Select from the following. <ul style="list-style-type: none"> <li>•"ZREFlection"      Specifies the equivalent impedance in reflection measurement.</li> <li>•"ZTRansmit"      Specifies the equivalent impedance(series) in transmission measurement.</li> <li>•"YREFlection"      Specifies the equivalent admittance in reflection measurement.</li> <li>•"YTRansmit"      Specifies the equivalent admittance(series) in transmission measurement.</li> <li>•"INVersion"      Specifies the inverse S-parameter.</li> <li>•"ZTSHunt"      Specifies the equivalent impedance(shunt) in transmission measurement.</li> <li>•"YTSHunt"      Specifies the equivalent admittance(shunt) in transmission measurement.</li> <li>•"CONJugation"      Specifies the conjugate.</li> </ul> |
| Preset value | "ZREFlection"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

|                 |                                                                                                                                                                                                 |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Func As String SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.CONVersion.FUNCTION = "ztr" Func = SCPI.CALCulate(1).SElected.CONVersion.FUNCTION</pre>                |
| Related objects | <p>SCPI.CALCulate(Ch).SElected.CONVersion.STATe on page 264</p> <p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p> <p>SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOFFset on page 521</p> |
| Equivalent key  | <b>[Analysis] - Conversion - Z:Reflection Z:Transmission Y:Reflection Y:Transmission 1/S Z:Trans-Shunt Y:Trans-Shunt Conjugation</b>                                                            |

## SCPI.CALCulate(Ch).SElected.CONVersion.STATe

|             |                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                     |
| Syntax      | SCPI.CALCulate(Ch).SElected.CONVersion.STATe = <i>Status</i><br><i>Status</i> = SCPI.CALCulate(Ch).SElected.CONVersion.STATe |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), turns ON/OFF the parameter conversion function.                      |
| Variable    |                                                                                                                              |

|              |                                                                                                                                                                                                                                                     |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                                                |
| Description  | ON/OFF of the parameter conversion function                                                                                                                                                                                                         |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                              |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•True or -1                      Turns ON the parameter conversion function.</li> <li>•False or 0                      Turns OFF the parameter conversion function.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                                          |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Conv As Boolean SCPI.CALCulate(1).PARAMeter(1).SElect SCPI.CALCulate(1).SElected.CONVersion.STATe = True Conv = SCPI.CALCulate(1).SElected.CONVersion.STATe</pre> |
| Related objects | <p>SCPI.CALCulate(Ch).SElected.CONVersion.FUNcTION on page 263</p> <p>SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253</p>                                              |
| Equivalent key  | <b>[Analysis] - Conversion - Conversion</b>                                                                                                                                |

**SCPI.CALCulate(Ch).SElected.CORRection.EDElay.  
MEDium**

|             |                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                   |
| Syntax      | SCPI.CALCulate(Ch).SElected.CORRection.EDElay.MEDium = <i>Param</i><br><i>Param</i> = SCPI.CALCulate(Ch).SElected.CORRection.EDElay.MEDium |
| Description | For calculating the electrical delay time of Channel 1 to 16 ( <i>Ch</i> ), select the media type.                                         |
| Variable    |                                                                                                                                            |

|              | <i>Param</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Select the media type for calculating the electrical delay time.                                                                                                                                             |
| Data type    | Character string type (String)                                                                                                                                                                               |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"COAXial"               Selects coaxial as a media type.</li> <li>•"WAVeguide"           Selects waveguide as a media type.</li> </ul> |
| Preset value | "COAXial"                                                                                                                                                                                                    |

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

|                 |                                                                                                                                                                                               |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim EdelMed As String<br>SCPI.CALCulate(1).SElected.CORRection.EDElay.MEDium = "WAVeguide"<br>EdelMed = SCPI.CALCulate(1).SElected.CORRection.EDElay.MEDium                                   |
| Related objects | SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253<br>SCPI.CALCulate(Ch).SElected.CORRection.EDElay. TIME on page 266<br>SCPI.CALCulate(Ch).SElected.CORRection.EDElay. WGCutoff on page 267 |
| Equivalent key  | <b>[Scale] - Electrical Delay - Media</b>                                                                                                                                                     |

**SCPI.CALCulate(Ch).SElected.CORRection.EDElay.TIME**

|             |                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                               |
| Syntax      | SCPI.CALCulate(Ch).SElected.CORRection.EDElay.TIME = <i>Value</i><br><i>Value</i> = SCPI.CALCulate(Ch).SElected.CORRection.EDElay.TIME |
| Description | Sets the electrical delay time of the active trace of channels 1 to 16 ( <i>Ch</i> ).                                                  |
| Variable    |                                                                                                                                        |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Electrical delay time                                                                                                                                                                                        |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -10 to 10                                                                                                                                                                                                    |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | s (second)                                                                                                                                                                                                   |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim Edel As Double
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.CORRection.EDElay.TIME = 0.2
Edel = SCPI.CALCulate(1).SElected.CORRection.EDElay.TIME
```

**Related objects**

SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253

SCPI.CALCulate(Ch).SElected.CORRection.EDElay.MEDium on page 265

SCPI.CALCulate(Ch).SElected.CORRection.EDElay.WGCutoff on page 267

**Equivalent key** **[Scale] - Electrical Delay**

## **SCPI.CALCulate(*Ch*).SElected.CORRection.EDElay.WGCutoff**

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.CORRection.EDElay.WGCutoff = *Value*  
*Value* = SCPI.CALCulate(*Ch*).SElected.CORRection.EDElay.WGCutoff

**Description** Sets the electrical delay time of the active trace of channels 1 to 16 (*Ch*).

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Cut-off frequency                                                                                                                                                                                            |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 3E5 to 3.0E9 (for E5070B)<br>3E5 to 8.5E9 (for E5071B)                                                                                                                                                       |
| Preset value | 3E5                                                                                                                                                                                                          |
| Unit         | s (second)                                                                                                                                                                                                   |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim EdelWgc As Double
SCPI.CALCulate(1).SElected.CORRection.EDElay.WGCutoff = 1E9
Edel = SCPI.CALCulate(1).SElected.CORRection.EDElay.WGCutoff
```

**Related objects**

SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253

SCPI.CALCulate(Ch).SElected.CORRection.EDElay. MEDium on page 265

SCPI.CALCulate(Ch).SElected.CORRection.EDElay. TIME on page 266

**Equivalent key** **[Scale] - Electrical Delay - Cutoff Frequency**

**SCPI.CALCulate(Ch).SElected.CORRection.OFFSet.PHASE**

|             |                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                 |
| Syntax      | SCPI.CALCulate(Ch).SElected.CORRection.OFFSet.PHASE = <i>Value</i><br><i>Value</i> = SCPI.CALCulate(Ch).SElected.CORRection.OFFSet.PHASE |
| Description | Sets the phase offset of the active trace of channels 1 to 16 ( <i>Ch</i> ).                                                             |
| Variable    |                                                                                                                                          |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Phase offset                                                                                                                                                                                                 |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -360 to 360                                                                                                                                                                                                  |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | ° (degree)                                                                                                                                                                                                   |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Offset As Double SCPI.CALCulate(2).PARAMeter(1).SElect SCPI.CALCulate(2).SElected.CORRection.OFFSet.PHASE = 2.5 Offset = SCPI.CALCulate(2).SElected.CORRection.OFFSet.PHASE</pre> |
| Related objects | SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253                                                                                                                                        |
| Equivalent key  | <b>[Scale] - Phase Offset</b>                                                                                                                                                              |

## SCPI.CALCulate(*Ch*).SElected.DATA.FDATA

|             |                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.DATA.FDATA = <i>Data</i><br><i>Data</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.DATA.FDATA                                                                                                                                                                                                                              |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), sets/reads out the formatted data array. The array data element varies in the data format (specified with the SCPI.CALCulate(Ch).SElected.FORMAT object). For more information on the formatted data array, see Section “Internal Data Processing” in the <i>E5070B/E5071B Programmer’s Guide</i> . |

---

**NOTE** If valid data is not calculated because of the invalid measurement, “1.#QNB” is read out.

Variable

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates the array data (formatted data array) of NOP (number of measurement points)×2. Where n is an integer between 1 and NOP.<br><ul style="list-style-type: none"> <li>• <i>Data(n×2-2)</i>                      Data (primary value) at the n-th measurement point.</li> <li>• <i>Data(n×2-1)</i>                      Data (secondary value) at the n-th measurement point. Always 0 when the data format is not the Smith chart format or the polar format.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Note        | If there is no array data of NOP (number of measurement point)×2 when setting a formatted data array, an error occurs when executed and the object is ignored.                                                                                                                                                                                                                                                                                                                                                       |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim FmtData As Variant
SCPI.SENSE(1).SWEep.POINTs = 201
SCPI.CALCulate(1).PARAMeter(1).SElect
FmtData = SCPI.CALCulate(1).SElected.DATA.FDATA
SCPI.CALCulate(1).PARAMeter(2).SElect
SCPI.CALCulate(1).SElected.DATA.FDATA = FmtData
```

**Related objects**

- SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
- SCPI.SENSE(Ch).SWEep.POINTs on page 606
- SCPI.CALCulate(Ch).SElected.FORMAT on page 280
- SCPI.CALCulate(Ch).SElected.DATA.FMEMORY on page 270
- SCPI.CALCulate(Ch).SElected.DATA.SDATA on page 271

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CALCulate(Ch).SElected.DATA.FMEMory

|             |                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                                                                        |
| Syntax      | SCPI.CALCulate(Ch).SElected.DATA.FMEMory = <i>Data</i><br><i>Data</i> = SCPI.CALCulate(Ch).SElected.DATA.FMEMory                                                                                                                                                                                                                                                |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), sets/reads out the formatted memory array. The array data element varies in the data format (specified with the SCPI.CALCulate(Ch).SElected.FORMAT object). For more information on the formatted memory array, see Section “Internal Data Processing” in the <i>E5070B/E5071B Programmer’s Guide</i> . |

---

**NOTE** If valid data is not calculated because of the invalid measurement, “1.#QNB” is read out.

Variable

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates the array data (formatted memory array) of NOP (number of measurement points)×2. Where n is an integer between 1 and NOP.<br><br><ul style="list-style-type: none"> <li>• <i>Data(n×2-2)</i>            Data (primary value) at the n-th measurement point.</li> <li>• <i>Data(n×2-1)</i>            Data (secondary value) at the n-th measurement point. Always 0 when the data format is not the Smith chart format or the polar format.</li> </ul> <p>The index of the array starts from 0.</p> |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Note        | If there is no array data of NOP (number of measurement point)×2 when setting a formatted memory array, an error occurs when executed and the object is ignored.                                                                                                                                                                                                                                                                                                                                              |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim FmtMem As Variant
SCPI.SENSE(1).SWEp.POINTs = 201
SCPI.CALCulate(1).PARAMeter(1).SElect
FmtMem = SCPI.CALCulate(1).SElected.DATA.FMEMory
SCPI.CALCulate(1).PARAMeter(2).SElect
SCPI.CALCulate(1).SElected.DATA.FMEMory = FmtMem
```

**Related objects**

- SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
- SCPI.SENSE(Ch).SWEp.POINTs on page 606
- SCPI.CALCulate(Ch).SElected.FORMAT on page 280
- SCPI.CALCulate(Ch).SElected.DATA.FDATA on page 269
- SCPI.CALCulate(Ch).SElected.DATA.SMEMory on page 272

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CALCulate(*Ch*).SElected.DATA.SDATA

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.DATA.SDATA = *Data*  
*Data* = SCPI.CALCulate(*Ch*).SElected.DATA.SDATA

**Description** For the active trace of channels 1 to 16 (*Ch*), sets/reads out the corrected data array. For more information on the corrected data array, see Section “Internal Data Processing” in the *E5070B/E5071B Programmer’s Guide*.

---

**NOTE** If valid data is not calculated because of the invalid measurement, “1.#QNB” is read out.

---

**Variable**

|                    | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b> | Indicates the array data (corrected data array) of NOP (number of measurement points)×2. Where n is an integer between 1 and NOP.<br><ul style="list-style-type: none"> <li>• <i>Data</i>(<i>n</i>×2-2)                      Real part of the data (complex number) at the n-th measurement point.</li> <li>• <i>Data</i>(<i>n</i>×2-1)                      Imaginary part of the data (complex number) at the n-th measurement point.</li> </ul> The index of the array starts from 0. |
| <b>Data type</b>   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Note</b>        | If there is no array data of NOP (number of measurement point)×2 when setting a corrected data array, an error occurs when executed and the object is ignored.                                                                                                                                                                                                                                                                                                                           |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim CorData As Variant
SCPI.SENSE(1).SWEep.POINTs = 201
CorData = SCPI.CALCulate(1).SElected.DATA.SDATA
SCPI.SENSE(2).SWEep.POINTs = 201
SCPI.CALCulate(2).SElected.DATA.SDATA = CorData
```

**Related objects** SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
 SCPI.SENSE(Ch).SWEep.POINTs on page 606  
 SCPI.CALCulate(Ch).SElected.DATA.SMEMory on page 272  
 SCPI.CALCulate(Ch).SElected.DATA.FDATA on page 269

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CALCulate(*Ch*).SELEcted.DATA.SMEMory

|             |                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                       |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SELEcted.DATA.SMEMory = <i>Data</i><br><i>Data</i> = SCPI.CALCulate( <i>Ch</i> ).SELEcted.DATA.SMEMory                                                                                                             |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), sets/reads out the corrected memory array. For more information on the corrected memory array, see Section “Internal Data Processing” in the <i>E5070B/E5071B Programmer’s Guide</i> . |

---

**NOTE** If valid data is not calculated because of the invalid measurement, “1.#QNB” is read out.

### Variable

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates the array data (corrected memory array) of NOP (number of measurement points)×2. Where n is an integer between 1 and NOP.<br><ul style="list-style-type: none"> <li>• <i>Data</i>(<i>n</i>×2-2)      Real part of the data (complex number) at the n-th measurement point.</li> <li>• <i>Data</i>(<i>n</i>×2-1)      Imaginary part of the data (complex number) at the n-th measurement point.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Note        | If there is no array data of NOP (number of measurement point)×2 when setting a corrected memory array, an error occurs when executed and the object is ignored.                                                                                                                                                                                                                                                                                           |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim CorMem As Variant
SCPI.SENSE(1).SWEp.POINTs = 201
CorMem = SCPI.CALCulate(1).SELEcted.DATA.SMEMory
SCPI.SENSE(2).SWEp.POINTs = 201
SCPI.CALCulate(1).SELEcted.DATA.SMEMory = CorMem
```

**Related objects**

- SCPI.CALCulate(Ch).PARAmeter(Tr).SELEct on page 253
- SCPI.SENSE(Ch).SWEp.POINTs on page 606
- SCPI.CALCulate(Ch).SELEcted.DATA.SDATa on page 271
- SCPI.CALCulate(Ch).SELEcted.DATA.FMEMory on page 270

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME. CENTER

- Object type** Property
- Syntax** SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME.CENTer = *Value*  
*Value* = SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME.CENTer
- Description** For the active trace of channels 1 to 16 (*Ch*), sets the center value of the gate used for the gating function of the time domain function.
- Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | The center value of the gate                                                                                                                                                                                 |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the frequency span and the number of points.                                                                                                                                             |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | s (second)                                                                                                                                                                                                   |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim FilCent As Double
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.CENTer = 1E-8
FilCent = SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.CENTer
```
- Related objects**
- SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. SPAN on page 275
 - SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. STATE on page 277
 - SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253
- Equivalent key** **[Analysis] - Gating - Center**

SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME. SHAPe

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME.SHAPe = *Param*
Param = SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME.SHAPe

Description For the active trace of channels 1 to 16 (*Ch*), selects the shape of the gate used for the gating function of the time domain function.

Variable

	<i>Param</i>
Description	The shape of the gate
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"MAXimum" Specifies the maximum shape. •"WIDE" Specifies the wide shape. •"NORMal" Specifies the normal shape. •"MINimum" Specifies the minimum shape.
Preset value	"NORMal"

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim FilShape As String
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.SHAPe = "wide"
FilShape = SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.SHAPe
```

Related objects SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME. TYPE on page 279
SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME. STATE on page 277
SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect on page 253

Equivalent key **[Analysis] - Gating - Shape - Maximum|Wide|Normal|Minimum**

SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME.SPAN

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.FILTer.GATE.TIME.SPAN = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).SElected.FILTer.GATE.TIME.SPAN
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), sets the span value of the gate used for the gating function of the time domain function.
Variable	

	<i>Value</i>
Description	The span value of the gate
Data type	Double precision floating point type (Double)
Range	Varies depending on the frequency span and the number of points.
Preset value	2E-8
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim FilStar As Double SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.SPAN = 1E-8 FilStar = SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.SPAN</pre>
Related objects	<p>SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.CENTer on page 273</p> <p>SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.STATe on page 277</p> <p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p>
Equivalent key	[Analysis] - Gating - Span

SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. START

Object type	Property
Syntax	SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.START = <i>Value</i> <i>Value</i> = SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.START
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), sets the start value of the gate used for the gating function of the time domain function.
Variable	

	<i>Value</i>
Description	The start value of the gate
Data type	Double precision floating point type (Double)
Range	Varies depending on the frequency span and the number of points.
Preset value	-1E-8
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim FilCent As Double SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.START = 0 FilCent = SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.START</pre>
Related objects	<p>SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. STOP on page 278</p> <p>SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. STATE on page 277</p> <p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p>
Equivalent key	[Analysis] - Gating - Start

SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME. STATE

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME.STATE = *Status*
Status = SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME.STATE

Description For the active trace of channels 1 to 16 (*Ch*), turns ON/OFF the gating function of the time domain function.

You can turn ON the gating function only when the sweep type is the linear sweep and the number of points is 3 or more. If you execute this object to try to turn ON the gating function when the sweep type is other than the linear sweep or the number of points is less than 3, an error occurs and the object is ignored.

When the sweep type is the power sweep, you cannot turn on the gating function. If you execute this object trying to turn on the gating function during the power sweep, an error occurs and the object is ignored.

Variable

	<i>Status</i>
Description	ON/OFF of the gating function
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> •True or -1 Turns ON the gating function. •False or 0 Turns OFF the gating function.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim Gating As Boolean
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.STATE = True
Gating = SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.STATE
```

Related objects SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253
SCPI.SENSE(Ch).SWEep.TYPE on page 609
SCPI.SENSE(Ch).SWEep.POINts on page 606

Equivalent key **[Analysis] - Gating - Gating**

SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. STOP

Object type Property

Syntax SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.STOP = *Value**Value* = SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.STOPDescription For the active trace of channels 1 to 16 (*Ch*), sets the stop value of the gate used for the gating function of the time domain function.

Variable

	<i>Value</i>
Description	The stop value of the gate
Data type	Double precision floating point type (Double)
Range	Varies depending on the frequency span and the number of points.
Preset value	1E-8
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim FilStop As Double
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.STOP = 2E-8
FilStop = SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.STOP
```

Related objects

SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. START on page 276

SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. STATE on page 277

SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253

Equivalent key

[Analysis] - Gating - Stop

SCPI.CALCulate(*Ch*).SElected.FILTer.GATE.TIME. TYPE

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.FILTer.GATE.TIME.TYPE = <i>Param</i> <i>Param</i> = SCPI.CALCulate(<i>Ch</i>).SElected.FILTer.GATE.TIME.TYPE
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), selects the gate type used for the gating function of the time domain function.
Variable	

	<i>Param</i>
Description	The gate type
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"BPASs" Specifies the band-pass type. •"NOTCh" Specifies the notch type.
Preset value	"BPASs"

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

Examples	<pre>Dim FilType As String SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.SHApe = "notc" FilType = SCPI.CALCulate(1).SElected.FILTer.GATE.TIME.SHApe</pre>
Related objects	<p>SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. SHApe on page 274</p> <p>SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME. STATE on page 277</p> <p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p>
Equivalent key	[Analysis] - Gating - Type

SCPI.CALCulate(Ch).SElected.FORMat

Object type	Property
Syntax	SCPI.CALCulate(Ch).SElected.FORMat = <i>Param</i> <i>Param</i> = SCPI.CALCulate(Ch).SElected.FORMat
Description	Selects the data format of the active trace of channels 1 to 16 (<i>Ch</i>).
Variable	

	<i>Param</i>
Description	Data format
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"MLOGarithmic" Specifies the log magnitude format. •"PHASe" Specifies the phase format. •"GDElay" Specifies the group delay format. •"SLINear" Specifies the Smith chart format (Lin/Phase). •"SLOGarithmic" Specifies the Smith chart format (Log/Phase). •"SCOMplex" Specifies the Smith chart format (Re/Im). •"SMITH" Specifies the Smith chart format (R+jX). •"SADMittance" Specifies the Smith chart format (G+jB). •"PLINear" Specifies the polar format (Lin/Phase). •"PLOGarithmic" Specifies the polar format (Log/Phase). •"POLar" Specifies the polar format (Re/Im). •"MLINear" Specifies the linear magnitude format. •"SWR" Specifies the SWR format. •"REAL" Specifies the real format. •"IMAGinary" Specifies the imaginary format. •"UPHase" Specifies the expanded phase format. •"PPHase" Specifies the positive phase format.
Preset value	"MLOGarithmic"

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

Examples

```
Dim Fmt As String
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.FORMat = "smit"
Fmt = SCPI.CALCulate(1).SElected.FORMat
```

Related objects SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253

Equivalent key

[Format] - Log Mag|Phase|Group Delay|Lin Mag|SWR|Real|Imaginary|Expand Phase|Positive Phase

[Format] - Smith - Lin/Phase|Log/Phase|Real/Imag|R+jX|G+jB

[Format] - Polar - Lin/Phase|Log/Phase|Real/Imag

SCPI.CALCulate(*Ch*).SElected.FUNCTION.DATA

Object type	Property
Syntax	<i>Data</i> = SCPI.CALCulate(<i>Ch</i>).SElected.FUNCTION.DATA
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), reads out the analysis result of the SCPI.CALCulate(Ch).SElected.FUNCTION.EXECute object. (Read only)
Variable	

	<i>Data</i>
Description	<p>Indicates the array data (analysis result) of N (number of data pairs)×2. N (number of data pairs) can be read out with the SCPI.CALCulate(Ch).SElected.FUNCTION.POINts object. Where n is an integer between 1 and N.</p> <ul style="list-style-type: none"> • <i>Data</i>(<i>n</i>×2-2) Response value or analysis result of the searched n-th measurement point. • <i>Data</i>(<i>n</i>×2-1) Stimulus value of the searched n-th measurement point. Always 0 for the analysis of the mean value^{*1}, the standard deviation^{*1}, and the difference between the maximum value and the minimum value^{*1}. <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)

*1. To specify the type of the analysis, use the SCPI.CALCulate(Ch).SElected.FUNCTION.TYPE object.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim AnaData As Variant
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.FUNCTION.TYPE = "mean"
SCPI.CALCulate(1).SElected.FUNCTION.EXECute
AnaData = SCPI.CALCulate(1).SElected.FUNCTION.DATA
```

Related objects

- SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
- SCPI.CALCulate(Ch).SElected.FUNCTION.TYPE on page 292
- SCPI.CALCulate(Ch).SElected.FUNCTION.EXECute on page 286
- SCPI.CALCulate(Ch).SElected.FUNCTION.POINts on page 288

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(Ch).SElected.FUNcTion.DOMain.COUPle

Object type Property

Syntax SCPI.CALCulate(Ch).SElected.FUNcTion.DOMain.COUPle = *Status*
Status = SCPI.CALCulate(Ch).SElected.FUNcTion.DOMain.COUPle

Description For channels 1 to 16 (*Ch*), specifies whether to set the coupling of the analysis range of the SCPI.CALCulate(Ch).SElected.FUNcTion.EXECute object for all traces.

Variable

	<i>Status</i>
Description	On/off of the trace coupling of the analysis range.
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Specifies the analysis range with the trace coupling. • False or 0 Specifies the analysis range for each trace.
Preset value	True or -1

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim TrCpl As Boolean
SCPI.CALCulate(1).SElected.FUNcTion.DOMain.COUPle = False
TrCpl = SCPI.CALCulate(1).SElected.FUNcTion.DOMain.COUPle
```

Related objects SCPI.CALCulate(Ch).SElected.FUNcTion.EXECute on page 286

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNcTion.DOMain.START

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.FUNcTion.DOMain.START = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).SElected.FUNcTion.DOMain.START
Description	For channels 1 to 16 (<i>Ch</i>), sets the start value of the analysis range of the SCPI.CALCulate(<i>Ch</i>).SElected.FUNcTion.EXECute object. When the trace coupling is off, the active trace is the target to be set.

Variable

	<i>Value</i>
Description	Start value of the analysis range
Data type	Double precision floating point type (Double)
Preset value	0
Unit	Hz (hertz), dBm or s (second)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim AnaStar As Double
SCPI.CALCulate(1).SElected.FUNcTion.DOMain.START = 1.5E9
AnaStar = SCPI.CALCulate(1).SElected.FUNcTion.DOMain.START
```

Related objects

SCPI.CALCulate(*Ch*).SElected.FUNcTion.DOMain.STOP on page 285
SCPI.CALCulate(*Ch*).SElected.FUNcTion.DOMain.STATe on page 284
SCPI.CALCulate(*Ch*).SElected.FUNcTion.DOMain.COUPle on page 282
SCPI.CALCulate(*Ch*).SElected.FUNcTion.EXECute on page 286

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.DOMain.STATe

Object type Property

Syntax SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.DOMain.STATe = *Status*
Status = SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.DOMain.STATe

Description For channels 1 to 16 (*Ch*), sets whether to use an arbitrary range when executing the analysis with the SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.EXECute object.

When the trace coupling is off, the active trace is the target to be set.

Variable

	<i>Status</i>
Description	Selection of the analysis range
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Specifies an arbitrary range *1. • False or 0 Specifies the entire sweep range.
Preset value	False or 0

*1. Specify with the SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.DOMain.STARt object and the SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.DOMain.STOP object.

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim AnaRnge As Boolean
SCPI.CALCulate(1).SELEcted.FUNcTion.DOMain.STARt = 1.5E9
SCPI.CALCulate(1).SELEcted.FUNcTion.DOMain.STOP = 1.8E9
SCPI.CALCulate(1).SELEcted.FUNcTion.DOMain.STATe = True
AnaRnge = SCPI.CALCulate(1).SELEcted.FUNcTion.DOMain.STATe
```

Related objects SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.DOMain.STARt on page 283
SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.DOMain.STOP on page 285
SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.DOMain.COUPle on page 282
SCPI.CALCulate(*Ch*).SELEcted.FUNcTion.EXECute on page 286

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNction.DOMain.STOP

- Object type** Property
- Syntax** SCPI.CALCulate(*Ch*).SElected.FUNction.DOMain.STOP = *Value*
Value = SCPI.CALCulate(*Ch*).SElected.FUNction.DOMain.STOP
- Description** For channels 1 to 16 (*Ch*), sets the stop value of the analysis range of the SCPI.CALCulate(*Ch*).SElected.FUNction.EXECute object.
 When the trace coupling is off, the active trace is the target to be set.

Variable

	<i>Value</i>
Description	Stop value of the analysis range
Data type	Double precision floating point type (Double)
Preset value	0
Unit	Hz (hertz), dBm or s (second)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**

```
Dim AnaStop As Double
SCPI.CALCulate(1).SElected.FUNction.DOMain.STOP = 1.8E9
AnaStop = SCPI.CALCulate(1).SElected.FUNction.DOMain.STOP
```
- Related objects** SCPI.CALCulate(*Ch*).SElected.FUNction.DOMain.START on page 283
 SCPI.CALCulate(*Ch*).SElected.FUNction.DOMain.STAtE on page 284
 SCPI.CALCulate(*Ch*).SElected.FUNction.DOMain.COUPle on page 282
 SCPI.CALCulate(*Ch*).SElected.FUNction.EXECute on page 286
- Equivalent key** No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNction.EXECute

Object type	Method
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.FUNction.EXECute
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), executes the analysis specified with the SCPI.CALCulate(Ch).SElected.FUNction.TYPE object. (No read)
Variable	For information on the variable (<i>Ch</i>), see Table 7-6, “Variable (Ch),” on page 203.
Examples	<pre>SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.FUNction.EXECute</pre>
Related objects	SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253 SCPI.CALCulate(Ch).SElected.FUNction.TYPE on page 292 SCPI.CALCulate(Ch).SElected.FUNction.DOMain.STATE on page 284
Equivalent key	No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNction.PEXCursion

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.FUNction.PEXCursion = *Value*
Value = SCPI.CALCulate(*Ch*).SElected.FUNction.PEXCursion

Description For the active trace of channels 1 to 16 (*Ch*), sets the lower limit of peak excursion value (the minimum value of the difference relative to the right and left adjacent measurement points) when executing the peak search with the SCPI.CALCulate(*Ch*).SElected.FUNction.EXECute object. For information on the peak excursion value, see Section “Searching for the Peak” in the *E5070B/E5071B User’s Guide*.

Variable

	<i>Value</i>
Description	Lower limit of peak excursion value
Data type	Double precision floating point type (Double)
Range	0 to 5E8
Preset value	3
Unit	Varies depending on the data format. <ul style="list-style-type: none"> • Log magnitude (MLOG) : dB (decibel) • Phase (PHAS), Expanded phase (UPH) or Positive phase (PPH) : ° (degree) • Group delay (GDEL) : s (second) • Others : No unit
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim PeakExc As Double
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.FUNction.TYPE = "peak"
SCPI.CALCulate(1).SElected.FUNction.PEXCursion = 1.5
PeakExc = SCPI.CALCulate(1).SElected.FUNction.PEXCursion
```

Related objects

SCPI.CALCulate(*Ch*).PARAmeter(Tr).SElect on page 253

SCPI.CALCulate(*Ch*).SElected.FUNction.TYPE on page 292

SCPI.CALCulate(*Ch*).SElected.FUNction.PPOLarity on page 289

SCPI.CALCulate(*Ch*).SElected.FUNction.EXECute on page 286

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNcTion.POINts

Object type Property

Syntax *Value* = SCPI.CALCulate(*Ch*).SElected.FUNcTion.POINts

Description For the active trace of channels 1 to 16 (*Ch*), reads out the number of data pairs of the analysis result of the SCPI.CALCulate(*Ch*).SElected.FUNcTion.EXECute object.

For the analysis of the mean value or the search of the maximum value, 1 is always read out; for the search of all peaks or the search of all targets, the total number of searched measurement points is read out. (Read only)

Variable

	<i>Value</i>
Description	Number of analyzed data pairs
Data type	Long integer type (Long)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim AnaPoin As Long
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.FUNcTion.TYPE = "ape"
SCPI.CALCulate(1).SElected.FUNcTion.EXECute
AnaPoin = SCPI.CALCulate(1).SElected.FUNcTion.POINts
```

Related objects

SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect on page 253
 SCPI.CALCulate(*Ch*).SElected.FUNcTion.EXECute on page 286
 SCPI.CALCulate(*Ch*).SElected.FUNcTion.DATA on page 281

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNCTION.PPOLarity

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.FUNCTION.PPOLarity = *Param*
Param = SCPI.CALCulate(*Ch*).SElected.FUNCTION.PPOLarity

Description For the active trace of channels 1 to 16 (*Ch*), selects the polarity when performing the peak search with the SCPI.CALCulate(*Ch*).SElected.FUNCTION.EXECute object.

Variable

	<i>Param</i>
Description	Polarity for peak search
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"POSitive" Specifies the positive peak. •"NEGative" Specifies the negative peak. •"BOTH" Specifies both the positive peak and the negative peak.
Preset value	"POSitive"

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim PeakPol As String
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.FUNCTION.TYPE = "peak"
SCPI.CALCulate(1).SElected.FUNCTION.PPOLarity = "both"
PeakPol = SCPI.CALCulate(1).SElected.FUNCTION.PPOLarity
```

Related objects

SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect on page 253

SCPI.CALCulate(*Ch*).SElected.FUNCTION.TYPE on page 292

SCPI.CALCulate(*Ch*).SElected.FUNCTION.PEXCursion on page 287

SCPI.CALCulate(*Ch*).SElected.FUNCTION.EXECute on page 286

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNcTion.TARGet

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.FUNcTion.TARGet = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).SElected.FUNcTion.TARGet
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), selects the target value when performing the target search with the SCPI.CALCulate(<i>Ch</i>).SElected.FUNcTion.EXECute object.
Variable	

	<i>Value</i>
Description	Target value
Data type	Double precision floating point type (Double)
Range	-5E8 to 5E8
Preset value	0
Unit	Varies depending on the data format. <ul style="list-style-type: none"> • Log magnitude (MLOG) : dB (decibel) • Phase (PHAS), Expanded phase (UPH) or Positive phase (PPH) : ° (degree) • Group delay (GDEL) : s (second) • Others : No unit
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim TargVal As Double
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.FUNcTion.TYPE = "atar"
SCPI.CALCulate(1).SElected.FUNcTion.TARGet = -12.5
TargVal = SCPI.CALCulate(1).SElected.FUNcTion.TARGet
```

Related objects

- SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect on page 253
- SCPI.CALCulate(*Ch*).SElected.FUNcTion.TYPE on page 292
- SCPI.CALCulate(*Ch*).SElected.FUNcTion.TTRansition on page 291
- SCPI.CALCulate(*Ch*).SElected.FUNcTion.EXECute on page 286

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNction.TTRansition

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.FUNction.TTRansition = *Param*
Param = SCPI.CALCulate(*Ch*).SElected.FUNction.TTRansition

Description For the active trace of channels 1 to 16 (*Ch*), selects the transition type when performing the target search with the SCPI.CALCulate(*Ch*).SElected.FUNction.EXECute object. For more information on the transition type, see Section “Searching for the Target Value” in the *E5070B/E5071B User’s Guide*.

Variable

	<i>Param</i>
Description	Transition type for search
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"POSitive" Specifies the positive transition. •"NEGative" Specifies the negative transition. •"BOTH" Specifies both the positive transition and the negative transition.
Preset value	"BOTH"

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim TargTran As String
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.FUNction.TYPE = "atar"
SCPI.CALCulate(1).SElected.FUNction.TTRansition = "pos"
TargTran = SCPI.CALCulate(1).SElected.FUNction.TTRansition
```

Related objects

- SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253
- SCPI.CALCulate(Ch).SElected.FUNction.TYPE on page 292
- SCPI.CALCulate(Ch).SElected.FUNction.TARGet on page 290
- SCPI.CALCulate(Ch).SElected.FUNction.EXECute on page 286

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.FUNCtion.TYPE

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.FUNCtion.TYPE = <i>Param</i> <i>Param</i> = SCPI.CALCulate(<i>Ch</i>).SElected.FUNCtion.TYPE
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), selects the type of analysis.
Variable	

	<i>Param</i>
Description	Analysis type
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none">•"PTPeak" Specifies the analysis of the difference between the maximum value and the minimum value (Peak to Peak).•"STDEV" Specifies the analysis of the standard deviation.•"MEAN" Specifies the analysis of the mean value.•"MAXimum" Specifies the search for the maximum value.•"MINimum" Specifies the search for the minimum value.•"PEAK" Specifies the search for the peak^{*1}.•"APEak" Specifies the search for all peaks^{*1}.•"ATARget" Specifies the search for all targets^{*2}.
Preset value	"PTPeak"

*1. To specify the conditions of the peak, use the SCPI.CALCulate(*Ch*).SElected.FUNCtion.PEXCursion object and the SCPI.CALCulate(*Ch*).SElected.FUNCtion.PPOLarity object.

*2. To specify the conditions of the target, use the SCPI.CALCulate(*Ch*).SElected.FUNCtion.TARGET object and the SCPI.CALCulate(*Ch*).SElected.FUNCtion.TTRansion object.

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

Examples	<pre>Dim AnaType As String SCPI.CALCulate(1).PARAMeter(1).SElect SCPI.CALCulate(1).SElected.FUNCtion.TYPE = "atar" AnaType = SCPI.CALCulate(1).SElected.FUNCtion.TYPE</pre>
----------	---

Related objects	SCPI.CALCulate(<i>Ch</i>).PARAMeter(<i>Tr</i>).SElect on page 253 SCPI.CALCulate(<i>Ch</i>).SElected.FUNCtion.PEXCursion on page 287 SCPI.CALCulate(<i>Ch</i>).SElected.FUNCtion.PPOLarity on page 289 SCPI.CALCulate(<i>Ch</i>).SElected.FUNCtion.TARGET on page 290 SCPI.CALCulate(<i>Ch</i>).SElected.FUNCtion.TTRansion on page 291 SCPI.CALCulate(<i>Ch</i>).SElected.FUNCtion.EXECute on page 286
-----------------	--

Equivalent key	No equivalent key is available on the front panel.
----------------	--

SCPI.CALCulate(*Ch*).SElected.LIMit.DATA

- Object type** Property
- Syntax** SCPI.CALCulate(*Ch*).SElected.LIMit.DATA = *Data*
Data = SCPI.CALCulate(*Ch*).SElected.LIMit.DATA
- Description** For the active trace of channels 1 to 16 (*Ch*), sets the limit table for the limit test.
- Variable**

	<i>Data</i>
Description	<p>Indicates the array data (for limit line) of 1 + Num (number of limit lines)×5. Where n is an integer between 1 and Num.</p> <ul style="list-style-type: none"> • <i>Data</i>(0) The number of limit lines you want to set. Specify an integer ranging 0 to 100. When the number of limit lines is set to 0 (clears the limit table), the variable <i>Data</i> is only required with <i>Data</i>(0). • <i>Data</i>(<i>n</i>×5-4) The type of the n-th line. Specify an integer 0 to 2 as follows. 0: OFF 1: Upper limit line 2: Lower limit line • <i>Data</i>(<i>n</i>×5-3) The value on the horizontal axis (frequency/power/time) of the start point of the n-th line. • <i>Data</i>(<i>n</i>×5-2) The value on the horizontal axis (frequency/power/time) of the end point of the n-th line. • <i>Data</i>(<i>n</i>×5-1) The value on the vertical axis of the start point of the n-th line. • <i>Data</i>(<i>n</i>×5) The value on the vertical axis of the end point of the n-th line. <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Note	<p>If there is no array data of 1+Num (number of set lines)×5 when setting a formatted memory array, an error occurs when executed and the object is ignored. For <i>Data</i>(<i>n</i>×5-4) in the array data, if you specify an integer other than 0, 1 or 2, an error occurs when executed. For <i>Data</i>(<i>n</i>×5-3), <i>Data</i>(<i>n</i>×5-2), <i>Data</i>(<i>n</i>×5-1), and <i>Data</i>(<i>n</i>×5) in the array data, if the specified value is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.</p>

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim LimData As Variant
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.LIMit.DATA = Array(1,1,1e6,1e9,0,0)
LimData = SCPI.CALCulate(1).SElected.LIMit.DATA

SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.LIMit.DATA = Array(0) 'Clear Limit Table
```

COM Object Reference

SCPI.CALCulate(Ch).SElected.LIMit.DATA

```
Dim LimData(5) As Variant
Dim Ref As Variant
LimData(0) = 1
LimData(1) = 1
LimData(2) = 1e6
LimData(3) = 1e9
LimData(4) = 0
LimData(5) = 0
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.LIMit.DATA = LimData
Ref = SCPI.CALCulate(1).SElected.LIMit.DATA

Dim LimData(0) As Variant
LimData(0) = 0
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.LIMit.DATA = LimData 'Clear Limit Table
```

Related objects	SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253 SCPI.CALCulate(Ch).SElected.LIMit.STATe on page 303 SCPI.CALCulate(Ch).SElected.LIMit.DISPlay.STATe on page 295
Equivalent key	[Analysis] - Limit Test - Edit Limit Line

SCPI.CALCulate(*Ch*).SElected.LIMit.DISPlay.STATe

- Object type** Property
- Syntax** SCPI.CALCulate(*Ch*).SElected.LIMit.DISPlay.STATe = *Status*
Status = SCPI.CALCulate(*Ch*).SElected.LIMit.DISPlay.STATe
- Description** For the active trace of channels 1 to 16 (*Ch*), turns ON/OFF the limit line display.
- Variable**

	<i>Status</i>
Description	Limit line display
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the limit line display. • False or 0 Turns OFF the limit line display.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim LimDisp As Boolean
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.LIMit = True
LimDisp = SCPI.CALCulate(1).SElected.LIMit.DISPlay.STATe
```
- Related objects** SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect on page 253  
SCPI.CALCulate(*Ch*).SElected.LIMit.STATe on page 303
- Equivalent key** **[Analysis] - Limit Test - Limit Line**

## **SCPI.CALCulate(Ch).SElected.LIMit.FAIL**

|             |                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                             |
| Syntax      | <i>Status</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.LIMit.FAIL                                      |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), reads out the limit test result. (Read only) |
| Variable    |                                                                                                      |

|             | <i>Status</i>                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Limit test result                                                                                                                                                |
| Data type   | Boolean type (Boolean)                                                                                                                                           |
| Range       | Select from the following.<br>•True or -1                      The limit test result is FAIL.<br>•False or 0                      The limit test result is PASS. |
| Note        | When the limit test is set to OFF, False or 0 is always read out.                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Result As Boolean SCPI.CALCulate(1).PARAMeter(1).SElect SCPI.CALCulate(1).SElected.LIMit.STATe = True Result = SCPI.CALCulate(1).SElected.LIMit.FAIL</pre> |
| Related objects | SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253<br>SCPI.CALCulate(Ch).SElected.LIMit.STATe on page 303                                                          |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                  |

## SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.AMPLitude

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.AMPLitude = *Value*  
*Value* = SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.AMPLitude

**Description** For channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect command), sets the limit line amplitude offset.  
 The setting of the limit line doesn't change even if the offset value is changed.

**Variable**

|              | <i>Value</i>                                  |
|--------------|-----------------------------------------------|
| Description  | The limit line amplitude offset               |
| Data type    | Double precision floating point type (Double) |
| Range        | -5E8 to 5E8                                   |
| Preset value | 0                                             |
| Unit         | dB                                            |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim LimOffset As Double
SCPI.CALCulate(1).SElected.LIMit.OFFSet.AMPLitude = -10
LimOffset = SCPI.CALCulate(1).SElected.LIMit.OFFSet.AMPLitude
```

**Related objects** SCPI.CALCulate(*Ch*).SElected.LIMit.STATe on page 303  
 SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.MARKer on page 298  
 SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.STIMulus on page 299

**Equivalent key** **[Analysis] - Limit Test - Limit Line Offsets - Amplitude Offset**

## **SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.MARKer**

|                 |                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                                                                                              |
| Syntax          | SCPI.CALCulate( <i>Ch</i> ).SElected.LIMit.OFFSet.MARKer                                                                                                                                                                                                                                                                                            |
| Description     | <p>For channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAmeter(Tr).SElect command), sets the active marker value to amplitude offset using the limit line.</p> <p>The setting of the limit line does not change even if the offset value is changed.</p> <p>When the markers are not displayed, this command does not operate.</p> |
| Variable        | For information on the variable ( <i>Ch</i> ), see Table 7-6, “Variable (Ch),” on page 203.                                                                                                                                                                                                                                                         |
| Examples        | <pre>SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.LIMit.OFFSet.MARKer</pre>                                                                                                                                                                                                                                                     |
| Related objects | <p>SCPI.CALCulate(Ch).SElected.LIMit.STATe on page 303</p> <p>SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.AMPLitude on page 297</p> <p>SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.STIMulus on page 299</p>                                                                                                                                               |
| Equivalent key  | <b>[Analysis] - Limit Test - Limit Line Offsets - Marker -&gt; Amplitude Offset</b>                                                                                                                                                                                                                                                                 |

## SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.STIMulus

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.STIMulus = *Value*  
*Value* = SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.STIMulus

Description For channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect command), sets the stimulus offset of the limit line.

The setting of the limit line doesn't change even if the offset value is changed.

Variable

|              | <i>Value</i>                                  |
|--------------|-----------------------------------------------|
| Description  | The stimulus offset of the limit line         |
| Data type    | Double precision floating point type (Double) |
| Range        | -1E12 to 1E12                                 |
| Preset value | 0                                             |
| Unit         | Hz (hertz), dBm or second                     |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples  

```
Dim LimOffset As Double
SCPI.CALCulate(1).SElected.LIMit.OFFSet.STIMulus = 1E9
LimOffset = SCPI.CALCulate(1).SElected.LIMit.OFFSet.STIMulus
```

Related objects  
 SCPI.CALCulate(*Ch*).SElected.LIMit.STATe on page 303  
 SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.AMPLitude on page 297  
 SCPI.CALCulate(*Ch*).SElected.LIMit.OFFSet.MARKer on page 298

Equivalent key **[Analysis] - Limit Test - Limit Line Offsets - Stimulus Offset**

## SCPI.CALCulate(Ch).SElected.LIMit.REPort.ALL

|             |                                                                                                                                                                                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                    |
| Syntax      | Data = SCPI.CALCulate(Ch).SElected.LIMit.REPort.ALL                                                                                                                                                                                                                         |
| Description | For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAmeter(Tr).SElect command), reads out the bandwidth test results (stimulus value, limit test result, upper limit value, lower limit value of all measurement points). (Read only) |

Variable

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p>Indicates the array data (for limit line) of NOP (number of measurement points)×4. Where n is an integer between 1 and NOP.</p> <ul style="list-style-type: none"> <li>• <i>Data(n×4-3)</i>            The stimulus value for the measurement point.</li> <li>• <i>Data(n×4-2)</i>            The limit test result.<br/>Specify an integer -1 to 1 as follows.<br/>-1: No limit<br/>0: Fail<br/>1: Pass</li> <li>• <i>Data(n×4-1)</i>            The upper limit value at the measurement point. (If there is no limit at this point, reads out the 0.)</li> <li>• <i>Data(n×4)</i>                The lower limit value at the measurement point. (If there is no limit at this point, reads out the 0.)</li> </ul> <p>The index of the array starts from 0.</p> |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim LimData As Variant
SCPI.CALCulate(1).PARAmeter(1).SElect
LimData = SCPI.CALCulate(1).SElected.LIMit.REPort.ALL
```

- Related objects**
- SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253
  - SCPI.CALCulate(Ch).SElected.LIMit.STATe on page 303
  - SCPI.CALCulate(Ch).SElected.LIMit.REPort.DATA on page 301
  - SCPI.CALCulate(Ch).SElected.LIMit.REPort.POINts on page 302

**Equivalent key**      No equivalent key is available on the front panel.

## SCPI.CALCulate(*Ch*).SElected.LIMit.REPort.DATA

|             |                                                                                                                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                     |
| Syntax      | <i>Data</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.LIMit.REPort.DATA                                                                                                                         |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), reads out the stimulus values (frequency, power level or time) at all the measurement points that failed the limit test. (Read only) |
| Variable    |                                                                                                                                                                                              |

|             | <i>Data</i>                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates the array data for failed measurement points (can be read out with the SCPI.CALCulate(Ch).SElected.LIMit.REPort.POINts object). |
| Data type   | Variant type (Variant)                                                                                                                    |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim FailData As Variant SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.LIMit.STATe = True FailData = SCPI.CALCulate(1).SElected.LIMit.REPort.DATA</pre>           |
| Related objects | <p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p> <p>SCPI.CALCulate(Ch).SElected.LIMit.REPort.POINts on page 302</p> <p>SCPI.CALCulate(Ch).SElected.LIMit.STATe on page 303</p> |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                       |

## **SCPI.CALCulate(Ch).SElected.LIMit.REPort.POINts**

|             |                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                       |
| Syntax      | <i>Value</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.LIMit.REPort.POINts                                                                        |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), reads out the number of the measurement points that failed the limit test. (Read only) |

### Variable

|             | <i>Value</i>                             |
|-------------|------------------------------------------|
| Description | Number of measurement points that failed |
| Data type   | Long integer type (Long)                 |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

### Examples

```
Dim FailPoin As Long
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.LIMit.STATe = True
FailPoin = SCPI.CALCulate(1).SElected.LIMit.REPort.POINts
```

|                 |                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------|
| Related objects | SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253<br>SCPI.CALCulate(Ch).SElected.LIMit.STATe on page 303 |
|-----------------|------------------------------------------------------------------------------------------------------------|

|                |                                                    |
|----------------|----------------------------------------------------|
| Equivalent key | No equivalent key is available on the front panel. |
|----------------|----------------------------------------------------|

## SCPI.CALCulate(*Ch*).SElected.LIMit.STATe

|             |                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                             |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.LIMit.STATe = <i>Status</i><br><i>Status</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.LIMit.STATe |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), turns ON/OFF the limit line function.                                        |
| Variable    |                                                                                                                                      |

|              |                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                              |
| Description  | ON/OFF of the limit test function                                                                                                                                                                                                 |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                            |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the limit test function.</li> <li>• False or 0                      Turns OFF the limit test function.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                        |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim LimTest As Boolean
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.LIMit.STATe = True
LimTest = SCPI.CALCulate(1).SElected.LIMit.STATe
```

**Related objects**

SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253  
SCPI.CALCulate(Ch).SElected.LIMit.DISPlay.STATe on page 295  
SCPI.DISPlay.FSIGN on page 375

**Equivalent key**      **[Analysis] - Limit Test - Limit Test**

## SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).ACTivate

|             |                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Method                                                                                                                                                         |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer( <i>Mk</i> ).ACTivate                                                                                              |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), sets marker 1 to 9 ( <i>Mk</i> ) and reference marker ( <i>Mk</i> :10) to the active marker. (No read) |

---

**NOTE** If you set a marker not displayed to the active marker, the marker display is automatically set to ON.

---

Variable

**Table 7-11**

### Variable (*Mk*)

|              | <i>Mk</i>                                                                                     |
|--------------|-----------------------------------------------------------------------------------------------|
| Description  | Marker number                                                                                 |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 1 to 10<br>Notice that 10 is for the reference marker.                                        |
| Preset value | 1                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**  
 SCPI.CALCulate(1).PARAmeter(1).SElect  
 SCPI.CALCulate(1).SElected.MARKer(1).ACTivate

**Related objects**  
 SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
 SCPI.DISPlay.WINDow(Ch).ACTivate on page 383

**Equivalent key**  
**[Marker] - Marker 1|Marker 2|Marker 3|Marker 4|Ref Marker**  
**[Marker] - More Markers - Marker 5|Marker 6|Marker 7|Marker 8|Marker 9**

## SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).BWIDth. DATA

Object type      Property

Syntax            *Data* = SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).BWIDth.DATA

Description      For the active trace of channels 1 to 16 (*Ch*), reads out the bandwidth search result of marker 1 to 9 (*Mk*) and reference marker (*Mk*:10).  
  
 If the bandwidth search is impossible, an error occurs when executed and the object is ignored. (Read only)

Variable

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 4-element array data (bandwidth search result).<br><br>• <i>Data</i> (0)                      The bandwidth.<br>• <i>Data</i> (1)                      Center point frequency of the 2 cutoff frequency points.<br>• <i>Data</i> (2)                      The Q value.<br>• <i>Data</i> (3)                      Insertion loss<br><br>The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                 |

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.

Examples            `Dim BandData As Variant`  
`SCPI.CALCulate(1).PARAmeter(1).SElect`  
`BandData = SCPI.CALCulate(1).SElected.MARKer(1).BWIDth.DATA`

Related objects    SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
 SCPI.CALCulate(Ch).SElected.MARKer.BWIDth.STATe on page 306  
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).BWIDth. THReshold on page 307

Equivalent key     No equivalent key is available on the front panel.

**SCPI.CALCulate(Ch).SElected.MARKer.BWIDth.STATe**

Object type

Property

Syntax

SCPI.CALCulate(Ch).SElected.MARKer.BWIDth.STATe = *Status**Status* = SCPI.CALCulate(Ch).SElected.MARKer.BWIDth.STATe

Description

For the active trace of channels 1 to 16 (*Ch*), turns ON/OFF the bandwidth search result display.

Variable

|              |                                                                                                                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                                                      |
| Description  | ON/OFF of the bandwidth search result display                                                                                                                                                                                                             |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                                    |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the bandwidth search result display.</li> <li>• False or 0                      Turns OFF the bandwidth search result display.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim BandSrch As Boolean
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer.BWIDth.STATe = True
BandSrch = SCPI.CALCulate(1).SElected.MARKer.BWIDth.STATe
```

Related objects

SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253

SCPI.CALCulate(Ch).SElected.MARKer(Mk).BWIDth. DATA on page 305

SCPI.CALCulate(Ch).SElected.MARKer(Mk).BWIDth. THReshold on page 307

Equivalent key

**[Marker Search] - Bandwidth**

## SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).BWIDth. THReshold

|             |                                                                                                                                                                                                                     |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                            |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer( <i>Mk</i> ).BWIDth. THReshold = <i>Value</i><br><i>Value</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer( <i>Mk</i> ).BWIDth. THReshold                              |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), sets the bandwidth definition value (the value to define the pass-band of the filter) of marker 1 to 9 ( <i>Mk</i> ) and reference marker ( <i>Mk</i> :10). |
| Variable    |                                                                                                                                                                                                                     |

|              | <i>Value</i>                                                                                                                                                                                                                                                                       |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Bandwidth definition value (the value to define the pass band of the filter)                                                                                                                                                                                                       |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                                                                                      |
| Range        | -5E8 to 5E8                                                                                                                                                                                                                                                                        |
| Preset value | -3                                                                                                                                                                                                                                                                                 |
| Unit         | Varies depending on the data format. <ul style="list-style-type: none"> <li>• Log magnitude (MLOG): dB (decibel)</li> <li>• Phase (PHAS), Expanded phase (UPH) or Positive phase (PPH): ° (degree)</li> <li>• Group delay (GDEL): s (second)</li> <li>• Others: No unit</li> </ul> |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                       |

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.

|                 |                                                                                                                                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim BandVal As Double SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.MARKer(1).BWIDth. THReshold = -6 BandVal = SCPI.CALCulate(1).SElected.MARKer(1).BWIDth. THReshold</pre> |
| Related objects | <p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p> <p>SCPI.CALCulate(Ch).SElected.MARKer.BWIDth.STATe on page 306</p>                                                                       |
| Equivalent key  | <b>[Marker Search] - Bandwidth Value</b>                                                                                                                                                            |

## SCPI.CALCulate(*Ch*).SElected.MARKer.COUPle

|             |                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                 |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer.COUPle = <i>Status</i><br><i>Status</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer.COUPle |
| Description | For channels 1 to 16 ( <i>Ch</i> ), turns ON/OFF the marker coupling between traces.                                                     |
| Variable    |                                                                                                                                          |

|              |                                                                                                                                                                                                                         |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                    |
| Description  | ON/OFF of the marker coupling between traces                                                                                                                                                                            |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                  |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•True or -1                      Turns ON the marker coupling.</li> <li>•False or 0                      Turns OFF the marker coupling.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                                                              |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim MkrCpl As Boolean
SCPI.CALCulate(1).SElected.MARKer.COUPle = False
MkrCpl = SCPI.CALCulate(1).SElected.MARKer.COUPle
```

**Equivalent key**      **[Marker Fctn] - Couple**

## SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).DISCcrete

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).DISCcrete = *Status*  
*Status* = SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).DISCcrete

**Description** For the active trace of channels 1 to 16 (*Ch*), turns ON/OFF the discrete mode (mode in which the marker moves only at the measurement points) with marker 1 to 9 (*Mk*) and reference marker (*Mk*:10).

**Variable**

|              |                                                                                                                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                  |
| Description  | ON/OFF of the marker discrete mode                                                                                                                                                                                    |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the discrete mode.</li> <li>• False or 0                      Turns OFF the discrete mode.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                            |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim MkrDsc As Boolean
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer(1).DISCcrete = True
MkrDsc = SCPI.CALCulate(1).SElected.MARKer(1).DISCcrete
```

**Related objects** SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253

**Equivalent key** **[Marker Fctn] - Discrete**

**SCPI.CALCulate(Ch).SElected.MARKer.FUNction.  
DOMain.COUPle**

|             |                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                               |
| Syntax      | SCPI.CALCulate(Ch).SElected.MARKer.FUNction.DOMain.COUPle = <i>Status</i><br><i>Status</i> = SCPI.CALCulate(Ch).SElected.MARKer.FUNction.DOMain.COUPle |
| Description | For channels 1 to 16 ( <i>Ch</i> ), specifies whether to set the coupling of the marker search range for all traces.                                   |

## Variable

|              |                                                                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Status</i>                                                                                                                                                                                                                                               |
| Description  | On/off of the trace coupling of the marker search range.                                                                                                                                                                                                    |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                                      |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Specifies the search range with the trace coupling.</li> <li>• False or 0                      Specifies the search range for each trace.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                                                                                                  |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

## Examples

```
Dim TrCpl As Boolean
SCPI.CALCulate(1).SElected.MARKer.FUNction.DOMain.COUPle = False
TrCpl = SCPI.CALCulate(1).SElected.MARKer.FUNction.DOMain.COUPle
```

Related objects      SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. EXECute on page 314

Equivalent key      **[Marker Search] - Search Range - Couple**

## SCPI.CALCulate(*Ch*).SElected.MARKer.FUNcTion. DOMain.STARt

|             |                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                             |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer.FUNcTion.DOMain.STARt = <i>Value</i><br><i>Value</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer.FUNcTion.DOMain.STARt |
| Description | For channels 1 to 16 ( <i>Ch</i> ), sets the start value of the marker search range.<br>When the trace coupling is off, the active trace is the target to be set.    |

### Variable

|              | <i>Value</i>                                  |
|--------------|-----------------------------------------------|
| Description  | The start value of the search range           |
| Data type    | Double precision floating point type (Double) |
| Preset value | 0                                             |
| Unit         | Hz (hertz), dBm or s (second)                 |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim SchStar As Double<br>SCPI.CALCulate(1).SElected.MARKer.FUNcTion.DOMain.STARt = 1.7E9<br>SchStar = SCPI.CALCulate(1).SElected.MARKer.FUNcTion.DOMain.STARt                                                         |
| Related objects | SCPI.CALCulate(Ch).SElected.MARKer.FUNcTion. DOMain.STOP on page 313<br>SCPI.CALCulate(Ch).SElected.MARKer.FUNcTion. DOMain.STATe on page 312<br>SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTion. EXECute on page 314 |
| Equivalent key  | <b>[Marker Search] - Search Range - Start</b>                                                                                                                                                                         |

**SCPI.CALCulate(Ch).SElected.MARKer.FUNCtion.  
DOMain.STATe**

|             |                                                                                                                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                      |
| Syntax      | SCPI.CALCulate(Ch).SElected.MARKer.FUNCtion.DOMain.STATe = <i>Status</i><br><i>Status</i> = SCPI.CALCulate(Ch).SElected.MARKer.FUNCtion.DOMain.STATe                                          |
| Description | For channels 1 to 16 ( <i>Ch</i> ), sets whether to use an arbitrary range when executing the marker search.<br><br>When the trace coupling is off, the active trace is the target to be set. |

## Variable

|              |                                                                                                                                                                                                                                |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Status</i>                                                                                                                                                                                                                  |
| Description  | Selects the search range.                                                                                                                                                                                                      |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                         |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Specifies an arbitrary range*1.</li> <li>• False or 0                      Specifies the entire sweep range.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                     |

\*1. Specify with the SCPI.CALCulate(Ch).SElected.MARKer.FUNCtion.DOMain.STARt object and the SCPI.CALCulate(Ch).SElected.MARKer.FUNCtion.DOMain.STOP object.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                                                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim SchRnge As Boolean SCPI.CALCulate(1).SElected.MARKer.FUNCtion.DOMain.STARt = 1.5E9 SCPI.CALCulate(1).SElected.MARKer.FUNCtion.DOMain.STOP = 1.8E9 SCPI.CALCulate(1).SElected.MARKer.FUNCtion.DOMain.STATe = True SchRnge = SCPI.CALCulate(1).SElected.MARKer.FUNCtion.DOMain.STATe</pre> |
| Related objects | <p>SCPI.CALCulate(Ch).SElected.MARKer.FUNCtion.DOMain.STARt on page 311</p> <p>SCPI.CALCulate(Ch).SElected.MARKer.FUNCtion.DOMain.STOP on page 313</p> <p>SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNCtion.EXECute on page 314</p>                                                                 |
| Equivalent key  | <b>[Marker Search] - Search Range - Search Range [ON/OFF]</b>                                                                                                                                                                                                                                     |

## SCPI.CALCulate(*Ch*).SElected.MARKer.FUNction. DOMain.STOP

|             |                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                           |
| Syntax      | SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer.FUNction.DOMain.STOP = <i>Value</i><br><i>Value</i> = SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer.FUNction.DOMain.STOP |
| Description | For channels 1 to 16 ( <i>Ch</i> ), sets the stop value of the marker search range.<br>When the trace coupling is off, the active trace is the target to be set.   |

### Variable

|              | <i>Value</i>                                  |
|--------------|-----------------------------------------------|
| Description  | Stop value of the search range                |
| Data type    | Double precision floating point type (Double) |
| Preset value | 0                                             |
| Unit         | Hz (hertz), dBm or s (second)                 |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim SchStop As Double SCPI.CALCulate(1).SElected.MARKer.FUNction.DOMain.STOP = 1.8E9 SchStop = SCPI.CALCulate(1).SElected.MARKer.FUNction.DOMain.STOP</pre>                                                                      |
| Related objects | <p>SCPI.CALCulate(Ch).SElected.MARKer.FUNction. DOMain.START on page 311</p> <p>SCPI.CALCulate(Ch).SElected.MARKer.FUNction. DOMain.STATE on page 312</p> <p>SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. EXECute on page 314</p> |
| Equivalent key  | <b>[Marker Search] - Search Range - Stop</b>                                                                                                                                                                                          |

**SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNction.  
EXECute**

|                 |                                                                                                                                                                                                                                                                           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                    |
| Syntax          | SCPI.CALCulate( <i>Ch</i> ).SElected.MARKer( <i>Mk</i> ).FUNction.EXECute                                                                                                                                                                                                 |
| Description     | For the active trace of channels 1 to 16 ( <i>Ch</i> ), executes search with marker 1 to 9 ( <i>Mk</i> ) and reference marker ( <i>Mk</i> :10).<br><br>To specify the type of the search, use the SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE object. (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Mk</i> ), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.                                                                                     |
| Examples        | SCPI.CALCulate(1).PARAmeter(1).SElect<br>SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TYPE = "maximum"<br>SCPI.CALCulate(1).SElected.MARKer(1).FUNction.EXECute                                                                                                          |
| Related objects | SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253<br>SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE on page 320<br>SCPI.CALCulate(Ch).SElected.MARKer.FUNction. DOMain.STATE on page 312                                                                         |
| Equivalent key  | <b>[Marker Search] - Max Min</b><br><b>[Marker Search] - Peak - Search Peak Search Left Search Right</b><br><b>[Marker Search] - Target - Search Target Search Left Search Right</b>                                                                                      |

---

**NOTE** When performing the operation from the front panel, you select the search type and execute the search at the same time.

---

## SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNction. PEXCursion

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNction.PEXCursion = *Value*  
*Value* = SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNction.PEXCursion

**Description** For the active trace of channels 1 to 16 (*Ch*), sets the lower limit of peak excursion value (the minimum value of the difference relative to the right and left adjacent measurement points) when executing the peak search with marker 1 to 9 (*Mk*) and reference marker (*Mk*:10). For information on the peak excursion value, see Section “Searching for the Peak” in the *E5070B/E5071B User’s Guide*.

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                                                                                       |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Lower limit of peak excursion value                                                                                                                                                                                                                                                |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                                                                                      |
| Range        | 0 to 5E8                                                                                                                                                                                                                                                                           |
| Preset value | 3                                                                                                                                                                                                                                                                                  |
| Unit         | Varies depending on the data format. <ul style="list-style-type: none"> <li>• Log magnitude (MLOG): dB (decibel)</li> <li>• Phase (PHAS), Expanded phase (UPH) or Positive phase (PPH): ° (degree)</li> <li>• Group delay (GDEL): s (second)</li> <li>• Others: No unit</li> </ul> |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                       |

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.

**Examples**

```
Dim PeakExc As Double
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TYPE = "peak"
SCPI.CALCulate(1).SElected.MARKer(1).FUNction.PEXCursion = 0.2
PeakExc = SCPI.CALCulate(1).SElected.MARKer(1).FUNction.PEXCursion
```

**Related objects** SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE on page 320  
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. PPOLarity on page 316

**Equivalent key** **[Marker Search] - Peak - Peak Excursion**

**SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction.PPOLarity**

|             |                                                                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                |
| Syntax      | SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction.PPOLarity = <i>Param</i><br><i>Param</i> = SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction.PPOLarity                    |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), selects the polarity of the peak search with marker 1 to 9 ( <i>Mk</i> ) and reference marker ( <i>Mk</i> :10). |

## Variable

|              |                                                                                                                                                                                                                                                                                                                            |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Param</i>                                                                                                                                                                                                                                                                                                               |
| Description  | Polarity for peak search                                                                                                                                                                                                                                                                                                   |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                             |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"POSitive"                      Specifies the positive peak.</li> <li>•"NEGative"                      Specifies the negative peak.</li> <li>•"BOTH"                              Specifies both the positive peak and the negative peak.</li> </ul> |
| Preset value | "POSitive"                                                                                                                                                                                                                                                                                                                 |

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-11, "Variable (Mk)," on page 304, respectively.

## Examples

```
Dim PeakPol As String
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TYPE = "peak"
SCPI.CALCulate(1).SElected.MARKer(1).FUNction.PPOLarity = "both"
PeakPol = SCPI.CALCulate(1).SElected.MARKer(1).FUNction.PPOLarity
```

## Related objects

SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253  
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE on page 320  
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. PEXCursion on page 315

## Equivalent key

**[Marker Search] - Peak - Peak Polarity**

## SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNction. TARGet

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNction.TARGet = *Value*  
*Value* = SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNction.TARGet

**Description** For the active trace of channels 1 to 16 (*Ch*), sets the target value to be searched with marker 1 to 9 (*Mk*) and reference marker (*Mk*:10).

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                                                                                       |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Target value for target search                                                                                                                                                                                                                                                     |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                                                                                      |
| Range        | -5E8 to 5E8                                                                                                                                                                                                                                                                        |
| Preset value | 0                                                                                                                                                                                                                                                                                  |
| Unit         | Varies depending on the data format. <ul style="list-style-type: none"> <li>• Log magnitude (MLOG): dB (decibel)</li> <li>• Phase (PHAS), Expanded phase (UPH) or Positive phase (PPH): ° (degree)</li> <li>• Group delay (GDEL): s (second)</li> <li>• Others: No unit</li> </ul> |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                       |

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.

**Examples**

```
Dim TargVal As Double
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TARGet = -12.5
TargVal = SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TARGet
```

**Related objects** SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE on page 320  
SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TTRAnsition on page 319

**Equivalent key** **[Marker Search] - Target - Target Value**

**SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TRACking**

|             |                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                   |
| Syntax      | SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction.TRACking = <i>Status</i><br><i>Status</i> = SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction.TRACking                                                       |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), turns ON/OFF the search tracking (function to repeat search for each sweep) for marker 1 to 9 ( <i>Mk</i> ) and reference marker ( <i>Mk</i> :10). |

## Variable

|              | <i>Status</i>                                                                                                                                                                                                             |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the marker search tracing                                                                                                                                                                                       |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                    |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the search tracking.</li> <li>• False or 0                      Turns OFF the search tracking.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                |

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.

## Examples

```
Dim SrchTrac As Boolean
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TYPE = "targ"
SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TRACking = True
SrchTrac = SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TRACking
```

## Related objects

SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253  
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE on page 320  
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. EXECute on page 314

## Equivalent key

**[Marker Search] - Tracking**

## SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNcTion. TTRansition

- Object type** Property
- Syntax** SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNcTion.TTRansition = *Param*  
*Param* = SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).FUNcTion.TTRansition
- Description** For marker 1 to 9 (*Mk*) and reference marker (*Mk*:10) of the active trace of channels 1 to 16 (*Ch*), selects the transition type of the target search. For more information on the transition type, see Section “Searching for the Target Value” in the *E5070B/E5071B User’s Guide*.

**Variable**

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Transition type for search                                                                                                                                                                                                                                                                                                  |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                              |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"POSitive"                Specifies the positive transition.</li> <li>•"NEGative"               Specifies the negative transition.</li> <li>•"BOTH"                    Specifies both the positive transition and the negative transition.</li> </ul> |
| Preset value | "BOTH"                                                                                                                                                                                                                                                                                                                      |

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.

- Examples**
- ```
Dim TargTran As String
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer(1).FUNcTion.TYPE = "targ"
SCPI.CALCulate(1).SElected.MARKer(1).FUNcTion.TTRansition = "neg"
TargTran = SCPI.CALCulate(1).SElected.MARKer(1).FUNcTion.TTRansition
```

- Related objects**
- SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
 - SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTion. TYPE on page 320
 - SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNcTion. TARGet on page 317

- Equivalent key** **[Marker Search] - Target - Target Transition**

SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE

Object type	Property
Syntax	SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE = <i>Param</i> <i>Param</i> = SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TYPE
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), selects the search type for marker 1 to 9 (<i>Mk</i>) and reference marker (<i>Mk</i> :10).
Variable	

	<i>Param</i>
Description	Search type of marker
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"MAXimum" Sets the search type to the maximum value. •"MINimum" Sets the search type to the minimum value. •"PEAK" Sets the search type to the peak search ^{*1}. •"LPEak" Sets the search type to the peak search ^{*1} to the left from the marker position. •"RPEak" Sets the search type to the peak search ^{*1} to the right from the marker position. •"TARGet" Sets the search type to the target search ^{*2}. •"LTARget" Sets the search type to the target search ^{*2} to the left from the marker position. •"RTARget" Sets the search type to the target search ^{*2} to the right from the marker position.
Preset value	"MAXimum"

*1. To specify the conditions of the peak, use the SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. PEXCursion object and the SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. PPOLarity object.

*2. To specify the conditions of the target, use the SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TARGet object and the SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TTRansition object.

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-11, "Variable (Mk)," on page 304, respectively.

Examples

```
Dim SrchType As String
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TYPE = "targ"
SrchType = SCPI.CALCulate(1).SElected.MARKer(1).FUNction.TYPE
```

Related objects

SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. PEXCursion on page 315
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. PPOLarity on page 316
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TARGet on page 317
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. TTRansition on page 319
 SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNction. EXECute on page 314

Equivalent key

[Marker Search] - Max|Min
[Marker Search] - Peak - Search Peak|Search Left|Search Right
[Marker Search] - Target - Search Target|Search Left|Search Right

NOTE

When performing the operation from the front panel, you select the search type and execute the search at the same time.

SCPI.CALCulate(*Ch*).SElected.MARKer.REFerence. STATE

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.MARKer.REFerence.STATE = <i>Status</i> <i>Status</i> = SCPI.CALCulate(<i>Ch</i>).SElected.MARKer.REFerence.STATE
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), turns ON/OFF the reference marker mode.
Variable	

	<i>Status</i>
Description	ON/OFF of the reference marker mode
Data type	Boolean type (Boolean)
Range	Select from the following. • True or -1 Turns ON the reference marker mode. • False or 0 Turns OFF the reference marker mode.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim RefMode As Boolean
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer.REFerence.STATE = True
RefMode = SCPI.CALCulate(1).SElected.MARKer.REFerence.STATE
```

Related objects SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253

Equivalent key **[Marker] - Ref Marker Mode**

SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).SET

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.MARKer(<i>Mk</i>).SET = <i>Param</i>
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), sets the value at the position of marker 1 to 9 (<i>Mk</i>) and reference marker (<i>Mk</i> :10) to the value of the instrument setting item (<i>Param</i>).
Variable	

	<i>Param</i>
Description	Instrument setting item
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"START" Sets the sweep start value to the stimulus value at the marker position. •"STOP" Sets the sweep stop value to the stimulus value at the marker position. •"CENTer" Sets the sweep center value to the stimulus value at the marker position. •"RLEVel" Sets the reference line value to the response value at the marker position. •"DELay" Sets the electrical delay time value to the value of the group delay at the marker position (a value smoothed with the aperture of 20%).

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-11, "Variable (Mk)," on page 304, respectively.

Examples	<pre>Dim MkrTo As String SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.MARKer(1).SET = "cent"</pre>
Related objects	SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253 SCPI.CALCulate(Ch).SElected.MARKer.REFerence. STATE on page 322
Equivalent key	[Marker Fctn] - Marker -> Start Marker -> Stop Marker -> Center Marker -> Reference Marker -> Delay

SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).STATE

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.MARKer(<i>Mk</i>).STATE = <i>Status</i> <i>Status</i> = SCPI.CALCulate(<i>Ch</i>).SElected.MARKer(<i>Mk</i>).STATE
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), turns ON/OFF the display of marker 1 to 9 (<i>Mk</i>) and reference marker (<i>Mk</i> :10).
Variable	

	<i>Status</i>
Description	ON/OFF of display of markers 1 to 9 and reference marker
Data type	Boolean type (Boolean)
Range	Select from the following. •True or -1 Turns ON the display of the marker. •False or 0 Turns OFF the display of the marker.
Preset value	False or 0

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.

Examples

```
Dim Mkr As Boolean
SCPI.CALCulate(1).PARAmeter(2).SElect
SCPI.CALCulate(1).SElected.MARKer(10).STATE = True
Mkr = SCPI.CALCulate(1).SElected.MARKer(10).STATE
```

Related objects SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253

Equivalent key When turning ON the display of the marker
[Marker] - Marker 1|Marker 2|Marker 3|Marker 4|Ref Marker
[Marker] - More Markers - Marker 5|Marker 6|Marker 7|Marker 8|Marker 9

NOTE When performing the operation from the front panel, a marker set to ON is automatically set to the active marker.

When turning OFF the display of the marker
[Marker] - Clear Marker Menu - Marker 1|Marker 2|Marker 3|Marker 4|Marker 5|Marker 6|Marker 7|Marker 8|Marker 9|Ref Marker

SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).X

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.MARKer(<i>Mk</i>).X = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).SElected.MARKer(<i>Mk</i>).X
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), sets the stimulus value for marker 1 to 9 (<i>Ch</i>) and reference marker (<i>Ch</i> :10).

Variable

	<i>Value</i>
Description	Stimulus value of the marker* ¹
Data type	Double precision floating point type (Double)
Range	Sweep start value to sweep stop value* ²
Preset value	Sweep start value* ³
Unit	Hz (hertz), dBm or s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

*1. When the reference marker mode is ON ("True" is specified with the SCPI.CALCulate(Ch).SElected.MARKer.REFERence. STATE object), it is the value relative to the reference marker.

*2. When the span value of the sweep range is 0, the range is from 0 to sweep time value.

*3. When the span value of the sweep range is 0, the preset value is 0.

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-11, "Variable (Mk)," on page 304, respectively.

Examples

```
Dim MkrX As Double
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.MARKer(1).X = 1E9
MkrX = SCPI.CALCulate(1).SElected.MARKer(1).X
```

Related objects

- SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
- SCPI.CALCulate(Ch).SElected.MARKer.REFERence. STATE on page 322
- SCPI.CALCulate(Ch).SElected.MARKer(Mk).Y on page 326

Equivalent key

[Marker] - Marker 1|Marker 2|Marker 3|Marker 4|Ref Marker

[Marker] - More Markers - Marker 5|Marker 6|Marker 7|Marker 8|Marker 9

NOTE When performing the operation from the front panel, you turn ON the marker and set the stimulus value at the same time.

SCPI.CALCulate(*Ch*).SElected.MARKer(*Mk*).Y

Object type	Property
Syntax	<i>Data</i> = SCPI.CALCulate(<i>Ch</i>).SElected.MARKer(<i>Mk</i>).Y
Description	<p>For the active trace of channels 1 to 16 (<i>Ch</i>), reads out the response value of marker 1 to 9 (<i>Mk</i>) and reference marker (<i>Mk</i>:10).</p> <p>When the reference marker mode is ON ("True" is specified with the SCPI.CALCulate(Ch).SElected.MARKer.REFERence.STATE object), the readout value is the value relative to the reference marker. (Read only)</p>

Variable

	<i>Data</i>
Description	<p>Indicates 2-element array data (response value of marker).</p> <ul style="list-style-type: none"> • <i>Data</i>(0) Response value (primary value) at the marker position. • <i>Data</i>(1) Response value (secondary value) at the marker position. Always 0 when the data format is not the Smith chart format or the polar format. <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)

For information on the variable (*Ch*) and the variable (*Mk*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-11, “Variable (Mk),” on page 304, respectively.

Examples

```
Dim MkrY As Variant
SCPI.CALCulate(1).PARAMeter(1).SElect
MkrY = SCPI.CALCulate(1).SElected.MARKer(1).Y
```

Related objects

- SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
- SCPI.CALCulate(Ch).SElected.MARKer.REFERence.STATE on page 322
- SCPI.CALCulate(Ch).SElected.MARKer(Mk).X on page 325

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.MATH.FUNCTION

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.MATH.FUNCTION = *Param*
Param = SCPI.CALCulate(*Ch*).SElected.MATH.FUNCTION

Description For the active trace of channels 1 to 16 (*Ch*), selects the data trace display method (math method between measurement data and memory trace data).
 The math result according to this setting is displayed on the data trace.

Variable

	<i>Param</i>
Description	Math method between measurement data and memory trace data
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"NORMal" Specifies <i>Data</i> (no math). •"DIVide" Specifies <i>Data / Mem</i>. •"MULTIply" Specifies <i>Data × Mem</i>. •"SUBTract" Specifies <i>Data - Mem</i>. •"ADD" Specifies <i>Data + Mem</i>. Where <i>Data</i> is the measurement data (corrected data array) and <i>Mem</i> is the data stored in the memory trace (corrected memory array).
Preset value	"NORMal"

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

Examples

```
Dim MathFunc As String
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.MATH.FUNCTION = "div"
MathFunc = SCPI.CALCulate(1).SElected.MATH.FUNCTION
```

Related objects SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253

Equivalent key **[Display] - Data Math - OFF|Data / Mem|Data * Mem|Data - Mem|Data + Mem**

SCPI.CALCulate(*Ch*).SElected.MATH.MEMorize

Object type	Method
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.MATH.MEMorize
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), copies the measurement data at the execution of this object to the memory trace. (No read)
Variable	For information on the variable (<i>Ch</i>), see Table 7-6, “Variable (Ch),” on page 203.
Examples	SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.MATH.MEMorize
Related objects	SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253
Equivalent key	[Display] - Data → Mem

SCPI.CALCulate(*Ch*).SElected.MIXer.XAXis

Type of object	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.MIXer.XAXis = <i>Param</i> <i>Param</i> = SCPI.CALCulate(<i>Ch</i>).SElected.MIXer.XAXis
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), selects the X-axis frequency when the frequency offset feature is off.
Variable	

	<i>Param</i>
Description	Selects the X-axis frequency (frequency offset: off)
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"NORMal" Specifies the normal frequency. •"RFPLo" Specifies the frequency $RF + LO$. •"RFMLo" Specifies the frequency $RF - LO$. •"LOMRf" Specifies the frequency $LO - RF$.
Preset value	"NORMal"

For information on the variable (*Ch*), refer to Table 7-6, "Variable (Ch)," on page 203.

Example of use	<pre>Dim Xaxis As String SCPI.SENSE.OFFSet.STATE = False SCPI.CALCulate(1).SElected.MIXer.XAXis = "RFPLo" Xaxis = SCPI.CALCulate(1).SElected.MIXer.XAXis</pre>
Related objects	SCPI.SENSE(Ch).OFFSet.STATE on page 598 SCPI.CALCulate(Ch).SElected.OFFset.XAXis on page 332
Equivalent key	[Sweep Setup] - Frequency Offset - X-Axis - Normal RF+LO RF-LO LO-RF

SCPI.CALCulate(*Ch*).SElected.MStatistics.DATA

Object type

Property

Syntax

Data = SCPI.CALCulate(*Ch*).SElected.MStatistics.DATA

Description

Reads out the statistics values (the mean vale, the standard deviation, and the difference between the maximum value and the minimum value) of the active trace of channels 1 to 16 (*Ch*). (Read only)

Variable

	<i>Data</i>
Description	<p>Indicates 3-element array data (statistics value).</p> <ul style="list-style-type: none"> • <i>Data</i>(0) Mean value • <i>Data</i>(1) Standard deviation • <i>Data</i>(2) Difference between the maximum value and the minimum value (Peak to Peak) <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim MstData As Variant
SCPI.CALCulate(1).PARAMeter(1).SElect
MstData = SCPI.CALCulate(1).SElected.MStatistics.DATA
```

Related objects

SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect on page 253
 SCPI.CALCulate(*Ch*).SElected.MStatistics.STATe on page 331

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.MStatistIcs.STATe

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.MStatistIcs.STATe = *Status*
Status = SCPI.CALCulate(*Ch*).SElected.MStatistIcs.STATe

Description For the active trace of channels 1 to 16 (*Ch*), turns ON/OFF the statistics values (the mean value, the standard deviation, and the difference between the maximum value and the minimum value) display.

Variable

	<i>Status</i>
Description	ON/OFF of the statistics value display
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the statistics value display. • False or 0 Turns OFF the statistics value display.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim Mst As Boolean
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.MStatistIcs.STATe = True
Mst = SCPI.CALCulate(1).SElected.MStatistIcs.STATe
```

Related objects SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect on page 253
SCPI.CALCulate(*Ch*).SElected.MStatistIcs.DATA on page 330

Equivalent key **[Marker Fctn] - Statistics**

SCPI.CALCulate(Ch).SElected.OFFset.XAXis

Type of object	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.OFFSet.XAXis = <i>Param</i> <i>Param</i> = SCPI.CALCulate(<i>Ch</i>).SElected.OFFSet.XAXis
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), selects the X-axis frequency when the frequency offset feature is on.
Variable	

	<i>Param</i>
Description	Selects the X-axis frequency (frequency offset: on)
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"BASE" Sets the normal frequency. •"STIMulus" Sets the frequency for the <i>source port</i> for the specified measurement parameter. •"RESPonse" Sets the frequency for <i>the receiver port for the specified measurement parameter</i>.
Preset value	"RESPonse"

For information on the variable (*Ch*), refer to Table 7-6, "Variable (Ch)," on page 203.

Example of use	<pre>Dim Xaxis As String SCPI.SENSE.OFFSet.STATe = True SCPI.CALCulate(1).SElected.OFFSet.XAXis = "STIMulus" Xaxis = SCPI.CALCulate(1).SElected.OFFSet.XAXis</pre>
Related objects	SCPI.SENSE(Ch).OFFSet.STATe on page 598 SCPI.CALCulate(Ch).SElected.MIXer.XAXis on page 329
Equivalent key	[Sweep Setup] - Frequency Offset - X-Axis - Base Stimulus Response

SCPI.CALCulate(*Ch*).SElected.RLIMit.DATA

Object type

Property

Syntax

SCPI.CALCulate(*Ch*).SElected.RLIMit.DATA = *Data*

Data = SCPI.CALCulate(*Ch*).SElected.RLIMit.DATA

Description

For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect command), sets the ripple limit table.

The data transfer format when this command is executed depends on the setting with the SCPI.FORMat.DATA command.

Variable

	Status
Description	<p>Indicates the array data (for ripple line) of 1 + Num (number of limit lines)×4. Where n is an integer between 1 and Num.</p> <ul style="list-style-type: none"> • <i>Data</i>(0) The number of limit lines you want to set. Specify an integer ranging 0 to 12. When the number of limit lines is set to 0 (clears the limit table), the variable <i>Data</i> is only required with <i>Data</i>(0). • <i>Data</i>(<i>n</i>×4-3) The type of the <i>n</i>-th line. Specify an integer 0 to 1 as follows. 0: OFF 1: ON • <i>Data</i>(<i>n</i>×4-2) The value on the horizontal axis (frequency/power/time) of the start point of the <i>n</i>-th line. • <i>Data</i>(<i>n</i>×4-1) The value on the horizontal axis (frequency/power/time) of the end point of the <i>n</i>-th line. • <i>Data</i>(<i>n</i>×4) The ripple line value (dB) of the <i>n</i>-th line. <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Note	<p>If there is no array data of 1+Num (number of set lines)×4 when setting a formatted memory array, an error occurs when executed and the object is ignored. For <i>Data</i>(<i>n</i>×4-3) in the array data, if you specify an integer other than 0 or 1, an error occurs when executed. For <i>Data</i>(<i>n</i>×4-2) and <i>Data</i>(<i>n</i>×4-1) in the array data, if the specified value is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.</p>

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples (1)

```
Dim RlimData As Variant
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.RLIMit.DATA = Array(1,1,1E6,1E9,0)
RlimData = SCPI.CALCulate(1).SElected.RLIMit.DATA

SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.RLIMit.DATA = Array(0) ''' Clear Ripple
Limit Table
```

Examples (2)

```
Dim RlimData(5) As Variant
Dim Ref As Variant
RlimData(0) = 1
```

COM Object Reference

SCPI.CALCulate(Ch).SElected.RLIMit.DATA

```
RLimData(1) = 1
RLimData(2) = 1e6
RLimData(3) = 1e9
RLimData(4) = 0
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.RLIMit.DATA = RLimData
Ref = SCPI.CALCulate(1).SElected.RLIMit.DATA

Dim RLimData(0) as Variant
RLimData(0) = 0
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.CALCulate(1).SElected.RLIMit.DATA = RLimData ''' Clear Ripple
Limit Table
```

Related objects	SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253 SCPI.CALCulate(Ch).SElected.RLIMit.STATe on page 340
Equivalent key	[Analysis] - Ripple Limit - Edit Ripple Limit - Add

SCPI.CALCulate(*Ch*).SElected.RLIMit.DISPlay.LINE

Object type Property

Syntax SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.LINE = Status
 Status = SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.LINE

Description For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAmeter(Tr).SElect command), turns ON/OFF the ripple limit line display.

Variable

	<i>Status</i>
Description	ON/OFF the ripple limit line display.
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> •True or -1 Turns ON the ripple limit line display. •False or 0 Turns OFF the ripple limit line display.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim RLimDisp As Boolean
SCPI.CALCulate(1).SElected.RLIMit.DISPlay.LINE = True
RLimDisp = SCPI.CALCulate(1).SElected.RLIMit.DISPlay.LINE
```

Related objects

SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253

SCPI.CALCulate(Ch).SElected.RLIMit.STATe on page 340

SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.SElect on page 336

SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.VALue on page 337

Equivalent key **[Analysis] - Ripple Limit - Ripple Limit**

SCPI.CALCulate(*Ch*).SElected.RLIMit.DISPlay.SELect

Object type Property

Syntax SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.SELect = Value
Value = SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.SELect

Description For channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAmeter(Tr).SElect command), sets the ripple limit band for ripple value display.

Variable

	<i>Value</i>
Description	The ripple limit band.
Data type	Long integer type (Long)
Range	1 to 12
Preset value	1

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim RBand As Long
SCPI.CALCulate(1).SElected.RLIMit.DISPlay.SELect = 2
RBand = SCPI.CALCulate(1).SElected.RLIMit.DISPlay.SELect
```

Related objects

SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253
SCPI.CALCulate(Ch).SElected.RLIMit.STATe on page 340
SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.LINE on page 335
SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.VALue on page 337

Equivalent key **[Analysis] - Ripple Limit - Ripple Band**

SCPI.CALCulate(*Ch*).SElected.RLIMit.DISPlay.VALue

Object type Property

Syntax SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.VALue = Param
 Param = SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.VALue

Description For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAmeter(Tr).SElect command), selects the display type of ripple value.

Variable

	<i>Param</i>
Description	The displaying type of ripple value.
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"OFF" Specifies the display off. •"ABSolute" Specifies the absolute value for display type. •"MARgin" Specifies the margin for display type.
Preset value	"OFF"

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim RDisp As String
SCPI.CALCulate(1).SElected.RLIMit.DISPlay.VALue = "ABSolute"
RDisp = SCPI.CALCulate(1).SElected.RLIMit.DISPlay.VALue
```

Related objects SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253
 SCPI.CALCulate(Ch).SElected.RLIMit.STATe on page 340
 SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.LINE on page 335
 SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.SElect on page 336

Equivalent key **[Analysis] - Ripple Limit - Ripple Value - OFF|Absolute|Margin**

SCPI.CALCulate(Ch).SElected.RLIMit.FAIL

Object type	Property
Syntax	<i>Status</i> = SCPI.CALCulate(<i>Ch</i>).SElected.RLIMit.FAIL
Description	For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAMeter(Tr).SElect command), reads out the ripple test result. (Read only)

Variable

	<i>Status</i>
Description	The ripple test result
Data type	Boolean type (Boolean)
Range	Select from the following. • True or -1 Turns ON the ripple test result is FAIL. • False or 0 Turns OFF the ripple test result is FAIL.
Note	When the ripple test is set to OFF, False or 0 is always read out.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Result As Boolean Result = SCPI.CALCulate(1).SElected.RLIMit.FAIL</pre>
Related objects	SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253 SCPI.CALCulate(Ch).SElected.RLIMit.STATe on page 340
Equivalent key	No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.RLIMit.REPort.DATA

Object type Property

Syntax *Data* = SCPI.CALCulate(*Ch*).SElected.RLIMit.REPort.DATA

Description For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect command), reads out the ripple value of the ripple test.

 The data transfer format when this command is executed depends on the setting with the SCPI.FORMAT.DATA command.(Read only)

Variable

	<i>Status</i>
Description	<p>Indicates the array data (for ripple line) of 1 + Num (number of limit lines)×3. Where n is an integer between 1 and 12.</p> <ul style="list-style-type: none"> • <i>Data</i>(0) Number of ripple limit line. • <i>Data</i>(<i>n</i>×3-2) Number of ripple limit bands. • <i>Data</i>(<i>n</i>×3-1) Ripple value. • <i>Data</i>(<i>n</i>×3) Results of ripple test. Select from the following. 0:PASS 1:FAIL. <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim RData As Variant
SCPI.CALCulate(1).PARAMeter(1).SElect
RData = SCPI.CALCulate(1).SElected.RLIMit.REPort.DATA
```

Related objects SCPI.CALCulate(*Ch*).PARAMeter(*Tr*).SElect on page 253
 SCPI.CALCulate(*Ch*).SElected.RLIMit.STATe on page 340

Equivalent key No equivalent key is available on the front panel.

SCPI.CALCulate(*Ch*).SElected.RLIMit.STATe

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.RLIMit.STATe = <i>Status</i> <i>Status</i> = SCPI.CALCulate(<i>Ch</i>).SElected.RLIMit.STATe
Description	For the active trace of channel 1 to channel 16 (specified with the SCPI.CALCulate(Ch).PARAMeter(Tr).SElect command), turns ON/OFF the ripple test function.

Variable

	<i>Status</i>
Description	ON/OFF the ripple test function
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> •True or -1 Turns ON the ripple test function. •False or 0 Turns OFF the ripple test function.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim RLimTest As Boolean
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.RLIMit.STATe = True
RLimTest = SCPI.CALCulate(1).SElected.RLIMit.STATe
```

Related objects

SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
 SCPI.CALCulate(Ch).SElected.RLIMit.DATA on page 333
 SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.LINE on page 335
 SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.SElect on page 336
 SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.VALue on page 337
 SCPI.CALCulate(Ch).SElected.RLIMit.FAIL on page 338
 SCPI.CALCulate(Ch).SElected.RLIMit.REPort.DATA on page 339

Equivalent key

[Analysis] - Ripple Limit - Ripple Limit Test

SCPI.CALCulate(*Ch*).SElected.SMOothing.APERture

Object type Property

Syntax SCPI.CALCulate(*Ch*).SElected.SMOothing.APERture = *Value*
Value = SCPI.CALCulate(*Ch*).SElected.SMOothing.APERture

Description Sets the smoothing aperture (percentage to the sweep span value) of the active trace of channels 1 to 16 (*Ch*).

Variable

	<i>Value</i>
Description	Smoothing aperture
Data type	Double precision floating point type (Double)
Range	0.05 to 25
Preset value	1.5
Unit	% (percent)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples `Dim SmoAper As Double`
`SCPI.CALCulate(1).PARAmeter(1).SElect`
`SCPI.CALCulate(1).SElected.SMOothing.APERture = 2.5`
`SmoAper = SCPI.CALCulate(1).SElected.SMOothing.APERture`

Related objects SCPI.CALCulate(*Ch*).PARAmeter(*Tr*).SElect on page 253
 SCPI.CALCulate(*Ch*).SElected.SMOothing.STATe on page 342

Equivalent key **[Avg] - Smo Aperture**

SCPI.CALCulate(Ch).SElected.SMOothing.STATe

Object type	Property
Syntax	SCPI.CALCulate(Ch).SElected.SMOothing.STATe = <i>Status</i> <i>Status</i> = SCPI.CALCulate(Ch).SElected.SMOothing.STATe
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), turns ON/OFF the smoothing.
Variable	

	<i>Status</i>
Description	ON/OFF of the smoothing
Data type	Boolean type (Boolean)
Range	Select from the following. •True or -1 Turns ON the smoothing. •False or 0 Turns OFF the smoothing.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Smo As Boolean SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.SMOothing.STATe = True Smo = SCPI.CALCulate(1).SElected.SMOothing.STATe</pre>
Related objects	SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253 SCPI.CALCulate(Ch).SElected.SMOothing.APERTure on page 341
Equivalent key	[Avg] - Smoothing

SCPI.CALCulate(*Ch*).SElected.TRANSform.TIME. CENTER

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.TRANSform.TIME.CENTer = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).SElected.TRANSform.TIME.CENTer
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), selects the center value used for the transformation function of the time domain function.
Variable	

	<i>Value</i>
Description	Center value
Data type	Double precision floating point type (Double)
Range	Varies depending on the frequency span and the number of points.
Preset value	0
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Cent As Double SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.TRANSform.TIME.CENTer = 1E-8 Cent = SCPI.CALCulate(1).SElected.TRANSform.TIME.CENTer</pre>
Related objects	<p>SCPI.CALCulate(Ch).SElected.TRANSform.TIME.SPAN on page 347</p> <p>SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATe on page 349</p> <p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p>
Equivalent key	[Analysis] - Transform - Center

SCPI.CALCulate(*Ch*).SELEcted.TRANSform.TIME.IMPulse.WIDTH

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.IMPulse.WIDTH = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.IMPulse.WIDTH
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), sets the shape of the Kayser Bessel window using the impulse width used for the transformation function of the time domain function.

Variable

	<i>Value</i>
Description	Impulse width
Data type	Double precision floating point type (Double)
Range	Varies depending on the frequency span and transformation type.
Preset value	Varies depending on the frequency span and transformation type.
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim ImpWid As Double SCPI.CALCulate(1).PARAMeter(1).SELEct SCPI.CALCulate(1).SELEcted.TRANSform.TIME.IMPulse.WIDTH = 1E-10 ImpWid = SCPI.CALCulate(1).SELEcted.TRANSform.TIME.IMPulse.WIDTH</pre>
Related objects	<p>SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.KBESsel on page 345</p> <p>SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.STEP.RTIME on page 350</p> <p>SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.STATE on page 349</p> <p>SCPI.CALCulate(<i>Ch</i>).PARAMeter(Tr).SELEct on page 253</p>
Equivalent key	[Analysis] - Transform - Center

SCPI.CALCulate(*Ch*).SELEcted.TRANSform.TIME. KBESsel

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.KBESsel = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.KBESsel
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), sets the shape of the Kayser Bessel window using β used for the transformation function of the time domain function.
Variable	

	<i>Value</i>
Description	The value of β
Data type	Double precision floating point type (Double)
Range	0 to 13
Preset value	6
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples	<pre>Dim Beta As Double SCPI.CALCulate(1).PARAMeter(1).SELEct SCPI.CALCulate(1).SELEcted.TRANSform.TIME.KBESsel = 3 Beta = SCPI.CALCulate(1).SELEcted.TRANSform.TIME.KBESsel</pre>
Related objects	<p>SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.IMPulse.WIDTH on page 344</p> <p>SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.STEP.RTIME on page 350</p> <p>SCPI.CALCulate(<i>Ch</i>).SELEcted.TRANSform.TIME.STATE on page 349</p> <p>SCPI.CALCulate(<i>Ch</i>).PARAMeter(<i>Tr</i>).SELEct on page 253</p>
Equivalent key	[Analysis] - Transform - Center

SCPI.CALCulate(Ch).SElected.TRANSform.TIME.LPFRequency

Object type	Method
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.TRANSform.TIME.LPFRequency = <i>Value</i>
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), changes the frequency range to match with the low-pass type transformation of the transformation function of the time domain function. (No read)
Variable	For information on the variable (<i>Ch</i>), see Table 7-6, “Variable (Ch),” on page 203.
Examples	SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.TRANSform.TIME.LPFRequency
Related objects	SCPI.CALCulate(Ch).SElected.TRANSform.TIME.TYPE on page 353 SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATE on page 349 SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253
Equivalent key	[Analysis] - Transform - Set Freq Low pass

SCPI.CALCulate(*Ch*).SElected.TRANSform.TIME.SPAN

Object type	Property
Syntax	SCPI.CALCulate(<i>Ch</i>).SElected.TRANSform.TIME.SPAN = <i>Value</i> <i>Value</i> = SCPI.CALCulate(<i>Ch</i>).SElected.TRANSform.TIME.SPAN
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), selects the span value used for the transformation function of the time domain function.
Variable	

	<i>Value</i>
Description	Span value
Data type	Double precision floating point type (Double)
Range	Varies depending on the frequency span and the number of points.
Preset value	2E-8
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Span As Double SCPI.CALCulate(1).PARAMeter(1).SElect SCPI.CALCulate(1).SElected.TRANSform.TIME.SPAN = 1E-8 Cent = SCPI.CALCulate(1).SElected.TRANSform.TIME.SPAN</pre>
Related objects	<p>SCPI.CALCulate(Ch).SElected.TRANSform.TIME.CENTer on page 343</p> <p>SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATE on page 349</p> <p>SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253</p>
Equivalent key	[Analysis] - Transform - Center

SCPI.CALCulate(Ch).SElected.TRANSform.TIME.START

Object type

Property

Syntax

SCPI.CALCulate(Ch).SElected.TRANSform.TIME.START = *Value**Value* = SCPI.CALCulate(Ch).SElected.TRANSform.TIME.START

Description

For the active trace of channels 1 to 16 (*Ch*), selects the start value used for the transformation function of the time domain function.

Variable

	<i>Value</i>
Description	Start value
Data type	Double precision floating point type (Double)
Range	Varies depending on the frequency span and the number of points.
Preset value	-1E-8
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim Star As Double
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.TRANSform.TIME.START = 0
Star = SCPI.CALCulate(1).SElected.TRANSform.TIME.START
```

Related objects

SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STOP on page 352

SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATe on page 349

SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253

Equivalent key

[Analysis] - Transform - Start

SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATe

Object type	Property
Syntax	SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATe = <i>Status</i> <i>Status</i> = SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATe
Description	<p>For the active trace of channels 1 to 16 (<i>Ch</i>), turns ON/OFF the transformation function of the time domain function.</p> <p>You can enable the transformation function only when the sweep type is the linear sweep and the number of points is 3 or more. If you execute this object to try to enable the transformation function when the sweep type is other than the linear sweep or the number of points is less than 3, an error occurs and the object is ignored.</p> <p>When the sweep type is the power sweep, you cannot turn on the transformation function. If you execute this object trying to turn on the transformation function during the power sweep, an error occurs and the object is ignored.</p>

Variable

	<i>Status</i>
Description	ON/OFF of the gating function
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the transformation function. • False or 0 Turns OFF the transformation function.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Trans As Boolean SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.TRANSform.TIME.STATe = True Trans = SCPI.CALCulate(1).SElected.TRANSform.TIME.STATe</pre>
Related objects	<p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p> <p>SCPI.SENSE(Ch).SWEep.TYPE on page 609</p> <p>SCPI.SENSE(Ch).SWEep.POINts on page 606</p>
Equivalent key	[Analysis] - Transform - Transform

SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STEP.RTImE

Object type Property

Syntax SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STEP.RTImE = *Value*
Value = SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STEP.RTImE

Description For the active trace of channels 1 to 16 (*Ch*), sets the shape of the Kayser Bessel window using the rise time of step signal used for the transformation function of the time domain function.

Variable

	<i>Value</i>
Description	The rise time of step signal
Data type	Double precision floating point type (Double)
Range	Varies depending on the frequency span.
Preset value	Varies depending on the frequency span.
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim RTime As Double
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.TRANSform.TIME.STEP.RTImE = 1E-10
RTime = SCPI.CALCulate(1).SElected.TRANSform.TIME.STEP.RTImE
```

Related objects SCPI.CALCulate(Ch).SElected.TRANSform.TIME.IMPulse.WIDTh on page 344
 SCPI.CALCulate(Ch).SElected.TRANSform.TIME.KBESsel on page 345
 SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATe on page 349
 SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253

Equivalent key **[Analysis] - Transform - Center**

SCPI.CALCulate(*Ch*).SElected.TRANSform.TIME. STIMulus

- Object type** Property
- Syntax** SCPI.CALCulate(*Ch*).SElected.TRANSform.TIME.STIMulus = *Param*
Param = SCPI.CALCulate(*Ch*).SElected.TRANSform.TIME.STIMulus
- Description** For the active trace of channels 1 to 16 (*Ch*), selects the stimulus type used for the transformation function of the time domain function.
- Variable**

	<i>Param</i>
Description	The stimulus type
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"IMPulse" Specifies the impulse*1. •"STEP" Specifies the step*2.
Preset value	"IMPulse"

*1. You need to select the transformation type (band-pass or low-pass) with the SCPI.CALCulate(Ch).SElected.TRANSform.TIME.TYPE object.
*2. You do not need to select the transformation type. Low-pass is selected automatically.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim StimType As String
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.TRANSform.TIME.STIMulus = "step"
StimType = SCPI.CALCulate(1).SElected.TRANSform.TIME.STIMulus
```
- Related objects** SCPI.CALCulate(Ch).SElected.TRANSform.TIME.TYPE on page 353  
SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATE on page 349  
SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253
- Equivalent key** **[Analysis] - Transform - Type - Bandpass|Lowpass Step|Lowpass Imp.**

---

**NOTE** When performing this operation from the front panel, you select the transformation type at the same time.

---

**SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STOP**

|             |                                                                                                                                                  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                         |
| Syntax      | SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STOP = <i>Value</i><br><i>Value</i> = SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STOP                 |
| Description | For the active trace of channels 1 to 16 ( <i>Ch</i> ), selects the span value used for the transformation function of the time domain function. |
| Variable    |                                                                                                                                                  |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Stop value                                                                                                                                                                                                   |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the frequency span and the number of points.                                                                                                                                             |
| Preset value | 1E-8                                                                                                                                                                                                         |
| Unit         | s (second)                                                                                                                                                                                                   |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Span As Double SCPI.CALCulate(1).PARAmeter(1).SElect SCPI.CALCulate(1).SElected.TRANSform.TIME.STOP = 2E-8 Cent = SCPI.CALCulate(1).SElected.TRANSform.TIME.STOP</pre>                    |
| Related objects | <p>SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STARt on page 348</p> <p>SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATe on page 349</p> <p>SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253</p> |
| Equivalent key  | <b>[Analysis] - Transform - Stop</b>                                                                                                                                                               |

## SCPI.CALCulate(*Ch*).SElected.TRANSform.TIME.TYPE

**Object type** Property

**Syntax** SCPI.CALCulate(*Ch*).SElected.TRANSform.TIME.TYPE = *Param*  
*Param* = SCPI.CALCulate(*Ch*).SElected.TRANSform.TIME.TYPE

**Description** For the active trace of channels 1 to 16 (*Ch*), selects the transformation type used for the transformation function of the time domain function.

**Variable**

|              |                                                                                                                                                   |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Param</i>                                                                                                                                      |
| Description  | The transformation type                                                                                                                           |
| Data type    | Character string type (String)                                                                                                                    |
| Range        | Select from the following.<br>•"BPASs"                      Specifies the band-pass*1.<br>•"LPASs"                      Specifies the low-pass*2. |
| Preset value | "BPASs"                                                                                                                                           |

\*1. You do not need to select the stimulus type. Impulse is selected automatically.  
 \*2. You need to select the stimulus type (impulse or step) with the SCPI.CALCulate(Ch).SElected.TRANSform.TIME. STIMulus object.

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

**Examples**

```
Dim Typ As String
SCPI.CALCulate(1).PARAMeter(1).SElect
SCPI.CALCulate(1).SElected.TRANSform.TIME.SHAPE = "lpas"
Typ = SCPI.CALCulate(1).SElected.TRANSform.TIME.SHAPE
```

**Related objects** SCPI.CALCulate(Ch).SElected.TRANSform.TIME. STIMulus on page 351  
 SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STATe on page 349  
 SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253

**Equivalent key** **[Analysis] - Transform - Type - Bandpass|Lowpass Step|Lowpass Imp.**

**NOTE** When performing this operation from the front panel, you select the stimulus type at the same time.

## SCPI.CONTRol.HANDler.A.DATA

Object type Property

Syntax SCPI.CONTRol.HANDler.A.DATA = *Value*

Description Outputs port information to output port A (A0 to A7) of the handler I/O. Port information is outputted as 8-bit binary data using A0 as LSB and A7 as MSB. (No read)

For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the *E5070B/E5071B Programmer’s Guide*.

Variable

|             | <i>Value</i>                                                                                                                                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Port information (output)                                                                                                                                                                                    |
| Data type   | Long integer type (Long)                                                                                                                                                                                     |
| Range       | 0 to 255                                                                                                                                                                                                     |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

Examples SCPI.CONTRol.HANDler.A.DATA = 15

Equivalent key No equivalent key is available on the front panel.

## SCPI.CONTRol.HANDler.B.DATA

|             |                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                             |
| Syntax      | SCPI.CONTRol.HANDler.B.DATA = <i>Value</i>                                                                                                                           |
| Description | Outputs port information to output port B (B0 to B7) of the handler I/O. Port information is outputted as 8-bit binary data using B0 as LSB and B7 as MSB. (No read) |

**NOTE** The bit 6 of the data outputted by this project is ignored when outputting the INDEX signal is turned ON (specifying True with the SCPI.CONTRol.HANDler.EXTension.INDEx.STATe object).  
 The bit 7 of the data outputted by this project is ignored when outputting the READY FOR TRIGGER signal is turned ON (specifying True with the SCPI.CONTRol.HANDler.EXTension.RTRigger.STATe object).

For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the *E5070B/E5071B Programmer’s Guide*.

### Variable

|             | <i>Value</i>                                                                                                                                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Port information (output)                                                                                                                                                                                    |
| Data type   | Long integer type (Long)                                                                                                                                                                                     |
| Range       | 0 to 255                                                                                                                                                                                                     |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

**Examples** SCPI.CONTRol.HANDler.B.DATA = 15

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CONTRol.HANDler.C.DATA

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Syntax      | SCPI.CONTRol.HANDler.C.DATA = <i>Value</i> (for output port)<br><i>Value</i> = SCPI.CONTRol.HANDler.C.DATA (for input port)                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Description | <p>When input/output port C of the handler I/O is set to the output port, outputs port information to output port C (C0 to C3).</p> <p>When input/output port C of the handler I/O is set to the input port, reads out port information inputted to port C (C0 to C3).</p> <p>Port information is inputted/outputted as 4-bit binary data using C0 as LSB and C3 as MSB.</p> <p>For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the <i>E5070B/E5071B Programmer’s Guide</i>.</p> |

### Variable

|             | <i>Value</i>                                                                                                                                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Port information (output/input)                                                                                                                                                                              |
| Data type   | Long integer type (Long)                                                                                                                                                                                     |
| Range       | 0 to 15                                                                                                                                                                                                      |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

### Examples

```
SCPI.CONTRol.HANDler.C.MODE = "outp"
SCPI.CONTRol.HANDler.C.DATA = 8
```

```
Dim Hd1Cinp As Long
SCPI.CONTRol.HANDler.C.MODE = "inp"
Hd1Cinp = SCPI.CONTRol.HANDler.C.DATA
```

Related objects SCPI.CONTRol.HANDler.C.MODE on page 357

Equivalent key No equivalent key is available on the front panel.

## SCPI.CONTRol.HANDler.C.MODE

**Object type** Property

**Syntax** SCPI.CONTRol.HANDler.C.MODE = *Param*  
*Param* = SCPI.CONTRol.HANDler.C.MODE

**Description** Sets the input/output direction of port C of the handler I/O.  
 For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the *E5070B/E5071B Programmer’s Guide*.

**Variable**

|              | <i>Param</i>                                                                                                                        |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Input/output direction of port C                                                                                                    |
| Data type    | Character string type (String)                                                                                                      |
| Range        | Select from the following.<br>•"INPut"                Sets the port C to input.<br>•"OUTPut"             Sets the port C to output. |
| Preset value | "INPut"                                                                                                                             |

**Examples**

```
Dim HdlCmode As String
SCPI.CONTRol.HANDler.C.MODE = "outp"
HdlCmode = SCPI.CONTRol.HANDler.C.MODE
```

**Related objects** SCPI.CONTRol.HANDler.C.DATA on page 356

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CONTRol.HANDler.D.DATA

**Object type** Property

**Syntax** SCPI.CONTRol.HANDler.D.DATA = *Value*(for output port)  
*Value* = SCPI.CONTRol.HANDler.D.DATA (for input port)

**Description** When input/output port D of the handler I/O is set to the output port, outputs port information to output port D (D0 to D3).  
 When input/output port D of the handler I/O is set to the input port, reads out port information inputted to port D (D0 to D3).  
 Port information is outputted as 4-bit binary data using D0 as LSB and D3 as MSB.  
 For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the *E5070B/E5071B Programmer’s Guide*.

**Variable**

|             | <i>Value</i>                                                                                                                                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Port information (output/input)                                                                                                                                                                              |
| Data type   | Long integer type (Long)                                                                                                                                                                                     |
| Range       | 0 to 15                                                                                                                                                                                                      |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

**Examples** SCPI.CONTRol.HANDler.D.MODE = "outp"  
 SCPI.CONTRol.HANDler.D.DATA = 8

```
Dim HdlDinp As Long
SCPI.CONTRol.HANDler.D.MODE = "inp"
HdlDinp = SCPI.CONTRol.HANDler.D.DATA
```

**Related objects** SCPI.CONTRol.HANDler.D.MODE on page 359

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CONTRol.HANDler.D.MODE

**Object type** Property

**Syntax** SCPI.CONTRol.HANDler.D.MODE = *Param*  
*Param* = SCPI.CONTRol.HANDler.D.MODE

**Description** Sets the input/output direction of port D of the handler I/O.  
 For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the *E5070B/E5071B Programmer’s Guide*.

**Variable**

|              | <i>Param</i>                                                                                                                            |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Input/output direction of port D                                                                                                        |
| Data type    | Character string type (String)                                                                                                          |
| Range        | Select from the following.<br>•"INPut"                 Sets the port D to input.<br>•"OUTPut"                Sets the port D to output. |
| Preset value | "INPut"                                                                                                                                 |

**Examples**

```
Dim HdlDmode As String
SCPI.CONTRol.HANDler.D.MODE = "outp"
HdlDmode = SCPI.CONTRol.HANDler.D.MODE
```

**Related objects** SCPI.CONTRol.HANDler.D.DATA on page 358

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CONTrol.HANDler.E.DATA

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Syntax      | SCPI.CONTrol.HANDler.E.DATA = <i>Value</i> (for output)<br><i>Value</i> = SCPI.CONTrol.HANDler.E.DATA (for input port)                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Description | <p>When input/output port E (port C + port D) of the handler I/O is set to the output port, outputs port information to output port E (C0 to D3).</p> <p>When input/output port E of the handler I/O is set to the input port, reads out port information inputted to port E (C0 to D3).</p> <p>Port information is outputted as 8-bit binary data using C0 as LSB and D3 as MSB.</p> <p>For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the <i>E5070B/E5071B Programmer’s Guide</i>.</p> |

### Variable

|             | <i>Value</i>                                                                                                                                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Port information (output/input)                                                                                                                                                                              |
| Data type   | Long integer type (Long)                                                                                                                                                                                     |
| Range       | 0 to 255                                                                                                                                                                                                     |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

### Examples

```
SCPI.CONTrol.HANDler.C.MODE = "outp"
SCPI.CONTrol.HANDler.D.MODE = "outp"
SCPI.CONTrol.HANDler.E.DATA = 128
```

```
Dim HdlEinp As Long
SCPI.CONTrol.HANDler.C.MODE = "inp"
SCPI.CONTrol.HANDler.D.MODE = "inp"
HdlEinp = SCPI.CONTrol.HANDler.E.DATA
```

|                 |                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related objects | SCPI.CONTrol.HANDler.C.MODE on page 357<br>SCPI.CONTrol.HANDler.D.MODE on page 359<br>SCPI.CONTrol.HANDler.C.DATA on page 356<br>SCPI.CONTrol.HANDler.D.DATA on page 358 |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                       |

## SCPI.CONTrol.HANDler.EXTension.INDEX.STATe

**Object type**      Property

**Syntax**            SCPI.CONTrol.HANDler.EXTension.INDEX.STATe = *Status*  
*Status* = SCPI.CONTrol.HANDler.EXTension.INDEX.STATe

**Description**       Turns ON/OFF outputting the INDEX signal to B6 of the handler I/O.  
 For more information on the handler I/O and the INDEX signal, see Chapter “Communication with External Instruments Using Handler I/O Port” in the *E5070B/E5071B Programmer’s Guide*.

---

**NOTE**                When you use port B6 as the output port, turn OFF the INDEX signal output. When outputting the INDEX signal is turned ON, the bit 6 of the data outputted by the SCPI.CONTrol.HANDler.B.DATA object (the bit 14 of the data outputted by the SCPI.CONTrol.HANDler.F.DATA object) is ignored.

---

**Variable**

|              |                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                              |
| Description  | ON/OFF of the INDEX signal output                                                                                                                                                                                                 |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                            |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the INDEX signal output.</li> <li>• False or 0                      Turns OFF the INDEX signal output.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                        |

**Examples**            Dim Indx As Boolean  
 SCPI.CONTrol.HANDler.EXTension.INDEX.STATe = True  
 Indx = SCPI.CONTrol.HANDler.EXTension.INDEX.STATe

**Related objects**    SCPI.CONTrol.HANDler.EXTension.RTRigger.STATe on page 362

**Equivalent key**     No equivalent key is available on the front panel.

**SCPI.CONTrol.HANDler.EXTension.RTRigger.STATe**

|             |                                                                                                                                                                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                      |
| Syntax      | SCPI.CONTrol.HANDler.EXTension.RTRigger.STATe = <i>Status</i><br><i>Status</i> = SCPI.CONTrol.HANDler.EXTension.RTRigger.STATe                                                                                                                                                |
| Description | Turns ON/OFF outputting the READY FOR TRIGGER signal to B7 of the handler I/O.<br>For more information on the handler I/O and the INDEX signal, see Chapter “Communication with External Instruments Using Handler I/O Port” in the <i>E5070B/E5071B Programmer’s Guide</i> . |

---

**NOTE** When you use port B7 as the output port, turn OFF the READY FOR TRIGGER signal output. When outputting the READY FOR TRIGGER signal is turned ON, the bit 7 of the data outputted by the SCPI.CONTrol.HANDler.B.DATA object (the bit 15 of the data outputted by the SCPI.CONTrol.HANDler.F.DATA object) is ignored.

---

## Variable

|              |                                                                                                                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                                                      |
| Description  | ON/OFF of the READY FOR TRIGGER signal output                                                                                                                                                                                                             |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                                    |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the READY FOR TRIGGER signal output.</li> <li>• False or 0                      Turns OFF the READY FOR TRIGGER signal output.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                                                |

**Examples**

```
Dim RdyTrig As Boolean
SCPI.CONTrol.HANDler.EXTension.RTRigger.STATe = True
RdyTrig = SCPI.CONTrol.HANDler.EXTension.RTRigger.STATe
```

**Related objects** SCPI.CONTrol.HANDler.EXTension.INDEX.STATe on page 361

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CONTRol.HANDler.F.DATA

**Object type** Property

**Syntax** SCPI.CONTRol.HANDler.F.DATA = *Value*

**Description** Outputs port information to output port F (port A + port B) of the handler I/O. Port information is outputted as 16-bit binary using A0 as LSB and B7 as MSB. (No read)

---

**NOTE** The bit 14 of the data outputted by this project is ignored when outputting the INDEX signal is turned ON (specifying True with the SCPI.CONTRol.HANDler.EXTension.INDEx.STATe object).

The bit 15 of the data outputted by this project is ignored when outputting the READY FOR TRIGGER signal is turned ON (specifying True with the SCPI.CONTRol.HANDler.EXTension.RTRigger.STATe object).

---

For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the *E5070B/E5071B Programmer’s Guide*.

**Variable**

|             | <i>Value</i>                                                                                                                                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Port information (output)                                                                                                                                                                                    |
| Data type   | Long integer type (Long)                                                                                                                                                                                     |
| Range       | 0 to 65535                                                                                                                                                                                                   |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

**Examples** SCPI.CONTRol.HANDler.F.DATA = 511

**Related objects** SCPI.CONTRol.HANDler.A.DATA on page 354  
 SCPI.CONTRol.HANDler.B.DATA on page 355

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.CONTrol.HANDler.OUTPut(*Num*).DATA

Object type      Property

Syntax            SCPI.CONTrol.HANDler.OUTPut(*Num*) = *Value*  
*Value* = SCPI.CONTrol.HANDler.OUTPut(*Num*)

Description      Sets HIGH / LOW of OUTPUT1 (*Num*:1) or OUTPUT2 (*Num*:2) of the handler I/O.  
For more information on the handler I/O, see Chapter “Communication with External Instruments Using Handler I/O Port” in the *E5070B/E5071B Programmer’s Guide*.

Variable

|              | <i>Num</i>                                                                                    |
|--------------|-----------------------------------------------------------------------------------------------|
| Description  | Number of the OUTPUT terminal                                                                 |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 1 to 2                                                                                        |
| Preset value | 1                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed. |

|             | <i>Value</i>                                                                                                    |
|-------------|-----------------------------------------------------------------------------------------------------------------|
| Description | Polarity (High/Low)                                                                                             |
| Data type   | Long integer type (Long)                                                                                        |
| Range       | Select from the following.<br>•1                      Specifies LOW.<br>•0                      Specifies HIGH. |

Examples         Dim HdlPol As Long  
SCPI.CONTrol.HANDler.OUTPut(1).DATA = 1  
HdlPol = SCPI.CONTrol.HANDler.OUTPut(1).DATA

Equivalent key    No equivalent key is available on the front panel.

## SCPI.DISPlay.ANNotation.FREQuency.STATe

Object type Property

Syntax SCPI.DISPlay.ANNotation.FREQuency.STATe = *Status*  
*Status* = SCPI.DISPlay.ANNotation.FREQuency.STATe

Description Turns ON/OFF the frequency display on the LCD display.

Variable

|              |                                                                                                                                                                                     |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                |
| Description  | ON/OFF of the frequency display                                                                                                                                                     |
| Data type    | Boolean type (Boolean)                                                                                                                                                              |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1 Turns ON the frequency display.</li> <li>• False or 0 Turns OFF the frequency display.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                          |

Examples  

```
Dim DispFreq As Boolean
SCPI.DISPlay.ANNotation.FREQuency.STATe = False
DispFreq = SCPI.DISPlay.ANNotation.FREQuency.STATe
```

Equivalent key **[Display] - Frequency**

## SCPI.DISPlay.CCLear

Object type Method

Syntax SCPI.DISPlay.CCLear

Description Clears the error message display on the instrument status bar (at the bottom of the LCD display). (No read)

Examples  

```
SCPI.DISPlay.CCLear
```

Equivalent key No equivalent key is available on the front panel.

## SCPI.DISPlay.CLOCK

|             |                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                          |
| Syntax      | SCPI.DISPlay.CLOCK = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.CLOCK                                          |
| Description | Turns ON/OFF the clock display at the right edge of the instrument status bar (at the bottom of the LCD display). |
| Variable    |                                                                                                                   |

|              | <i>Status</i>                                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the clock display                                                                                                                                                                                   |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                        |
| Range        | Select from the following. <ul style="list-style-type: none"><li>•True or -1                      Turns ON the clock display.</li><li>•False or 0                      Turns OFF the clock display.</li></ul> |
| Preset value | True or -1                                                                                                                                                                                                    |

**Examples**

```
Dim DispTime As Boolean
SCPI.DISPlay.CLOCK = False
DispTime = SCPI.DISPlay.CLOCK
```

**Equivalent key**      **[System] - Misc Setup - Clock Setup - Show Clock**

## SCPI.DISPlay.COLOr(*Dnum*).BACK

**Object type** Property

**Syntax** SCPI.DISPlay.COLOr(*Dnum*).BACK = *Data*  
*Data* = SCPI.DISPlay.COLOr(*Dnum*).BACK

**Description** Sets the background color for normal display (*Dnum*: 1) and inverted display (*Dnum*: 2).

**Variable**

**Table 7-12**

### Variable(*Dnum*)

|              | <i>Dnum</i>                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------|
| Description  | The number of display mode<br>1: normal display<br>2: inverted display                        |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 1 to 2                                                                                        |
| Preset value | 1                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed. |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 3-element array data.<br><ul style="list-style-type: none"> <li>• <i>Data</i>(0)                      Sets amount of red.</li> <li>• <i>Data</i>(1)                      Sets amount of green.</li> <li>• <i>Data</i>(2)                      Sets amount of blue.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                        |
| Range       | <ul style="list-style-type: none"> <li>• <i>Data</i>(0)                      0 to 5</li> <li>• <i>Data</i>(1)                      0 to 5</li> <li>• <i>Data</i>(2)                      0 to 5</li> </ul>                                                                                                                    |
| Resolution  | 1                                                                                                                                                                                                                                                                                                                             |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                                                  |

**Examples**

```
Dim BackColor As Variant
SCPI.DISPlay.COLOr(1).BACK = Array(1,2,3)
BackColor = SCPI.DISPlay.COLOr(1).BACK
```

**Related objects** SCPI.DISPlay.COLOr(*Dnum*).RESet on page 370

**Equivalent key** **[System] - Misc Setup - Color Setup - Normal|Invert - Background**

## SCPI.DISPLAY.COLOR(*Dnum*).GRATICULE(*Gnum*)

Object type

Property

Syntax

SCPI.DISPLAY.COLOR(*Dnum*).GRATICULE(*Gnum*) = *Data*

*Data* = SCPI.DISPLAY.COLOR(*Dnum*).GRATICULE(*Gnum*)

Description

Sets the color of the graticule label and the outer frame line of the graph (*Gnum*: 1) and the color of the grid line of the graph (*Gnum*: 2) for normal display (*Dnum*: 1) and inverted display (*Dnum*: 2).

Variable

|              | <i>Gnum</i>                                                                                              |
|--------------|----------------------------------------------------------------------------------------------------------|
| Description  | The number of item<br>1: The outer frame line of the graph<br>2: The color of the grid line of the graph |
| Data type    | Long integer type (Long)                                                                                 |
| Range        | 1 to 2                                                                                                   |
| Preset value | 1                                                                                                        |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed.            |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 3-element array data.<br><ul style="list-style-type: none"> <li>• <i>Data</i>(0)                 Sets amount of red.</li> <li>• <i>Data</i>(1)                 Sets amount of green.</li> <li>• <i>Data</i>(2)                 Sets amount of blue.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                         |
| Range       | <ul style="list-style-type: none"> <li>• <i>Data</i>(0)                 0 to 5</li> <li>• <i>Data</i>(1)                 0 to 5</li> <li>• <i>Data</i>(2)                 0 to 5</li> </ul>                                                                                                                    |
| Resolution  | 1                                                                                                                                                                                                                                                                                                              |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                                   |

For information on the variable (*Dnum*), see Table 7-12, “Variable(*Dnum*),” on page 367.

Examples

```
Dim GritColor As Variant
SCPI.DISPLAY.COLOR(1).GRATICULE(1) = Array(1,2,3)
GritColor = SCPI.DISPLAY.COLOR(1).GRATICULE(1)
```

Related objects

SCPI.DISPLAY.COLOR(*Dnum*).RESET on page 370

Equivalent key

**[System] - Misc Setup - Color Setup - Normal|Invert - Graticule Main|Graticule Sub**

## SCPI.DISPLAY.COLOR(*Dnum*).LIMIT(*Lnum*)

Object type      Property

Syntax            SCPI.DISPLAY.COLOR(*Dnum*).LIMIT(*Lnum*) = *Data*  
*Data* = SCPI.DISPLAY.COLOR(*Dnum*).LIMIT(*Lnum*)

Description      Sets the fail display color used for the limit test result , the bandwidth test result and the ripple test result (*Lnum*: 1) and the color of the limit line (*Lnum*: 2) for normal display (*Dnum*: 1) and inverted display (*Dnum*: 2).

Variable

|              |                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------|
|              | <b><i>Lnum</i></b>                                                                            |
| Description  | The number of item<br>1: The limit test result<br>2: The limit line                           |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 1 to 2                                                                                        |
| Preset value | 1                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed. |

|             |                                                                                                                                                                                                                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <b><i>Data</i></b>                                                                                                                                                                                                                                                                                                            |
| Description | Indicates 3-element array data.<br><ul style="list-style-type: none"> <li>• <i>Data</i>(0)                      Sets amount of red.</li> <li>• <i>Data</i>(1)                      Sets amount of green.</li> <li>• <i>Data</i>(2)                      Sets amount of blue.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                        |
| Range       | <ul style="list-style-type: none"> <li>• <i>Data</i>(0)                      0 to 5</li> <li>• <i>Data</i>(1)                      0 to 5</li> <li>• <i>Data</i>(2)                      0 to 5</li> </ul>                                                                                                                    |
| Resolution  | 1                                                                                                                                                                                                                                                                                                                             |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                                                  |

For information on the variable (*Dnum*), see Table 7-12, “Variable(Dnum),” on page 367.

Examples

```
Dim LimColor As Variant
SCPI.DISPLAY.COLOR(1).LIMIT(1) = Array(1,2,3)
LimColor = SCPI.DISPLAY.COLOR(1).LIMIT(1)
```

Related objects      SCPI.DISPLAY.COLOR(Dnum).RESET on page 370

Equivalent key      **[System] - Misc Setup - Color Setup - Normal|Invert - Limit Fail|Limit Line**

## **SCPI.DISPlay.COLOr(*Dnum*).RESet**

|                 |                                                                                                                                                                                                                                                                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                                                                                                 |
| Syntax          | SCPI.DISPlay.COLOr( <i>Dnum</i> ).RESet                                                                                                                                                                                                                                                                                                                |
| Description     | Resets the display color settings for all the items to the factory preset state for normal display ( <i>Dnum</i> : 1) and inverted display ( <i>Dnum</i> : 2). (No read)                                                                                                                                                                               |
| Variable        | For information on the variable ( <i>Dnum</i> ), see Table 7-12, “Variable( <i>Dnum</i> ),” on page 367.                                                                                                                                                                                                                                               |
| Examples        | <code>SCPI.DISPlay.COLOr(1).RESet</code>                                                                                                                                                                                                                                                                                                               |
| Related objects | SCPI.DISPlay.COLOr( <i>Dnum</i> ).BACK on page 367<br>SCPI.DISPlay.COLOr( <i>Dnum</i> ).GRATicule( <i>Gnum</i> ) on page 368<br>SCPI.DISPlay.COLOr( <i>Dnum</i> ).LIMit( <i>Lnum</i> ) on page 369<br>SCPI.DISPlay.COLOr( <i>Dnum</i> ).TRACe( <i>Tr</i> ).DATA on page 371<br>SCPI.DISPlay.COLOr( <i>Dnum</i> ).TRACe( <i>Tr</i> ).MEMory on page 372 |
| Equivalent key  | <b>[System] - Misc Setup - Color Setup - Normal Invert - Reset Color - OK</b>                                                                                                                                                                                                                                                                          |

## SCPI.DISPLAY.COLOR(*Dnum*).TRACE(*Tr*).DATA

|             |                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                           |
| Syntax      | SCPI.DISPLAY.COLOR( <i>Dnum</i> ).TRACE( <i>Tr</i> ).DATA = <i>Data</i><br><i>Data</i> = SCPI.DISPLAY.COLOR( <i>Dnum</i> ).TRACE( <i>Tr</i> ).DATA |
| Description | Sets the color of the data trace of traces 1 to 16 ( <i>Tr</i> ) for normal display ( <i>Dnum</i> : 1) and inverted display ( <i>Dnum</i> : 2).    |
| Variable    |                                                                                                                                                    |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 3-element array data.<br><ul style="list-style-type: none"> <li>• <i>Data</i>(0)                      Sets amount of red.</li> <li>• <i>Data</i>(1)                      Sets amount of green.</li> <li>• <i>Data</i>(2)                      Sets amount of blue.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                        |
| Range       | <ul style="list-style-type: none"> <li>• <i>Data</i>(0)                      0 to 5</li> <li>• <i>Data</i>(1)                      0 to 5</li> <li>• <i>Data</i>(2)                      0 to 5</li> </ul>                                                                                                                    |
| Resolution  | 1                                                                                                                                                                                                                                                                                                                             |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                                                  |

For information on the variable (*Dnum*) and the variable (*Tr*), see Table 7-12, “Variable(*Dnum*),” on page 367 and Table 7-10, “Variable (*Tr*),” on page 253, respectively.

|                 |                                                                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim TrColor As Variant SCPI.DISPLAY.COLOR(1).TRACE(1).DATA = Array(1,2,3) TrColor = SCPI.DISPLAY.COLOR(1).TRACE(1).DATA</pre>                                                |
| Related objects | SCPI.DISPLAY.COLOR( <i>Dnum</i> ).RESET on page 370                                                                                                                               |
| Equivalent key  | <b>[System] - Misc Setup - Color Setup - Normal Invert - Data Trace 1 Data Trace 2 Data Trace 3 Data Trace 4 Data Trace 5 Data Trace 6 Data Trace 7 Data Trace 8 Data Trace 9</b> |

## SCPI.DISPlay.COLOr(*Dnum*).TRACe(*Tr*).MEMory

|             |                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                               |
| Syntax      | SCPI.DISPlay.COLOr( <i>Dnum</i> ).TRACe( <i>Tr</i> ).MEMory = <i>Data</i><br><i>Data</i> = SCPI.DISPlay.COLOr( <i>Dnum</i> ).TRACe( <i>Tr</i> ).MEMory |
| Description | Sets the color of the memory trace of traces 1 to 16 ( <i>Tr</i> ) for normal display ( <i>Dnum</i> : 1) and inverted display ( <i>Dnum</i> : 2).      |
| Variable    |                                                                                                                                                        |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 3-element array data.<br><ul style="list-style-type: none"> <li>• <i>Data</i>(0)                 Sets amount of red.</li> <li>• <i>Data</i>(1)                 Sets amount of green.</li> <li>• <i>Data</i>(2)                 Sets amount of blue.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                         |
| Range       | <ul style="list-style-type: none"> <li>• <i>Data</i>(0)                 0 to 5</li> <li>• <i>Data</i>(1)                 0 to 5</li> <li>• <i>Data</i>(2)                 0 to 5</li> </ul>                                                                                                                    |
| Resolution  | 1                                                                                                                                                                                                                                                                                                              |
| Note        | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                                   |

For information on the variable (*Dnum*) and the variable (*Tr*), see Table 7-12, “Variable(*Dnum*),” on page 367 and Table 7-10, “Variable (*Tr*),” on page 253, respectively.

**Examples**

```
Dim TrColor As Variant
SCPI.DISPlay.COLOr(1).TRACe(1).MEMory = Array(1,2,3)
TrColor = SCPI.DISPlay.COLOr(1).TRACe(1).MEMory
```

**Related objects**      SCPI.DISPlay.COLOr(*Dnum*).RESet on page 370

**Equivalent key**      **[System] - Misc Setup - Color Setup - Normal|Invert - Mem Trace 1|Mem Trace 2|Mem Trace 3|Mem Trace 4|Mem Trace 5|Mem Trace 6|Mem Trace 7|Mem Trace 8|Mem Trace 9**

## SCPI.DISPlay.ECHO.CLEAr

|                 |                                                                      |
|-----------------|----------------------------------------------------------------------|
| Object type     | Method                                                               |
| Syntax          | SCPI.DISPlay.ECHO.CLEAr                                              |
| Description     | Clears all character strings displayed in the echo window. (No read) |
| Examples        | <code>SCPI.DISPlay.ECHO.CLEAr</code>                                 |
| Related objects | ECHO on page 192<br>SCPI.DISPlay.ECHO.DATA on page 373               |
| Equivalent key  | <b>[Macro Setup] - Clear Echo</b>                                    |

## SCPI.DISPlay.ECHO.DATA

|             |                                                                                                                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                      |
| Syntax      | SCPI.DISPlay.ECHO.DATA = <i>Cont</i>                                                                                                                                                                                          |
| Description | Displays a character string in the echo window. (No read)<br>There is the following difference from the display with the ECHO object. <ul style="list-style-type: none"> <li>• Displays a single character string.</li> </ul> |

### Variable

|             |                                                |
|-------------|------------------------------------------------|
|             | <i>Cont</i>                                    |
| Description | String you want to display in the echo window. |
| Data type   | Character string type (String)                 |
| Range       | 254 characters or less                         |

|                 |                                                                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <code>SCPI.DISPlay.ECHO.DATA = "Test Result"</code><br><code>SCPI.DISPlay.TABLE.TYPE = "echo"</code><br><code>SCPI.DISPlay.TABLE.STATE = True</code> |
| Related objects | ECHO on page 192<br>SCPI.DISPlay.TABLE.TYPE on page 382<br>SCPI.DISPlay.TABLE.STATE on page 381<br>SCPI.DISPlay.ECHO.CLEAr on page 373               |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                   |

## SCPI.DISPlay.ENABLE

|             |                                                                            |
|-------------|----------------------------------------------------------------------------|
| Object type | Property                                                                   |
| Syntax      | SCPI.DISPlay.ENABLE = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.ENABLE |
| Description | Turns ON/OFF the display update on the E5070B/E5071B measurement screen.   |
| Variable    |                                                                            |

|              | <i>Status</i>                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the display update of the E5070B/E5071B measurement screen                                                                                          |
| Data type    | Boolean type (Boolean)                                                                                                                                        |
| Range        | Select from the following.<br>•True or -1                      Turns ON the display update.<br>•False or 0                      Turns OFF the display update. |
| Preset value | True or -1                                                                                                                                                    |

**Examples**

```
Dim DispUpdt As Boolean
SCPI.DISPlay.ENABLE = False
DispUpdt = SCPI.DISPlay.ENABLE
```

**Equivalent key**      **[Display] - Update**

## SCPI.DISPlay.FSIGn

|             |                                                                                                              |
|-------------|--------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                     |
| Syntax      | SCPI.DISPlay.FSIGn = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.FSIGn                                     |
| Description | Turns ON/OFF the “Fail” display on the LCD screen when the limit test ,bandwidth test and ripple test fails. |
| Variable    |                                                                                                              |

|              | <i>Status</i>                                                                                                                                                                                                           |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the “Fail” display when the limit test fails                                                                                                                                                                  |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                  |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the “Fail” display.</li> <li>• False or 0                      Turns OFF the “Fail” display.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                                                              |

On/off of the Fail display cannot be set at each test. When the Fail display of either of test is turned on, the Fail display of other tests turns on, too.

|                 |                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim DispFail As Boolean SCPI.DISPlay.FSIGn = False DispFail = SCPI.DISPlay.FSIGn</pre>                                                                         |
| Related objects | SCPI.CALCulate(Ch).SElected.LIMit.STATe on page 303<br>SCPI.CALCulate(Ch).SElected.RLIMit.STATe on page 340<br>SCPI.CALCulate(Ch).SElected.BLIMit.STATe on page 262 |
| Equivalent key  | <b>[Analysis] - Limit Test - Fail Sign</b><br><b>[Analysis] - Ripple Limit - Fail Sign</b><br><b>[Analysis] - Bandwidth limit - Fail Sign</b>                       |

## SCPI.DISPlay.IMAGe

|             |                                                                        |
|-------------|------------------------------------------------------------------------|
| Object type | Property                                                               |
| Syntax      | SCPI.DISPlay.IMAGe = <i>Param</i><br><i>Param</i> = SCPI.DISPlay.IMAGe |
| Description | Selects the display type of the LCD display.                           |
| Variable    |                                                                        |

|              | <i>Param</i>                                                                                                                                                                                                                                                         |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Display type of the LCD display                                                                                                                                                                                                                                      |
| Data type    | Character string type (String)                                                                                                                                                                                                                                       |
| Range        | Select from the following. <ul style="list-style-type: none"><li>•"NORMal" Specifies the normal display (background color: black).</li><li>•"INVert" Specifies the display in which the color of the normal display is inversed (background color: white).</li></ul> |
| Preset value | "NORMal"                                                                                                                                                                                                                                                             |

**Examples**

```
Dim DispImg As String
SCPI.DISPlay.IMAGe = "inv"
DispImg = SCPI.DISPlay.IMAGe
```

**Equivalent key**     **[Display] - Invert Color**

## SCPI.DISPlay.MAXimize

Object type

Property

Syntax

SCPI.DISPlay.MAXimize = *Status*  
*Status* = SCPI.DISPlay.MAXimize

Description

Turns ON/OFF the window maximization of the active channel.

If you turned ON the maximization, only the window of the active channel is maximized on the LCD display and the windows of the other channels are not displayed.

Variable

|              | <i>Status</i>                                                                                                                                                                                                                     |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the window maximization                                                                                                                                                                                                 |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                            |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the window maximization.</li> <li>• False or 0                      Turns OFF the window maximization.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                        |

Examples

```
Dim ChMax As Boolean
SCPI.DISPlay.SPLit = "d1_2"
SCPI.DISPlay.WINDow(2).ACTivate
SCPI.DISPlay.MAXimize = True
ChMax = SCPI.DISPlay.MAXimize
```

Related objects

SCPI.DISPlay.WINDow(Ch).ACTivate on page 383

Equivalent key

**[Channel Max]**

## SCPI.DISPlay.SKEY.STATe

|             |                                                                                    |
|-------------|------------------------------------------------------------------------------------|
| Object type | Property                                                                           |
| Syntax      | SCPI.DISPlay.SKEY.STATe = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.SKEY.STATe |
| Description | Turns ON/OFF the display of the softkey menu bar.                                  |
| Variable    |                                                                                    |

|              | <i>Status</i>                                                                                                                                                                     |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the softkey menu bar display                                                                                                                                            |
| Data type    | Boolean type (Boolean)                                                                                                                                                            |
| Range        | Select from the following.<br>•True or -1                      Turns ON the softkey menu bar display.<br>•False or 0                      Turns OFF the softkey menu bar display. |
| Preset value | True or -1                                                                                                                                                                        |

**Examples**

```
Dim DispSkey As Boolean
SCPI.DISPlay.SKEY.STATe = False
DispSkey = SCPI.DISPlay.SKEY.STATe
```

**Equivalent key**      **[Entry Off]**

## SCPI.DISPlay.SPLit

|             |                                                                        |
|-------------|------------------------------------------------------------------------|
| Object type | Property                                                               |
| Syntax      | SCPI.DISPlay.SPLit = <i>Param</i><br><i>Param</i> = SCPI.DISPlay.SPLit |
| Description | Sets the layout of the channel windows on the LCD display.             |
| Variable    |                                                                        |

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Layout of channel windows                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"D1"                    See Figure 7-4 on page 380.</li> <li>•"D12"                   See Figure 7-4.</li> <li>•"D1_2"                   See Figure 7-4.</li> <li>•"D112"                   See Figure 7-4.</li> <li>•"D1_1_2"                See Figure 7-4.</li> <li>•"D123"                   See Figure 7-4.</li> <li>•"D1_2_3"                See Figure 7-4.</li> <li>•"D12_33"                See Figure 7-4.</li> <li>•"D11_23"                See Figure 7-4.</li> <li>•"D13_23"                See Figure 7-4.</li> <li>•"D12_13"                See Figure 7-4.</li> <li>•"D1234"                 See Figure 7-4.</li> <li>•"D1_2_3_4"              See Figure 7-4.</li> <li>•"D12_34"                See Figure 7-4.</li> <li>•"D123_456"              See Figure 7-4.</li> <li>•"D12_34_56"             See Figure 7-4.</li> <li>•"D1234_5678"            See Figure 7-4.</li> <li>•"D12_34_56_78"        See Figure 7-4.</li> <li>•"D123_456_789"        See Figure 7-4.</li> <li>•"D123__ABC"            See Figure 7-4.</li> <li>•"D1234__9ABC"          See Figure 7-4.</li> <li>•"D1234__DEFG"         See Figure 7-4.</li> </ul> |
| Preset value | "D1"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

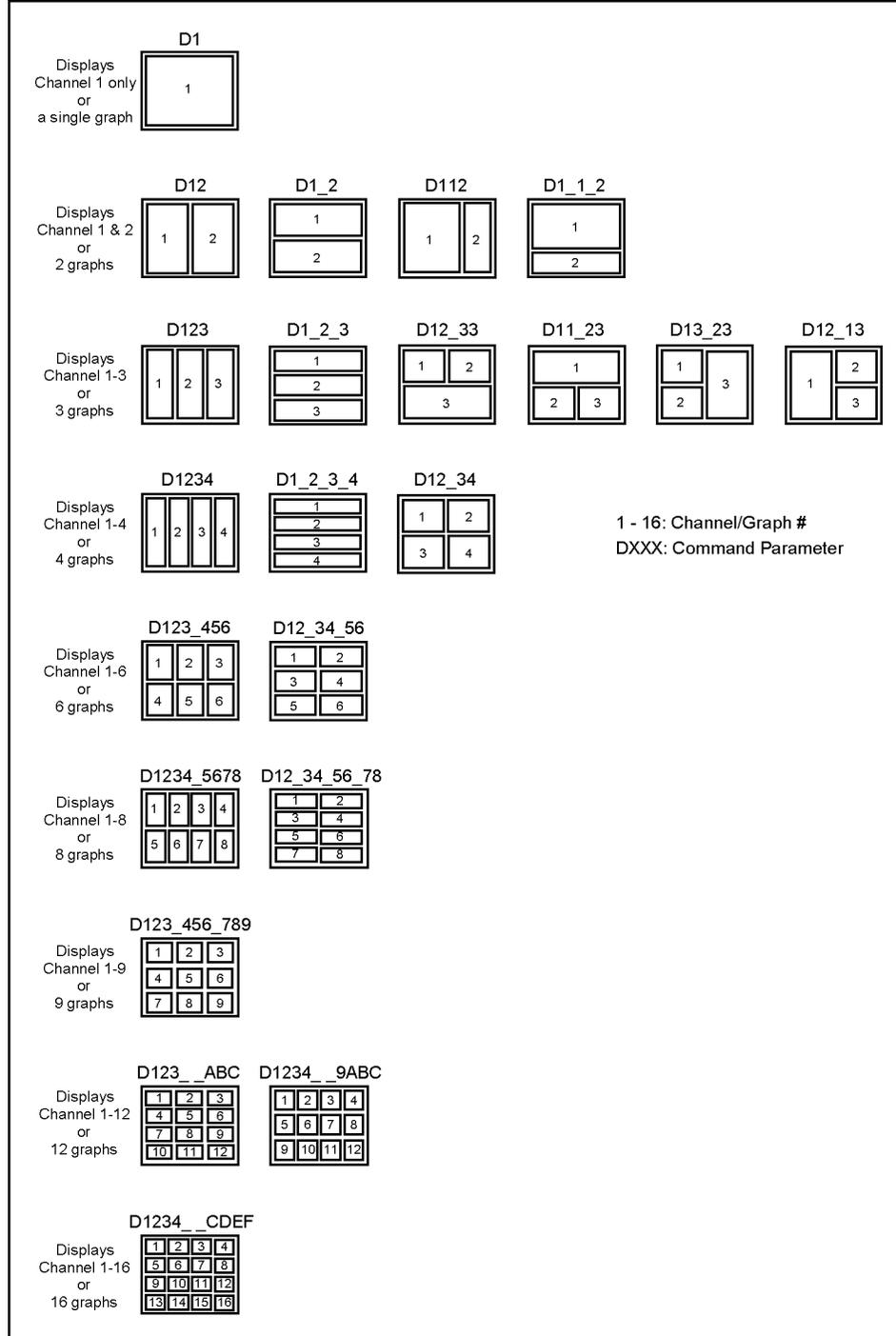
**Examples**

```
Dim ChanAloc As String
SCPI.DISPlay.SPLit = "d12_34"
ChanAloc = SCPI.DISPlay.SPLit
```

Related objects SCPI.DISPlay.WINDOW(Ch).SPLit on page 388

Equivalent key **[Display] - Allocate Channels**

Figure 7-4 **Channel/graph window layouts**



e5070bpe030

## SCPI.DISPlay.TABLe.STATe

|             |                                                                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                      |
| Syntax      | SCPI.DISPlay.TABLe.STATe = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.TABLe.STATe                                                          |
| Description | Turns ON/OFF the display of the window that appears in the lower part of the LCD display (specified with the SCPI.DISPlay.TABLe.TYPE object). |
| Variable    |                                                                                                                                               |

|              | <i>Status</i>                                                                                                                                                                                             |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the display of the window that appears in the lower part of the LCD display                                                                                                                     |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                    |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the display.</li> <li>• False or 0                      Turns OFF the display.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                |

**Examples**

```
Dim DispTbl As Boolean
SCPI.DISPlay.TABLe.TYPE = "echo"
SCPI.DISPlay.TABLe.STATe = True
DispTbl = SCPI.DISPlay.TABLe.STATe
```

**Related objects**      SCPI.DISPlay.TABLe.TYPE on page 382

**Equivalent key**

- [Sweep Setup] - Edit Segment Table**
- [Marker Fctn] - Marker Table**
- [Analysis] - Limit Test - Edit Limit Line**
- [Analysis] - Ripple Limit - Edit Ripple Line**
- [Macro Setup] - Echo Window**
- [Cal] - Power Calibration - Loss Compen**
- [Cal] - Power Calibration - Sensor A Settings | Sensor B Settings**

---

**NOTE**      When performing the operation from the front panel, you select the type of the window that appears in the lower part of the LCD display and turn ON/OFF the display at the same time.

---

## SCPI.DISPlay.TABLE.TYPE

|             |                                                                                   |
|-------------|-----------------------------------------------------------------------------------|
| Object type | Property                                                                          |
| Syntax      | SCPI.DISPlay.TABLE.TYPE = <i>Param</i><br><i>Param</i> = SCPI.DISPlay.TABLE.TYPE  |
| Description | Selects the type of the window that appears in the lower part of the LCD display. |
| Variable    |                                                                                   |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Description  | Window type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"MARKer"                Specifies the marker table window.</li> <li>•"LIMit"                Specifies the limit test table window.</li> <li>•"SEGment"             Specifies the segment table window.</li> <li>•"ECHO"                 Specifies the echo window.</li> <li>•"PLOSs"                Specifies the loss compensation table window.</li> <li>•"SCFactor"             Specifies the power sensor's calibration factor table window.</li> <li>•"RLIMit"               Specifies the ripple test table window.</li> </ul> |
| Preset value | "MARKer"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Examples**

```
Dim TblType As String
SCPI.DISPlay.TABLE.TYPE = "echo"
SCPI.DISPlay.TABLE.STAtE = True
TblType = SCPI.DISPlay.TABLE.TYPE
```

**Related objects**      SCPI.DISPlay.TABLE.STAtE on page 381

**Equivalent key**

- [Sweep Setup] - Edit Segment Table**
- [Marker Fctn] - Marker Table**
- [Analysis] - Limit Test - Edit Limit Line**
- [Analysis] - Ripple Limit - Edit Ripple Line**
- [Macro Setup] - Echo Window**
- [Cal] - Power Calibration - Loss Compen**
- [Cal] - Power Calibration - Sensor A Settings|Sensor B Settings**

---

**NOTE**                      When performing the operation from the front panel, you select the type of the window that appears in the lower part of the LCD display and turn ON/OFF the display at the same time.

---

### **SCPI.DISPlay.UPDate.IMMEDIATE**

|                 |                                                                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                      |
| Syntax          | SCPI.DISPlay.UPDate.IMMEDIATE                                                                                                                               |
| Description     | When the display update of the LCD screen is set to OFF (specifying False with the SCPI.DISPlay.ENABLE object), executes the display update once. (No read) |
| Examples        | SCPI.DISPlay.ENABLE = False<br>SCPI.DISPlay.UPDate.IMMEDIATE                                                                                                |
| Related objects | SCPI.DISPlay.ENABLE on page 374                                                                                                                             |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                          |

### **SCPI.DISPlay.WINDow(Ch).ACTivate**

|                 |                                                                                                                                                                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                             |
| Syntax          | SCPI.DISPlay.WINDow( <i>Ch</i> ).ACTivate                                                                                                                                                                                                                                          |
| Description     | Specifies channels 1 to 16 ( <i>Ch</i> ) to the active channel.<br><br>You can set only a channel displayed to the active channel. If this object is used to set a channel not displayed to the active channel, an error occurs when executed and the object is ignored. (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ), see Table 7-6, “Variable (Ch),” on page 203.                                                                                                                                                                                        |
| Examples        | SCPI.DISPlay.SPLit = "d1_2"<br>SCPI.DISPlay.WINDow(2).ACTivate                                                                                                                                                                                                                     |
| Related objects | SCPI.CALCulate(Ch).PARAMeter(Tr).SElect on page 253                                                                                                                                                                                                                                |
| Equivalent key  | <b>[Channel Prev] / [Channel Next]</b>                                                                                                                                                                                                                                             |

**SCPI.DISPlay.WINDow(Ch).ANNotation.MARKeR.ALIGn. STATE**

|             |                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Method                                                                                                                                         |
| Syntax      | SCPI.DISPlay.WINDow(Ch).ANNotation.MARKeR.ALIGn.STATE = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.WINDow(Ch).ANNotation.MARKeR.ALIGn.STATE |
| Description | For channel 1 to 16 ( <i>Ch</i> ), turn ON/OFF the mode that align the marker display position of each trace based on trace 1.                 |

## Variable

|              | <i>Status</i>                                                                                                                                                                                                                                                |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF the mode that align the marker display position of each trace based on trace 1                                                                                                                                                                        |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                                       |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the mode that align marker display position based on trace 1.</li> <li>• False or 0                      Turns OFF the alignment.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                                                                                                   |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim AnnMarkAlig As Boolean SCPI.DISPlay.WINDow(1).ANNotation.MARKeR.ALIGn.STATE = False AnnMarkAlig = SCPI.DISPlay.WINDow(1).ANNotation.MARKeR.ALIGn.STATE</pre>                                                                          |
| Related objects | <p>SCPI.DISPlay.WINDow(Ch).ANNotation.MARKeR.SINGle. STATE on page 385</p> <p>SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNotation.MARKeR.POSition.X on page 391</p> <p>SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNotation.MARKeR.POSition.Y on page 392</p> |
| Equivalent key  | <b>[Marker Fctn] - Annotation Options - Align</b>                                                                                                                                                                                              |

**SCPI.DISPlay.WINDow(Ch).ANNOtation.MARKer.SINGLe. STATE**

|             |                                                                                                                                                                                                  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Method                                                                                                                                                                                           |
| Syntax      | SCPI.DISPlay.WINDow( <i>Ch</i> ).ANNOtation.MARKer.SINGLe.STATe = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.WINDow( <i>Ch</i> ).ANNOtation.MARKer.SINGLe.STATe                               |
| Description | For channel 1 to 16 ( <i>Ch</i> ), turns ON/OFF the display of the marker value of only active traces.<br><br>If you turn off the function, marker values of all traces (markers) are displayed. |

## Variable

|              | <i>Status</i>                                                                                                                                                                                              |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF the display of the marker value of only active                                                                                                                                                      |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                     |
| Range        | Select from the following.<br>•True or -1                      Displays the marker values of only active traces.(ON)<br>•False or 0                        Displays the marker values of all traces. (OFF) |
| Preset value | True or -1                                                                                                                                                                                                 |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim AnnMarkAlig As Boolean<br>SCPI.DISPlay.WINDow(1).ANNOtation.MARKer.SINGLe.STATe = False<br>AnnMarkAlig = SCPI.DISPlay.WINDow(1).ANNOtation.MARKer.SINGLe.STATe                                                             |
| Related objects | SCPI.DISPlay.WINDow(Ch).ANNOtation.MARKer.ALIGN. STATE on page 384<br>SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNOtation.MARKer.POSition.X on page 391<br>SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNOtation.MARKer.POSition.Y on page 392 |
| Equivalent key  | <b>[Marker Fctn] - Annotation Options - Active Only</b>                                                                                                                                                                        |

## SCPI.DISPlay.WINDOW(*Ch*).LABel

Object type      Property

Syntax            SCPI.DISPlay.WINDOW(*Ch*).LABel = *Status*  
*Status* = SCPI.DISPlay.WINDOW(*Ch*).LABel

Description      Turns ON/OFF the graticule label display of the graph of channels 1 to 16 (*Ch*).

Variable

|              |                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Status</i>                                                                                                                                                                   |
| Description  | ON/OFF of the graticule label display of the graph                                                                                                                              |
| Data type    | Boolean type (Boolean)                                                                                                                                                          |
| Range        | Select from the following.<br>•True or -1                      Turns ON the graticule label display.<br>•False or 0                      Turns OFF the graticule label display. |
| Preset value | True or -1                                                                                                                                                                      |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim DispGrat As Boolean
SCPI.DISPlay.WINDOW(1).LABel = False
DispGrat = SCPI.DISPlay.WINDOW(1).LABel
```

Equivalent key    **[Display] - Graticule Label**

## SCPI.DISPlay.WINDow(Ch).MAXimize

**Object type** Property

**Syntax** SCPI.DISPlay.WINDow(*Ch*).MAXimize = *Status*  
*Status* = SCPI.DISPlay.WINDow(*Ch*).MAXimize

**Description** Turns ON/OFF the maximization of the active trace of channels 1 to 16 (*Ch*).  
 If you turned ON the maximization, only the maximized active trace is displayed in the window and the other traces are not displayed.

**Variable**

|              | <i>Status</i>                                                                                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the maximization of the active trace                                                                                                                                                                        |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the maxim display.</li> <li>• False or 0                      Turns OFF the maxim display.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                            |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim TracMax As Boolean
SCPI.CALCulate(1).PARAmeter(2).SElect
SCPI.DISPlay.WINDow(1).MAXimize = True
TracMax = SCPI.DISPlay.WINDow(1).MAXimize
```

**Related objects** SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
 SCPI.DISPlay.MAXimize on page 377

**Equivalent key** **[Trace Max]**

## SCPI.DISPlay.WINDow(*Ch*).SPLit

|             |                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                       |
| Syntax      | SCPI.DISPlay.WINDow( <i>Ch</i> ).SPLit = <i>Param</i><br><i>Param</i> = SCPI.DISPlay.WINDow( <i>Ch</i> ).SPLit |
| Description | Sets the graph layout of channels 1 to 16 ( <i>Ch</i> ).                                                       |
| Variable    |                                                                                                                |

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Graph layout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• "D1"                    See Figure 7-4 on page 380.</li> <li>• "D12"                   See Figure 7-4.</li> <li>• "D1_2"                   See Figure 7-4.</li> <li>• "D112"                   See Figure 7-4.</li> <li>• "D1_1_2"                See Figure 7-4.</li> <li>• "D123"                   See Figure 7-4.</li> <li>• "D1_2_3"                See Figure 7-4.</li> <li>• "D12_33"                See Figure 7-4.</li> <li>• "D11_23"                See Figure 7-4.</li> <li>• "D13_23"                See Figure 7-4.</li> <li>• "D12_13"                See Figure 7-4.</li> <li>• "D1234"                  See Figure 7-4.</li> <li>• "D1_2_3_4"              See Figure 7-4.</li> <li>• "D12_34"                See Figure 7-4.</li> <li>• "D123_456"              See Figure 7-4.</li> <li>• "D12_34_56"             See Figure 7-4.</li> <li>• "D1234_5678"            See Figure 7-4.</li> <li>• "D12_34_56_78"        See Figure 7-4.</li> <li>• "D123_456_789"        See Figure 7-4.</li> <li>• "D123_ABC"              See Figure 7-4.</li> <li>• "D1234_9ABC"            See Figure 7-4.</li> <li>• "D1234_DEFG"            See Figure 7-4.</li> </ul> |
| Preset value | "D1"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim TracAlloc As String
SCPI.DISPlay.WINDow(1).SPLit = "d1_2"
TracAlloc = SCPI.DISPlay.WINDow(1).SPLit
```

**Related objects**      SCPI.DISPlay.SPLit on page 379

**Equivalent key**      **[Display] - Allocate Traces**

## SCPI.DISPlay.WINDow(Ch).TITLe.DATA

|             |                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                           |
| Syntax      | SCPI.DISPlay.WINDow(Ch).TITLe.DATA = <i>Lbl</i><br><i>Lbl</i> = SCPI.DISPlay.WINDow(Ch).TITLe.DATA |
| Description | Sets the title label displayed in the title area of channels 1 to 16 ( <i>Ch</i> ).                |
| Variable    |                                                                                                    |

|              |                                |
|--------------|--------------------------------|
|              | <i>Lbl</i>                     |
| Description  | Title label                    |
| Data type    | Character string type (String) |
| Range        | 254 characters or less         |
| Preset value | ""                             |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim TtlLbl As String SCPI.DISPlay.WINDow(1).TITLe.DATA = "Filter" SCPI.DISPlay.WINDow(1).TITLe.STATe = True TtlLbl = SCPI.DISPlay.WINDow(1).TITLe.DATA</pre> |
| Related objects | SCPI.DISPlay.WINDow(Ch).TITLe.STATe on page 390                                                                                                                   |
| Equivalent key  | <b>[Display] - Edit Title Label</b>                                                                                                                               |

## SCPI.DISPlay.WINDow(*Ch*).TITLe.STATe

|             |                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                     |
| Syntax      | SCPI.DISPlay.WINDow( <i>Ch</i> ).TITLe.STATe = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.WINDow( <i>Ch</i> ).TITLe.STATe |
| Description | Turns ON/OFF the title label display in the title area of channels 1 to 16 ( <i>Ch</i> ).                                    |
| Variable    |                                                                                                                              |

|              |                                                                                                                                                                                                                                  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                             |
| Description  | ON/OFF of the title label display                                                                                                                                                                                                |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                           |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the title label display.</li> <li>• False or 0                      Turns ON the title label display.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                       |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim DispTtl As Boolean
SCPI.DISPlay.WINDow(1).TITLe.DATA = "Filter"
SCPI.DISPlay.WINDow(1).TITLe.STATe = True
DispTtl = SCPI.DISPlay.WINDow(1).TITLe.STATe
```

**Related objects**      SCPI.DISPlay.WINDow(Ch).TITLe.DATA on page 389

**Equivalent key**      **[Display] - Title Label**

**SCPI.DISPlay.WINDOW(*Ch*).TRACe(*Tr*).ANNotation.MARKer.POSition.X**

|             |                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                           |
| Syntax      | SCPI.DISPlay.WINDOW( <i>Ch</i> ).TRACe( <i>Tr</i> ).ANNotation.MARKer.POSition.X = <i>Value</i><br><i>Value</i> = SCPI.DISPlay.WINDOW( <i>Ch</i> ).TRACe( <i>Tr</i> ).ANNotation.MARKer.POSition.X |
| Description | For trace 1 to 16 ( <i>Tr</i> ) of channel 1 to 16 ( <i>Ch</i> ), sets the display position of the marker value on the X-axis by a percentage of a width of the display span.                      |
| Variable    |                                                                                                                                                                                                    |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Display position of the marker value on the X-axis.                                                                                                                                                          |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -15 to 100                                                                                                                                                                                                   |
| Preset value | 1                                                                                                                                                                                                            |
| Unit         | % (percent)                                                                                                                                                                                                  |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

|                 |                                                                                                                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim AnnMPosX As Double<br>SCPI.DISPlay.WINDOW(1).TRACe(1).ANNotation.MARKer.POSition.X = 15<br>AnnMPosX =<br>SCPI.DISPlay.WINDOW(1).TRACe(1).ANNotation.MARKer.POSition.X                                               |
| Related objects | SCPI.DISPlay.WINDOW(Ch).ANNotation.MARKer.ALIGN. STATE on page 384<br>SCPI.DISPlay.WINDOW(Ch).ANNotation.MARKer.SINGLE. STATE on page 385<br>SCPI.DISPlay.WINDOW(Ch).TRACe(Tr).ANNotation.MARKer.POSition.Y on page 392 |
| Equivalent key  | <b>[Marker Fctn] - Annotation Options - Marker Info X Pos</b>                                                                                                                                                           |

**SCPI.DISPLAY.WINDOW(*Ch*).TRACE(*Tr*).ANNOTATION.MARKER.POSITION.Y**

|             |                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                                                                            |
| Syntax      | SCPI.DISPLAY.WINDOW( <i>Ch</i> ).TRACE( <i>Tr</i> ).ANNOTATION.MARKER.POSITION.Y = <i>Value</i><br><i>Value</i> = SCPI.DISPLAY.WINDOW( <i>Ch</i> ).TRACE( <i>Tr</i> ).ANNOTATION.MARKER.POSITION.X                                                                                                                                                                  |
| Description | For trace 1 to 16 ( <i>Tr</i> ) of channel 1 to 16 ( <i>Ch</i> ), sets the display position of the marker value on the X-axis by a percentage of a width of the display span.<br><br>For trace 1 to 16 ( <i>Tr</i> ) of channel 1 to 16 ( <i>Ch</i> ), sets the display position of the marker value on the Y-axis by a percentage of a height of the display span. |

## Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Display position of the marker value on the Y-axis.                                                                                                                                                          |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -15 to 100                                                                                                                                                                                                   |
| Preset value | 1                                                                                                                                                                                                            |
| Unit         | % (percent)                                                                                                                                                                                                  |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

**Examples**

```
Dim AnnMPosY As Double
SCPI.DISPLAY.WINDOW(1).TRACE(1).ANNOTATION.MARKER.POSITION.Y = 23
AnnMPosY =
SCPI.DISPLAY.WINDOW(1).TRACE(1).ANNOTATION.MARKER.POSITION.Y
```

**Related objects**

SCPI.DISPLAY.WINDOW(Ch).ANNOTATION.MARKER.ALIGN.STATE on page 384  
 SCPI.DISPLAY.WINDOW(Ch).ANNOTATION.MARKER.SINGLE.STATE on page 385  
 SCPI.DISPLAY.WINDOW(Ch).TRACE(Tr).ANNOTATION.MARKER.POSITION.X on page 391

**Equivalent key**    **[Marker Fctn] - Annotation Options - Marker Info X Pos**

## SCPI.DISPlay.WINDow(Ch).TRACe(Tr).MEMory. STATE

|             |                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                             |
| Syntax      | SCPI.DISPlay.WINDow( <i>Ch</i> ).TRACe( <i>Tr</i> ).MEMory.STATe = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.WINDow( <i>Ch</i> ).TRACe( <i>Tr</i> ).MEMory.STATe |
| Description | For traces 1 to 16 ( <i>Tr</i> ) of channels 1 to 16 ( <i>Ch</i> ), turns ON/OFF the memory trace display.                                                           |
| Variable    |                                                                                                                                                                      |

|              | <i>Status</i>                                                                                                                                                                                                                       |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the memory trace display                                                                                                                                                                                                  |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                              |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the memory trace display.</li> <li>• False or 0                      Turns OFF the memory trace display.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                          |

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

|                 |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim DispMem As Boolean SCPI.DISPlay.WINDow(1).TRACe(2).MEMory.STATe = True DispMem = SCPI.DISPlay.WINDow(1).TRACe(2).MEMory.STATe</pre>             |
| Related objects | SCPI.CALCulate(Ch).SElected.MATH.MEMorize on page 328<br>SCPI.DISPlay.WINDow(Ch).TRACe(Tr).STATe on page 394                                             |
| Equivalent key  | <b>[Display] - Display - Mem</b> (when the data trace display is OFF)<br><b>[Display] - Display - Data &amp; Mem</b> (when the data trace display is ON) |

## SCPI.DISPlay.WINDow(Ch).TRACe(Tr).STATe

|             |                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                           |
| Syntax      | SCPI.DISPlay.WINDow(Ch).TRACe(Tr).STATe = <i>Status</i><br><i>Status</i> = SCPI.DISPlay.WINDow(Ch).TRACe(Tr).STATe |
| Description | For traces 1 to 16 ( <i>Tr</i> ) of channels 1 to 16 ( <i>Ch</i> ), turns ON/OFF the data trace display.           |
| Variable    |                                                                                                                    |

|              | <i>Status</i>                                                                                                                                                                                                                   |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the data trace display                                                                                                                                                                                                |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                          |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the data trace display.</li> <li>• False or 0                      Turns OFF the data trace display.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                                                                      |

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

|                 |                                                                                                                                                               |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim DispTrac As Boolean SCPI.DISPlay.WINDow(1).TRACe(2).STATe = False DispTrac = SCPI.DISPlay.WINDow(1).TRACe(2).STATe</pre>                             |
| Related objects | SCPI.DISPlay.WINDow(Ch).TRACe(Tr).MEMory. STATe on page 393                                                                                                   |
| Equivalent key  | <b>[Display] - Display - Data</b> (when the memory trace display is OFF)<br><b>[Display] - Display - Data &amp; Mem</b> (when the memory trace display is ON) |

## SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.AUTO

|                 |                                                                                                                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                           |
| Syntax          | SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.AUTO                                                                                                                                                                                                   |
| Description     | For traces 1 to 16 ( <i>Tr</i> ) of channels 1 to 16 ( <i>Ch</i> ), executes the auto scale (function to automatically adjust the value of the reference division line and the scale per division to display the trace appropriately). (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Tr</i> ), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.                                                            |
| Examples        | SCPI.DISPlay.WINDow(1).TRACe(2).Y.SCALe.AUTO                                                                                                                                                                                                     |
| Related objects | SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe. PDIVision on page 395<br>SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.RLEVEL on page 396                                                                                                                 |
| Equivalent key  | <b>[Scale] - Auto Scale</b>                                                                                                                                                                                                                      |

## SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.PDIVision

|             |                                                                                                                                                                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                           |
| Syntax      | SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.PDIVision = <i>Value</i><br><i>Value</i> = SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.PDIVision                                                                                                                                                                           |
| Description | For traces 1 to 16 ( <i>Tr</i> ) of channels 1 to 16 ( <i>Ch</i> ), when the data format is not the Smith chart format or the polar format, sets the scale per division. When the data format is the Smith chart format or the polar format, sets the full scale value (the value of the outermost circumference). |

### Variable

|              | <i>Value</i>                                                                                                                                                                                                                                                                                             |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Scale value                                                                                                                                                                                                                                                                                              |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                                                                                                            |
| Range        | 1E-18 to 1E8                                                                                                                                                                                                                                                                                             |
| Preset value | Varies depending the data format. <ul style="list-style-type: none"> <li>• Log magnitude: 10</li> <li>• Phase, Expanded phase or Positive phase: 90</li> <li>• Group delay: 1E-8</li> <li>• Smith chart or Polar or SWR: 1</li> <li>• Linear magnitude: 0.1</li> <li>• Real or Imaginary: 0.2</li> </ul> |
| Unit         | Varies depending on the data format. <ul style="list-style-type: none"> <li>• Log magnitude: dB (decibel)</li> <li>• Phase, Expanded phase or Positive phase: ° (degree)</li> <li>• Group delay: s (second)</li> <li>• Others: No unit</li> </ul>                                                        |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                             |

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

### Examples

```
Dim Pdiv As Double
SCPI.CALCulate(1).PARAMeter(2).SElect
SCPI.CALCulate(1).SElected.FORMat = "gdel"
SCPI.DISPlay.WINDow(1).TRACe(2).Y.SCALe.PDIVision = 1E-9
Pdiv = SCPI.DISPlay.WINDow(1).TRACe(2).Y.SCALe.PDIVision
```

### Related objects

SCPI.CALCulate(Ch).SElected.FORMat on page 280  
 SCPI.DISPlay.WINDow(Ch).Y.SCALe.DIVisions on page 399  
 SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.RLEVel on page 396  
 SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.RPOStion on page 397

### Equivalent key

**[Scale]** - Scale/Div

## SCPI.DISPlay.WINDow(*Ch*).TRACe(*Tr*).Y.SCALe.RLEVel

|             |                                                                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                               |
| Syntax      | SCPI.DISPlay.WINDow( <i>Ch</i> ).TRACe( <i>Tr</i> ).Y.SCALe.RLEVel = <i>Value</i><br><i>Value</i> = SCPI.DISPlay.WINDow( <i>Ch</i> ).TRACe( <i>Tr</i> ).Y.SCALe.RLEVel |
| Description | For traces 1 to 16 ( <i>Tr</i> ) of channels 1 to 16 ( <i>Ch</i> ), sets the value of the reference division line.                                                     |
| Variable    |                                                                                                                                                                        |

|              | <i>Value</i>                                                                                                                                                                                                                                                                       |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Value of reference division line                                                                                                                                                                                                                                                   |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                                                                                      |
| Range        | -5E8 to 5E8                                                                                                                                                                                                                                                                        |
| Preset value | 0*1                                                                                                                                                                                                                                                                                |
| Unit         | Varies depending on the data format. <ul style="list-style-type: none"> <li>• Log magnitude (MLOG): dB (decibel)</li> <li>• Phase (PHAS), Expanded phase (UPH) or Positive phase (PPH): ° (degree)</li> <li>• Group delay (GDEL): s (second)</li> <li>• Others: No unit</li> </ul> |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                       |

\*1. The preset value is 1 when the data format is SWR.

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

**Examples**

```
Dim RefLvl As Double
SCPI.CALCulate(1).PARAMeter(2).SElect
SCPI.CALCulate(1).SElected.FORMat = "phas"
SCPI.DISPlay.WINDow(1).TRACe(2).Y.SCALe.RLEVel = 90
Pdiv = SCPI.DISPlay.WINDow(1).TRACe(2).Y.SCALe.RLEVel
```

**Related objects**

SCPI.CALCulate(Ch).SElected.FORMat on page 280  
SCPI.DISPlay.WINDow(Ch).Y.SCALe.DIVisions on page 399  
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe. PDIVision on page 395  
SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe. RPOSITION on page 397

**Equivalent key**      **[Scale] - Reference Value**

## SCPI.DISPlay.WINDow(*Ch*).TRACe(*Tr*).Y.SCALe.RPOStion

**Object type** Property

**Syntax** SCPI.DISPlay.WINDow(*Ch*).TRACe(*Tr*).Y.SCALe.RPOStion = *Value*  
*Value* = SCPI.DISPlay.WINDow(*Ch*).TRACe(*Tr*).Y.SCALe.RPOStion

**Description** For traces 1 to 16 (*Tr*) of channels 1 to 16 (*Ch*), specifies the position of a reference division line with its number (an integer assigned starting from 0 from the lowest division).

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Position of reference division line                                                                                                                                                                          |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 0 to the number of divisions*1                                                                                                                                                                               |
| Preset value | 5*2                                                                                                                                                                                                          |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

\*1. Set with the SCPI.DISPlay.WINDow(Ch).Y.SCALe.DIVisions object.

\*2. The preset value is 0 when the data format is linear magnitude or SWR.

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

**Examples**

```
Dim RefPos As Long
SCPI.DISPlay.WINDow(1).TRACe(2).Y.SCALe.RPOStion = 6
RefPos = SCPI.DISPlay.WINDow(1).TRACe(2).Y.SCALe.RPOStion
```

**Related objects**

- SCPI.CALCulate(Ch).SElected.FORMat on page 280
- SCPI.DISPlay.WINDow(Ch).Y.SCALe.DIVisions on page 399
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.PDIVision on page 395
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALe.RLEVel on page 396

**Equivalent key** **[Scale] - Reference Position**

## **SCPI.DISPlay.WINDow(Ch).X.SPACing**

|             |                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                               |
| Syntax      | SCPI.DISPlay.WINDow( <i>Ch</i> ).X.SPACing = <i>Param</i><br><i>Param</i> = SCPI.DISPlay.WINDow( <i>Ch</i> ).X.SPACing |
| Description | Selects the display type of the graph horizontal axis of channels 1 to 16 ( <i>Ch</i> ) for segment sweep.             |
| Variable    |                                                                                                                        |

|              |                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                     |
| Description  | Horizontal axis display type of the graph for segment sweep                                                                                                                                                                                                                                                                                                                      |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                   |
| Range        | Select from the following.<br><ul style="list-style-type: none"><li>•"LINear" Specifies the frequency base (linear frequency axis with the minimum frequency at the left edge and the maximum frequency at the right edge).</li><li>•"OBASe" Specifies the order base (axis in which the measurement point numbers are positioned evenly in the order of measurement).</li></ul> |
| Preset value | "OBASe"                                                                                                                                                                                                                                                                                                                                                                          |

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

**Examples**

```
Dim DispSegm As String
SCPI.SENSE(1).SWEep.TYPE = "segm"
SCPI.DISPlay.WINDow(1).X.SPACing = "obas"
DispSegm = SCPI.DISPlay.WINDow(1).X.SPACing
```

**Related objects** SCPI.SENSE(*Ch*).SWEep.TYPE on page 609

**Equivalent key** **[Sweep Setup] - Segment Display**

## SCPI.DISPLAY.WINDOW(*Ch*).Y.SCALE.DIVISIONS

|             |                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                               |
| Syntax      | SCPI.DISPLAY.WINDOW( <i>Ch</i> ).Y.SCALE.DIVISIONS = <i>Value</i><br><i>Value</i> = SCPI.DISPLAY.WINDOW( <i>Ch</i> ).Y.SCALE.DIVISIONS |
| Description | For channels 1 to 16 ( <i>Ch</i> ), sets the number of divisions in all the graphs.                                                    |
| Variable    |                                                                                                                                        |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Number of divisions of graph                                                                                                                                                                                 |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 4 to 30                                                                                                                                                                                                      |
| Preset value | 10                                                                                                                                                                                                           |
| Resolution   | 2                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                                                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim Divs As Long<br>SCPI.DISPLAY.WINDOW(1).Y.SCALE.DIVISIONS = 12<br>Divs = SCPI.DISPLAY.WINDOW(1).Y.SCALE.DIVISIONS                                                                                                                                     |
| Related objects | SCPI.DISPLAY.WINDOW( <i>Ch</i> ).TRACE( <i>Tr</i> ).Y.SCALE.PDIVISION on page 395<br>SCPI.DISPLAY.WINDOW( <i>Ch</i> ).TRACE( <i>Tr</i> ).Y.SCALE.RLEVEL on page 396<br>SCPI.DISPLAY.WINDOW( <i>Ch</i> ).TRACE( <i>Tr</i> ).Y.SCALE.RPOSITION on page 397 |
| Equivalent key  | <b>[Scale] - Divisions</b>                                                                                                                                                                                                                               |

## SCPI.FORMat.BORDER

|             |                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                     |
| Syntax      | SCPI.FORMat.BORDER = <i>Param</i><br><i>Param</i> = SCPI.FORMat.BORDER                                                                                                       |
| Description | When the data transfer format is set to the binary transfer format (specify “REAL” with SCPI.FORMat.DATA object), sets the transfer order of each byte in data (byte order). |

---

**NOTE** This object is NOT used when controlling the E5070B/E5071B using COM objects in the E5070B/E5071B VBA.

---

### Variable

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                          |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Byte order                                                                                                                                                                                                                                                                                                                                            |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                        |
| Range        | Select from the following.<br><ul style="list-style-type: none"><li>•"NORMal"                 Specifies the byte order in which transfer starts from the byte including MSB (Most Significant Bit).</li><li>•"SWAPped"               Specifies the byte order in which transfer starts from the byte including LSB (Least Significant Bit).</li></ul> |
| Preset value | "NORMal"                                                                                                                                                                                                                                                                                                                                              |

**Examples**

```
Dim BitOrd As String
SCPI.FORMat.BORDER "swap"
BitOrd = SCPI.FORMat.BORDER
```

**Related objects**      SCPI.FORMat.DATA on page 401

**Equivalent key**      No equivalent key is available on the front panel.

## SCPI.FORMat.DATA

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Syntax      | <p>SCPI.FORMat.DATA = <i>Param</i></p> <p><i>Param</i> = SCPI.FORMat.DATA</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Description | <p>Use the following SCPI commands to set the format to read the data.</p> <ul style="list-style-type: none"> <li>• :CALC{1-16}:DATA:FDAT</li> <li>• :CALC{1-16}:DATA:FMEM</li> <li>• :CALC{1-16}:DATA:SDAT?</li> <li>• :CALC{1-16}:DATA:SMEM?</li> <li>• :CALC{1-16}:FUNC:DATA?</li> <li>• :CALC{1-16}:LIM:DATA</li> <li>• :CALC{1-16}:LIM:REP?</li> <li>• :CALC{1-16}:LIM:REP:ALL?</li> <li>• :CALC{1-16}:BLIM:REP?</li> <li>• :CALC{1-16}:RLIM:DATA?</li> <li>• :CALC{1-16}:RLIM:REP?</li> <li>• :SENS{1-16}:FREQ:DATA?</li> <li>• :SENS{1-16}:SEGM:DATA</li> <li>• :SOUR:POW:PORT:CORR:COLL:TABL:ASEN:DATA</li> <li>• :SOUR:POW:PORT:CORR:COLL:TABL:BSEN:DATA</li> <li>• :SOUR{1-16}:POW:PORT{1-4}:CORR:COLL:TABL:LOSS:DATA</li> <li>• :SOUR{1-16}:POW:PORT{1-4}:CORR:DATA</li> </ul> |

---

**NOTE** ASCII transfer format must be specified when controlling the E5070B/E5071B using SCPI commands with the **Parse** object in the E5070B/E5071B VBA.

---

### Variable

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Data transfer format                                                                                                                                                                                                                                                                                                                                                        |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                              |
| Range        | <p>Select from the following.</p> <ul style="list-style-type: none"> <li>• "ASCIi"                      Specifies the ASCII transfer format.</li> <li>• "REAL"                        Specifies the IEEE 64-bit floating point binary transfer format.</li> <li>• "REAL32"                      Specifies the IEEE 32-bit floating point binary transfer format.</li> </ul> |
| Preset value | "NORMal"                                                                                                                                                                                                                                                                                                                                                                    |

**Examples**

```
Dim Fmt As String
SCPI.FORMat.DATA = "asc"
Fmt = SCPI.FORMat.DATA
```

**Related objects**

SCPI.FORMat.BORDER on page 400

Parse on page 194

COM Object Reference  
**SCPI.FORMat.DATA**

Equivalent key      No equivalent key is available on the front panel.

## SCPI.HCOPy.ABORT

|                 |                                    |
|-----------------|------------------------------------|
| Object type     | Method                             |
| Syntax          | SCPI.HCOPy.ABORT                   |
| Description     | Aborts the print output. (No read) |
| Examples        | SCPI.HCOPy.ABORT                   |
| Related objects | SCPI.HCOPy.IMMEDIATE on page 404   |
| Equivalent key  | <b>[System] - Abort Printing</b>   |

## SCPI.HCOPy.IMAGe

|             |                                                                    |
|-------------|--------------------------------------------------------------------|
| Object type | Property                                                           |
| Syntax      | SCPI.HCOPy.IMAGe = <i>Param</i><br><i>Param</i> = SCPI.HCOPy.IMAGe |
| Description | Selects the print color for output to the printer.                 |
| Variable    |                                                                    |

|              |                                                                                                                                                                                                                                                                               |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Param</i>                                                                                                                                                                                                                                                                  |
| Description  | Print color for output to the printer.                                                                                                                                                                                                                                        |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"NORMal"                      Specifies printing in close color to the display color.</li> <li>•"INVert"                      Specifies printing in the inverted color of the display color.</li> </ul> |
| Preset value | "INVert"                                                                                                                                                                                                                                                                      |

|                 |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| Examples        | Dim Img As String<br>SCPI.HCOPy.IMAGe = "norm"<br>Img = SCPI.HCOPy.IMAGe |
| Related objects | SCPI.HCOPy.IMMEDIATE on page 404                                         |
| Equivalent key  | <b>[System] - Invert Image</b>                                           |

## SCPI.HCOPy.IMMEDIATE

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Syntax          | SCPI.HCOPy.IMMEDIATE                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Description     | Outputs the display image on the LCD display to the printer connected to the E5070B/E5071B. (No read)                                                                                                                                                                                                                                                                                                                                                                   |
| <b>NOTE</b>     | When printing the E5070B/E5071B measurement screen, execute the VBA program with the Visual Basic editor closed. For the method, see “Running a Program from the E5070B/E5071B Measurement Screen” on page 54.                                                                                                                                                                                                                                                          |
| Examples        | <code>SCPI.HCOPy.IMMEDIATE</code>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Related objects | SCPI.HCOPy.ABORT on page 403<br>SCPI.HCOPy.IMAGE on page 403                                                                                                                                                                                                                                                                                                                                                                                                            |
| Equivalent key  | <b>[System] - Print</b><br>When performing the operation from the front panel, the image on the LCD display memorized in the volatile memory (clipboard) (the image on the LCD display when the <b>[Capture] ([System])</b> key is pressed) is printed. Notice that, if no image is memorized in the clipboard, in the same way as the SCPI.HCOPy.IMMEDIATE object, the image on the LCD display at the execution is memorized in the clipboard and then it is printed. |

## SCPI.IEEE4882.CLS

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type    | Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Syntax         | SCPI.IEEE4882.CLS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Description    | <p>Clears the followings. (No read)</p> <ul style="list-style-type: none"><li>• Error Queue</li><li>• Status Byte Register</li><li>• Standard Event Status Register</li><li>• Operation Status Event Register</li><li>• Questionable Status Event Register</li><li>• Questionable Limit Status Event Register</li><li>• Questionable Limit Extra Status Event Register</li><li>• Questionable Limit Channel Status Event Register</li><li>• Questionable Limit Channel Extra Status Event Register</li><li>• Questionable Bandwidth Limit Status Event Register</li><li>• Questionable Bandwidth Limit Extra Status Event Register</li><li>• Questionable Bandwidth Limit Channel Status Event Register</li><li>• Questionable Bandwidth Limit Channel Extra Status Event Register</li><li>• Questionable Ripple Limit Status Event Register</li><li>• Questionable Ripple Limit Extra Status Event Register</li><li>• Questionable Ripple Limit Channel Status Event Register</li><li>• Questionable Ripple Limit Channel Extra Status Event Register</li></ul> |
| Examples       | SCPI.IEEE4882.CLS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Equivalent key | No equivalent key is available on the front panel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## SCPI.IEEE4882.ESE

|             |                                                                      |
|-------------|----------------------------------------------------------------------|
| Object type | Property                                                             |
| Syntax      | SCPI.IEEE4882.ESE = <i>Value</i><br><i>Value</i> = SCPI.IEEE4882.ESE |
| Description | Sets the value of the Standard Event Status Enable Register.         |
| Variable    |                                                                      |

|              | <i>Value</i>                                                                                                     |
|--------------|------------------------------------------------------------------------------------------------------------------|
| Description  | Value of the Standard Event Status Enable Register                                                               |
| Data type    | Long integer type (Long)                                                                                         |
| Range        | 0 to 255                                                                                                         |
| Preset value | 0                                                                                                                |
| Note         | If the specified variable is out of the allowable setup range, the result of bitwise AND with 255 (0xff) is set. |

**Examples**

```
Dim Stat As Long
SCPI.IEEE4882.ESE = 16
Stat = SCPI.IEEE4882.ESE
```

**Related objects** SCPI.IEEE4882.SRE on page 410

**Equivalent key** No equivalent key is available on the front panel.

**SCPI.IEEE4882.ESR**

|             |                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                |
| Syntax      | <i>Value</i> = SCPI.IEEE4882.ESR                                                                                        |
| Description | Reads out the value of the Standard Event Status Register. Executing this object clears the register value. (Read only) |

## Variable

|             | <i>Value</i>                                |
|-------------|---------------------------------------------|
| Description | Value of the Standard Event Status Register |
| Data type   | Long integer type (Long)                    |

|          |                                                      |
|----------|------------------------------------------------------|
| Examples | <pre>Dim Stat As Long Stat = SCPI.IEEE4882.ESR</pre> |
|----------|------------------------------------------------------|

|                |                                                    |
|----------------|----------------------------------------------------|
| Equivalent key | No equivalent key is available on the front panel. |
|----------------|----------------------------------------------------|

**SCPI.IEEE4882.IDN**

|             |                                                                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                     |
| Syntax      | <i>Cont</i> = SCPI.IEEE4882.IDN                                                                                                              |
| Description | Reads out the product information (manufacturer, model number, serial number, and firmware version number) of the E5070B/E5071B. (Read only) |

## Variable

|             | <i>Cont</i>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Product information (" {string 1}, {string 2}, {string 3}, {string 4}") <ul style="list-style-type: none"> <li>• {string 1}                   Manufacturer. Agilent Technologies is always read out.</li> <li>• {string 2}                   Model number (example: E5070B).</li> <li>• {string 3}                   Serial number (example: JP1KI00101).</li> <li>• {string 4}                   Firmware version number (example: 03.00).</li> </ul> |
| Data type   | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                         |

|          |                                                      |
|----------|------------------------------------------------------|
| Examples | <pre>Dim Who As String Who = SCPI.IEEE4882.IDN</pre> |
|----------|------------------------------------------------------|

|                |                                                                                                        |
|----------------|--------------------------------------------------------------------------------------------------------|
| Equivalent key | <b>[System] - Firmware Revision</b><br><b>[System] - Service Menu - Enable Options - Serial Number</b> |
|----------------|--------------------------------------------------------------------------------------------------------|

## SCPI.IEEE4882.OPC

Object type Property

Syntax (1) SCPI.IEEE4882.OPC = *Dummy*  
(2) *Value* = SCPI.IEEE4882.OPC

Description Case (1):  
Specifies so that 1 is set to OPC bit (bit 0) of the Standard Event Status Register is set to 1 when all of pending operations complete. For information on the structure of the status register, see Appendix “Status Reporting System” in the *E5070B/E5071B Programmer’s Guide*.  
Case (2):  
Specifies so that 1 is read when all of pending operations complete.

Variable Case (2):

|             | <i>Value</i>                                        |
|-------------|-----------------------------------------------------|
| Description | 1 returned when all pending operations are complete |
| Data type   | Long integer type (Long)                            |

Examples Case (1) :  
SCPI.IEEE4882.OPC = 1

Case (2) :  
Dim Dmy As Long  
Dmy = SCPI.IEEE4882.OPC

Related objects SCPI.SENSE(Ch).CORREction.COLLECT.ACQUIRE.ISOLation on page 456  
SCPI.SENSE(Ch).CORREction.COLLECT.ACQUIRE.LOAD on page 457  
SCPI.SENSE(Ch).CORREction.COLLECT.ACQUIRE.OPEN on page 458  
SCPI.SENSE(Ch).CORREction.COLLECT.ACQUIRE.SHORT on page 458  
SCPI.SENSE(Ch).CORREction.COLLECT.ACQUIRE.THROUGH on page 460  
SCPI.TRIGGER.SEQUENCE.SINGLE on page 720

Equivalent key No equivalent key is available on the front panel.

## SCPI.IEEE4882.OPT

|             |                                                                                             |
|-------------|---------------------------------------------------------------------------------------------|
| Object type | Property                                                                                    |
| Syntax      | <i>Cont</i> = SCPI.IEEE4882.OPT                                                             |
| Description | Reads out the identification numbers of options installed in the E5070B/E5071B. (Read only) |

### Variable

|             | <i>Cont</i>                                     |
|-------------|-------------------------------------------------|
| Description | Identification numbers of installed options     |
| Data type   | Character string type (String)                  |
| Note        | If there is no installed option, 0 is read out. |

**Examples**

```
Dim OptNum As String
OptNum = SCPI.IEEE4882.OPT
```

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.IEEE4882.RST

|             |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Method                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | SCPI.IEEE4882.RST                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description | <p>Presets the setting state of the E5070B/E5071B. There is the following difference from the setting state preset with the SCPI.SYSTem.PRESet object. For details, see Appendix “List of Default Values” in the <i>E5070B/E5071B User’s Guide</i>. (No read)</p> <ul style="list-style-type: none"> <li>The continuous initiation mode (see the SCPI.INITiate(Ch).CONTinuous object) of channel 1 is set to OFF.</li> </ul> |

**Examples**

```
SCPI.IEEE4882.RST
```

**Related objects**

- SCPI.INITiate(Ch).CONTinuous on page 412
- SCPI.SYSTem.PRESet on page 711
- SCPI.SYSTem.UPReset on page 717

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.IEEE4882.SRE

|             |                                                                      |
|-------------|----------------------------------------------------------------------|
| Object type | Property                                                             |
| Syntax      | SCPI.IEEE4882.SRE = <i>Value</i><br><i>Value</i> = SCPI.IEEE4882.SRE |
| Description | Sets the value of the Service Request Enable Register.               |
| Variable    |                                                                      |

|              | <i>Value</i>                                                                                                                                         |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Value of the Service Request Enable Register                                                                                                         |
| Data type    | Long integer type (Long)                                                                                                                             |
| Range        | 0 to 255                                                                                                                                             |
| Preset value | 0                                                                                                                                                    |
| Note         | If the specified variable is out of the allowable setup range, the result of bitwise AND with 255 (0xff) is set. Note that bit 6 cannot be set to 1. |

**Examples**

```
Dim Stat As Long
SCPI.IEEE4882.SRE = 8
Stat = SCPI.IEEE4882.SRE
```

**Related objects**

- SCPI.IEEE4882.ESE on page 406
- SCPI.STATus.OPERation.ENABLE on page 635
- SCPI.STATus.QUESTIONable.ENABLE on page 656

**Equivalent key** No equivalent key is available on the front panel.

**SCPI.IEEE4882.STB**

|             |                                                              |
|-------------|--------------------------------------------------------------|
| Object type | Property                                                     |
| Syntax      | <i>Value</i> = SCPI.IEEE4882.STB                             |
| Description | Reads out the value of the Status Byte Register. (Read only) |
| Variable    |                                                              |

|             | <i>Value</i>                      |
|-------------|-----------------------------------|
| Description | Value of the Status Byte Register |
| Data type   | Long integer type (Long)          |

|                |                                                    |
|----------------|----------------------------------------------------|
| Examples       | Dim Stat As Long<br>Stat = SCPI.IEEE4882.STB       |
| Equivalent key | No equivalent key is available on the front panel. |

**SCPI.IEEE4882.TRG**

|                 |                                                                                                                                                                                                                                                                                               |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                                        |
| Syntax          | SCPI.IEEE4882.TRG                                                                                                                                                                                                                                                                             |
| Description     | If the trigger source is set to GPIB/LAN (set to BUS with the SCPI.TRIGger.SEQuence.SOURce object), triggers the E5070B/E5071B waiting for trigger. For information on the waiting for trigger state, see Section “Trigger System” in the <i>E5070B/E5071B Programmer’s Guide</i> . (No read) |
| Examples        | SCPI.TRIGger.SEQuence.SOURce = "bus"<br>SCPI.IEEE4882.TRG                                                                                                                                                                                                                                     |
| Related objects | SCPI.TRIGger.SEQuence.SOURce on page 721                                                                                                                                                                                                                                                      |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                                                                            |

**SCPI.IEEE4882.WAI**

|                |                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------|
| Object type    | Method                                                                                                     |
| Syntax         | SCPI.IEEE4882.WAI                                                                                          |
| Description    | Waits for the execution of all objects sent before this object to be completed. (No read)                  |
| Examples       | SCPI.TRIGger.SEQuence.SOURce = "bus"<br>SCPI.TRIGger.SEQuence.SINGle<br>SCPI.IEEE4882.WAI<br>MsgBox "Done" |
| Equivalent key | No equivalent key is available on the front panel.                                                         |

## SCPI.INITiate(*Ch*).CONTInuous

|             |                                                                                                                                                                                                                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                              |
| Syntax      | SCPI.INITiate( <i>Ch</i> ).CONTInuous = <i>Status</i><br><i>Status</i> = SCPI.INITiate( <i>Ch</i> ).CONTInuous                                                                                                                                                                                        |
| Description | Turns ON/OFF of the continuous initiation mode (setting by which the trigger system initiates continuously) of channels 1 to 16 ( <i>Ch</i> ) in the trigger system.<br><br>For more information on the trigger system, see Section “Trigger System” in the <i>E5070B/E5071B Programmer’s Guide</i> . |

### Variable

|              | <i>Status</i>                                                                                                                                                                                                                              |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the continuous initiation mode                                                                                                                                                                                                   |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                     |
| Range        | Select from the following.<br><ul style="list-style-type: none"><li>•True or -1                      Turns ON the continuous initiation mode.</li><li>•False or 0                      Turns OFF the continuous initiation mode.</li></ul> |
| Preset value | Varies depending on [variable ( <i>Ch</i> )]* <sup>1</sup>                                                                                                                                                                                 |

\*1. Only channel 1 is initialized to ON at the execution of the SCPI.SYSTEM.PRESet object; all the channels are initialized to OFF at the execution of the SCPI.IEEE4882.RST object.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim ContMode As Boolean
SCPI.INITiate(2).CONTInuous = True
ContMode = SCPI.INITiate(2).CONTInuous
```

**Related objects**      SCPI.INITiate(Ch).IMMEDIATE on page 413

**Equivalent key**      **[Trigger] - Continuous** (continuous initiation mode ON)  
**[Trigger] - Hold** (continuous initiation mode OFF)

## SCPI.INITiate(Ch).IMMEDIATE

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax          | SCPI.INITiate(Ch).IMMEDIATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Description     | <p>Changes the state of each channel of channels 1 to 16 (<i>Ch</i>) to the initiation state in the trigger system.</p> <p>When this object is executed for a channel in the idle state in the trigger system, it goes into the initiation state immediately. Then, after measurement is executed once, it goes back to the idle state.</p> <p>If this object is executed for a channel that is not in the idle state or a channel for which the continuous initiation mode is set to ON (setting by which the trigger system initiates continuously) in the trigger system, an error occurs when executed and the object is ignored.</p> <p>For more information on the trigger system, see Section “Trigger System” in the <i>E5070B/E5071B Programmer’s Guide</i>. (No read)</p> |
| Variable        | For information on the variable ( <i>Ch</i> ), see Table 7-6, “Variable (Ch),” on page 203.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Examples        | <pre>SCPI.INITiate(1).CONTinuous = False SCPI.INITiate(1).IMMEDIATE</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Related objects | SCPI.INITiate(Ch).CONTinuous on page 412                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Equivalent key  | <b>[Trigger] - Single</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## SCPI.MMEMemory.CATalog(*Dir*)

- Object type           Property
- Syntax                `Cont = SCPI.MMEMemory.CATalog(Dir)`
- Description           Reads out the following information on the built-in storage device of the E5070B/E5071B.
- Space in use
  - Available space
  - Name and size of all files (including directories) in the specified directory.

To read out the information in the root directory (folder), specify "\" (backslash). If you want to specify a directory on the floppy disk drive, you need to add "A:" at the beginning of the file name. Separate between directory names (file name) with "\" (back slash), or "/" (slash). (Read only)

### Variable

|             | <i>Cont</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p>Directory information ("{A},{B},{Name 1},{Size 1},{Name 2},{Size 2},...,{Name N},{Size N}")</p> <p>Where N is the number of all files in the specified directory and n is an integer between 1 and N.</p> <ul style="list-style-type: none"> <li>• {A}                           Space in use of the built-in storage device (byte)*1.</li> <li>• {B}                           Available space of the built-in storage device (byte)*1.</li> <li>• {Name n}                    Name of the n-th file (directory).</li> <li>• {Size n}                    Size (byte) of the n-th file (directory). Always 0 for directories.</li> </ul> |
| Data type   | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

\*1. If you specify a directory on the floppy disk drive, it is the capacity of the floppy disk in the drive.

|             | <i>Dir</i>                                            |
|-------------|-------------------------------------------------------|
| Description | Directory name whose information you want to read out |
| Data type   | Character string type (String)                        |
| Range       | 254 characters or less                                |

Examples               `Dim DirCont As String`  
`DirCont = SCPI.MMEMemory.CATalog("a:\")`

Equivalent key        No equivalent key is available on the front panel.

## SCPI.MMEMory.COPY

Object type Property

Syntax SCPI.MMEMory.COPY = *File*

Description Copies a file.

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names (folder names) and file name, separate them with "\" (back slash), or "/" (slash). (No read)

Variable

|             | <i>File</i>                                                                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 2 file names (copy source and copy destination). <ul style="list-style-type: none"> <li>• <i>File(0)</i> Copy source file name</li> <li>• <i>File(1)</i> Copy destination file name</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                         |
| Range       | 254 characters or less                                                                                                                                                                                                                         |
| Note        | If the specified copy source file does not exist, an error occurs when executed and the object is ignored. Notice that, if a file with the same name as the specified copy destination file name exists, its contents are overwritten.         |

Examples `SCPI.MMEMory.COPY = Array("test/state01.sta", "a:test01.sta")`

```
Dim File(1) As Variant
File(0) = "test/state01.sta"
File(1) = "a:test01.sta"
SCPI.MMEMory.COPY = File
```

Equivalent key **[Save/Recall] - Save State - File Dialog...**

## SCPI.MMEMory.DElete

Object type Property

Syntax SCPI.MMEMory.DElete = *File*

Description Deletes an existing file or directory (folder).

When you delete a directory, all the files and directories in it are deleted.

Specify the file name with the extension. If you want to specify a file or directory on the floppy disk drive, you need to add "A:" at the beginning of its name. When you specify a file (directory) under an existing directory, separate them with "\" (back slash), or "/" (slash).

To delete all files in the directory (folder), specify "\" (backslash). (No read)

Variable

|             |                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------|
|             | <b><i>File</i></b>                                                                                          |
| Description | File name or directory name you want to delete                                                              |
| Data type   | Character string type (String)                                                                              |
| Range       | 254 characters or less                                                                                      |
| Note        | If the specified file or directory does not exist, an error occurs when executed and the object is ignored. |

Examples SCPI.MMEMory.DElete = "a:\"

SCPI.MMEMory.DElete = "test/state01.sta"

Equivalent key **[Save/Recall] - Save State - File Dialog...**

## SCPI.MMEMory.LOAD.ASCFactor

Object type Property

Syntax SCPI.MMEMory.LOAD.ASCFactor = *File*

Description Recalls the file (file with the ".csv" extension saved with the SCPI.MMEMory.STORE.ASCFactor object) you want to specify as the table for the reference calibration coefficient and the calibration coefficient table for power sensor A. Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

Variable

|             | <i>File</i>                                                                                                                       |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Description | A file name (extension ".csv") of the reference calibration coefficient and the calibration coefficient table for power sensor A. |
| Data type   | Character string type (String)                                                                                                    |
| Range       | 254 characters or less                                                                                                            |
| Note        | If the specified file does not exist, a runtime error occurs.                                                                     |

Examples SCPI.MMEMory.LOAD.ASCFactor = "a:\sensor01.csv"

SCPI.MMEMory.LOAD.ASCFactor = "test/sensor01.csv"

Related objects SCPI.MMEMory.STORE.ASCFactor on page 427

Equivalent key **[Cal] - Power Calibration - Sensor A Settings - Import from CSV File**

## SCPI.MMEMory.LOAD.BSCFactor

Object type Property

Syntax SCPI.MMEMory.LOAD.BSCFactor = *File*

Description Recalls the file (file with the ".csv" extension saved with the SCPI.MMEMory.STORE.BSCFactor object) you want to specify as the table for the reference calibration coefficient and the calibration coefficient table for power sensor B.

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

Variable

|             |                                                                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------|
|             | <b><i>File</i></b>                                                                                                                |
| Description | A file name (extension ".csv") of the reference calibration coefficient and the calibration coefficient table for power sensor B. |
| Data type   | Character string type (String)                                                                                                    |
| Range       | 254 characters or less                                                                                                            |
| Note        | If the specified file does not exist, a runtime error occurs.                                                                     |

Examples SCPI.MMEMory.LOAD.BSCFactor = "a:\sensor01.csv"

SCPI.MMEMory.LOAD.BSCFactor = "test/sensor01.csv"

Related objects SCPI.MMEMory.STORE.BSCFactor on page 428

Equivalent key **[Cal] - Power Calibration - Sensor B Settings - Import from CSV File**

## SCPI.MMEMory.LOAD.CHANnel.STATe

- Object type** Property
- Syntax** SCPI.MMEMory.LOAD.CHANnel.STATe = *Register*
- Description** Recalls the instrument state for an individual channel (saved with the SCPI.MMEMory.STORe.CHANnel.STATe object) from the specified register as the setting of the active channel.  
 It is possible to recall the register from a different channel where it was saved. (No read)

**Variable**

|             |                                                                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <b><i>Register</i></b>                                                                                                                                                                                                                                                                                     |
| Description | Register                                                                                                                                                                                                                                                                                                   |
| Data type   | Character string type (String)                                                                                                                                                                                                                                                                             |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•"A"                      Specifies register A.</li> <li>•"B"                      Specifies register B.</li> <li>•"C"                      Specifies register C.</li> <li>•"D"                      Specifies register D.</li> </ul> |
| Note        | If no instrument state has been saved in the specified register, an error occurs and the object is ignored.                                                                                                                                                                                                |

- Examples** SCPI.MMEMory.LOAD.CHANnel.STATe = "a"
- Related objects** SCPI.MMEMory.STORe.CHANnel.STATe on page 429  
 SCPI.DISPlay.WINDow(Ch).ACTivate on page 383
- Equivalent key** **[Save/Recall] - Recall Channel - A|B|C|D**

## SCPI.MMEMory.LOAD.CKIT(*Ckit*)

**Object type** Property

**Syntax** SCPI.MMEMory.LOAD.CKIT(*Ckit*) = *File*

**Description** Recalls the instrument state for an individual channel (saved with the SCPI.MMEMory.STORE.CHANnel.STATE object) from the specified register as the setting of the active channel.

It is possible to recall the register from a different channel where it was saved. (No read)

**Variable**

**Table 7-13**

### Variable (*Ckit*)

|              | <i>Ckit</i>                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------|
| Description  | Number of calibration kit                                                                     |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 1 to 20                                                                                       |
| Preset value | 1                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, an error occurs when executed. |

|             | <i>File</i>                                                   |
|-------------|---------------------------------------------------------------|
| Description | File name of the definition table of a calibration kit        |
| Data type   | Character string type (String)                                |
| Range       | 254 characters or less                                        |
| Note        | If the specified file does not exist, a runtime error occurs. |

**Examples** SCPI.MMEMory.LOAD.CKIT(1) = "Test1/Ckit01.ckx"

SCPI.MMEMory.LOAD.CKIT(1) = "A:\Ckit01.ckx"

**Related objects** SCPI.MMEMory.STORE.CKIT(Ckit) on page 430

**Equivalent key** **[Cal] - Modify Cal Kit - Import Cal Kit...**

## SCPI.MMEMory.LOAD.LIMit

**Object type** Property

**Syntax** SCPI.MMEMory.LOAD.LIMit = *File*

**Description** As the limit table for the active trace of the active channel, recalls the specified limit table file (file with the .csv extension saved with the SCPI.MMEMory.STORE.LIMit object).  
 Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

**Variable**

|             | <i>File</i>                                                                                    |
|-------------|------------------------------------------------------------------------------------------------|
| Description | File name of limit table (extension ".csv")                                                    |
| Data type   | Character string type (String)                                                                 |
| Range       | 254 characters or less                                                                         |
| Note        | If the specified file does not exist, an error occurs when executed and the object is ignored. |

**Examples**

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.MMEMory.LOAD.LIMit = "a:\limit01.csv"

SCPI.DISPlay.WINDow(1).ACTivate
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.MMEMory.LOAD.LIMit = "test/limit01.csv"
```

**Related objects**

SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
 SCPI.MMEMory.STORE.LIMit on page 433

**Equivalent key**

**[Analysis] - Limit Test - Edit Limit Line - Import from CSV File**

## SCPI.MMEMory.LOAD.PLOSs(Pt)

Object type Property

Syntax SCPI.MMEMory.LOAD.PLOSs(Pt) = *File*

Description For ports 1 to 4 (*Pt*), as the loss compensation table for the active channel, recalls the specified loss compensation table file (a file with the ".csv" extension saved with the SCPI.MMEMory.STORe.PLOSs(Pt) object).

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

Variable

|             | <i>File</i>                                                   |
|-------------|---------------------------------------------------------------|
| Description | File name of the loss compensation table (extension ".csv")   |
| Data type   | Character string type (String)                                |
| Range       | 254 characters or less                                        |
| Note        | If the specified file does not exist, a runtime error occurs. |

For information on the variable (*Pt*), refer to Table 7-9, "Variable (Pt)," on page 235.

Examples

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.MMEMory.LOAD.PLOSs(1) = "a:\loss01.csv"
```

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.MMEMory.LOAD.PLOSs(1) = "test/loss01.csv"
```

Related objects

SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.MMEMory.STORe.PLOSs(Pt) on page 434

Equivalent key

**[Cal] - Power Calibration - Loss Compen - Import from CSV File**

## SCPI.MMEMory.LOAD.RLIMit

Object type Property

Syntax SCPI.MMEMory.LOAD.RLIMit = *File*

Description As the ripple limit table for the active trace (specified with the SCPI.CALCulate(Ch).PARAmeter(Tr).SELEct command) of the active channel (specified with the SCPI.DISPlay.WINDow(Ch).ACTivate command), recalls the specified ripple limit table file (file with the .csv extension saved with the SCPI.MMEMory.STORE.RLIMit command).

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you write directory names and file name, separate them with "/" (slash) or "\" (backslash).

If the specified file does not exist, an error occurs and the command is ignored. (Read only)

Variable

|             | <i>File</i>                                                                                    |
|-------------|------------------------------------------------------------------------------------------------|
| Description | File name of the ripple limit table (extension ".csv")                                         |
| Data type   | Character string type (String)                                                                 |
| Range       | 254 characters or less                                                                         |
| Note        | If the specified file does not exist, an error occurs when executed and the object is ignored. |

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

Examples (1)  
 SCPI.DISPlay.WINDow(1).ACTive  
 SCPI.CALCulate(1).PARAmeter(1).SELEct  
 SCPI.MMEMory.LOAD.RIMit = "A:\Rlimit01.csv"

Examples (2)  
 SCPI.DISPlay.WINDow(1).ACTive  
 SCPI.CALCulate(1).PARAmeter(1).SELEct  
 SCPI.MMEMory.LOAD.RLIMit = "test/Rlimit01.csv"

Related objects  
 SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.CALCulate(Ch).PARAmeter(Tr).SELEct on page 253  
 SCPI.MMEMory.STORE.RLIMit on page 435

Equivalent key **[Analysis] - Ripple Limit - Edit Ripple Line - Import from CSV File**

## SCPI.MMEMory.LOAD.SEGMent

- Object type** Property
- Syntax** SCPI.MMEMory.LOAD.SEGMent = *File*
- Description** As the segment sweep table of the active channel, recalls the specified segment sweep table file (file with the .csv extension saved with the SCPI.MMEMory.STORE.SEGMent object).  
Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

**Variable**

|             |                                                                                                |
|-------------|------------------------------------------------------------------------------------------------|
|             | <i>File</i>                                                                                    |
| Description | File name of segment sweep table (extension ".csv")                                            |
| Data type   | Character string type (String)                                                                 |
| Range       | 254 characters or less                                                                         |
| Note        | If the specified file does not exist, an error occurs when executed and the object is ignored. |

- Examples**
- ```
SCPI.DISPlay.WINDow(1).ACTivate  
SCPI.MMEMory.LOAD.SEGMent = "a:\segm01.csv"
```
- ```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.MMEMory.LOAD.SEGMent = "test/segm01.csv"
```
- Related objects** SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
SCPI.MMEMory.STORE.SEGMent on page 437
- Equivalent key** **[Sweep Setup] - Edit Segment Table - Import from CSV File**

## SCPI.MMEMory.LOAD.STATe

**Object type** Property

**Syntax** SCPI.MMEMory.LOAD.STATe = *File*

**Description** Recalls the specified instrument state file (file with the .sta extension saved with the SCPI.MMEMory.STORE.STATe object).

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

**Variable**

|             | <i>File</i>                                                                                    |
|-------------|------------------------------------------------------------------------------------------------|
| Description | File name of instrument state (extension ".sta")                                               |
| Data type   | Character string type (String)                                                                 |
| Range       | 254 characters or less                                                                         |
| Note        | If the specified file does not exist, an error occurs when executed and the object is ignored. |

**Examples**

```
SCPI.MMEMory.LOAD.STATe = "a:\state01.sta"
```

```
SCPI.MMEMory.LOAD.STATe = "test/state01.sta"
```

**Related objects** SCPI.MMEMory.STORE.STATe on page 438

**Equivalent key** **[Save/Recall] - Recall State**

## SCPI.MMEMory.MDIRectory

Object type Property

Syntax SCPI.MMEMory.MDIRectory = *File*

Description Creates a new directory (folder).

If you want to create a directory on the floppy disk drive, you need to add "A:" at the beginning of the directory name. When you create a directory under an existing directory, separate between the directory names with "\" (back slash), or "/" (slash). (No read)

### Variable

|             | <i>File</i>                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------|
| Description | Directory name you want to create                                                                                                  |
| Data type   | Character string type (String)                                                                                                     |
| Range       | 254 characters or less                                                                                                             |
| Note        | If a directory with the same name as the specified directory name exists, an error occurs when executed and the object is ignored. |

Examples SCPI.MMEMory.MDIRectory = "a:\test"

SCPI.MMEMory.MDIRectory = "test"

Equivalent key **[Save/Recall] - Save State - File Dialog...**

## SCPI.MMEMory.STORE.ASCFactor

**Object type** Property

**Syntax** SCPI.MMEMory.STORE.ASCFactor = *File*

**Description** Saves the reference calibration coefficient and the calibration coefficient table for power sensor A into a CSV file (extension ".csv").

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

**Variable**

|             |                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
|             | <i>File</i>                                                                                                                            |
| Description | A file name (extension ".csv") to save the reference calibration coefficient and the calibration coefficient table for power sensor A. |
| Data type   | Character string type (String)                                                                                                         |
| Range       | 254 characters or less                                                                                                                 |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten.                                          |

**Examples** SCPI.MMEMory.STORE.ASCFactor = "a:\sensor01.csv"

SCPI.MMEMory.STORE.ASCFactor = "test/sensor01.csv"

**Related objects** SCPI.MMEMory.LOAD.ASCFactor on page 417

**Equivalent key** **[Cal] - Power Calibration - Sensor A Settings - Export to CSV File**

## SCPI.MMEMory.STORe.BSCFactor

|             |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | SCPI.MMEMory.STORe.BSCFactor = <i>File</i>                                                                                                                                                                                                                                                                                                                                                                                  |
| Description | <p>Saves the reference calibration coefficient and the calibration coefficient table for power sensor B into a CSV file (extension ".csv").</p> <p>Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)</p> |

### Variable

|             | <i>File</i>                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Description | A file name (extension ".csv") to save the reference calibration coefficient and the calibration coefficient table for power sensor B. |
| Data type   | Character string type (String)                                                                                                         |
| Range       | 254 characters or less                                                                                                                 |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten.                                          |

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| Examples | <pre>SCPI.MMEMory.STORe.BSCFactor = "a:\sensor01.csv"</pre> <pre>SCPI.MMEMory.STORe.BSCFactor = "test/sensor01.csv"</pre> |
|----------|---------------------------------------------------------------------------------------------------------------------------|

|                 |                                         |
|-----------------|-----------------------------------------|
| Related objects | SCPI.MMEMory.LOAD.BSCFactor on page 418 |
|-----------------|-----------------------------------------|

|                |                                                                           |
|----------------|---------------------------------------------------------------------------|
| Equivalent key | <b>[Cal] - Power Calibration - Sensor B Settings - Export to CSV File</b> |
|----------------|---------------------------------------------------------------------------|

## SCPI.MMEMory.STORe.CHANnel.CLEAr

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                 |
| Syntax          | SCPI.MMEMory.STORe.CHANnel.CLEAr                                                                                                       |
| Description     | Deletes the instrument state for each channel (saved with the SCPI.MMEMory.STORe.CHANnel.STATe object) in all the registers. (No read) |
| Examples        | <code>SCPI.MMEMory.STORe.CHANnel.CLEAr</code>                                                                                          |
| Related objects | SCPI.MMEMory.STORe.CHANnel.STATe on page 429                                                                                           |
| Equivalent key  | <b>[Save/Recall] - Save Channel - Clear States - OK</b>                                                                                |

## SCPI.MMEMory.STORe.CHANnel.STATe

|             |                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                  |
| Syntax      | SCPI.MMEMory.STORe.CHANnel.STATe = <i>Register</i>                                                                                                        |
| Description | Saves the instrument state of the items set for the active channel specific to that channel only into the specified register (volatile memory). (No read) |

### Variable

|             |                                                                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <i>Register</i>                                                                                                                                                                                                                                                                                            |
| Description | Register                                                                                                                                                                                                                                                                                                   |
| Data type   | Character string type (String)                                                                                                                                                                                                                                                                             |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•"A"                      Specifies register A.</li> <li>•"B"                      Specifies register B.</li> <li>•"C"                      Specifies register C.</li> <li>•"D"                      Specifies register D.</li> </ul> |
| Note        | If an instrument state has been saved already in the specified register, its contents are overwritten.                                                                                                                                                                                                     |

|                 |                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------|
| Examples        | <code>SCPI.MMEMory.STORe.CHANnel.STATe = "a"</code>                                         |
| Related objects | SCPI.MMEMory.LOAD.CHANnel.STATe on page 419<br>SCPI.DISPlay.WINDow(Ch).ACTivate on page 383 |
| Equivalent key  | <b>[Save/Recall] - Save Channel - A B C D</b>                                               |

## SCPI.MMEMory.STORe.CKIT(*Ckit*)

Object type

Property

Syntax

SCPI.MMEMory.STORe.CKIT(*Ckit*) = *File*

Description

Saves the definition table of the calibration kit to a file.

Specify the file name with the .ckx extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use a directory name and file name, separate them with "/" (slash) or "\" (backslash).

Notice that, if a file with the specified file name exists, its contents are overwritten. (No Read)

Variable

|             | <i>File</i>                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | A file name used to save the definition of the calibration kit.                               |
| Data type   | Character string type (String)                                                                |
| Range       | 254 characters or less                                                                        |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten. |

For information on the variable (*Ckit*), see Table 7-13, "Variable (Ckit)," on page 420.

Examples

```
SCPI.MMEMory.STORe.CKIT(1) = "a:\Ckit01.ckx"
```

```
SCPI.MMEMory.STORe.CKIT(1) = "test/trace01.csv"
```

Related objects

SCPI.MMEMory.LOAD.CKIT(Ckit) on page 420

Equivalent key

**[Save/Recall] - Save Trace Data**

## SCPI.MMEMory.STORe.FDATA

**Object type** Property

**Syntax** SCPI.MMEMory.STORe.FDATA = *File*

**Description** For the active trace of the active channel, saves the formatted data array into a file in the CSV format (extension ".csv").

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

**Variable**

|             |                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------|
|             | <i>File</i>                                                                                   |
| Description | File name in which you want to save the formatted data array (extension ".csv")               |
| Data type   | Character string type (String)                                                                |
| Range       | 254 characters or less                                                                        |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten. |

**Examples**

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.CALCulate(1).PARAmeter(1).SELEct
SCPI.MMEMory.STORe.FDATA = "a:\trace01.csv"
```

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.CALCulate(1).PARAmeter(1).SELEct
SCPI.MMEMory.STORe.FDATA = "test/trace01.csv"
```

**Related objects**

SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.CALCulate(Ch).PARAmeter(Tr).SELEct on page 253

**Equivalent key**

**[Save/Recall] - Save Trace Data**

## SCPI.MMEMory.STORe.IMAGe

Object type Property

Syntax SCPI.MMEMory.STORe.IMAGe = *File*

Description Saves the display image on the LCD display at the execution of the object into a file in the bitmap (extension ".bmp") or portable network graphics (extension ".png") format. When saving the E5070B/E5071B measurement screen, execute the VBA program with the Visual Basic editor closed. For more information, see "Running a Program from the E5070B/E5071B Measurement Screen" on page 54.

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

Variable

|             | <i>File</i>                                                                                           |
|-------------|-------------------------------------------------------------------------------------------------------|
| Description | File name in which you want to save the display image on the LCD display (extension ".bmp" or ".png") |
| Data type   | Character string type (String)                                                                        |
| Range       | 254 characters or less                                                                                |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten.         |

Examples SCPI.MMEMory.STORe.IMAGe = "a:\image01.bmp"

SCPI.MMEMory.STORe.IMAGe = "test/image01.png"

Equivalent key **[System] - Dump Screen Image**

When performing the operation from the front panel, the image on the LCD display memorized in the volatile memory (clipboard) (the image on the LCD display when the **[Capture] ([System])** key is pressed) is saved. Notice that, if no image is memorized in the clipboard, in the same way as the SCPI.MMEMory.STORe.IMAGe object, the image on the LCD display at the execution is memorized in the clipboard and then it is saved.

## SCPI.MMEMory.STORe.LIMit

**Object type** Property

**Syntax** SCPI.MMEMory.STORe.LIMit = *File*

**Description** Saves the limit table of the active trace of the active channel into a file in the CSV format (extension ".csv").

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

**Variable**

|             | <i>File</i>                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | File name to save the limit table (extension ".csv")                                          |
| Data type   | Character string type (String)                                                                |
| Range       | 254 characters or less                                                                        |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten. |

**Examples**

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.MMEMory.STORe.LIMit = "a:\limit01.csv"
```

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.CALCulate(1).PARAmeter(1).SElect
SCPI.MMEMory.STORe.LIMit = "test/limit01.csv"
```

**Related objects**

SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.CALCulate(Ch).PARAmeter(Tr).SElect on page 253  
 SCPI.MMEMory.LOAD.LIMit on page 421

**Equivalent key**

**[Analysis] - Limit Test - Edit Limit Line - Export to CSV File**

## SCPI.MMEMory.STORe.PLOSs(Pt)

**Object type** Property

**Syntax** SCPI.MMEMory.STORe.PLOSs(Pt) = *File*

**Description** For ports 1 to 4 (*Pt*), saves the loss compensation table of the active channel into a file in the CSV format (extension ".csv").

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

**Variable**

|             | <i>File</i>                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | A file name to save the loss compensation table (extension ".csv")                            |
| Data type   | Character string type (String)                                                                |
| Range       | 254 characters or less                                                                        |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten. |

For information on the variable (*Pt*), refer to Table 7-9, "Variable (Pt)," on page 235.

**Examples**

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.MMEMory.STORe.PLOSs(1) = "a:\loss01.csv"
```

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.MMEMory.STORe.PLOSs(1) = "test/loss01.csv"
```

**Related objects**

SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.MMEMory.LOAD.PLOSs(Pt) on page 422

**Equivalent key**

**[Cal] - Power Calibration - Loss Compen - Export to CSV File**

## SCPI.MMEMory.STORe.RLIMit

**Object type** Property

**Syntax** SCPI.MMEMory.STORe.RLIMit = *File*

**Description** Saves the ripple limit table of the active trace (specified with the SCPI.CALCulate(Ch).PARAmeter(Tr).SELEct command) of the active channel (specified with the SCPI.DISPlay.WINDow(Ch).ACTivate command) into a file in the CSV format.

Specify the file name with the .sta extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you write directory names and file name, separate them with "/" (slash) or "\" (backslash).

Notice that if a file with the specified file name already exists, its contents will be overwritten. (Read only)

**Variable**

|             |                                                                  |
|-------------|------------------------------------------------------------------|
|             | <i>File</i>                                                      |
| Description | File name used to save the ripple limit table (extension ".csv") |
| Data type   | Character string type (String)                                   |
| Range       | 254 characters or less                                           |
| Note        | If the specified file does not exist, a runtime error occurs.    |

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

**Examples (1)**  
 SCPI.DISPlay.WINDow(1).ACTivate  
 SCPI.CALCulate(1).PARAmeter(1).SELEct  
 SCPI.MMEMory.STORe.RLIMit = "A:\Rlimit01.csv"

**Examples (2)**  
 SCPI.DISPlay.WINDow(1).ACTivate  
 SCPI.CALCulate(1).PARAmeter(1).SELEct  
 SCPI.MMEMory.STORe.RLIMit = "test/Rlimit01.csv"

**Related objects**  
 SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.CALCulate(Ch).PARAmeter(Tr).SELEct on page 253  
 SCPI.MMEMory.LOAD.RLIMit on page 423

**Equivalent key** **[Analysis] - Ripple Limit - Edit Ripple Line - Export to CSV File**

## SCPI.MMEMory.STORe.SALL

Object type

Property

Syntax

SCPI.MMEMory.STORe.SALL = *Status*

*Status* = SCPI.MMEMory.STORe.SALL

Description

Selects whether to save the setting of all channels/traces or that of the displayed channels/traces only as the instrument state to be saved.

Variable

|              |                                                                                                                                                                                                                                                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                                                                                                              |
| Description  | Selecting content to be saved as the instrument state setting.                                                                                                                                                                                                                                                    |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                                                                                            |
| Range        | Select from the following. <ul style="list-style-type: none"><li>• True or -1                      Specifies the setting of all channels/traces as the target to be saved.</li><li>• False or 0                      Specifies the setting of displayed channels/traces only as the target to be saved.</li></ul> |
| Preset value | False or 0                                                                                                                                                                                                                                                                                                        |

Examples

```
Dim Obj As Boolean
SCPI.MMEMory.STORe.SALL = True
Obj = SCPI.MMEMory.STORe.SALL
```

Related objects

SCPI.MMEMory.STORe.STATe on page 438

Equivalent key

**[Save/Recall] - Channel/Trace**

## SCPI.MMEMory.STORe.SEGMent

**Object type** Property

**Syntax** SCPI.MMEMory.STORe.SEGMent = *File*

**Description** Saves the segment sweep table of the active channel into a file in the CSV format (extension ".csv").

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

**Variable**

|             |                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------|
|             | <i>File</i>                                                                                   |
| Description | File name to save segment sweep table (extension ".csv")                                      |
| Data type   | Character string type (String)                                                                |
| Range       | 254 characters or less                                                                        |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten. |

**Examples**

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.MMEMory.STORe.SEGMent = "a:\segm01.csv"
```

```
SCPI.DISPlay.WINDow(1).ACTivate
SCPI.MMEMory.STORe.SEGMent = "test/segm01.csv"
```

**Related objects** SCPI.DISPlay.WINDow(Ch).ACTivate on page 383  
 SCPI.MMEMory.LOAD.SEGMent on page 424

**Equivalent key** **[Sweep Setup] - Edit Segment Table - Export to CSV File**

## SCPI.MMEMory.STORe.STATe

**Object type** Property

**Syntax** SCPI.MMEMory.STORe.STATe = *File*

**Description** Saves the instrument state (contents to be saved specified with the SCPI.MMEMory.STORe.STYPE object) into a file (file with the .sta extension).

Specify the file name with the extension. If you want to specify a file on the floppy disk drive, you need to add "A:" at the beginning of the file name. When you use directory names and file name, separate them with "\" (back slash), or "/" (slash). (No read)

---

**NOTE** The instrument setting file saved with the "autorec.sta" file name is automatically recalled when turning on the E5070B/E5071B.

---

**Variable**

|             | <i>File</i>                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | File name to save the instrument state (extension ".sta")                                     |
| Data type   | Character string type (String)                                                                |
| Range       | 254 characters or less                                                                        |
| Note        | If a file with the same name as the specified file name exists, its contents are overwritten. |

**Examples**

```
Dim StaType As String
SCPI.MMEMory.STORe.STYPE = "cdst"
SCPI.MMEMory.STORe.STATe = "a:\state01.sta"

Dim StaType As String
SCPI.MMEMory.STORe.STYPE = "cdst"
SCPI.MMEMory.STORe.STATe = "test/state01.sta"
```

**Related objects** SCPI.MMEMory.STORe.STYPE on page 439  
SCPI.MMEMory.LOAD.STATe on page 425

**Equivalent key** **[Save/Recall] - Save State**

## SCPI.MMEMory.STORe.STYPe

|             |                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                          |
| Syntax      | SCPI.MMEMory.STORe.STYPe = <i>Param</i><br><i>Param</i> = SCPI.MMEMory.STORe.STYPe                                |
| Description | Selects the contents saved when saving the instrument state into a file with the SCPI.MMEMory.STORe.STATe object. |
| Variable    |                                                                                                                   |

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Data of instrument state                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"STATE"                Specifies the save of the measurement conditions<sup>*1</sup> only.</li> <li>•"CStAtE"               Specifies the save of the measurement conditions<sup>*1</sup> and the calibration state.</li> <li>•"DStAtE"               Specifies the save of the measurement conditions<sup>*1</sup> and the formatted data array.</li> <li>•"CDStAtE"              Specifies the save of the measurement conditions<sup>*1</sup>, the calibration state, and the formatted data array.</li> </ul> |
| Preset value | "CStAtE"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

\*1. For information on the measurement conditions to be saved, see Appendix "List of Default Values" in the *E5070B/E5071B User's Guide or Programmer's Guide*.

|                 |                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim StaType As String SCPI.MMEMory.STORe.STYPe = "cdst" StaType = SCPI.MMEMory.STORe.STYPe</pre> |
| Related objects | SCPI.MMEMory.STORe.STATe on page 438                                                                  |
| Equivalent key  | <b>[Save/Recall] - Save Type - State Only State &amp; Cal State &amp; Trace All</b>                   |

## SCPI.OUTPUT.STATE

**Object type** Property

**Syntax** SCPI.OUTPUT.STATE = *Status*  
*Status* = SCPI.OUTPUT.STATE

**Description** Turns on/off of the stimulus signal output. You cannot perform measurement until you turn on the stimulus signal output.

**Variable**

|              |                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------|
|              | <i>Status</i>                                                                                                         |
| Description  | On/off of the stimulus signal output                                                                                  |
| Data type    | Boolean type (Boolean)                                                                                                |
| Range        | Select from the following.<br>•True or -1 Turns on the stimulus signal.<br>•False or 0 Turns off the stimulus signal. |
| Preset value | True or -1                                                                                                            |

**Examples**

```
Dim Outp As Boolean
SCPI.OUTPUT.STATE = True
Outp = SCPI.OUTPUT.STATE
```

**Equivalent key** **[Sweep Setup] - Power - RF Out**

### SCPI.SENSE(*Ch*).AVERAge.CLEAr

|                 |                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                     |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).AVERAge.CLEAr                                                                                                                                      |
| Description     | Resets the data count to 0 used for averaging of channels 1 to 16 ( <i>Ch</i> ). Measurement data before the execution of this object is not used for averaging. (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ), see Table 7-6, “Variable (Ch),” on page 203.                                                                                |
| Examples        | SCPI.SENSE(1).AVERAge.CLEAr                                                                                                                                                |
| Related objects | SCPI.SENSE(Ch).AVERAge.COUNT on page 441<br>SCPI.SENSE(Ch).AVERAge.STATE on page 442                                                                                       |
| Equivalent key  | <b>[Avg] - Averaging Restart</b>                                                                                                                                           |

### SCPI.SENSE(*Ch*).AVERAge.COUNT

|             |                                                                                                              |
|-------------|--------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                     |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).AVERAge.COUNT = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).AVERAge.COUNT |
| Description | Sets the averaging factor of channels 1 to 16 ( <i>Ch</i> ).                                                 |
| Variable    |                                                                                                              |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Averaging factor                                                                                                                                                                                             |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 1 to 999                                                                                                                                                                                                     |
| Preset value | 16                                                                                                                                                                                                           |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                               |
|-----------------|-----------------------------------------------------------------------------------------------|
| Examples        | Dim AvgCnt As Long<br>SCPI.SENSE(1).AVERAge.COUNT = 4<br>AvgCnt = SCPI.SENSE(1).AVERAge.COUNT |
| Related objects | SCPI.SENSE(Ch).AVERAge.STATE on page 442<br>SCPI.SENSE(Ch).AVERAge.CLEAr on page 441          |
| Equivalent key  | <b>[Avg] - Avg Factor</b>                                                                     |

## SCPI.SENSE(*Ch*).AVERAge.STATE

|             |                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                       |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).AVERAge.STATE = <i>Status</i><br><i>Status</i> = SCPI.SENSE( <i>Ch</i> ).AVERAge.STATE |
| Description | Turns ON/OFF the averaging function of channels 1 to 16 ( <i>Ch</i> ).                                         |
| Variable    |                                                                                                                |

|              |                                                                                                                                                                                                                               |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                          |
| Description  | ON/OFF of the averaging function                                                                                                                                                                                              |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                        |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•True or -1                      Turns ON the averaging function.</li> <li>•False or 0                      Turns OFF the averaging function.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                    |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim Avg As Boolean
SCPI.SENSE(1).AVERAge.STATE = True
Avg = SCPI.SENSE(1).AVERAge.STATE
```

**Related objects**

SCPI.SENSE(*Ch*).AVERAge.COUNT on page 441  
SCPI.SENSE(*Ch*).AVERAge.CLEAr on page 441

**Equivalent key**      **[Avg] - Averaging**

## SCPI.SENSE(*Ch*).BANDwidth.RESolution

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).BANDwidth.RESolution = *Value*  
*Value* = SCPI.SENSE(*Ch*).BANDwidth.RESolution

**Description** Sets the IF bandwidth of channels 1 to 16 (*Ch*).  
This object provides the same function as the SCPI.SENSE(*Ch*).BWIDth.RESolution object.

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | IF bandwidth                                                                                                                                                                                                 |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 10 to 100000                                                                                                                                                                                                 |
| Preset value | 70000                                                                                                                                                                                                        |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Resolution   | In steps of 1, 1.5, 2, 3, 4, 5, or 7                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples**

```
Dim IfBw As Double
SCPI.SENSE(1).BANDwidth.RESolution = 1.5E3
IfBw = SCPI.SENSE(1).BANDwidth.RESolution
```

**Related objects** SCPI.SENSE(*Ch*).BWIDth.RESolution on page 444

**Equivalent key** **[Avg] - IF Bandwidth**

## SCPI.SENSE(*Ch*).BWIDth.RESolution

|             |                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                       |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).BWIDth.RESolution = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).BWIDth.RESolution                                           |
| Description | Sets the IF bandwidth of channels 1 to 16 ( <i>Ch</i> ).<br>This object provides the same function as the SCPI.SENSE( <i>Ch</i> ).BANDwidth.RESolution object. |

### Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | IF bandwidth                                                                                                                                                                                                 |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 10 to 100000                                                                                                                                                                                                 |
| Preset value | 70000                                                                                                                                                                                                        |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Resolution   | In steps of 1, 1.5, 2, 3, 4, 5, or 7                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim IfBw As Double SCPI.SENSE(1).BWIDth.RESolution = 1.5E3 IfBw = SCPI.SENSE(1).BWIDth.RESolution</pre> |
| Related objects | SCPI.SENSE( <i>Ch</i> ).BANDwidth.RESolution on page 443                                                     |
| Equivalent key  | <b>[Avg] - IF Bandwidth</b>                                                                                  |

## SCPI.SENSE(*Ch*).CORRection.CLEAr

|                 |                                                                                                                                      |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Type of object  | Method                                                                                                                               |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORRection.CLEAr                                                                                             |
| Description     | For channels 1 to 16 ( <i>Ch</i> ), clears the error coefficient for calibration when the frequency offset feature is off. (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ), refer to Table 7-6, “Variable (Ch),” on page 203.                                     |
| Example of use  | SCPI.SENSE(1).CORRection.CLEAr                                                                                                       |
| Related objects | SCPI.SENSE(Ch).OFFSet.STATe on page 598<br>SCPI.SENSE(Ch).CORRection.OFFSet.CLEAr on page 538                                        |
| Equivalent key  | <b>[Cal] - Clear - OK</b>                                                                                                            |

## SCPI.SENSE(*Ch*).CORRection.COEFFicient.DATA

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.COEFFicient.DATA (*Str*, *Int1* , *Int2*) = *Array*  
*Array* = SCPI.SENSE(*Ch*).CORRection.COEFFicient.DATA (*Str*, *Int1* , *Int2* )

Description Reads out/write the calibration coefficient data for specified channel.

When the calibration factor is interpolated, the interpolated calibration coefficient array is read. Similarly, when the calibration factor is not interpolated, a non-interpolated calibration coefficient array is read.

After writing the calibration coefficient array, the written value becomes effective only after the (SCPI.SENSE(Ch).CORRection.COEFFicient.SAVE) command is executed.

### Variable

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <b><i>Array</i></b>                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Description | Indicates the array data (corrected data array) of NOP (number of measurement points)×2. Where n is an integer between 1 and NOP.<br><ul style="list-style-type: none"> <li>• <i>Data</i>(<i>n</i>×2-2) Real part of data (complex number) at the n-th measurement point.</li> <li>• <i>Data</i>(<i>n</i>×2-1) Imaginary part of data (complex number) at the n-th measurement point.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                 |

|             |                                                                                                                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <b><i>Str</i></b>                                                                                                                                                                                                                                              |
| Description | Calibration type                                                                                                                                                                                                                                               |
| Data type   | Character string type (String)                                                                                                                                                                                                                                 |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>• "ES" Source match</li> <li>• "ER" Reflection tracking</li> <li>• "ED" Directivity</li> <li>• "EL" Load match</li> <li>• "ET" Transmission tracking</li> <li>• "EX" Isolation</li> </ul> |

|             |                                                                                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <b><i>Int1</i></b>                                                                                                                                                          |
| Description | Response port                                                                                                                                                               |
| Data type   | Integer type (Integer)                                                                                                                                                      |
| Range       | 1 to 4                                                                                                                                                                      |
| Note        | If ES, ER, or ED is used, the response port and the stimulus port must be the same, while EL, ET, or EX is used, the response port and the stimulus port must be different. |

|             |                                                                                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <i>Int2</i>                                                                                                                                                                 |
| Description | Stimulus port                                                                                                                                                               |
| Data type   | Integer type (Integer)                                                                                                                                                      |
| Range       | 1 to 4                                                                                                                                                                      |
| Note        | If ES, ER, or ED is used, the response port and the stimulus port must be the same, while EL, ET, or EX is used, the response port and the stimulus port must be different. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
DIM Array(200) As Variant
Array = SCPI.SENS(1).CORRection.COEFficient("EL", 1, 2)
```

**Related objects**

- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.ERESponse on page 448
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.RESPonse.OPEN on page 449
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.RESPonse.SHORT on page 449
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.RESPonse.THRU on page 450
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.SOLT1 on page 451
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.SOLT2 on page 452
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.SOLT3 on page 453
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.SOLT4 on page 454
- SCPI.SENSE(Ch).CORRection.COEFficient.SAVE on page 455
- SCPI.SENSE(Ch).CORRection.COLLEct.METHod.TRL2 on page 514
- SCPI.SENSE(Ch).CORRection.COLLEct.METHod.TRL3 on page 515
- SCPI.SENSE(Ch).CORRection.COLLEct.METHod.TRL4 on page 516

**Equivalent key**

No equivalent key is available on the front panel.

## SCPI.SENSE(*Ch*).CORRection.COEFFicient.METHod.ERE Sponse

|             |                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                  |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COEFFicient.METHod.ERESponse = <i>Ports</i>                                                                                                                                                                            |
| Description | For channel 1 to channel 16, sets the calibration type to the enhanced response calibration between the two specified ports when the calibration coefficient data array is written with the SCPI.SENSE(Ch).CORRection.COEFFicient.DATA command. (No read) |
| Variable    |                                                                                                                                                                                                                                                           |

|             | <i>Ports</i>                                                                                                                                                                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 2-element array data (port number). <ul style="list-style-type: none"> <li>• <i>Ports(0)</i>                      Specifies the response port.</li> <li>• <i>Ports(1)</i>                      Specifies the stimulus port.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                 |
| Range       | 1 to 4                                                                                                                                                                                                                                                                                 |
| Resolution  | 1                                                                                                                                                                                                                                                                                      |
| Note        | For each parameter, you must specify a different port number. If you specify the same port number for 2 or more parameters, an error occurs and the command is ignored.                                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim ERESport(1) As Variant ERESport(0) = 1 ERESport(1) = 2 SCPI.SENSE(1).CORRection.COEFFicient.METHod.ERESponse = ERESport</pre> |
| Related objects | <p>SCPI.SENSE(Ch).CORRection.COEFFicient.DATA on page 446</p> <p>SCPI.SENSE(Ch).CORRection.COEFFicient.SAVE on page 455</p>            |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                     |

**SCPI.SENSE(*Ch*).CORREction.COEFFicient.METHod.RESPonse.OPEN**

|                 |                                                                                                                                                                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                                                                               |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.METHod.RESPonse.OPEN = <i>Port</i>                                                                                                                                                                      |
| Description     | For channel 1 to channel 16, sets the calibration type to the response calibration (open) of the specified port when the calibration coefficient data array is written with the SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.DATA command. (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Port</i> ), see Table 7-6, “Variable ( <i>Ch</i> ),” on page 203 and Table 7-15, “Variable ( <i>Port</i> ),” on page 457, respectively.                                            |
| Examples        | SCPI.SENSE(1).CORREction.COEFFicient.METHod.RESPonse.OPEN = 1                                                                                                                                                                                          |
| Related objects | SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.DATA on page 446<br>SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.SAVE on page 455                                                                                                                     |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                                     |

**SCPI.SENSE(*Ch*).CORREction.COEFFicient.METHod.RESPonse.SHORT**

|                 |                                                                                                                                                                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                                                                                |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.METHod.RESPonse.SHORT = <i>Port</i>                                                                                                                                                                      |
| Description     | For channel 1 to channel 16, sets the calibration type to the response calibration (short) of the specified port when the calibration coefficient data array is written with the SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.DATA command. (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Port</i> ), see Table 7-6, “Variable ( <i>Ch</i> ),” on page 203 and Table 7-15, “Variable ( <i>Port</i> ),” on page 457 and , respectively.                                        |
| Examples        | SCPI.SENSE(1).CORREction.COEFFicient.METHod.RESPonse.SHORT = 1                                                                                                                                                                                          |
| Related objects | SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.DATA on page 446<br>SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.SAVE on page 455                                                                                                                      |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                                      |

**SCPI.SENSE(*Ch*).CORRection.COEFFicient.METHod.RESPonse.THru**

|                 |                                                                                                                                                                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                                                                                |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORRection.COEFFicient.METHod.RESPonse.THru = <i>Ports</i>                                                                                                                                                                      |
| Description     | For channel 1 to channel 16, sets the calibration type to the response calibration (open) between the two specified ports when the calibration coefficient data array is written with the SCPI.SENSE(Ch).CORRection.COEFFicient.DATA command. (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Port</i> ), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-15, “Variable (Port),” on page 457, respectively.                                                               |
| Examples (1)    | <pre>SCPI.SENSE(1).CORRection.COEFFicient.METHod.RESPonse.THru =<br/>Array(2, 1)</pre>                                                                                                                                                                  |
| Examples (2)    | <pre>Dim ThruPort(1) As Variant<br/>ThruPort(0) = 2<br/>ThruPort(1) = 1<br/>SCPI.SENSE(1).CORRection.COEFFicient.METHod.RESPonse.THru =<br/>ThruPort</pre>                                                                                              |
| Related objects | SCPI.SENSE(Ch).CORRection.COEFFicient.DATA on page 446<br>SCPI.SENSE(Ch).CORRection.COEFFicient.SAVE on page 455                                                                                                                                        |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                                      |

## SCPI.SENSE(*Ch*).CORREction.COEFFicient.METHOD.SOLT1

|                 |                                                                                                                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                                                              |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORREction.COEFFicient.METHOD.SOLT1 = <i>Port</i>                                                                                                                                                             |
| Description     | For channel 1 to channel 16 , sets the calibration type to the 1-port calibration of the specified port when the calibration coefficient data array is written with the SCPI.SENSE(Ch).CORREction.COEFFicient.DATA command. (No read) |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Port</i> ), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-15, “Variable (Port),” on page 457 and , respectively.                                        |
| Examples        | SCPI.SENSE(1).CORREction.COEFFicient.METHOD.SLOT1 = 1                                                                                                                                                                                 |
| Related objects | SCPI.SENSE(Ch).CORREction.COEFFicient.DATA on page 446<br>SCPI.SENSE(Ch).CORREction.COEFFicient.SAVE on page 455                                                                                                                      |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                    |

**SCPI.SENSE(*Ch*).CORRection.COEFFicient.METHod.SOLT2**

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.COEFFicient.METHod.SOLT2 = *Ports*

Description For channel 1 to channel 16, sets the calibration type to full 2-port calibration between the two specified ports when the calibration coefficient data array is written with the SCPI.SENSE(Ch).CORRection.COEFFicient.DATA command. (No read)

Variable

|             | <i>Ports</i>                                                                                                                                                                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 2-element array data (port number). <ul style="list-style-type: none"> <li>• <i>Ports(0)</i> Specifies a port for full 2-port calibration.</li> <li>• <i>Ports(1)</i> Specifies the other port for full 2-port calibration.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                 |
| Range       | 1 to 4                                                                                                                                                                                                                                                                                 |
| Resolution  | 1                                                                                                                                                                                                                                                                                      |
| Note        | For each parameter, you must specify a different port number. If you specify the same port number for 2 or more parameters, an error occurs and the command is ignored.                                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples (1) SCPI.SENSE(1).CORRection.COEFFicient.METHod.SOLT2 = Array(1, 2)

Examples (2) Dim CalPort(1) As Variant  
CalPort(0) = 1  
CalPort(1) = 2  
SCPI.SENSE(1).CORRection.COEFFicient.METHod.SOLT2 = CalPort

Related objects SCPI.SENSE(Ch).CORRection.COEFFicient.DATA on page 446  
SCPI.SENSE(Ch).CORRection.COEFFicient.SAVE on page 455

Equivalent key No equivalent key is available on the front panel.

## SCPI.SENSE(*Ch*).CORRection.COEFFicient.METHod.SOLT3

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).CORRection.COEFFicient.METHod.SOLT3 = *Ports*

**Description** For channel 1 to channel 16, sets the calibration type to full 3-port calibration between the three specified ports when the calibration coefficient data array is written with the SCPI.SENSE(*Ch*).CORRection.COEFFicient.DATA command. (No read)

**Variable**

|             |                                                                                                                                                                                                                                                                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <b><i>Ports</i></b>                                                                                                                                                                                                                                                                                                                                     |
| Description | Indicates 3-element array data (port number). <ul style="list-style-type: none"> <li>• <i>Ports(0)</i> Specifies a port for full 3-port calibration.</li> <li>• <i>Ports(1)</i> Specifies a port for full 3-port calibration.</li> <li>• <i>Ports(2)</i> Specifies a port for full 3-port calibration.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                  |
| Range       | 1 to 4                                                                                                                                                                                                                                                                                                                                                  |
| Resolution  | 1                                                                                                                                                                                                                                                                                                                                                       |
| Note        | For each parameter, you must specify a different port number. If you specify the same port number for 2 or more parameters, an error occurs and the command is ignored.                                                                                                                                                                                 |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples (1)** SCPI.SENSE(1).CORRection.COEFFicient.METHod.SOLT3 = Array(1, 2, 3)

**Examples (2)**

```
Dim CalPort(2) As Variant
CalPort(0) = 1
CalPort(1) = 2
CalPort(2) = 3
SCPI.SENSE(1).CORRection.COEFFicient.METHod.SOLT3 = CalPort
```

**Related objects** SCPI.SENSE(*Ch*).CORRection.COEFFicient.DATA on page 446  
SCPI.SENSE(*Ch*).CORRection.COEFFicient.SAVE on page 455

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.SENSE(*Ch*).CORRection.COEFFicient.METHod.SOLT4

|             |                                                                                                                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                         |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COEFFicient.METHod.SOLT4 = <i>Ports</i>                                                                                                                                       |
| Description | For channel 1 to channel 16 , sets the calibration type to full 4-port calibration when the calibration coefficient data array is written with the SCPI.SENSE(Ch).CORRection.COEFFicient.DATA command. (No read) |

### Variable

|             | <i>Ports</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 4-element array data (port number). <ul style="list-style-type: none"> <li>• <i>Ports(0)</i>                      Specifies a port for full 4-port calibration.</li> <li>• <i>Ports(1)</i>                      Specifies a port for full 4-port calibration.</li> <li>• <i>Ports(2)</i>                      Specifies a port for full 4-port calibration.</li> <li>• <i>Ports(3)</i>                      Specifies a port for full 4-port calibration.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Range       | 1 to 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Resolution  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Note        | For each parameter, you must specify a different port number. If you specify the same port number for 2 or more parameters, an error occurs and the command is ignored.                                                                                                                                                                                                                                                                                                                                              |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples (1)**                      SCPI.SENSE(1).CORRection.COEFFicient.METHod.SOLT4 = Array(1, 2, 3, 4)

**Examples (2)**                      Dim CalPort(3) As Variant  
 CalPort(0) = 1  
 CalPort(1) = 2  
 CalPort(2) = 3  
 CalPort(3) = 4  
 SCPI.SENSE(1).CORRection.COEFFicient.METHod.SOLT4 = CalPort

**Related objects**                      SCPI.SENSE(Ch).CORRection.COEFFicient.DATA on page 446  
 SCPI.SENSE(Ch).CORRection.COEFFicient.SAVE on page 455

**Equivalent key**                      No equivalent key is available on the front panel.

## SCPI.SENSE(*Ch*).CORRection.COEfficient.SAVE

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORRection.COEfficient.SAVE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Description     | <p>From the writing calibration data, enables the calibration coefficients depending on the selected calibration type.</p> <p>Enabling the calibration coefficients clears all calibration data regardless of whether the data are used for the calculation and also clears the calibration type selections.</p> <p>If you execute this command before all calibration data needed for calculating the calibration coefficients are written, an error occurs and the command is ignored. (No Read)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Variable        | For information on the variable ( <i>Ch</i> ), see Table 7-6, “Variable ( <i>Ch</i> ),” on page 203.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Examples        | <pre>Dim Dmy As Long Dim Data(3) as Variant Data(0) = -1.123 Data(1) = 2.456 Data(2) = -2.249 Data(3) = 2.608 SCPI.SENSE(1).CORRection.COEfficient.METHod.RESPonse.THRU = Array(2, 1) SCPI.SENSE(1).CORRection.COEfficient("ET", 2, 1) = Data Dmy = SCPI.IEEE4882.OPC SCPI.SENSE(1).CORRection.COEfficient.SAVE</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Related objects | <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.DATA on page 446</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.METHod.ERESponse on page 448</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.METHod.RESPonse.OPEN on page 449</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.METHod.RESPonse.SHORT on page 449</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.METHod.RESPonse.THRU on page 450</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.METHod.SOLT1 on page 451</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.METHod.SOLT2 on page 452</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.METHod.SOLT3 on page 453</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COEfficient.METHod.SOLT4 on page 454</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLection.METHod.TRL2 on page 514</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLection.METHod.TRL3 on page 515</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLection.METHod.TRL4 on page 516</p> |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.ISOLation

|             |                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                      |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ACQuire.ISOLation = <i>Ports</i>                                                                                   |
| Description | For channels 1 to 16 ( <i>Ch</i> ), measures the calibration data of the isolation from the specified stimulus port to the specified response port. (No read) |
| Variable    |                                                                                                                                                               |

**Table 7-14** Variable (*Ports*)

|             | <i>Ports</i>                                                                                                                                                                                                                                                                                            |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 2-element array data (port number).<br><ul style="list-style-type: none"> <li>• <i>Ports(0)</i>                      Specifies the response port number.</li> <li>• <i>Ports(1)</i>                      Specifies the stimulus port number.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                  |
| Range       | 1 to 4                                                                                                                                                                                                                                                                                                  |
| Resolution  | 1                                                                                                                                                                                                                                                                                                       |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed.<br>If you specify the same port number to 2 port numbers, an error occurs when executed.                                                                                                                  |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim Dmy As Long
SCPI.SENSE(1).CORRection.COLLect.ACQuire.ISOLation = Array(1,2)
Dmy = SCPI.IEEE4882.OPC

Dim IsPort(1) As Variant
Dim Dmy As Long
IsPort(0) = 1
IsPort(1) = 2
SCPI.SENSE(1).CORRection.COLLect.ACQuire.ISOLation = IsPort
Dmy = SCPI.IEEE4882.OPC
```

|                 |                                                                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Related objects | SCPI.IEEE4882.OPC on page 408                                                                                                                     |
| Equivalent key  | <b>[Cal] - Calibrate - Response (Thru) - Isolation (Optional)</b><br><b>[Cal] - Calibrate - n-Port Cal - Isolation (Optional) - Port m-n Isol</b> |

## SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.LOAD

|             |                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                 |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ACQuire.LOAD = <i>Port</i>                                                    |
| Description | For channels 1 to 16 ( <i>Ch</i> ), measures the calibration data of the load standard for the specified port. (No read) |

Variable

**Table 7-15**

### Variable (*Port*)

|             | <i>Port</i>                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Port number                                                                                   |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 1 to 4                                                                                        |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim Dmy As Long
SCPI.SENSE(1).CORRection.COLLect.ACQuire.LOAD = 1
Dmy = SCPI.IEEE4882.OPC
```

Related objects

SCPI.IEEE4882.OPC on page 408

Equivalent key

**[Cal] - Calibrate - Response (Open)|Response (Short) - Load (Optional)**

**[Cal] - Calibrate - 1-Port Cal - Load**

**[Cal] - Calibrate - n-Port Cal - Reflection - Port m Load**

**SCPI.SENSE(Ch).CORRection.COLLect.ACQuire.OPEN**

|                 |                                                                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                  |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ACQuire.OPEN = <i>Port</i>                                                                                                                     |
| Description     | For channels 1 to 16 ( <i>Ch</i> ), measures the calibration data of the open standard for the specified port. (No read)                                                                  |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Port</i> ), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-15, “Variable (Port),” on page 457, respectively. |
| Examples        | <pre>Dim Dmy As Long SCPI.SENSE(1).CORRection.COLLect.ACQuire.OPEN = 1 Dmy = SCPI.IEEE4882.OPC</pre>                                                                                      |
| Related objects | SCPI.IEEE4882.OPC on page 408                                                                                                                                                             |
| Equivalent key  | <b>[Cal] - Calibrate - Response (Open) 1-Port Cal - Open</b><br><b>[Cal] - Calibrate - n-Port Cal - Reflection - Port m Open</b>                                                          |

**SCPI.SENSE(Ch).CORRection.COLLect.ACQuire.SHORT**

|                 |                                                                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                  |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ACQuire.SHORT = <i>Port</i>                                                                                                                    |
| Description     | For channels 1 to 16 ( <i>Ch</i> ), measures the calibration data of the short standard for the specified port. (No read)                                                                 |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Port</i> ), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-15, “Variable (Port),” on page 457, respectively. |
| Examples        | <pre>Dim Dmy As Long SCPI.SENSE(1).CORRection.COLLect.ACQuire.SHORT = 1 Dmy = SCPI.IEEE4882.OPC</pre>                                                                                     |
| Related objects | SCPI.IEEE4882.OPC on page 408                                                                                                                                                             |
| Equivalent key  | <b>[Cal] - Calibrate - Response (Short) 1-Port Cal - Short</b><br><b>[Cal] - Calibrate - n-Port Cal - Reflection - Port m Short</b>                                                       |

## SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.SUBClass

|             |                                                                                                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                        |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ACQuire.SUBClass = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ACQuire.SUBClass                                                        |
| Description | For channels 1 to 16 ( <i>Ch</i> ), measures the calibration data of the short standard for the specified port. (No read)<br>For channel 1 to 16 ( <i>Ch</i> ), sets the standard subclass for the calibration. |

### Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | The setting number of the standard subclass for the calibration.                                                                                                                                             |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 1 to 8                                                                                                                                                                                                       |
| Preset value | 25                                                                                                                                                                                                           |
| Unit         | $\Omega$ (ohm)                                                                                                                                                                                               |
| Resolution   | 0.001                                                                                                                                                                                                        |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

### Examples

```
Dim Subc As Long
SCPI.SENSE(1).CORRection.COLLect.ACQuire.SUBClass = 3
Subc = SCPI.SENSE(1).CORRection.COLLect.ACQuire.SUBClass
```

### Equivalent key

No equivalent key is available on the front panel.

**SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.THRU**

|                 |                                                                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                                                                                                   |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ACQuire.THRU = <i>Ports</i>                                                                                                                                                                                                     |
| Description     | For channels 1 to 16 ( <i>Ch</i> ), measures the calibration data of the thru standard from the specified stimulus port to the specified response port. (No read)                                                                                                          |
| Variable        | For information on the variable ( <i>Ch</i> ) and the variable ( <i>Ports</i> ), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-14, “Variable (Ports),” on page 456, respectively.                                                                                |
| Examples        | <pre>Dim Dmy As Long SCPI.SENSE(1).CORRection.COLLect.ACQuire.THRU = Array(2,1) Dmy = SCPI.IEEE4882.OPC  Dim ThruPort(1) As Variant Dim Dmy As Long ThruPort(0) = 2 ThruPort(1) = 1 SCPI.SENSE(1).CORRection.COLLect.ACQuire.THRU = ThruPort Dmy = SCPI.IEEE4882.OPC</pre> |
| Related objects | SCPI.IEEE4882.OPC on page 408                                                                                                                                                                                                                                              |
| Equivalent key  | <b>[Cal] - Calibrate - Response (Thru) - Thru</b><br><b>[Cal] - Calibrate - n-Port Cal - Transmission - Port m-n Thru</b>                                                                                                                                                  |

## SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.TRLLine

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.TRLLine = *Ports*

**Description** For channel 1 to 16 (*Ch*), executes LINE or MATCH measurement of the TRL calibration for the selected calibration kit.  
 (No Read)

**Variable**

|             | <i>Ports</i>                                                                                                                                                                                                                                    |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 2-element array data (port number).<br><ul style="list-style-type: none"> <li>• <i>Ports(0)</i> Specifies the response port.</li> <li>• <i>Ports(1)</i> Specifies the stimulus port.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                          |
| Range       | 1 to 4                                                                                                                                                                                                                                          |
| Resolution  | 1                                                                                                                                                                                                                                               |
| Note        | For each parameter, you must specify a different port number. If you specify the same port number for 2 or more parameters, an error occurs and the command is ignored.                                                                         |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples**

```
Dim Dmy As Long
SCPI.SENSE(1).CORRection.COLLect.ACQuire.TRLLine = Array(1,2)
Dmy = SCPI.IEEE4882.OPC
```

```
Dim Trll(1) As Variant
Dim Dmy As Long
Trll(0) = 1
Trll(1) = 2
SCPI.SENSE(1).CORRection.COLLect.ACQuire.TRLLine = Trll
Dmy = SCPI.IEEE4882.OPC
```

**Related objects** SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire. TRLReflect on page 462  
 SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.TRLThru on page 463

**Equivalent key** **[Cal] - Calibrate - 2-Port TRL Cal - Line/Match - x-y Line/Match|x-y Fwd (Syx)|x-y Rvs (Sxy)**  
**[Cal] - Calibrate - 3-Port TRL Cal - Line/Match - x-y Line/Match|x-y Fwd (Syx)|x-y Rvs (Sxy)|x-z Line/Match|x-z Fwd (Szx)|x-z Rvs (Sxz)|y-z Line/Match|y-z Fwd (Szy)|y-z Rvs (Syz)**  
**[Cal] - Calibrate - 4-Port TRL Cal - Line/Match - x-y Line/Match|x-y Fwd (Syx)|x-y Rvs (Sxy) - x-z Line/Match|x-z Fwd (Szx)|x-z Rvs (Sxz) - x-w Line/Match|x-w Fwd (Swx)|x-w Rvs (Sxw) - y-z Line/Match|y-z Fwd (Szy)|y-z Rvs (Syz) - y-w Line/Match|y-w Fwd (Swy)|y-w Rvs (Syw) - z-w Line/Match|z-w Fwd (Swz)|z-w Rvs (Szw)**

**SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire. TRLReflect**

Object type      Property

Syntax            SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.TRLReflect = *Port*

Description      For channel 1 to 16 (*Ch*), executes the reflection measurement of the TRL calibration for the selected calibration kit.(No Read)

Variable

|              |                                                                                                                                                                                                              |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Port</i></b>                                                                                                                                                                                           |
| Description  | Port number                                                                                                                                                                                                  |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 1 to 4                                                                                                                                                                                                       |
| Preset value | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples            Dim Dmy As Long  
 SCPI.SENSE(1).CORRection.COLLect.ACQuire.TRLReflect = 1  
 Dmy = SCPI.IEEE4882.OPC

Related objects    SCPI.SENSE(Ch).CORRection.COLLect.ACQuire.TRLLine on page 461  
 SCPI.SENSE(Ch).CORRection.COLLect.ACQuire.TRLThru on page 463

Equivalent key    **[Cal] - Calibrate - 2-Port TRL Cal - Reflect - Portx Reflect|Porty Reflect**  
**[Cal] - Calibrate - 3-Port TRL Cal - Reflect - Portx Reflect|Porty Reflect|Portz Reflect**  
**[Cal] - Calibrate - 4-Port TRL Cal - Reflect - Portx Reflect|Porty Reflect|Portz Reflect|Portw Reflect**

## SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.TRLThru

|             |                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                           |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ACQuire.TRLThru = <i>Ports</i>                                                          |
| Description | For channel 1 to 16 ( <i>Ch</i> ), executes the THRU measurement of the TRL calibration for the selected calibration kit.(No Read) |
| Variable    |                                                                                                                                    |

|             | <i>Ports</i>                                                                                                                                                                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates 2-element array data (port number). <ul style="list-style-type: none"> <li>• <i>Ports(0)</i>                      Specifies the response port.</li> <li>• <i>Ports(1)</i>                      Specifies the stimulus port.</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                 |
| Range       | 1 to 4                                                                                                                                                                                                                                                                                 |
| Resolution  | 1                                                                                                                                                                                                                                                                                      |
| Note        | For each parameter, you must specify a different port number. If you specify the same port number for 2 or more parameters, an error occurs and the command is ignored.                                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples**

```
Dim Dmy As Long
SCPI.SENSE(1).CORRection.COLLect.ACQuire.TRLThru = Array(1,2)
Dmy = SCPI.IEEE4882.OPC
```

```
Dim Trlt(1) As Variant
Dim Dmy As Long
Trlt(0) = 1
Trlt(1) = 2
SCPI.SENSE(1).CORRection.COLLect.ACQuire.TRLThru = Trlt
Dmy = SCPI.IEEE4882.OPC
```

**Related objects**

SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire.TRLLine on page 461  
 SCPI.SENSE(*Ch*).CORRection.COLLect.ACQuire. TRLReflect on page 462

**Equivalent key**

**[Cal] - Calibrate - 2-Port TRL Cal - Thru/Line - Port x-y Thru**  
**[Cal] - Calibrate - 3-Port TRL Cal - Thru/Line - Port x-y Thru|Port x-z Thru|Port y-z Thru**  
**[Cal] - Calibrate - 4-Port TRL Cal - Thru/Line - Port x-y Thru|Port x-z Thru|Port x-w Thru|Port y-z Thru|Port y-w Thru|Port z-w Thru**

## SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.LABel

|             |                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                 |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.LABel = <i>Lbl</i><br><i>Lbl</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.LABel |
| Description | Sets a calibration kit name for the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ).                                         |
| Variable    |                                                                                                                                          |

|              |                                                                                                                                                                                                                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Lbl</i></b>                                                                                                                                                                                                                                                                                                                       |
| Description  | Calibration kit name                                                                                                                                                                                                                                                                                                                    |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                          |
| Range        | 254 characters or less                                                                                                                                                                                                                                                                                                                  |
| Preset value | Varies depending on the calibration kit number. <ul style="list-style-type: none"> <li>• 1: "85033E"</li> <li>• 2: "85033D"</li> <li>• 3: "85052D"</li> <li>• 4: "85032F"</li> <li>• 5: "85032B"</li> <li>• 6: "85036B/E"</li> <li>• 7: "85031B"</li> <li>• 8: "85050C/D"</li> <li>• 9: "85052C"</li> <li>• 10 to 20: "User"</li> </ul> |

|                 |                                                                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim CalLbl As String SCPI.SENSE(1).CORRection.COLLEct.CKIT.LABel = "User 1" CalLbl = SCPI.SENSE(1).CORRection.COLLEct.CKIT.LABel</pre> |
| Related objects | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.SELect on page 475                                                                          |
| Equivalent key  | <b>[Cal] - Modify Cal Kit - Label Kit</b>                                                                                                   |

## SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDer.LOAD(*Cpt*)

|             |                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                           |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.ORDer.LOAD( <i>Cpt</i> ) = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.ORDer.LOAD( <i>Cpt</i> ) |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), selects the standard used for the load measurement of the specified port ( <i>Cpt</i> ).                      |

Variable

**Table 7-16**

### Variable (*Cpt*)

|             | <i>Cpt</i>                                                                                    |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Port number                                                                                   |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 1 to 4                                                                                        |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

**NOTE**

Since the variable (*Cpt*) has no preset value, you cannot omit it. If you omit the variable (*Cpt*), an error occurs when executed.

|             | <i>Value</i>                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Standard number                                                                               |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 0 to 21                                                                                       |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples**

```
Dim StanLoad As Long
SCPI.SENSE(1).CORRection.COLLect.CKIT.ORDer.LOAD(1) = 10
StanLoad = SCPI.SENSE(1).CORRection.COLLect.CKIT.ORDer.LOAD(1)
```

**Related objects**

- SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.SELect on page 475
- SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDer.OPEN(*Cpt*) on page 467
- SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDer.SELect on page 468
- SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDer.SHORT(*Cpt*) on page 469
- SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDer.THRU(*Cpt\_m*,*Cpt\_n*) on page 470
- SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDer.TRLLine(*Cpt\_m*,*Cpt\_n*) on page 472

COM Object Reference

**SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDer. LOAD(Cpt)**

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDer. TRLReflect on page 473

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDer. TRLThru(Cpt\_m,Cpt\_n) on page 474

Equivalent key

**[Cal] - Modify Cal Kit - Specify CLSs - Load - Set All|Port 1|Port 2|Port 3|Port 4**

## SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER.OPEN(*Cpt*)

|             |                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                           |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.ORDER.OPEN( <i>Cpt</i> ) = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.ORDER.OPEN( <i>Cpt</i> ) |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), selects the standard used for the open measurement of the specified port ( <i>Cpt</i> ).                      |
| Variable    |                                                                                                                                                                                    |

|             | <i>Value</i>                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Standard number                                                                               |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 0 to 21                                                                                       |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*) and the variable (*Cpt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-16, “Variable (Cpt),” on page 465, respectively.

---

**NOTE** Since the variable (*Cpt*) has no preset value, you cannot omit it. If you omit the variable (*Cpt*), an error occurs when executed.

---

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim StanOpen As Long SCPI.SENSE(1).CORRection.COLLect.CKIT.ORDER.OPEN(1) = 10 StanOpen = SCPI.SENSE(1).CORRection.COLLect.CKIT.ORDER.OPEN(1)</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Related objects | <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.SELect on page 475</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.ORDER.LOAd(<i>Cpt</i>) on page 465</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.ORDER.SELect on page 468</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.ORDER.SHORt(<i>Cpt</i>) on page 469</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.ORDER.THRU(<i>Cpt</i>_m,<i>Cpt</i>_n) on page 470</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.ORDER.TRLLine(<i>Cpt</i>_m,<i>Cpt</i>_n) on page 472</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.ORDER.TRLReflect on page 473</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.ORDER.TRLThru(<i>Cpt</i>_m,<i>Cpt</i>_n) on page 474</p> |
| Equivalent key  | <b>[Cal] - Modify Cal Kit - Specify CLSs - Open - Port 1 Port 2 Port 3 Port 4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.ORDER. SElect**

|             |                                                                                                                                                                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.ORDER. SElect = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.ORDER. SElect                                                                                            |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), selects the standard used for the open measurement of the specified port ( <i>Cpt</i> ).<br>Sets a subclass of the standard for the calibration for channel 1 to 16 ( <i>Ch</i> ). |

## Variable

|             | <i>Value</i>                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | The number of the standard subclass for the calibration.                                      |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 1 to 8                                                                                        |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

## Examples

```
Dim CKitSel As Long
SCPI.SENSE(1).CORRection.COLLEct.CKIT.ORDER. SElect = 3
CKitSel = SCPI.SENSE(1).CORRection.COLLEct.CKIT.ORDER. SElect
```

## Related objects

SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT. SElect on page 475  
 SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.ORDER. LOAD(*Cpt*) on page 465  
 SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.ORDER. OPEN(*Cpt*) on page 467  
 SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.ORDER. SHORT(*Cpt*) on page 469  
 SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.ORDER. THRU(*Cpt\_m*,*Cpt\_n*) on page 470  
 SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.ORDER. TRLLine(*Cpt\_m*,*Cpt\_n*) on page 472  
 SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.ORDER. TRLReflect on page 473  
 SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.ORDER. TRLThru(*Cpt\_m*,*Cpt\_n*) on page 474

## Equivalent key

**[Cal] - Modify Cal Kit - Specify CLSs - Sub Class - Sub Class 1|...|Sub Class 8**

## SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.SHORt(Cpt)

|             |                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                       |
| Syntax      | SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.SHORt(Cpt) = <i>Value</i><br><i>Value</i> = SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.SHORt(Cpt)               |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), selects the standard used for the short measurement of the specified port ( <i>Cpt</i> ). |
| Variable    |                                                                                                                                                                |

|             | <i>Value</i>                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Standard number                                                                               |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 1 to 21                                                                                       |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*) and the variable (*Cpt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-16, “Variable (Cpt),” on page 465, respectively.

---

**NOTE** Since the variable (*Cpt*) has no preset value, you cannot omit it. If you omit the variable (*Cpt*), an error occurs when executed.

---

**Examples**

```
Dim StanShor As Long
SCPI.SENSE(1).CORRection.COLLect.CKIT.ORDER.SHORt(1) = 10
StanShor = SCPI.SENSE(1).CORRection.COLLect.CKIT.ORDER.SHORt(1)
```

**Related objects**

- SCPI.SENSE(Ch).CORRection.COLLect.CKIT.SELect on page 475
- SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.LOAd(Cpt) on page 465
- SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.OPEN(Cpt) on page 467
- SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.SELect on page 468
- SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.THRU(Cpt\_m,Cpt\_n) on page 470
- SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.TRLLine(Cpt\_m,Cpt\_n) on page 472
- SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.TRLReflect on page 473
- SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.TRLThru(Cpt\_m,Cpt\_n) on page 474

**Equivalent key** **[Cal] - Modify Cal Kit - Specify CLSs - Short - Port 1|Port 2|Port 3|Port 4**

**SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.  
THRU(Cpt\_m,Cpt\_n)**

|             |                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                 |
| Syntax      | SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.THRU(Cpt_m,Cpt_n) = <i>Value</i><br><i>Value</i> = SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.THRU(Cpt_m,Cpt_n)                           |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), selects the standard used for the thru measurement between the specified 2 ports ( <i>Cpt_m</i> and <i>Cpt_n</i> ). |

Variable

Table 7-17

**Variable (*Cpt\_m*, *Cpt\_n*)**

|             | <i>Cpt_m</i> , <i>Cpt_n</i>                                                                   |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Port number                                                                                   |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 1 to 4                                                                                        |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

**NOTE**

Since the variables (*Cpt\_m* and *Cpt\_n*) have no preset value, you cannot omit them. If you omit the variables (*Cpt\_m* and *Cpt\_n*) or if you specify the same port number to 2 port numbers, an error occurs when executed. Notice that when you specify 2 ports with the variables (*Cpt\_m* and *Cpt\_n*), the order of the 2 port numbers is arbitrary.

|             | <i>Value</i>                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Standard number                                                                               |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 1 to 21                                                                                       |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim StanThru As Long
SCPI.SENSE(1).CORRection.COLLect.CKIT.ORDER.THRU(1,2) = 10
StanThru = SCPI.SENSE(1).CORRection.COLLect.CKIT.ORDER.THRU(1,2)
```

**Related objects**

SCPI.SENSE(Ch).CORRection.COLLect.CKIT.SELect on page 475  
 SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.LOAD(Cpt) on page 465  
 SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.OPEN(Cpt) on page 467  
 SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.SELect on page 468  
 SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.SHORT(Cpt) on page 469  
 SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER.TRLLine(Cpt\_m,Cpt\_n) on

**SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. THRU(Cpt\_m,Cpt\_n)**

page 472

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. TRLReflect on page 473

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. TRLThru(Cpt\_m,Cpt\_n) on page 474

Equivalent key

**[Cal] - Modify Cal Kit - Specify CLSs - Thru - Port 1-2|Port 1-3|Port 1-4|Port 2-3|Port 2-4|Port 3-4**

## SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. TRLLine(*Cpt\_m*,*Cpt\_n*)

|             |                                                                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                 |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.ORDER.TRLLine( <i>Cpt_m</i> , <i>Cpt_n</i> ) = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.ORDER.TRLLine( <i>Cpt_m</i> , <i>Cpt_n</i> )                                                               |
| Description | For the calibration kit selected for channel 1 to 16 ( <i>Ch</i> ), selects the standard used for the line measurement of TRL calibration between the specified 2 ports ( <i>Cpt_m</i> and <i>Cpt_n</i> ).<br><br>If the standard number is 0, the standard is invalid for the subclass. |

### Variable

|             | <i>Value</i>                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Standard number                                                                               |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 0 to 21                                                                                       |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*) and the variable (*Cpt\_m* and *Cpt\_n*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-17, “Variable (Cpt\_m, Cpt\_n),” on page 470, respectively.

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim StanTrll As Long SENSe(1).CORRection.COLLect.CKIT.ORDER.TRLLine(1,2) = 10 StanTrll = SENSe(1).CORRection.COLLect.CKIT.ORDER.TRLLine(1,2)</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Related objects | <p>SCPI.SENSE(Ch).CORRection.COLLect.CKIT.SELect on page 475</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER. LOAD(<i>Cpt</i>) on page 465</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER. OPEN(<i>Cpt</i>) on page 467</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER. SELect on page 468</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER. SHORt(<i>Cpt</i>) on page 469</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER. THRU(<i>Cpt_m</i>,<i>Cpt_n</i>) on page 470</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER. TRLReflect on page 473</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.CKIT.ORDER. TRLThru(<i>Cpt_m</i>,<i>Cpt_n</i>) on page 474</p> |
| Equivalent key  | <b>[Cal] - Modify Cal Kit - Specify CLSs - TRL Line/Match - Set All Port 1-2 Port 1-3 Port 1-4 Port 2-3 Port 2-4 Port 3-4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. TRLReflect

- Object type** Property
- Syntax** SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER.TRLreflect = *Value*  
*Value* = SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER.TRLreflect
- Description** For the calibration kit selected for channel 1 to 16 (*Ch*), selects the standard used for the reflection measurement of the TRL calibration between the specified 2 ports.  
 If the standard number is 0, the standard is invalid for the subclass.

**Variable**

|             | <i>Value</i>                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------|
| Description | Standard number                                                                               |
| Data type   | Long integer type (Long)                                                                      |
| Range       | 0 to 21                                                                                       |
| Note        | If the specified variable is out of the allowable setup range, an error occurs when executed. |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

- Examples**
- ```
Dim StanTrlr As Long
SENSe(1).CORRection.COLLect.CKIT.ORDER.TRLReflect = 5
StanTrlr = SENSe(1).CORRection.COLLect.CKIT.ORDER.TRLReflect
```

- Related objects**
- SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.SELect on page 475
 - SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. LOAD(*Cpt*) on page 465
 - SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. OPEN(*Cpt*) on page 467
 - SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. SELect on page 468
 - SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. SHORt(*Cpt*) on page 469
 - SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. THRU(*Cpt_m*,*Cpt_n*) on page 470
 - SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. TRLLine(*Cpt_m*,*Cpt_n*) on page 472
 - SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.ORDER. TRLThru(*Cpt_m*,*Cpt_n*) on page 474

- Equivalent key** **[Cal] - Modify Cal Kit - Specify CLSs - TRL Reflect**

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.ORDER.TRLThru(*Cpt_m*,*Cpt_n*)

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLECT.CKIT.ORDER.TRLThru(<i>Cpt_m</i> , <i>Cpt_n</i>) = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).CORRection.COLLECT.CKIT.ORDER.TRLThru(<i>Cpt_m</i> , <i>Cpt_n</i>)
Description	<p>For the calibration kit selected for channel 1 to 16 (<i>Ch</i>), selects the standard used for the line measurement of TRL calibration between the specified 2 ports (<i>Cpt_m</i> and <i>Cpt_n</i>).</p> <p>For the calibration kit selected for channel 1 to 16 (<i>Ch</i>), selects the standard used for the THRU measurement of the TRL calibration between the specified 2 ports (<i>Cpt_m</i> and <i>Cpt_n</i>).</p> <p>If the standard number is 0, the standard is invalid for the subclass.</p>

Variable

	<i>Value</i>
Description	Standard number
Data type	Long integer type (Long)
Range	0 to 21
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

For information on the variable (*Ch*) and the variable (*Cpt_m* and *Cpt_n*), see Table 7-6, “Variable (*Ch*),” on page 203 and Table 7-17, “Variable (*Cpt_m*, *Cpt_n*),” on page 470, respectively.

Examples

```
Dim StanTrlt As Long
SENSE(1).CORRection.COLLECT.CKIT.ORDER.TRLThru(1,2) = 3
StanTrlt = SENSE(1).CORRection.COLLECT.CKIT.ORDER.TRLThru(1,2)
```

Related objects

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.SELECT on page 475

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.ORDER.LOAD(*Cpt*) on page 465

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.ORDER.OPEN(*Cpt*) on page 467

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.ORDER.SELECT on page 468

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.ORDER.SHORT(*Cpt*) on page 469

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.ORDER.THRU(*Cpt_m*,*Cpt_n*) on page 470

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.ORDER.TRLLine(*Cpt_m*,*Cpt_n*) on page 472

SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.ORDER.TRLReflect on page 473

Equivalent key

[Cal] - Modify Cal Kit - Specify CLSs - TRL Thru - Set All|Port 1-2|Port 1-3|Port 1-4|Port 2-3|Port 2-4|Port 3-4

SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.RESet

Object type	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.RESet
Description	Resets the calibration kit selected for channels 1 to 16 (<i>Ch</i>) to the factory setting state. (No read)
Variable	For information on the variable (<i>Ch</i>), see Table 7-6, “Variable (Ch),” on page 203.
Examples	SCPI.SENSE(1).CORRection.COLLEct.CKIT.RESet
Related objects	SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.SELect on page 475
Equivalent key	No equivalent key is available on the front panel.

SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.SELect

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.SELect = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.SELect
Description	Selects the calibration kit of channels 1 to 16 (<i>Ch</i>).
Variable	

	<i>Value</i>
Description	Number of calibration kit*1
Data type	Long integer type (Long)
Range	1 to 10
Preset value	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

*1. The numbers of 1 to 10 assigned from the top to the calibration kit names displayed on the softkey labels when performing **[Cal] - Cal Kit**.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	Dim CalKit As Long SCPI.SENSE(1).CORRection.COLLEct.CKIT.SELect = 3 CalKit = SCPI.SENSE(1).CORRection.COLLEct.CKIT.SELect
Related objects	SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.ORDER. LOAD(<i>Cpt</i>) on page 465 SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.ORDER. OPEN(<i>Cpt</i>) on page 467 SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.ORDER. SELect on page 468

COM Object Reference

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.SELect

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDer. SHORt(Cpt) on page 469

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDer. THRU(Cpt_m,Cpt_n) on page 470

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDer. TRLLine(Cpt_m,Cpt_n) on page 472

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDer. TRLReflect on page 473

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDer. TRLThru(Cpt_m,Cpt_n) on page 474

SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.STAN(Std).DELay on page 483

Equivalent key

[Cal] - Cal Kit

SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).ARBITrary

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).ARBITrary = *Value*
Value = SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).ARBITrary

Description For the calibration kit selected for channels 1 to 16 (*Ch*), sets the value of the arbitrary impedance of the standards 1 to 21 (*Std*).

Variable

Table 7-18

Variable (*Std*)

	<i>Std</i>
Description	Standard number
Data type	Long integer type (Long)
Range	1 to 21
Preset value	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

	<i>Value</i>
Description	Value of arbitrary impedance
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	Varies depending on the specified calibration kit and standard.
Unit	Ω (ohm)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim StanArbt As Double
SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).ARBITrary = 50.5
StanArbt = SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).ARBITrary
```

Related objects

SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.SELECT on page 475

Equivalent key

[Cal] - Modify Cal Kit - Define STDs - no. name^{*1} - Arb. Impedance

*1.no: standard number (1 to 21), name: standard name (variable)

SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).C0

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.STAN(<i>Std</i>).C0 = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.STAN(<i>Std</i>).C0
Description	For the calibration kit selected for channels 1 to 16 (<i>Ch</i>), sets the value of the C0 value of the standards 1 to 21 (<i>Std</i>).

Variable

	<i>Value</i>
Description	C0
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	Varies depending on the specified calibration kit and standard.
Unit	fF (femto farad): 1E-15 F (farad)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

Examples	Dim StanC0 As Double SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).C0 = 12.3 StanC0 = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).C0
Related objects	SCPI.SENSE(Ch).CORRection.COLLect.CKIT.SELect on page 475
Equivalent key	[Cal] - Modify Cal Kit - Define STDs - no. name^{*1} - C0

*1.no: standard number (1 to 21), name: standard name (variable)

SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).C1

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.STAN(<i>Std</i>).C1 = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.STAN(<i>Std</i>).C1
Description	For the calibration kit selected for channels 1 to 16 (<i>Ch</i>), sets the value of the C1 value of the standards 1 to 21 (<i>Std</i>).
Variable	

	<i>Value</i>
Description	C1
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	Varies depending on the specified calibration kit and standard.
Unit	1E-27 F/Hz (1E-27 farad / hertz)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

Examples	Dim StanC1 As Double SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).C1 = 12.3 StanC1 = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).C1
Related objects	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.SELect on page 475
Equivalent key	[Cal] - Modify Cal Kit - Define STDs - no. name^{*1} - C1

*1.no: standard number (1 to 21), name: standard name (variable)

SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).C2

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).C2 = *Value*
Value = SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).C2

Description For the calibration kit selected for channels 1 to 16 (*Ch*), sets the value of the C2 value of the standards 1 to 21 (*Std*).

Variable

	<i>Value</i>
Description	C2
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	Varies depending on the specified calibration kit and standard.
Unit	1E-36 F/Hz ² (1E-36 farad /hertz ²)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

Examples

```
Dim StanC2 As Double
SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).C2 = 12.3
StanC2 = SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).C2
```

Related objects SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.SELEct on page 475

Equivalent key **[Cal] - Modify Cal Kit - Define STDs - no. name^{*1} - C2**

*1. no: standard number (1 to 21), name: standard name (variable)

SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).C3

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.STAN(<i>Std</i>).C3 = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.CKIT.STAN(<i>Std</i>).C3
Description	For the calibration kit selected for channels 1 to 16 (<i>Ch</i>), sets the value of the C3 value of the standards 1 to 21 (<i>Std</i>).
Variable	

	<i>Value</i>
Description	C3
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	Varies depending on the specified calibration kit and standard.
Unit	1E-45 F/Hz ³ (1E-45 farad / hertz ³)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

Examples	Dim StanC3 As Double SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).C3 = 12.3 StanC3 = SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).C3
Related objects	SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.SELect on page 475
Equivalent key	[Cal] - Modify Cal Kit - Define STDs - no. name^{*1} - C3

*1. no: standard number (1 to 21), name: standard name (variable)

**SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).
CHARacter**

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.STAN(<i>Std</i>).CHARacter = <i>Param</i> <i>Param</i> = SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.CKIT.STAN(<i>Std</i>).CHARacter
Description	For the calibration kit selected for channels 1 to 16 (<i>Ch</i>), sets the value of the C3 value of the standards 1 to 21 (<i>Std</i>). For the standard 1 to 21 (<i>Std</i>) selected for the channel 1 to 16 (<i>Ch</i>), set the media type.

Variable

	<i>Param</i>
Description	Select media type of standard.
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"COAXial" Selects coaxial as the media type. •"WAVeguide" Selects waveguide as the media type.
Preset value	"COAXial"

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-18, "Variable (Std)," on page 477, respectively.

Examples

```
Dim StanChar As Double
SCPI.SENSE(1).SENSe.CORRection.COLLect.CKIT.STAN.CHARacter =
"WAVeguide"
StanChar = SCPI.SENSE.CORRection.COLLect.CKIT.STAN.CHARacter
```

Related objects SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std).DELay on page 483

Equivalent key **[Cal] - Modify Cal Kit - Define STDs - no. name^{*1} - Media**

*1.no: standard number (1 to 21), name: standard name (variable)

SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).DELay

- Object type** Property
- Syntax** SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).DELay = *Value*
Value = SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).DELay
- Description** For the calibration kit selected for channels 1 to 16 (*Ch*), sets the value of the offset delay of the standards 1 to 21 (*Std*).
- Variable**

	<i>Value</i>
Description	Offset delay
Data type	Double precision floating point type (Double)
Range	-1E18 to 1E18
Preset value	Varies depending on the specified calibration kit and standard.
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

- Examples**
- ```
Dim StanDel As Double
SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).DELay = 12.3
StanDel = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).DELay
```
- Related objects** SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.SELect on page 475  
SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).CHARacter on page 482
- Equivalent key** **[Cal] - Modify Cal Kit - Define STDs - no. name<sup>\*1</sup> - Offset Delay**

\*1.no: standard number (1 to 21), name: standard name (variable)

**SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*)  
.FMAXimum**

|             |                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                 |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).FMAXimum = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).FMAXimum |
| Description | For the calibration kit selected for channel 1 to 16 ( <i>Ch</i> ), sets the value of the stop frequency of the standard 1 to 21 ( <i>Std</i> ).                                         |

---

**NOTE** When media type of standard is "Waveguide", sets the stop frequency of the cutoff frequency.

---

## Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Stop frequency of the selected standard.                                                                                                                                                                     |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 0 to 999E9                                                                                                                                                                                                   |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                              |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-18, "Variable (Std)," on page 477, respectively.

**Examples**

```
Dim StanFMax As Double
SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).FMAXimum = 13.2E9
StanFMax = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).FMAXimum
```

**Related objects** SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std) .FMINimum on page 485

**Equivalent key** **[Cal] - Modify Cal Kit - Define STDs - no. name<sup>\*1</sup> - Max. Frequency**

---

\*1.no: standard number (1 to 21), name: standard name (variable)

## SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*) .FMINimum

|             |                                                                                                                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                           |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).FMINimum = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).FMINimum                                                                                           |
| Description | For the calibration kit selected for channel 1 to 16 ( <i>Ch</i> ), sets the value of the stop frequency of the standard 1 to 21 ( <i>Std</i> ).<br><br>For the standard 1 to 21 ( <i>Std</i> ) selected for channel 1 to 16 ( <i>Ch</i> ), sets the value of the start frequency. |
| <b>NOTE</b> | When media type of standard is "Waveguide", sets the stop frequency of the cutoff frequency.                                                                                                                                                                                       |

Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Start frequency of the selected standard.                                                                                                                                                                    |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 0 to 999E9                                                                                                                                                                                                   |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                              |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-18, "Variable (Std)," on page 477, respectively.

|                 |                                                                                                                                                               |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim StanFMin As Double<br>SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).FMINimum = 600E6<br>StanFMax = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).FMINimum |
| Related objects | SCPI.SENSE(Ch).CORRection.COLLect.CKIT.STAN(Std) .FMAXimum on page 484                                                                                        |
| Equivalent key  | <b>[Cal] - Modify Cal Kit - Define STDs - no. name<sup>*1</sup> - Min. Frequency</b>                                                                          |

<sup>\*1</sup>no: standard number (1 to 21), name: standard name (variable)

**SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.STAN(*Std*).L0**

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.STAN(*Std*).L0 = *Value*  
*Value* = SCPI.SENSE(*Ch*).CORRection.COLLECT.CKIT.STAN(*Std*).L0

**Description** For the calibration kit selected for channels 1 to 16 (*Ch*), sets the value of the L0 value of the standards 1 to 21 (*Std*).

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | L0                                                                                                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E18 to 1E18                                                                                                                                                                                                |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                              |
| Unit         | pH (pico henry)                                                                                                                                                                                              |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

**Examples** Dim StanL0 As Double  
SCPI.SENSE(1).CORRection.COLLECT.CKIT.STAN(5).L0 = 12.3  
StanL0 = SCPI.SENSE(1).CORRection.COLLECT.CKIT.STAN(5).L0

**Related objects** SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.SELect on page 475

**Equivalent key** **[Cal] - Modify Cal Kit - Define STDs - no. name<sup>\*1</sup> - L0**

\*1.no: standard number (1 to 21), name: standard name (variable)

## **SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).L1**

|             |                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                     |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).L1 = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).L1 |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), sets the value of the L1 value of the standards 1 to 21 ( <i>Std</i> ).                                 |
| Variable    |                                                                                                                                                                              |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | L1                                                                                                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E18 to 1E18                                                                                                                                                                                                |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                              |
| Unit         | 1E-24 H/Hz (1E-24 henry / hertz)                                                                                                                                                                             |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

|                 |                                                                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim StanL1 As Double<br>SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).L1 = 12.3<br>StanL1 = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).L1 |
| Related objects | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.SELect on page 475                                                                           |
| Equivalent key  | <b>[Cal] - Modify Cal Kit - Define STDs - no. name<sup>*1</sup> - L1</b>                                                                     |

<sup>\*1</sup>.no: standard number (1 to 21), name: standard name (variable)

**SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).L2**

|             |                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                     |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.STAN( <i>Std</i> ).L2 = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.STAN( <i>Std</i> ).L2 |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), sets the value of the L2 value of the standards 1 to 21 ( <i>Std</i> ).                                 |

## Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | L2                                                                                                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E18 to 1E18                                                                                                                                                                                                |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                              |
| Unit         | 1E-33 H/Hz <sup>2</sup> (1E-33 henry / hertz <sup>2</sup> )                                                                                                                                                  |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

## Examples

```
Dim StanL2 As Double
SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).L2 = 12.3
StanL2 = SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).L2
```

Related objects SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.SELEct on page 475

Equivalent key **[Cal] - Modify Cal Kit - Define STDs - no. name<sup>\*1</sup> - L2**

\*1. no: standard number (1 to 21), name: standard name (variable)

## SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).L3

|             |                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                     |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).L3 = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).L3 |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), sets the value of the L3 value of the standards 1 to 21 ( <i>Std</i> ).                                 |
| Variable    |                                                                                                                                                                              |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | L3                                                                                                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E18 to 1E18                                                                                                                                                                                                |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                              |
| Unit         | 1E-42 H/Hz <sup>3</sup> (1E-42 henry / hertz <sup>3</sup> )                                                                                                                                                  |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

|                 |                                                                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim StanL3 As Double<br>SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).L3 = 12.3<br>StanL3 = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).L3 |
| Related objects | SCPI.SENSE(Ch).CORRection.COLLect.CKIT.SELect on page 475                                                                                    |
| Equivalent key  | <b>[Cal] - Modify Cal Kit - Define STDs - no. name<sup>*1</sup> - L3</b>                                                                     |

\*1.no: standard number (1 to 21), name: standard name (variable)

**SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).LAbel**

|             |                                                                                                                                                                                |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                       |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).LAbel = <i>Lbl</i><br><i>Lbl</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).LAbel |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), sets the name of the standards 1 to 21 ( <i>Std</i> ).                                                    |

## Variable

|              | <i>Lbl</i>                                                      |
|--------------|-----------------------------------------------------------------|
| Description  | Standard name                                                   |
| Data type    | Character string type (String)                                  |
| Range        | 254 characters or less                                          |
| Preset value | Varies depending on the specified calibration kit and standard. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

## Examples

```
Dim StanLbl As Double
SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).LAbel = "OPEN 3.5mm"
StanLbl = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).LAbel
```

Related objects SCPI.SENSE(Ch).CORRection.COLLect.CKIT.SELect on page 475

Equivalent key **[Cal] - Modify Cal Kit - Define STDs - no. name<sup>\*1</sup> - Label**

\*1. no: standard number (1 to 21), name: standard name (variable)

## SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).LOSS

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).LOSS = *Value*  
*Value* = SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).LOSS

**Description** For the calibration kit selected for channels 1 to 16 (*Ch*), sets the value of the offset loss of the standards 1 to 21 (*Std*).

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Offset loss                                                                                                                                                                                                  |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E18 to 1E18                                                                                                                                                                                                |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                              |
| Unit         | $\Omega/s$ (ohm/second)                                                                                                                                                                                      |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

**Examples**

```
Dim StanLoss As Double
SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).LOSS = 12.3
StanLoss = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).LOSS
```

**Related objects** SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.SELect on page 475

**Equivalent key** **[Cal] - Modify Cal Kit - Define STDs - no. name<sup>\*1</sup> - Offset Loss**

<sup>\*1</sup>no: standard number (1 to 21), name: standard name (variable)

**SCPI.SENSE(*Ch*).CORRection.COLLEct.CKIT.STAN(*Std*).TYPE**

|             |                                                                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                         |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.STAN( <i>Std</i> ).TYPE = <i>Param</i><br><i>Param</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.STAN( <i>Std</i> ).TYPE |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), sets the standard type of the standards 1 to 21 ( <i>Std</i> ).                                             |
| Variable    |                                                                                                                                                                                  |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description  | Standard type                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                                                                                |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"OPEN"                    Specifies open.</li> <li>•"SHORT"                   Specifies short.</li> <li>•"LOAD"                    Specifies load.</li> <li>•"THRU"                    Specifies thru.</li> <li>•"ARBI"                    Specifies arbitrary impedance.</li> <li>•"NONE"                    Specifies DUT of which theoretical value is 0.</li> </ul> |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                                                                                                                                                                                                                                                               |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-18, "Variable (Std)," on page 477, respectively.

|                 |                                                                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim StanType As String SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).TYPE = "OPEN" StanType = SCPI.SENSE(1).CORRection.COLLEct.CKIT.STAN(5).TYPE</pre> |
| Related objects | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLEct.CKIT.SELEct on page 475                                                                                          |
| Equivalent key  | <b>[Cal] - Modify Cal Kit - Define STDs - no. name<sup>*1</sup> - STD Type</b>                                                                              |

\*1. no: standard number (1 to 21), name: standard name (variable)

## SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.STAN(*Std*).Z0

|             |                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                     |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).Z0 = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.STAN( <i>Std</i> ).Z0 |
| Description | For the calibration kit selected for channels 1 to 16 ( <i>Ch</i> ), sets the value of the offset Z0 of the standards 1 to 21 ( <i>Std</i> ).                                |
| Variable    |                                                                                                                                                                              |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Offset Z0                                                                                                                                                                                                    |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E18 to 1E18                                                                                                                                                                                                |
| Preset value | Varies depending on the specified calibration kit and standard.                                                                                                                                              |
| Unit         | Ω (ohm)                                                                                                                                                                                                      |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Std*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-18, “Variable (Std),” on page 477, respectively.

|                 |                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim StanZ0 As Double<br>SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).Z0 = 50<br>StanZ0 = SCPI.SENSE(1).CORRection.COLLect.CKIT.STAN(5).Z0 |
| Related objects | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.SELect on page 475                                                                         |
| Equivalent key  | <b>[Cal] - Modify Cal Kit - Define STDs - no. name<sup>*1</sup> - Offset Z0</b>                                                            |

\*1.no: standard number (1 to 21), name: standard name (variable)

**SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.TRLoption.  
IMPedance**

|             |                                                                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                 |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.TRLoption.IMPedance = <i>Param</i><br><i>Param</i> = SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CKIT.TRLoption.IMPedance |
| Description | For channel 1 to 16 ( <i>Ch</i> ), selects the reference impedance during the TRL calibration.                                                                           |
| Variable    |                                                                                                                                                                          |

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Selects the reference impedance during the TRL calibration.                                                                                                                                                                                                                                                                                                                      |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                   |
| Range        | Select from the following. <ul style="list-style-type: none"> <li>•"SYSTem"                      Calculate the error coefficients by setting the system impedance to the reference impedance.</li> <li>•"LINE"                              Calculate the error coefficients by setting the characteristic impedance of the line standard to the reference impedance.</li> </ul> |
| Preset value | "SYSTem"                                                                                                                                                                                                                                                                                                                                                                         |

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

|                 |                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim TrlImp As String SCPI.SENSE(1).CORRection.COLLect.CKIT.TRLoption.IMPedance = "LINE" TrlImp = SCPI.SENSE(1).CORRection.COLLect.CKIT.TRLoption.IMPedance</pre> |
| Related objects | SCPI.SENSE(Ch).CORRection.COLLect.CKIT.TRLoption. RPLane on page 495                                                                                                  |
| Equivalent key  | <b>[Ca] - Modify Cal Kit - TRL Option - Impedance</b>                                                                                                                 |

## **SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.TRLoption.RPLane**

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.TRLoption.RPLane = *Param*  
*Param* = SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.TRLoption.RPLane

**Description** For channel 1 to 16 (*Ch*). selects the calculation method of the calibration plane.

**Variable**

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                           |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Selects the calculation method of the calibration plane.                                                                                                                                                                                                                                                                               |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                         |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"THRU"                      Uses the length of the THRU and LINE standard to calculate the calibration plane.</li> <li>•"REFlect"                      Uses the reflection coefficient of the reflection standard to calculate the calibration plane.</li> </ul> |
| Preset value | "THRU"                                                                                                                                                                                                                                                                                                                                 |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim TrlRpl As String
SCPI.SENSE(1).SENSe(1).CORRection.COLLect.CKIT.TRLoption.RPLane =
"REFlect"
TrlRpl = SCPI.SENSE(1).CORRection.COLLect.CKIT.TRLoption.RPLane
```

**Related objects** SCPI.SENSE(*Ch*).CORRection.COLLect.CKIT.TRLoption. IMPedance on page 494

**Equivalent key** **[Cal] - Modify Cal Kit - TRL Option - Reference Plane**

## **SCPI.SENSE(*Ch*).CORRection.COLLect.CLEAr**

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object  | Method                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax          | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.CLEAr                                                                                                                                                                                                                                                                                                                                                                                          |
| Description     | <p>For channels 1 to 16 (<i>Ch</i>), clears the calibration measurement data when the frequency offset feature is off. (No read)</p> <p>Settings that have been temporarily changed due to measurement for each standard (number of traces, measurement parameters, and so on) return to their original values.</p>                                                                                                                       |
| Variable        | For information on the variable ( <i>Ch</i> ), refer to Table 7-6, “Variable ( <i>Ch</i> ),” on page 203.                                                                                                                                                                                                                                                                                                                                 |
| Example of use  | <code>SCPI.SENSE(1).CORRection.COLLect.CLEAr</code>                                                                                                                                                                                                                                                                                                                                                                                       |
| Related objects | SCPI.SENSE( <i>Ch</i> ).OFFSet.STATe on page 598                                                                                                                                                                                                                                                                                                                                                                                          |
| Equivalent key  | <p><b>[Cal] - Calibrate - Responce(Open) - Cancel - OK</b></p> <p><b>[Cal] - Calibrate - Responce(Short) - Cancel - OK</b></p> <p><b>[Cal] - Calibrate - Responce(Thru) - Cancel - OK</b></p> <p><b>[Cal] - Calibrate - 1-Port Cal - Cancel - OK</b></p> <p><b>[Cal] - Calibrate - 2-Port Cal - Cancel - OK</b></p> <p><b>[Cal] - Calibrate - 3-Port Cal - Cancel - OK</b></p> <p><b>[Cal] - Calibrate - 4-Port Cal - Cancel - OK</b></p> |

## SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.CCHeck.ACQuire

|                |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Method                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).CORRection.COLLect.ECAL.CCHeck.ACQuire                                                                                                                                                                                                                                                                                                                                                      |
| Description    | <p>Using ECal (Electronic Calibration), executes the confidence check of the calibration coefficients for channels 1 to 16 (<i>Ch</i>) (sets the data measured with the analyzer and the data stored in ECal so that they can be compared).</p> <p>If you execute this object when the ECal module is not connected or when ports are not connected each other appropriately, a runtime error occurs. (No read)</p> |
| <b>NOTE</b>    | This function is available with the firmware version 3.50 or greater.                                                                                                                                                                                                                                                                                                                                               |
| Variable       | For information on the variable ( <i>Ch</i> ), refer to Table 7-6, “Variable (Ch),” on page 203.                                                                                                                                                                                                                                                                                                                    |
| Example of use | SCPI.SENSE(1).CORRection.COLLect.ECAL.CCHeck.ACQuire                                                                                                                                                                                                                                                                                                                                                                |
| Equivalent key | <b>[Cal] - ECal - Confidence Check</b>                                                                                                                                                                                                                                                                                                                                                                              |

**SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.ERESponse**

Object type

Property

Syntax

SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.ERESponse = Eports

Description

Executes enhanced response calibration between the two specified ports of channel 1 to channel 16 using the ECal (Electrical Calibration) module.

If you execute this command when the ECal module is not connected, an error occurs and the command is ignored. (No read)

Variable

|             | <i>Eports</i>                                                                                                                                                                                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p>Indicates 2-element array data (port number).</p> <ul style="list-style-type: none"> <li>• <i>EPorts(0)</i>                      Specifies the response port.</li> <li>• <i>EPorts(1)</i>                      Specifies the stimulus port.</li> </ul> <p>The index of the array starts from 0.</p> |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                 |
| Range       | 1 to 4                                                                                                                                                                                                                                                                                                 |
| Resolution  | 1                                                                                                                                                                                                                                                                                                      |
| Note        | For each parameter, you must specify a different port number. If you specify the same port number for 2 or more parameters, an error occurs and the command is ignored.                                                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim ERESport(1) As Variant
ERESport(0) = 1
ERESport(1) = 2
SCPI.SENSE(1).CORRection.COLLect.ECAL.ERESponse = ERESport
```

Equivalent key

**[Cal] - ECal - Enhanced Response - 2-1 (S21 S11)|3-1 (S31 S11)|...|3-4 (S34 S44)**

## **SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.ISOLation.STATe**

- Object type** Property
- Syntax** SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.ISOLation.STATe = *Status*  
*Status* = SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.ISOLation.STATe
- Description** For channels 1 to 16 (*Ch*), turns ON/OFF the isolation measurement when executing Ecal (Electronic Calibration).
- Variable**

|              |                                                                                                                                                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Status</i>                                                                                                                                                                                                                         |
| Description  | ON/OFF of the isolation measurement when executing ECal                                                                                                                                                                               |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the isolation measurement.</li> <li>• False or 0                      Turns OFF the isolation measurement.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                            |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim EcalIso As Boolean
SCPI.SENSE(1).CORRection.COLLect.ECAL.ISOLation.STATe = True
EcalIso = SCPI.SENSE(1).CORRection.COLLect.ECAL.ISOLation.STATe
```
- Related objects**
- SCPI.SENSE(Ch).CORRection.COLLect.ECAL.SOLT1 on page 502
 - SCPI.SENSE(Ch).CORRection.COLLect.ECAL.SOLT2 on page 503
 - SCPI.SENSE(Ch).CORRection.COLLect.ECAL.SOLT3 on page 504
 - SCPI.SENSE(Ch).CORRection.COLLect.ECAL.SOLT4 on page 505
- Equivalent key** **[Cal] - ECal - Isolation**

SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.ORIentation .STATE

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.ECAL.ORIentation.STATE = <i>Status</i> <i>Status</i> = SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.ECAL.ORIentation.STATE
Description	Turns ON/OFF the ECal auto-detect funcion.
Variable	

	<i>Status</i>
Description	ON/OFF the ECal auto-detect funcion.
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> •True or -1 Turns ON the auto detect function. •False or 0 Turns OFF the auto detect function.
Preset value	True or -1

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim EcalOri As Boolean SCPI.SENSE(1).CORRection.COLLect.ECAL.ORIentation.STATE = True EcalOri = SCPI.SENSE(1).CORRection.COLLect.ECAL.ORIentation.STATE</pre>
Related objects	<p>SCPI.SENSE(Ch).CORRection.COLLect.ECAL.PATH(Cpt) on page 501</p> <p>SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed. PORT(Pt).TYPE on page 235</p>
Equivalent key	[Cal] - ECal - Orientation

SCPI.SENSE(Ch).CORREction.COLLECT.ECAL.PATH(Cpt)

Object type Property

Syntax SCPI.SENSE.CORREction.COLLECT.ECAL.PATH(*Cpt*) = *Value*
Value = SCPI.SENSE(Ch).CORREction.COLLECT.ECAL.PATH(*Cpt*)

Description Specify the ECal module n port number which is connected to a specified port.

Variable

	<i>Value</i>
Description	Port of ECal module.
Data type	Long integer type (Long)
Range	One of the following is read out. <ul style="list-style-type: none"> • 0 Nothing is connected. • 1 Port A is connected. • 2 Port B is connected. • 3 Port C is connected. • 4 Port D is connected.

For information on the variable (*Cpt*), see Table 7-16, “Variable (Cpt),” on page 465.

Examples

```
Dim ECalPort As Long
SCPI.SENSE.CORREction.COLLECT.ECAL.PATH(1) = 3
ECalPort = SCPI.SENSE.CORREction.COLLECT.ECAL.PATH(1)
```

Related objects SCPI.SENSE(Ch).CORREction.COLLECT.ECAL.ORIentation .STATE on page 500

Equivalent key No equivalent key is available on the front panel.

SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.SOLT1

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.ECAL.SOLT1 = <i>Eport</i>
Description	<p>Executes 1-port calibration of the specified port of channels 1 to 16 (<i>Ch</i>) using the ECal (Electronic Calibration) module.</p> <p>If you execute this object when the ECal module is not connected, an error occurs when executed and the object is ignored. (No read)</p>

Variable

	<i>Eport</i>
Description	Port number
Data type	Long integer type (Long)
Range	1 to 4
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples SCPI.SENSE(1).CORRection.COLLect.ECAL.SOLT1 = 1

Equivalent key **[Cal] - ECal - 1-Port Cal - Port 1|Port 2|Port 3|Port 4**

SCPI.SENSE(*Ch*).CORRection.COLLEct.ECAL.SOLT2

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.COLLEct.ECAL.SOLT2 = *Eports*

Description Executes full 2-port calibration between the specified 2 ports of channels 1 to 16 (*Ch*) using the ECal (Electronic Calibration) module.

If you execute this object when the ECal module is not connected, an error occurs when executed and the object is ignored. (No read)

Variable

	<i>Eports</i>
Description	Indicates 2-element array data (port number). <ul style="list-style-type: none"> • <i>EPorts(0)</i> • <i>EPorts(1)</i> <p style="margin-left: 100px;">Specifies the port numbers for 2-port ECal.</p> <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 port numbers, an error occurs when executed. the order of the 2 port numbers to be specified is arbitrary.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples SCPI.SENSE(1).CORRection.COLLEct.ECAL.SOLT2 = Array(1,2)

```
Dim EcalPort(1) As Variant
EcalPort(0) = 1
EcalPort(1) = 2
SCPI.SENSE(1).CORRection.COLLEct.ECAL.SOLT2 = EcalPort
```

Equivalent key **[Cal] - ECal - 2-Port Cal - Port 1-2|Port 1-3|Port 1-4|Port 2-3|Port 2-4|Port 3-4**

SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.SOLT3

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.ECAL.SOLT3 = <i>Eports</i>
Description	<p>Executes full 3-port calibration between the specified 3 ports of channels 1 to 16 (<i>Ch</i>) using the ECal (Electronic Calibration) module.</p> <p>If you execute this object when the 4-port ECal module is not connected, an error occurs when executed and the object is ignored. (No read)</p>

Variable

	<i>Eports</i>
Description	<p>Indicates 3-element array data (port number).</p> <ul style="list-style-type: none"> • <i>EPorts(0)</i> <i>EPorts(1)</i> <i>EPorts(2)</i> <p style="text-align: right;">Specifies the port numbers for 3-port ECal.</p> <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	<p>If the specified variable is out of the allowable setup range, an error occurs when executed.</p> <p>If you specify the same port number to more than 2 port numbers, an error occurs when executed. the order of the 3 port numbers to be specified is arbitrary.</p>

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
SCPI.SENSE(1).CORRection.COLLect.ECAL.SOLT3 = Array(1,2,3)
```

```
Dim EcalPort(2) As Variant
EcalPort(0) = 1
EcalPort(1) = 2
EcalPort(2) = 3
SCPI.SENSE(1).CORRection.COLLect.ECAL.SOLT3 = EcalPort
```

Equivalent key **[Cal] - ECal - 3-Port Cal - Port 1-2-3|Port 1-2-4|Port 1-3-4|Port 2-3-4**

SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.SOLT4

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.SOLT4 = *Eports*

Description Executes full 4-port calibration for channels 1 to 16 (*Ch*) using the ECal (Electronic Calibration) module.

If you execute this object when the 4-port ECal module is not connected, an error occurs when executed and the object is ignored. (No read)

Variable

	<i>Eports</i>
Description	Indicates 4-element array data (port number). <ul style="list-style-type: none"> • <i>EPorts(0)</i> <i>EPorts(1)</i> <i>EPorts(2)</i> <i>EPorts(3)</i> <p style="text-align: right;">Specifies the port numbers for 4-port ECal.</p> <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to more than 2 port numbers, an error occurs when executed. the order of the 4 port numbers to be specified is arbitrary.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples SCPI.SENSE(1).CORRection.COLLect.ECAL.SOLT4 = Array(1,2,3,4)

```
Dim EcalPort(3) As Variant
EcalPort(0) = 1
EcalPort(1) = 2
EcalPort(2) = 3
EcalPort(3) = 4
SCPI.SENSE(1).CORRection.COLLect.ECAL.SOLT4 = EcalPort
```

Equivalent key **[Cal] - ECal - 4-Port Cal**

SCPI.SENSE(*Ch*).CORRection.COLLect.ECAL.THURU

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.ECAL.THURU = <i>Eports</i>
Description	<p>Executes response calibration (thru) between the specified 2 ports of channels 1 to 16 (<i>Ch</i>) using the ECal (Electronic Calibration) module.</p> <p>If you execute this object when the ECal module is not connected, an error occurs when executed and the object is ignored. (No read)</p>

Variable

	<i>Eports</i>
Description	<p>Indicates 2-element array data (port number).</p> <ul style="list-style-type: none"> • <i>Ports(0)</i> Specifies the response port number. • <i>Ports(1)</i> Specifies the stimulus port number. <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	<p>If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 port numbers, an error occurs when executed. the order of the 2 port numbers to be specified is arbitrary.</p>

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
SCPI.SENSE(1).CORRection.COLLect.ECAL.THURU = Array(1,2)
```

```
Dim EcalPort(1) As Variant
EcalPort(0) = 1
EcalPort(1) = 2
SCPI.SENSE(1).CORRection.COLLect.ECAL.THURU = EcalPort
```

Equivalent key

[Cal] - ECal - Thru Cal - 2-1 (S21)|3-1 (S31)|4-1 (S41)|1-2 (S12)|3-2 (S32)| 4-2 (S42)| 1-3 (S13)|2-3 (S23)|4-3 (S43)|1-4 (S14)|2-4 (S24)|3-4 (S34)

SCPI.SENSE(*Ch*).CORRection.COLLEct.ECAL.UCHar

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.COLLEct.ECAL.UCHar = *Param*

Description For channels 1 to 16 (*Ch*), selects the ECal characteristic used when executing the user-defined ECal.

The user-defined ECal is a type of ECal that is executed using the characteristic that has been acquired by the user and stored in the memory for ECal. For more information, refer to *User's Guide*.

When the ECal module is not connected or the characteristic is not stored at the specified location number, executing this object will cause a runtime error.

NOTE This function is available with the firmware version 3.50 or greater.

Variable

	<i>Param</i>
Description	Characteristic used when executing ECal (user characterization)
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"CHAR0" Uses the factory-default characteristic. (Normal ECal) •"CHAR1" Uses the characteristic stored at location number 1 in the ECal's flash memory. •"CHAR2" Uses the characteristic stored at location number 2 in the ECal's flash memory. •"CHAR3" Uses the characteristic stored at location number 3 in the ECal's flash memory. •"CHAR4" Uses the characteristic stored at location number 4 in the ECal's flash memory. •"CHAR5" Uses the characteristic stored at location number 5 in the ECal's flash memory.
Preset value	"CHAR0"

For information on the variable (*Ch*), refer to Table 7-6, "Variable (Ch)," on page 203.

Examples

```
Dim UserChar As String
SCPI.SENSE(1).CORRection.COLLEct.ECAL.UCHar = "CHAR2"
UserChar = SCPI.SENSE(1).CORRection.COLLEct.ECAL.UCHar
```

Equivalent key **[Cal] - ECal - Characterization - Factory|User1|User2|User3|User4|User5**

SCPI.SENSE(*Ch*).CORRection.COLLect.METHod.ERESponse

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.ERESponse = <i>Ports</i>
Description	For channel 1 to channel 16, sets the calibration type to the enhanced response calibration between the two specified ports. (No read)
Variable	

	<i>Ports</i>
Description	Indicates 2-element array data (port number). <ul style="list-style-type: none"> • <i>Ports(0)</i> Specifies the response port. • <i>Ports(1)</i> Specifies the stimulus port. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	For each parameter, you must specify a different port number. If you specify the same port number for 2 or more parameters, an error occurs and the command is ignored.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim ERESport(1) As Variant ERESport(0) = 1 ERESport(1) = 2 SCPI.SENSE(1).CORRection.COLLect.METHod.ERESponse = ERESport</pre>
Related objects	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.TYPE on page 517
Equivalent key	[Cal] - Calibrate - Enhanced Response - Select Ports - 2-1 (S21 S11) 3-1 (S31 S11) ... 3-4 (S34 S44)

SCPI.SENSE(*Ch*).CORREction.COLLECT.METHOD. RESPonse.OPEN

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORREction.COLLECT.METHOD.RESPonse.OPEN = <i>Port</i>
Description	For channels 1 to 16 (<i>Ch</i>), sets the calibration type to the response calibration (open) of the specified port. (No read)
Variable	For information on the variable (<i>Ch</i>) and the variable (<i>Port</i>), see Table 7-6, “Variable (<i>Ch</i>),” on page 203 and Table 7-15, “Variable (<i>Port</i>),” on page 457, respectively.
Examples	SCPI.SENSE(1).CORREction.COLLECT.METHOD.RESPonse.OPEN = 1
Related objects	SCPI.SENSE(<i>Ch</i>).CORREction.COLLECT.METHOD.TYPE on page 517
Equivalent key	[Cal] - Calibrate - Response (Open) - Select Port

SCPI.SENSE(*Ch*).CORREction.COLLECT.METHOD. RESPonse.SHORT

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORREction.COLLECT.METHOD.RESPonse.SHORT = <i>Port</i>
Description	For channels 1 to 16 (<i>Ch</i>), sets the calibration type to the response calibration (short) of the specified port. (No read)
Variable	For information on the variable (<i>Ch</i>) and the variable (<i>Port</i>), see Table 7-6, “Variable (<i>Ch</i>),” on page 203 and Table 7-15, “Variable (<i>Port</i>),” on page 457, respectively.
Examples	SCPI.SENSE(1).CORREction.COLLECT.METHOD.RESPonse.SHORT = 1
Related objects	SCPI.SENSE(<i>Ch</i>).CORREction.COLLECT.METHOD.TYPE on page 517
Equivalent key	[Cal] - Calibrate - Response (Short) - Select Port

**SCPI.SENSE(*Ch*).CORRection.COLLect.METHod.
RESPonse.THRU**

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.RESPonse.THRU = <i>Ports</i>
Description	For channels 1 to 16 (<i>Ch</i>), sets the calibration type to the response calibration (thru) between the specified 2 ports. (No read)
Variable	For information on the variable (<i>Ch</i>) and the variable (<i>Ports</i>), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-14, “Variable (Ports),” on page 456, respectively.
Examples	<pre>SCPI.SENSE(1).CORRection.COLLect.METHod.RESPonse.THRU = Array(2,1)</pre> <pre>Dim ThruPort(1) As Variant ThruPort(0) = 2 ThruPort(1) = 1 SCPI.SENSE(1).CORRection.COLLect.METHod.RESPonse.THRU = ThruPort</pre>
Related objects	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.TYPE on page 517
Equivalent key	[Cal] - Calibrate - Response (Thru) - Select Ports

SCPI.SENSE(*Ch*).CORRection.COLLect.METHod. SOLT1

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.SOLT1 = <i>Port</i>
Description	For channels 1 to 16 (<i>Ch</i>), sets the calibration type to the 1-port calibration of the specified port. (No read)
Variable	For information on the variable (<i>Ch</i>) and the variable (<i>Port</i>), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-15, “Variable (Port),” on page 457, respectively.
Examples	<pre>SCPI.SENSE(1).CORRection.COLLect.METHod.SOLT1 = 1</pre>
Related objects	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.TYPE on page 517
Equivalent key	[Cal] - Calibrate - 1-Port Cal - Select Port

SCPI.SENSE(*Ch*).CORRection.COLLect.METHod. SOLT2

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.SOLT2 = <i>Ports</i>
Description	For channels 1 to 16 (<i>Ch</i>), sets the calibration type to the full 2-port calibration between the specified 2 ports. (No read)
Variable	

	<i>Ports</i>
Description	Indicates 2-element array data (port number). <ul style="list-style-type: none"> • <i>Ports(0)</i> Specifies a port for full 2-port calibration. • <i>Ports(1)</i> Specifies the other port for full 2-port calibration. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 port numbers, an error occurs when executed. The order of the 2 port numbers to be specified is arbitrary.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples SCPI.SENSE(1).CORRection.COLLect.METHod.SOLT2 = Array(1,2)

```
Dim CalPort(1) As Variant
CalPort(0) = 1
CalPort(1) = 2
SCPI.SENSE(1).CORRection.COLLect.METHod.SOLT2 = CalPort
```

Related objects SCPI.SENSE(Ch).CORRection.COLLect.METHod.TYPE on page 517

Equivalent key **[Cal] - Calibrate - 2-Port Cal - Select Ports**

SCPI.SENSE(*Ch*).CORRection.COLLect.METHod. SOLT3

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.SOLT3 = <i>Ports</i>
Description	For channels 1 to 16 (<i>Ch</i>), sets the calibration type to the full 3-port calibration between the specified 3 ports. (No read)
Variable	

	<i>Ports</i>
Description	<p>Indicates 3-element array data (port number).</p> <ul style="list-style-type: none"> • <i>Ports(0)</i> Specifies a port for full 3-port calibration. • <i>Ports(1)</i> Specifies a port for full 3-port calibration. • <i>Ports(2)</i> Specifies a port for full 3-port calibration. <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 or more port numbers, an error occurs when executed. The order of the 3 port numbers to be specified is arbitrary.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples SCPI.SENSE(1).CORRection.COLLect.METHod.SOLT3 = Array(1,2,3)

```
Dim CalPort(2) As Variant
CalPort(0) = 1
CalPort(1) = 2
CalPort(2) = 3
SCPI.SENSE(1).CORRection.COLLect.METHod.SOLT3 = CalPort
```

Related objects SCPI.SENSE(Ch).CORRection.COLLect.METHod.TYPE on page 517

Equivalent key **[Cal] - Calibrate - 3-Port Cal - Select Ports**

SCPI.SENSE(*Ch*).CORRection.COLLect.METHod. SOLT4

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.SOLT4 = <i>Ports</i>
Description	For channels 1 to 16 (<i>Ch</i>), sets the calibration type to the full 4-port calibration. (No read)
Variable	

	<i>Ports</i>
Description	Indicates 4-element array data (port number). <ul style="list-style-type: none"> • <i>Ports(0)</i> Specifies a port for full 4-port calibration. • <i>Ports(1)</i> Specifies a port for full 4-port calibration. • <i>Ports(2)</i> Specifies a port for full 4-port calibration. • <i>Ports(3)</i> Specifies a port for full 4-port calibration. The index of the array starts from 0.
Data type	Variant type (<i>Variant</i>)
Range	1 to 4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 or more port numbers, an error occurs when executed. The order of the 4 port numbers to be specified is arbitrary.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples `SCPI.SENSE(1).CORRection.COLLect.METHod.SOLT4 = Array(1, 2, 3, 4)`

```
Dim CalPort(3) As Variant
CalPort(0) = 1
CalPort(1) = 2
CalPort(2) = 3
CalPort(3) = 4
SCPI.SENSE(1).CORRection.COLLect.METHod.SOLT4 = CalPort
```

Related objects `SCPI.SENSE(Ch).CORRection.COLLect.METHod.TYPE` on page 517

Equivalent key **[Cal] - Calibrate - 4-Port Cal**

SCPI.SENSE(*Ch*).CORRection.COLLect.METHod.TRL2

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.METHod.TRL2 = <i>Ports</i>
Description	For channel 1 to 16 (<i>Ch</i>), sets the calibration type to the TRL calibration between the 2 specified ports. (No Read)
Variable	

	<i>Ports</i>
Description	Indicates 2-element array data (port number). <ul style="list-style-type: none"> • <i>Ports(0)</i> Specifies a port for TRL 2-port calibration. • <i>Ports(1)</i> Specifies a port for TRL 2-port calibration. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 or more port numbers, an error occurs when executed. The order of the 2 port numbers to be specified is arbitrary.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
SCPI.SENSE(1).CORRection.COLLect.METHod.TRL2 = Array(1,2)

Dim TrlCalPort(1) As Variant
TrlCalPort(0) = 1
TrlCalPort(1) = 2
SCPI.SENSE(1).CORRection.COLLect.METHod.TRL2 = TrlCalPort
```

Related objects

- SCPI.SENSE(Ch).CORRection.COEFFicient.DATA on page 446
- SCPI.SENSE(Ch).CORRection.COEFFicient.SAVE on page 455
- SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL3 on page 515
- SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL4 on page 516
- SCPI.SENSE(Ch).CORRection.COLLect.SAVE on page 518
- SCPI.SENSE(Ch).CORRection.TYPE(Tr) on page 556

Equivalent key **[Cal] - Calibrate - 2-Port TRL Cal - Select Ports - 1-2|1-3*1|1-4*2|2-3*1|2-4*2|3-4*2**

*1. Only with Options 313, 314, 413, and 414.
 *2. Only with Options 413 and 414.

SCPI.SENSE(*Ch*).CORREction.COLLECT.METHOD.TRL3

Object type Property

Syntax SCPI.SENSE(*Ch*).CORREction.COLLECT.METHOD.TRL3 = *Ports*

Description For channel 1 to 16 (*Ch*), sets the calibration type to the TRL calibration between the 3 specified ports. (No Read)

Variable

	<i>Ports</i>
Description	Indicates 3-element array data (port number). <ul style="list-style-type: none"> • <i>Ports(0)</i> Specifies a port for TRL 3-port calibration. • <i>Ports(1)</i> Specifies a port for TRL 3-port calibration. • <i>Ports(2)</i> Specifies a port for TRL 3-port calibration. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 or more port numbers, an error occurs when executed. The order of the 3 port numbers to be specified is arbitrary.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples SCPI.SENSE(1).CORREction.COLLECT.METHOD.TRL3 = Array(1, 2, 3)

```
Dim TrlCalPort(2) As Variant
TrlCalPort(0) = 1
TrlCalPort(1) = 2
TrlCalPort(2) = 3
SCPI.SENSE(1).CORREction.COLLECT.METHOD.TRL3 = TrlCalPort
```

Related objects SCPI.SENSE(Ch).CORREction.COEFFicient.DATA on page 446
 SCPI.SENSE(Ch).CORREction.COEFFicient.SAVE on page 455
 SCPI.SENSE(Ch).CORREction.COLLECT.METHOD.TRL2 on page 514
 SCPI.SENSE(Ch).CORREction.COLLECT.METHOD.TRL4 on page 516
 SCPI.SENSE(Ch).CORREction.COLLECT.SAVE on page 518
 SCPI.SENSE(Ch).CORREction.TYPE(Tr) on page 556

Equivalent key **[Cal] - Calibrate - 3-Port TRL Cal**^{*1} - **Select Ports - 1-2-3|1-2-4**^{*2}|**1-3-4**^{*2}|**2-3-4**^{*2}

*1. Only with Options 313, 314, 413, and 414.
 *2. Only with Options 413 and 414.

SCPI.SENSE(*Ch*).CORRection.COLLect.METHod.TRL4

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CCORRection.COLLect.METHod.TRL4 = <i>Ports</i>
Description	For channel 1 to 16 (<i>Ch</i>), sets the calibration type to the TRL calibration between the 4 specified ports. (No Read)
Variable	

	<i>Ports</i>
Description	Indicates 4-element array data (port number). <ul style="list-style-type: none"> • <i>Ports(0)</i> Specifies a port for TRL 4-port calibration. • <i>Ports(1)</i> Specifies a port for TRL 4-port calibration. • <i>Ports(2)</i> Specifies a port for TRL 4-port calibration. • <i>Ports(3)</i> Specifies a port for TRL 4-port calibration. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Resolution	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. If you specify the same port number to 2 or more port numbers, an error occurs when executed. The order of the 4 port numbers to be specified is arbitrary.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples SCPI.SENSE(1).CORRection.COLLect.METHod.TRL4 = Array(1,2,3,4)

```
Dim TrlCalPort(3) As Variant
TrlCalPort(0) = 1
TrlCalPort(1) = 2
TrlCalPort(2) = 3
TrlCalPort(3) = 4
SCPI.SENSE(1).CORRection.COLLect.METHod.TRL4 = TrlCalPort
```

Related objects

- SCPI.SENSE(Ch).CORRection.COEFFicient.DATA on page 446
- SCPI.SENSE(Ch).CORRection.COEFFicient.SAVE on page 455
- SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL2 on page 514
- SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL3 on page 515
- SCPI.SENSE(Ch).CORRection.COLLect.SAVE on page 518
- SCPI.SENSE(Ch).CORRection.TYPE(Tr) on page 556

Equivalent key **[Cal] - Calibrate - 4-Port TRL Cal**^{*1}

SCPI.SENSE(*Ch*).CORRection.COLLect.METHod.TYPE

Object type Property

Syntax *Param* = SCPI.SENSE(*Ch*).CORRection.COLLect.METHod.TYPE

Description Reads out the selected calibration type of channels 1 to 16 (*Ch*). (Read only)

NOTE This object is used to check the selected calibration type for calculating the calibration coefficients. To check the applied calibration type (error correction on), use the SCPI.SENSE(Ch).CORRection.TYPE(Tr) object.

Variable

	<i>Param</i>
Description	Calibration type
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"ERES" The calibration type is the enhanced response calibration. •"NONE" The calibration type is set to nothing. •"RESPO" The calibration type is the response calibration (open). •"RESPS" The calibration type is the response calibration (short). •"RESPT" The calibration type is the response calibration (thru). •"SOLT1" The calibration type is the 1-port calibration. •"SOLT2" The calibration type is the full 2-port calibration. •"SOLT3" The calibration type is the full 3-port calibration. •"SOLT4" The calibration type is the full 4-port calibration. •"TRL2" The calibration type is the TRL 2-port calibration. •"TRL3" The calibration type is the TRL 3-port calibration. •"TRL4" The calibration type is the TRL 4-port calibration.

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

Examples

```
Dim CalType As String
CalType = SCPI.SENSE(1).CORRection.COLLect.METHod.TYPE
```

Related objects SCPI.SENSE(Ch).CORRection.COLLect.SAVE on page 518
 SCPI.SENSE(Ch).CORRection.TYPE(Tr) on page 556

Equivalent key No equivalent key is available on the front panel.

*1. Only with Options 413 and 414.

SCPI.SENSE(*Ch*).CORRection.COLLect.SAVE

Object type	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLect.SAVE
Description	<p>From the measured calibration data, calculates the calibration coefficients depending on the calibration type selection.</p> <p>Calculating the calibration coefficients clears all the measured calibration data whether or not used for the calculation and also clears the calibration type selection.</p> <p>If you execute this object before all necessary calibration data for calculating the calibration coefficients is measured, an error occurs when executed. (No read)</p>
Variable	For information on the variable (<i>Ch</i>), see Table 7-6, “Variable (Ch),” on page 203.
Examples	<pre>Dim Dmy As Long SCPI.SENSE(1).CORRection.COLLect.METHod.RESPonse.THru = Array(2,1) SCPI.SENSE(1).CORRection.COLLect.ACQuire.THru = Array(2,1) Dmy = SCPI.IEEE4882.OPC SCPI.SENSE(1).CORRection.COLLect.SAVE</pre>
Related objects	<p>SCPI.SENSE(Ch).CORRection.COLLect.METHod. RESPonse.OPEN on page 509</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod. RESPonse.SHORt on page 509</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod. RESPonse.THru on page 510</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod. SOLT1 on page 510</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod. SOLT2 on page 511</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod. SOLT3 on page 512</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod. SOLT4 on page 513</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL2 on page 514</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL3 on page 515</p> <p>SCPI.SENSE(Ch).CORRection.COLLect.METHod.TRL4 on page 516</p>
Equivalent key	[Cal] - Calibrate - Response n-Port Cal - Done

SCPI.SENSE(*Ch*).CORRection.COLLEct.SIMPLified.SAVE

Object type	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.SIMPLified.SAVE
Description	<p>When the full 3/4 port calibration is selected as the calibration type, calculates the calibration coefficients for the simple full 3 port calibration or the simple full 4 port calibration from the measured calibration data.</p> <p>If the response calibration or the 1/2 port calibration is selected as the calibration type, this object provides the same function as the SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.SAVE object.</p> <p>After the calibration coefficients are calculated, the measured data and the calibration type setting are cleared.</p> <p>If you execute this object before all the necessary calibration data for calculating the calibration coefficients for the simple full 3 port calibration or the simple full 4 port calibration is measured, a runtime error occurs. (No read)</p>
NOTE	This function is available with the firmware version 3.50 or greater.
Variable	For information on the variable (<i>Ch</i>), refer to Table 7-6, “Variable (Ch),” on page 203.
Examples	<pre>SCPI.SENSE(1).CORRection.COLLEct.METHod.SOLT3 = Array(1,2,3) SCPI.SENSE(1).CORRection.COLLEct.SIMPLified.SAVE</pre>
Related objects	<p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.METHod. SOLT3 on page 512</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.METHod. SOLT4 on page 513</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.COLLEct.SAVE on page 518</p>
Equivalent key	No equivalent key is available on the front panel.

SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.CONFIg

Object type Method

Syntax SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.CONFIg = *Param**Param* = SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.CONFIgDescription For channel 1 to 16 (*Ch*), sets the frequency point to calculate the loss value of the auto port extension.

Variable

	<i>Param</i>
Description	The frequency point to calculate the loss value of the auto port extension
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"CSPN" Uses the frequency of the current sweep range. •"AMKR" Use the frequency of the active marker.*1 This is applied to Loss 1 and Loss 2 is ignored. •"USPN" This is executed with the arbitrary specified start frequency and stop frequency.
Preset value	"CSPN"

*1. Even if active marker is set to OFF, it turns on automatically.

For information on the variable (*Ch*), refer to Table 7-6, "Variable (*Ch*)," on page 203.

Examples

```
Dim Conf As String
SCPI.SENSE(1).CORRection.EXTEnsion.AUTO.CONFIg = "AMKR"
Conf = SCPI.SENSE(1).CORRection.EXTEnsion.AUTO.CONFIg
```

Related objects

SCPI.SENSE(*Ch*).CORRection.EXTEnsion.STATe on page 536
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.DCOFFset on page 521
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.LOSS on page 522
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.MEASure on page 523
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.PORT(*Pt*) on page 524
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.RESet on page 525
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.STARt on page 526
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.STOP on page 527

Equivalent key

[Cal] - Port Extensions - Auto Port Extension - Method - Current Span|Active Marker|User Span

SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOFFset

Object type Method

Syntax SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOFFset = *Status*
Status = SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOFFset

Description For channel 1 to 16 (*Ch*), enables or disables the usage of DC loss value for the results of the auto port extension .

Variable

	<i>Status</i>
Description	ON/OFF the usage of DC loss value for the results of the auto port extension
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Uses the DC loss value for the results. • False or 0 Does not use the DC loss value for the results.
Preset value	False or 0

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim Dcof As Boolean
SCPI.SENSE(1).CORRection.EXTension.AUTO.DCOFFset = True
Dcof = SCPI.SENSE(1).CORRection.EXTension.AUTO.DCOFFset
```

Related objects SCPI.CALCulate(Ch).PARAmeter(Tr).SELEct on page 253
SCPI.CALCulate(Ch).SELEcted.CONVersion.FUNcTION on page 263
SCPI.SENSE(Ch).CORRection.EXTension.STATe on page 536
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.CONFig on page 520
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.LOSS on page 522
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.MEASure on page 523
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.PORT(Pt) on page 524
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.RESEt on page 525
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STARt on page 526
SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STOP on page 527

Equivalent key **[Cal] - Port Extensions - Auto Port Extension - Adjust Mismatch**

SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.LOSS

Object type	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.EXTeNsion.AUTO.LOSS = <i>Status</i> <i>Status</i> = SCPI.SENSE(<i>Ch</i>).CORRection.EXTeNsion.AUTO.LOSS
Description	For channel 1 to 16 (<i>Ch</i>), turns ON/OFF the loss compensation for the results of the auto port extension .
Variable	

	<i>Status</i>
Description	ON/OFF the loss compensation for the results of the auto port extension
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns on the loss compensation • False or 0 Turns off the loss compensation
Preset value	False or 0

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim AutoLoss As Boolean
SCPI.SENSE(1).CORRection.EXTeNsion.AUTO.LOSS = True
AutoLoss = SCPI.SENSE(1).CORRection.EXTeNsion.AUTO.LOSS
```

Related objects

- SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.CONFig on page 520
- SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.DCOFFset on page 521
- SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.MEASure on page 523
- SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.PORT(*Pt*) on page 524
- SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.RESet on page 525
- SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.STARt on page 526
- SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.STOP on page 527

Equivalent key **[Cal] - Port Extensions - Auto Port Extension - Include Loss**

SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTOMEASure

Object type Method

Syntax SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTOMEASure = *Param*
Param = SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTOMEASure

Description For channel 1 to 16 (*Ch*), measures the calibration data of the OPEN standard or SHORT standard of the auto port extension.

Variable

	<i>Param</i>
Description	Standard type of the auto port extension
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"OPEN" Measures the calibration data of the OPEN standard •"SHORT" Measures the calibration data of the SHORT standard
Preset value	"SHORT"

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim AutoMeas As String
SCPI.SENSE(1).CORRection.EXTeNsion.AUTOMEASure = "OPEN"
AutoLoss = SCPI.SENSE(1).CORRection.EXTeNsion.AUTO.LOSS
```

Related objects

SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.CONFig on page 520
SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.DCOFFset on page 521
SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.LOSS on page 522
SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.PORT(*Pt*) on page 524
SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.RESet on page 525
SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.STARt on page 526
SCPI.SENSE(*Ch*).CORRection.EXTeNsion.AUTO.STOP on page 527

Equivalent key **[Cal] - Port Extensions - Auto Port Extension - Measure OPEN|Measure Short-All|Port 1|Port 2|Port 3|Port 4**

SCPI.SENSE(Ch).CORRection.EXTension.AUTO.PORT(Pt)

Object type	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.AUTO.PORT(<i>Pt</i>) = <i>Status</i> <i>Status</i> = SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.AUTO.PORT(<i>Pt</i>)
Description	For channel 1 to 16 (<i>Ch</i>), turns ON/OFF the auto port extension.
Variable	

	<i>Status</i>
Description	On/off of the auto port extension
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the auto port extension • False or 0 Turns OFF the autot port extension
Preset value	True or -1

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (*Pt*),” on page 235.

Examples

```
Dim APort As Boolean
SCPI.SENSE(1).CORRection.EXTension.AUTO.PORT(1) = True
APort = SCPI.SENSE(1).CORRection.EXTension.AUTO.PORT(1)
```

Related objects

SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.CONFig on page 520
 SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.DCOFFset on page 521
 SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.LOSS on page 522
 SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.MEASure on page 523
 SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.RESet on page 525
 SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.STARt on page 526
 SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.STOP on page 527

Equivalent key **[Cal] - Port Extensions - Auto Port Extension - Select Ports - Port 1|Port 2|Port 3|Port 4**

SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.RESet

Object type	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.AUTO.RESet
Description	For channel 1 to 16 (<i>Ch</i>), deletes the finished measurement data (OPEN and SHORT). (No Read)
Variable	For information on the variable (<i>Ch</i>), refer to Table 7-6, “Variable (Ch),” on page 203.
Examples	SCPI.SENSE(1).CORRection.EXTension.AUTO.RESet
Related objects	SCPI.SENSE(Ch).CORRection.EXTension.STATe on page 536 SCPI.SENSE(Ch).CORRection.EXTension.AUTO.CONFig on page 520 SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOFFset on page 521 SCPI.SENSE(Ch).CORRection.EXTension.AUTO.LOSS on page 522 SCPI.SENSE(Ch).CORRection.EXTension.AUTO.MEASure on page 523 SCPI.SENSE(Ch).CORRection.EXTension.AUTO.PORT(Pt) on page 524 SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STARt on page 526 SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STOP on page 527
Equivalent key	No equivalent key is available on the front panel.

SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.START

Object type Method

Syntax SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.START = *Value**Value* = SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.STARTDescription For channel 1 to 16 (*Ch*), sets the start frequency within the frequency range of the user specified auto port extension.

Variable

	<i>Value</i>
Description	Start frequency
Data type	Double precision floating point type (Double)
Range	3E5 to 3.0E9 (for E5070B) 3E5 to 8.5E9 (for E5071B)
Preset value	3E5
Unit	Hz (hertz)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim AStart As Double
SCPI.SENSE(1).CORRection.EXTEnsion.AUTO.START = 1E9
AStart = SCPI.SENSE(1).CORRection.EXTEnsion.AUTO.START
```

Related objects

SCPI.SENSE(*Ch*).CORRection.EXTEnsion.STATE on page 536
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.CONFig on page 520
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.DCOFfset on page 521
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.LOSS on page 522
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.MEASure on page 523
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.PORT(*Pt*) on page 524
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.RESet on page 525
 SCPI.SENSE(*Ch*).CORRection.EXTEnsion.AUTO.STOP on page 527

Equivalent key

[Cal] - Port Extensions - Auto Port Extension - Method - User Span Start

SCPI.SENSE(Ch).CORREction.EXTEnsion.AUTO.STOP

Object type Method

Syntax SCPI.SENSE(*Ch*).CORREction.EXTEnsion.AUTO.STOP = *Value*

Value = SCPI.SENSE(*Ch*).CORREction.EXTEnsion.AUTO.STOP

Description For channel 1 to 16 (*Ch*), sets the stop frequency within the frequency range of the user specified auto port extension.

Variable

	<i>Value</i>
Description	Stop frequency
Data type	Double precision floating point type (Double)
Range	3E5 to 3.0E9 (for E5070B) 3E5 to 8.5E9 (for E5071B)
Preset value	3.0E9 (for E5070B) 8.5E9 (for E5071B)
Unit	Hz (hertz)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim AStop As Double
SCPI.SENSE(1).CORREction.EXTEnsion.AUTO.STOP = 250E8
AStop = SCPI.SENSE(1).CORREction.EXTEnsion.STOP.START
```

Related objects

- SCPI.SENSE(Ch).CORREction.EXTEnsion.STATE on page 536
- SCPI.SENSE(Ch).CORREction.EXTEnsion.AUTO.CONFig on page 520
- SCPI.SENSE(Ch).CORREction.EXTEnsion.AUTO.DCOFFset on page 521
- SCPI.SENSE(Ch).CORREction.EXTEnsion.AUTO.LOSS on page 522
- SCPI.SENSE(Ch).CORREction.EXTEnsion.AUTO.MEASure on page 523
- SCPI.SENSE(Ch).CORREction.EXTEnsion.AUTO.PORT(Pt) on page 524
- SCPI.SENSE(Ch).CORREction.EXTEnsion.AUTO.RESet on page 525
- SCPI.SENSE(Ch).CORREction.EXTEnsion.AUTO.START on page 526

Equivalent key **[Cal] - Port Extensions - Auto Port Extension - Method - User Span Stop**

**SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).
FREQuency(*Fq*)**

Object type	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.PORT(<i>Pt</i>).FREQuency(<i>Fq</i>) = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.PORT(<i>Pt</i>).FREQuency(<i>Fq</i>)
Description	For channel 1 to 16 (<i>Ch</i>), sets the stop frequency within the frequency range of the user specified auto port extension.

Variable

Table 7-19 Variable (*Fq*)

	<i>Fq</i>
Description	Frequency number
Data type	Long integer type (Long)
Range	1 to 2
Preset value	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

	<i>Value</i>
Description	Frequency
Data type	Double precision floating point type (Double)
Range	3E5 to 3.0E9 (for E5070B) 3E5 to 8.5E9 (for E5071B)
Preset value	0
Unit	Hz (hertz)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples

```
Dim PortFreq As Double
SCPI.SENSE(1).CORRection.EXTension.PORT(1).FREQuency(1) = 500E6
PortFreq = SCPI.SENSE(1).CORRection.EXTension.PORT(1).FREQuency(1)
```

Related objects

SCPI.SENSE(*Ch*).CORRection.EXTension.STATe on page 536
 SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*). INCLude(II).STATe on page 530
 SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).LDC on page 532

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt). FREQUency(Fq)

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt) .LOSS(Loss) on page 533

Equivalent key **[Cal] - Port Extensions - Loss - Freq1|Freq2**

**SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).
INCLude(II).STATe**

Object type	Method
Syntax	SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).INCLude(II).STATe = <i>Status</i> <i>Status</i> = SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).INCLude(II).STATe
Description	For channel 1 to 16 (<i>Ch</i>), turns ON/OFF the set of loss value and frequency value of include 1 to 2 (<i>II</i>) of the port 1 to 4 (<i>Pt</i>).

Variable

Table 7-20**Variable (II)**

	<i>II</i>
Description	Include number
Data type	Long integer type (Long)
Range	1 to 2
Preset value	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

	<i>Status</i>
Description	ON/OFF the set of loss value and frequency value.
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> •True or -1 Turns ON the loss value and frequency value. •False or 0 Turns OFF the loss value and frequency value.
Preset value	False or 0

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples

```
Dim PortIncl As Double
SCPI.SENSE(1).CORRection.EXTEnsion.PORT(1).INCLude(1).STATe = 500E6
PortIncl =
SCPI.SENSE(1).CORRection.EXTEnsion.PORT(1).INCLude(1).STATe
```

Related objects

SCPI.SENSE(Ch).CORRection.EXTEnsion.STATe on page 536
 SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt). FREQuency(Fq) on page 528
 SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).LDC on page 532
 SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).LOSS(Loss) on page 533
 SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).TIME on page 535

Equivalent key **[Cal] - Port Extensions - Loss - Loss1|Loss2**

SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).LDC

Object type Method

Syntax SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).LDC = *Value**Value* = SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).LDCDescription For channel 1 to 16 (*Ch*), sets the DC loss value of the port 1 to 4 (*Pt*).

Variable

	<i>Value</i>
Description	The loss value of DC.
Data type	Double precision floating point type (Double)
Range	-90 to 90
Preset value	0
Unit	dBm
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples

```
Dim PLdc As Double
SCPI.SENSE(1).CORRection.EXTension.PORT(1).LDC = 45
PLdc = SCPI.SENSE(1).CORRection.EXTension.PORT(1).LDC
```

Related objects

SCPI.SENSE(Ch).CORRection.EXTension.STATe on page 536

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt). FREQuency(Fq) on page 528

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt). INCLude(II).STATe on page 530

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt) .LOSS(Loss) on page 533

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).TIME on page 535

Equivalent key

[Cal] - Port Extensions - Loss - Loss at DC

SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).LOSS(Loss)

Object type	Method
Syntax	SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).LOSS(Loss) = <i>Value</i> <i>Value</i> = SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).LOSS(Loss)
Description	For channel 1 to 16 (<i>Ch</i>), sets the DC loss value of the port 1 to 4 (<i>Pt</i>).
Variable	

Table 7-21**Variable (*Loss*)**

	<i>Loss</i>
Description	Loss number
Data type	Long integer type (Long)
Range	1 to 2
Preset value	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

	<i>Value</i>
Description	The loss value
Data type	Double precision floating point type (Double)
Range	-90 to 90
Preset value	0
Unit	dBm
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples

```
Dim PLoss As Double
SCPI.SENSE(1).CORRection.EXTEnsion.PORT(1).LOSS(1) = -45
PLoss = SCPI.SENSE(1).CORRection.EXTEnsion.PORT(1).LOSS(1)
```

Related objects

SCPI.SENSE(Ch).CORRection.EXTEnsion.STATE on page 536
 SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).FREQUency(Fq) on page 528
 SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).INCLude(II).STATE on page 530
 SCPI.SENSE(Ch).CORRection.EXTEnsion.PORT(Pt).LDC on page 532

COM Object Reference

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt) .LOSS(Loss)

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).TIME on page 535

Equivalent key

[Cal] - Port Extensions - Loss - Loss1|Loss2

SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).TIME

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.PORT(<i>Pt</i>).TIME = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.PORT(<i>Pt</i>).TIME
Description	For channels 1 to 16 (<i>Ch</i>), sets the delay time for the port extension of ports 1 and 4 (<i>Pt</i>).
Variable	

	<i>Value</i>
Description	Delay time
Data type	Double precision floating point type (Double)
Range	-10 to 10
Preset value	0
Unit	s (second)
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples	<pre>Dim PortExt As Double SCPI.SENSE(1).CORRection.EXTension.PORT(1).TIME = 1E-3 PortExt = SCPI.SENSE(1).CORRection.EXTension.PORT(1).TIME</pre>
Related objects	<p>SCPI.SENSE(Ch).CORRection.EXTension.STATe on page 536</p> <p>SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt). FREQUency(Fq) on page 528</p> <p>SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt). INCLude(II).STATe on page 530</p> <p>SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).LDC on page 532</p> <p>SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt) .LOSS(Loss) on page 533</p>
Equivalent key	[Cal] - Port Extensions - Extension Port N

SCPI.SENSE(*Ch*).CORRection.EXTension.STATe

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.STATe = <i>Status</i> <i>Status</i> = SCPI.SENSE(<i>Ch</i>).CORRection.EXTension.STATe
Description	For channels 1 to 16 (<i>Ch</i>), turns ON/OFF the port extension.
Variable	

	<i>Status</i>
Description	ON/OFF of the port extension correction
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the port extension. • False or 0 Turns OFF the port extension.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim Ext As Boolean
SCPI.SENSE(1).CORRection.EXTension.STATe = True
Ext = SCPI.SENSE(1).CORRection.EXTension.STATe
```

Related objects

- SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).TIME on page 535
- SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.DCOFFset on page 521
- SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.LOSS on page 522
- SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.MEASure on page 523
- SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.PORT(*Pt*) on page 524
- SCPI.SENSE(*Ch*).CORRection.EXTension.AUTO.RESet on page 525
- SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*). FREQuency(*Fq*) on page 528
- SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*). INCLude(*Il*).STATe on page 530
- SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).LDC on page 532
- SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).LOSS(*Loss*) on page 533
- SCPI.SENSE(*Ch*).CORRection.EXTension.PORT(*Pt*).TIME on page 535

Equivalent key **[Cal] - Port Extensions - Extensions**

SCPI.SENSE(*Ch*).CORRection.IMPedance.INPut.MAGNitude

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.IMPedance.INPut.MAGNitude = *Value*
Value = SCPI.SENSE(*Ch*).CORRection.IMPedance.INPut.MAGNitude

Description Sets the system characteristic impedance (*Z0*) value.

NOTE This object is available with the firmware version 3.01 or greater.

Variable

	<i>Value</i>
Description	System <i>Z0</i> value
Data type	Double precision floating point type (Double)
Range	1E-3 to 1000
Preset value	50
Unit	Ω (ohm)
Resolution	0.001
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

Examples `Dim SysZ0 As Double`
`SCPI.SENSE.CORRection.IMPedance.INPut.MAGNitude = 75`
`SysZ0 = SCPI.SENSE.CORRection.IMPedance.INPut.MAGNitude`

Equivalent key **[Cal] - Set Z0**

SCPI.SENSE(*Ch*).CORRection.OFFSet.CLEar

Type of object	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.CLEar
Description	<p>For channels 1 to 16 (<i>Ch</i>), clears the error coefficient for calibration when the frequency offset feature is on. (No read)</p> <p>This command does not clear the error coefficient when the frequency offset mode is off.</p>
Variable	For information on the variable (<i>Ch</i>), refer to Table 7-6, “Variable (Ch),” on page 203.
Example of use	<code>SCPI.SENSE(1).CORRection.OFFSet.CLEar</code>
Related objects	<p>SCPI.SENSE(<i>Ch</i>).OFFSet.STATe on page 598</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.CLEar on page 445</p>
Equivalent key	[Cal] - Mixer/Converter Calibration - Clear - OK

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQure.LOAD

Type of object Property

Syntax SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQure.LOAD = *Ports*

Description For channels 1 to 16 (*Ch*), measures the calibration data of the load standard of the specified port when the frequency offset feature is on. (No read)

Variable

	<i>Ports</i>
Description	Provides 2-element array data (port). Ports(0): Measurement port number Ports(1): Frequency port number The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Note	The value used as the frequency is the value specified with frequency setting commands "SCPI.SENSE(<i>Ch</i>).OFFSet.PORT(<i>Pt</i>).FREQuency and its subcommands" for the port specified by the frequency port number.

For information on the variable (*Ch*), refer to Table 7-6, "Variable (*Ch*)," on page 203.

Example of use (1) SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQure.LOAD = Array(1,2)

Example of use (2) Dim Port As Variant
 Port(0) = 1
 Port(1) = 2
 SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQure.LOAD = Port

Related objects SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQure.OPEN on page 540
 SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQure.SHORT on page 543

Equivalent key **[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Reflection - PortX@FreqY Broadband**

NOTE The values of PortX and FreqY change depending on the selected calibration method and port number.

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQuire.OPEN

Type of object	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.OPEN = <i>Ports</i>
Description	For channels 1 to 16 (<i>Ch</i>), measures the calibration data of the open standard of the specified port when the frequency offset feature is on. (No read)
Variable	

	<i>Ports</i>
Description	Provides 2-element array data (port). Ports(0): Measurement port number Ports(1): Frequency port number The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Note	The value used as the frequency is the value specified with frequency setting commands "SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQUENCY and its subcommands" for the port specified by the frequency port number.

For information on the variable (*Ch*), refer to Table 7-6, "Variable (*Ch*)," on page 203.

Example of use (1)	SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQuire.OPEN = Array(1,2)
Example of use (2)	Dim Port As Variant Port(0) = 1 Port(1) = 2 SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQuire.OPEN = Port
Related objects	SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.LOAD on page 539 SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.SHORT on page 543
Equivalent key	[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Reflection - PortX@FreqY Open

NOTE The values of PortX and FreqY change depending on the selected calibration method and port number.

SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.PMETer

Type of object	Property
Syntax	SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQuire.PMETer = <i>Params</i>
Description	For channels 1 to 16 (<i>Ch</i>), measures the scalar-mixer calibration data using the power meter for the specified port when the frequency offset feature is on. (No read)
Variable	

	<i>Params</i>
Description	Provides 3-element array data (port). Params(0): Measurement port number Params(1): Frequency port number Params(2): Power sensor number in use The index of the array starts from 0.
Data type	Variant type (Variant)
Range	Measurement port number/frequency port number 1 to 4 Power sensor number in use <ul style="list-style-type: none"> • "ASENSor": Specifies power sensor A. • "BSENSor": Specifies power sensor B.
Note	The value used as the frequency is the value specified with frequency setting commands "SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency and its subcommands" for the port specified by the frequency port number. The setting of the power sensor is common to that for power meter calibration.

For information on the variable (*Ch*), refer to Table 7-6, "Variable (Ch)," on page 203.

Example of use (1) SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQuire.PMETer = Array(1,2,"ASENSor")

Example of use (2)
 Dim Params As Variant
 Params(0) = 1
 Params(1) = 2
 Params(2) = "ASENSor"
 SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQuire.PMETer = Params

COM Object Reference

SCPI.SENSE(Ch).CORRection.OFFSet.COLLEct.ACQuire.PMETER

Related objects SCPI.SENSE(Ch).CORRection.OFFSet.COLLEct.ACQuire.LOAD on page 539
SCPI.SENSE(Ch).CORRection.OFFSet.COLLEct.ACQuire.OPEN on page 540
SCPI.SENSE(Ch).CORRection.OFFSet.COLLEct.ACQuire.SHORT on page 543

Equivalent key **[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Power Meter - Use Sensor A|Use Sensor B**
[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Power Meter - PortX@FreqY

NOTE The values of PortX and FreqY change depending on the selected calibration method and port number.

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQuire.SHORt

Type of object Property

Syntax SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQuire.SHORt = *Ports*

Description For channels 1 to 16 (*Ch*), measures the calibration data of the short standard of the specified port when the frequency offset feature is on. (No read)

Variable

	<i>Ports</i>
Description	Provides 2-element array data (port). Ports(0): Measurement port number Ports(1): Frequency port number The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Note	The value used as the frequency is the value specified with frequency setting commands "SCPI.SENSE(<i>Ch</i>).OFFSet.PORT(<i>Pt</i>).FREQuency and its subcommands" for the port specified by the frequency port number.

For information on the variable (*Ch*), refer to Table 7-6, "Variable (*Ch*)," on page 203.

Example of use (1) SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQuire.SHORt = Array(1,2)

Example of use (2) Dim Port As Variant
Port(0) = 1
Port(1) = 2
SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQuire.SHORt = Port

Related objects SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQuire.LOAD on page 539
SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQuire.OPEN on page 540

Equivalent key **[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Reflection - PortX@FreqY Short**

NOTE The values of PortX and FreqY change depending on the selected calibration method and port number.

**SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ACQuire.
THURU**

Type of object	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.THURU = <i>Ports</i>
Description	For channels 1 to 16 (<i>Ch</i>), measures the calibration data of the thru standard of the specified port when the frequency offset feature is on. (No read)
Variable	

	<i>Ports</i>
Description	Provides 2-element array data (port). Ports(0): Response port number Ports(1): Stimulus port number The index of the array starts from 0.
Data type	Variant type (Variant)
Range	1 to 4
Note	For example, when THRU 1,2 is specified, S22 and S12 are measured; when THRU 2,1 is specified, S11 and S21 are measured. If you specify the same port number to the 2 port numbers, an error occurs when executed.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

Example of use (1)	SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQuire.THURU = Array(1,2)
Example of use (2)	Dim Port As Variant Port(0) = 1 Port(1) = 2 SCPI.SENSE(1).CORRection.OFFSet.COLLect.ACQuire.THURU = Port
Related objects	SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.LOAD on page 539 SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.OPEN on page 540 SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.SHORT on page 543
Equivalent key	[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Transmission - PortX-Y@FreqZ Thru

NOTE The values of PortX-Y and FreqZ change depending on the selected calibration method and port number.

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLlect.CLEar

Type of object	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLlect.CLEar
Description	<p>For channels 1 to 16 (<i>Ch</i>), clears the calibration measurement data when the frequency offset feature is on. This command also clears the measurement data of the power meter. (No read)</p> <p>Settings that have been temporarily changed due to measurement for each standard (number of traces, measurement parameters, and so on) return to their original values.</p>
Variable	For information on the variable (<i>Ch</i>), refer to Table 7-6, “Variable (Ch),” on page 203.
Example of use	SCPI.SENSE(1).CORRection.OFFSet.COLlect.CLEar
Related objects	SCPI.SENSE(Ch).OFFSet.STATe on page 598 SCPI.SENSE(Ch).CORRection.OFFSet.CLEar on page 538
Equivalent key	[Cal] - Mixer/Converter Calibration - Scalar Cal(Manual) - Cancel - OK

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ECAL.SMIX2

Type of object	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ECAL.SMIX2 = <i>Ports</i>
Description	<p>Executes calibration for the specified 2 ports when the frequency offset feature is on for channels 1 to 16 (<i>Ch</i>) using ECal(Electronic Calibration).</p> <p>If you execute this object when the ECal module is not connected or when ports are not connected each other appropriately, a runtime error occurs. (No read)</p>

Variable

	<i>Ports</i>
Description	<p>Provides 2-element array data (port).</p> <p>Ports(0): Port number 1</p> <p>Ports(1): Port number 2</p> <p>The direction (forward or reverse) is determined by the presence/absence of power meter measurement data instead of port 1 or port 2 specified here.</p> <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Range	1 to 4
Note	<p>Before executing this command, the “SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.PMETer” on page 541 command must be executed.</p> <p>If you specify the same port number to the 2 port numbers, an error occurs when executed.</p>

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

Example of use (1) `SCPI.SENSE(1).CORRection.OFFSet.COLLect.ECAL.SMIX2 = Array(1,2)`

Example of use (2) `Dim Port As Variant`
`Port(0) = 1`
`Port(1) = 2`
`SCPI.SENSE(1).CORRection.OFFSet.COLLect.ECAL.SMIX2 = Port`

Related objects `SCPI.SENSE(Ch).OFFSet.STATe` on page 598
`SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.PMETer` on page 541
`SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ECAL.SOLT1` on page 547

Equivalent key **[Cal] - Mixer/Converter Caribration - Scalar Cal(ECal) - ECal & Done**

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ECAL.SOLT1

Type of object Property

Syntax SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.ECAL.SOLT1 = *EPort*

Description Executes 1-port calibration for the specified port when the frequency offset feature is on for channels 1 to 16 (*Ch*) using ECal(Electronic Calibration).
 If you execute this object when the ECal module is not connected or when ports are not connected each other appropriately, a runtime error occurs. (No read)

Variable

	<i>EPort</i>
Description	Executes 1-port calibration for frequency offset measurement.
Data type	Long integer type (Long)
Range	1 to 4
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Example of use (1) SCPI.SENSE(1).CORRection.OFFSet.COLLect.ECAL.SOLT1 = 1

Related objects SCPI.SENSE(Ch).OFFSet.STATe on page 598
 SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ECAL.SMIX2 on page 546

Equivalent key **[Cal] - Mixer/Converter Caribration - Scalar Cal(ECal) - Select Ports - Port n**
[Cal] - Mixer/Converter Caribration - Scalar Cal(ECal) - ECal & Done

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.METHod.SMIX2

Type of object	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.METHod.SMIX2 = <i>Ports</i>
Description	Executes 2-port calibration for the specified 2 ports when the frequency offset feature is on for channels 1 to 16 (<i>Ch</i>). (No read)
Variable	

	<i>Ports</i>
Description	<p>Provides 2-element array data (port).</p> <p>Ports(0): Port number 1</p> <p>Ports(1): Port number 2</p> <p>The direction (forward, reverse, or both) is determined depending on the port number specified with the “SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.LOAD”, “SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.OPEN”, “SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.SHORT”, and “SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.THURU” command instead of port number 1 or port number 2 specified here.</p> <p>The index of the array starts from 0.</p>
Data type	Variant type (Variant)
Range	1 to 4
Note	If you specify the same port number to the 2 port numbers, an error occurs when executed.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Example of use (1) `SCPI.SENSE(1).CORRection.OFFSet.COLLect.METHod.SMIX2 = Array(1,2)`

Example of use (2) `Dim Port As Variant
Port(0) = 1
Port(1) = 2
SCPI.SENSE(1).CORRection.OFFSet.COLLect.METHod.SMIX2 = Port`

Related objects

- SCPI.SENSE(Ch).OFFSet.STATe on page 598
- SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.LOAD on page 539
- SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.OPEN on page 540
- SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.SHORT on page 543
- SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.ACQUIRE.THURU on page 544

Equivalent key **[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Select Ports - 2-1(fwd)|1-2(rev)|1-2(both)•••**

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.METHod.SOLT1

Type of object Property

Syntax SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.METHod.SOLT1 = *Port*

Description Executes 1-port calibration for the specified port when the frequency offset feature is on for channels 1 to 16 (*Ch*). (No read)

Variable

	<i>Port</i>
Description	Executes 1-port calibration for frequency offset measurement.
Data type	Long integer type (Long)
Range	1 to 4
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Example of use (1) SCPI.SENSE(1).CORRection.OFFSet.COLLect.METHod.SOLT1 = 2

Related objects SCPI.SENSE(Ch).OFFSet.STATe on page 598
 SCPI.SENSE(Ch).CORRection.OFFSet.COLLect.METHod.SMIX2 on page 548

Equivalent key **[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Select Ports - Port n**

SCPI.SENSE(*Ch*).CORRection.OFFSet.COLLect.SAVE

Type of object	Method
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.SAVE
Description	<p>For channels 1 to 16 (<i>Ch</i>), calculates the calibration coefficient for the selected calibration type from the calibration data measured with the frequency offset feature.</p> <p>After the calibration coefficient is calculated, the measured data and the calibration type setting are cleared.</p> <p>If you execute this object before all necessary calibration data for calculating the calibration coefficient is measured, an error occurs when executed. (No read)</p>
Variable	For information on the variable (<i>Ch</i>), refer to Table 7-6, “Variable (Ch),” on page 203.
Example of use	SCPI.SENSE(1).CORRection.OFFSet.COLLect.SAVE
Related objects	<p>SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.METHod.SMIX2 on page 548</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.METHod.SOLT1 on page 549</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.LOAD on page 539</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.OPEN on page 540</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.SHORT on page 543</p> <p>SCPI.SENSE(<i>Ch</i>).CORRection.OFFSet.COLLect.ACQuire.THURU on page 544</p>
Equivalent key	[Cal] - Mixer/Converter Caribration - Scalar Cal(Manual) - Done

SCPI.SENSE(*Ch*).CORRection.PROPeRty

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.PROPeRty = <i>Status</i> <i>Status</i> = SCPI.SENSE(<i>Ch</i>).CORRection.PROPeRty
Description	For the active trace of channels 1 to 16 (<i>Ch</i>), turns ON/OFF the display of the calibration property.
Variable	

	<i>Status</i>
Description	ON/OFF of the display of the calibration property
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the display of the calibration property. • False or 0 Turns OFF the display of the calibration property.
Preset value	False or 0

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim CalProp As Boolean
SCPI.SENSE(1).CORRection.PROPeRty = True
CalProp = SCPI.SENSE(1).CORRection.PROPeRty
```

Equivalent key **[Cal] - Property**

SCPI.SENSE(*Ch*).CORRection.RECeiver(*Pt*).COLLect.ACQuire

Type of object	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.RECeiver(<i>Pt</i>).COLLect.ACQuire = <i>Src</i>
Description	For measurement ports 1 to 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), executes receiver calibration.(No read)

Because information of power calibration for both the measurement port and the source port is used for error coefficient calculation, the precision of receiver calibration is improved by executing power calibration for both ports before executing receiver calibration.

Variable

	<i>Src</i>
Description	Specifies the source port for receiver correction.
Data type	Long integer type (Long)
Range	1 to 4
Note	If you specify the same port number as the measurement port number, an error occurs when executed.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (Pt),” on page 235.

Example of use SCPI.SENSE(1).CORRection.RECeiver(2).COLLect.ACQuire = 4

Related objects SCPI.SENSE(Ch).CORRection.RECeiver(Pt).STATE on page 553

Equivalent key **[Cal] - Receiver Calibration - Select Port 1|2|3|4**
[Cal] - Receiver Calibration - Source Port 1|2|3|4
[Cal] - Receiver Calibration - Take Cal Sweep

SCPI.SENSE(*Ch*).CORRection.RECeiver(*Pt*).STATe

Type of object	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.RECeiver(<i>Pt</i>).STATe = <i>Status</i> <i>Status</i> = SCPI.SENSE(<i>Ch</i>).CORRection.RECeiver(<i>Pt</i>).STATe
Description	For measurement ports 1 to 4 (<i>Pt</i>) of channels 1 to 16 (<i>Ch</i>), turns on/off error correction for receiver calibration.
Variable	

	<i>Status</i>
Description	On/off of error correction
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns on the receiver calibration error correction. • False or 0 Turns off the receiver calibration error correction.
Preset value	False or 0

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (Pt),” on page 235.

Example of use	Dim Corr As Boolean SCPI.SENSE(1).CORRection.RECeiver(1).STATe = True Corr = SCPI.SENSE(1).CORRection.RECeiver(1).STATe
Related objects	SCPI.SENSE(<i>Ch</i>).CORRection.RECeiver(<i>Pt</i>).COLLect.ACQuire on page 552
Equivalent key	[Cal] - Receiver Calibration - Correction

SCPI.SENSE(*Ch*).CORRection.RVELocity.COAX

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).CORRection.RVELocity.COAX = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).CORRection.RVELocity.COAX
Description	For channels 1 to 16 (<i>Ch</i>), sets the velocity factor.
Variable	

	<i>Value</i>
Description	Velocity factor
Data type	Double precision floating point type (Double)
Range	0 to 10
Preset value	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Vel As Double SCPI.SENSE(1).CORRection.RVELocity.COAX = 0.5 Vel = SCPI.SENSE(1).CORRection.RVELocity.COAX</pre>
----------	--

Equivalent key	[Cal] - Velocity Factor
----------------	--------------------------------

SCPI.SENSE(*Ch*).CORRection.STATe

Object type Property

Syntax SCPI.SENSE(*Ch*).CORRection.STATe = *Status*
Status = SCPI.SENSE(*Ch*).CORRection.STATe

Description For the active trace of channels 1 to 16 (*Ch*), turns ON/OFF the error correction.

Variable

	<i>Status</i>
Description	ON/OFF of the error correction
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the error correction. • False or 0 Turns OFF the error correction.
Preset value	False or 0

Examples

```
Dim Corr As Boolean
SCPI.SENSE(1).CORRection.STATe = True
Corr = SCPI.SENSE(1).CORRection.STATe
```

Equivalent key **[Cal] - Correction**

SCPI.SENSE(*Ch*).CORREction.TYPE(*Tr*)

Object type

Properties

Syntax

Data = SCPI.SENSE(*Ch*).CORREction.TYPE(*Tr*)

Description

For traces 1 to 16 (*Tr*) of channels 1 to 16 (*Ch*), reads out the information (calibration type, port numbers) of the applied calibration coefficients for the actual error correction. (Read only)

Variable

	<i>Data</i>
Description	<p>Indicates 5 array data items (the calibration type and the port information to which the calibration is applied).</p> <ul style="list-style-type: none"> • <i>Data</i>(0) The calibration type applied. For detail, refer to the Range section. • <i>Data</i>(1) The port number to which the calibration is applied (0 when the calibration type is NONE). • <i>Data</i>(2) The port number to which the calibration is applied (0 when the calibration type is not SOLT2, SOLT3, or SOLT4). • <i>Data</i>(3) The port number to which the calibration is applied (0 when the calibration type is not SOLT3 or SOLT4). • <i>Data</i>(4) The port number to which the calibration is applied (0 when the calibration type is not SOLT4). <p>The array index starts from 0.</p>
Range	<p>One of the following is read out as <i>Data</i>(0).</p> <ul style="list-style-type: none"> • "ERES" The enhanced response calibration is applied. • "NONE" Nothing is applied. • "RESPO" The response calibration (open) is applied. • "RESPS" The response calibration (short) is applied. • "RESPT" The response calibration (thru) is applied. • "SMIX2" The scalar-mixer calibration is applied. • "SOLT1" The 1-port calibration is applied. • "SOLT2" The full 2-port calibration is applied. • "SOLT3" The full 3-port calibration is applied. • "SOLT4" The full 4-port calibration is applied.
Data type	Variant type (Variant)

For information on the variable (*Ch*) and the variable (*Tr*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-10, “Variable (Tr),” on page 253, respectively.

Examples

```
Dim CalType As Variant
CalType = SCPI.SENSE(1).CORREction.TYPE(1)
```

Related objects

SCPI.SENSE(*Ch*).CORREction.COLLECT.METHOD.TRL2 on page 514
 SCPI.SENSE(*Ch*).CORREction.COLLECT.METHOD.TRL3 on page 515

SCPI.SENSE(Ch).CORRection.COLLEct.METHod.TRL4 on page 516

Equivalent key No equivalent key is available on the front panel.

SCPI.SENSE(*Ch*).FREQUENCY.CENTER

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).FREQUENCY.CENTER = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).FREQUENCY.CENTER
Description	Sets the center value of the sweep range of channels 1 to 16 (<i>Ch</i>).
Variable	

	<i>Value</i>
Description	Center value
Data type	Double precision floating point type (Double)
Range	3E5 to 8.5E9
Preset value	4.25015E9
Unit	Hz (hertz)
Resolution	0.5 or 1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Cntr As Double SCPI.SENSE(1).FREQUENCY.CENTER = 2E9 Cntr = SCPI.SENSE(1).FREQUENCY.CENTER</pre>
----------	--

Related objects	SCPI.SENSE(<i>Ch</i>).FREQUENCY.SPAN on page 562
-----------------	--

Equivalent key	[Center]
----------------	-----------------

SCPI.SENSE(*Ch*).FREQUENCY.CW

- Object type** Property
- Syntax** SCPI.SENSE(*Ch*).FREQUENCY.CW = *Value*
Value = SCPI.SENSE(*Ch*).FREQUENCY.CW
- Description** Sets the fixed frequency (CW frequency) for the power sweep for channels 1 to 16 (*Ch*). This object provides the same function as the SCPI.SENSE(*Ch*).FREQUENCY.FIXED object.

Variable

	<i>Value</i>
Description	Fixed frequency
Data type	Double precision floating point type (Double)
Range	3E5 to 8.5E9
Preset value	3E5
Unit	Hz (hertz)
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

- Examples**

```
Dim CwFreq As Double
SCPI.SENSE(1).FREQUENCY.CW = 1E9
CwFreq = SCPI.SENSE(1).FREQUENCY.CW
```
- Related objects** SCPI.SENSE(*Ch*).FREQUENCY.FIXED on page 561
SCPI.SENSE(*Ch*).SWEep.TYPE on page 609
- Equivalent key** **[Sweep Setup] - Power - CW Freq**

SCPI.SENSE(*Ch*).FREQUENCY.DATA

Object type	Property
Syntax	<i>Data</i> = SCPI.SENSE(<i>Ch</i>).FREQUENCY.DATA
Description	Reads out the frequencies at all measurement points of channels 1 to 16 (<i>Ch</i>). (Read only)
Variable	

	<i>Data</i>
Description	Indicates the array data (frequency) of NOP (number of measurement points). Where <i>n</i> is an integer between 1 and NOP. <ul style="list-style-type: none"> • <i>Data(n-1)</i> Frequency at the <i>n</i>-th measurement point The index of the array starts from 0.
Data type	Variant type (Variant)

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim FreqData As Variant
SCPI.SENSE(1).SWEp.POINTs = 201
FreqData = SCPI.SENSE(1).FREQUENCY.DATA
```

Related objects SCPI.SENSE(*Ch*).SWEp.POINTs on page 606

Equivalent key No equivalent key is available on the front panel.

SCPI.SENSE(*Ch*).FREQUENCY.FIXed

- Object type** Property
- Syntax** SCPI.SENSE(*Ch*).FREQUENCY.FIXed = *Value*
Value = SCPI.SENSE(*Ch*).FREQUENCY.FIXed
- Description** Sets the fixed frequency (CW frequency) for the power sweep for channels 1 to 16 (*Ch*). This object provides the same function as the SCPI.SENSE(*Ch*).FREQUENCY.CW object.

Variable

	<i>Value</i>
Description	Fixed frequency
Data type	Double precision floating point type (Double)
Range	3E5 to 8.5E9
Preset value	3E5
Unit	Hz (hertz)
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

- Examples**

```
Dim CwFreq As Double
SCPI.SENSE(1).FREQUENCY.FIXed = 1E9
CwFreq = SCPI.SENSE(1).FREQUENCY.FIXed
```
- Related objects** SCPI.SENSE(*Ch*).FREQUENCY.CW on page 559
SCPI.SENSE(*Ch*).SWEep.TYPE on page 609
- Equivalent key** **[Sweep Setup] - Power - CW Freq**

SCPI.SENSE(*Ch*).FREQUENCY.SPAN

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).FREQUENCY.SPAN = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).FREQUENCY.SPAN
Description	Sets the span value of the sweep range of channels 1 to 16 (<i>Ch</i>).
Variable	

	<i>Value</i>
Description	Span value
Data type	Double precision floating point type (Double)
Range	0 to 8.4997E9
Preset value	8.4997E9
Unit	Hz (hertz)
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Span As Double SCPI.SENSE(1).FREQUENCY.SPAN = 1E9 Span = SCPI.SENSE(1).FREQUENCY.SPAN</pre>
----------	--

Related objects	SCPI.SENSE(<i>Ch</i>).FREQUENCY.CENTER on page 558
-----------------	--

Equivalent key	[Span]
----------------	---------------

SCPI.SENSE(*Ch*).FREQUENCY.START

Object type Property

Syntax SCPI.SENSE(*Ch*).FREQUENCY.START = *Value*
Value = SCPI.SENSE(*Ch*).FREQUENCY.START

Description Sets the start value of the sweep range of channels 1 to 16 (*Ch*).

Variable

	<i>Value</i>
Description	Start value
Data type	Double precision floating point type (Double)
Range	3E5 to 8.5E9
Preset value	3E5
Unit	Hz (hertz)
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples Dim Start As Double
SCPI.SENSE(1).FREQUENCY.START = 100E6
Start = SCPI.SENSE(1).FREQUENCY.START

Related objects SCPI.SENSE(Ch).FREQUENCY.STOP on page 564

Equivalent key **[Start]**

SCPI.SENSE(*Ch*).FREQUENCY.STOP

Object type	Property
Syntax	SCPI.SENSE(<i>Ch</i>).FREQUENCY.STOP = <i>Value</i> <i>Value</i> = SCPI.SENSE(<i>Ch</i>).FREQUENCY.STOP
Description	Sets the stop value of the sweep range of channels 1 to 16 (<i>Ch</i>).
Variable	

	<i>Value</i>
Description	Stop value
Data type	Double precision floating point type (Double)
Range	3E5 to 8.5E9
Preset value	8.5E9
Unit	Hz (hertz)
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Stp As Double SCPI.SENSE(1).FREQUENCY.STOP = 3E9 Stp = SCPI.SENSE(1).FREQUENCY.STOP</pre>
----------	--

Related objects	SCPI.SENSE(<i>Ch</i>).FREQUENCY.START on page 563
-----------------	---

Equivalent key	[Stop]
----------------	---------------

SCPI.SENSE.MULTiplexer.CATalog

Object type	Property
Syntax	<i>Param</i> = SCPI.SENSE.MULTiplexer.CATalog
Description	Reads the name of the E5091A test set. (Read only)
Examples	<pre>Dim MultCat As String MultCat = SCPI.SENSE.MULTiplexer.CATalog</pre>
Related objects	SCPI.SENSE.MULTiplexer(Id).NAME on page 569
Equivalent key	No equivalent key is available on the front panel.

SCPI.SENSE(*Ch*).MULTiplexer(*Id*).COUNT

Object type	Property
Syntax	<i>Value</i> = SCPI.SENSE(<i>Ch</i>).MULTiplexer(<i>Id</i>).COUNT
Description	Reads the number of ports (9 or 16) of the E5091A whose ID is <i>Id</i> . (Read only)
Variable	

Table 7-22

Variable(*Id*)

	<i>Id</i>
Description	ID of the E5091A
Data type	Long integer type (Long)
Range	1 to 2
Preset value	1
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

	<i>Value</i>
Description	The number of ports
Data type	Long integer type (Long)
Note	0 is read when the E5091A is not connected.

Examples

```
Dim NPort As Long  
NPort = SCPI.SENSE.MULTiplexer(1).COUNT
```

Equivalent key No equivalent key is available on the front panel.

SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATe

- Object type** Property
- Syntax** SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATe = *Status*
Status = SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATe
- Description** Turns ON/OFF the property display (the state of the port assignment) of the E5091A whose ID is *Id*.
- Variable**

	<i>Status</i>
Description	ON/OFF of the property display
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the property display. • False or 0 Turns OFF the property display.
Preset value	False or 0

For information on the variable (*Id*), see Table 7-22, “Variable(*Id*),” on page 566.

- Examples**
- ```
Dim Prop As Boolean
SCPI.SENSE.MULTiplexer(1).DISPlay.STATe = True
Prop = SCPI.SENSE.MULTiplexer(1).DISPlay.STATe
```
- Related objects**
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT1 on page 576
  - SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2 on page 577
  - SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3 on page 578
  - SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4 on page 579
  - SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog on page 571
  - SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).SElect on page 572
- Equivalent key** **[System] - Multiport Test Set Setup - Test Set 1|Test Set 2 - Property**

## **SCPI.SENSE.MULTiplexer(*Id*).INCount**

|                 |                                                                                                                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                                                                                                 |
| Syntax          | <i>Value</i> = SCPI.SENSE.MULTiplexer( <i>Id</i> ).INCount                                                                                                                                                                                                               |
| Description     | The E5091A returns the number of input ports of ID 1 to 2 ( <i>Id</i> ) (Read only)                                                                                                                                                                                      |
| Variable        | For information on the variable ( <i>Id</i> ), see Table 7-22, “Variable( <i>Id</i> ),” on page 566.                                                                                                                                                                     |
| Examples        | <pre>Dim INCount As Long INCount = SCPI.SENSE(1).MULTiplexer(1).INCount</pre>                                                                                                                                                                                            |
| Related objects | SCPI.SENSE(Ch).MULTiplexer( <i>Id</i> ).TSET9.PORT1 on page 576<br>SCPI.SENSE(Ch).MULTiplexer( <i>Id</i> ).TSET9.PORT2 on page 577<br>SCPI.SENSE(Ch).MULTiplexer( <i>Id</i> ).TSET9.PORT3 on page 578<br>SCPI.SENSE(Ch).MULTiplexer( <i>Id</i> ).TSET9.PORT4 on page 579 |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                                                       |

## SCPI.SENSE.MULTIplexer(*Id*).NAME

|             |                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                           |
| Syntax      | SCPI.SENSE.MULTIplexer( <i>Id</i> ).NAME = <i>Param</i><br><i>Param</i> = SCPI.SENSE.MULTIplexer( <i>Id</i> ).NAME |
| Description | Specify the name of the E5091A test set.<br>The upper case and lower case are not distinguished.                   |
| Variable    |                                                                                                                    |

|             | <i>Param</i>                                                                                                                                                                                                                                                                                                                                    |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | The name of the E5091A test set                                                                                                                                                                                                                                                                                                                 |
| Data type   | Character string type (String)                                                                                                                                                                                                                                                                                                                  |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•"E5091_9"                    Select the E5091A option 009.</li> <li>•"E5091_13"                Select the E5091A option 016 for the 13-port device function.</li> <li>•"E5091_16"                Select the E5091A option 016 for the 16-port device function.</li> </ul> |

For information on the variable (*Id*), see Table 7-22, "Variable(*Id*)," on page 566.

|                 |                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim MultName As String SCPI.SENSE.MULTIplexer(1).NAME = "E5091_16" MultName = SCPI.SENSE.MULTIplexer(1).NAME</pre> |
| Related objects | SCPI.SENSE.MULTIplexer.CATalog on page 565<br>SCPI.SENSE.MULTIplexer( <i>Id</i> ).INCount on page 568                   |
| Equivalent key  | <b>[System] - Multiport Test Set Setup - Test Set 1 Test Set 2 - Select Test Set - E5091_9 E5091_13 E5091_16</b>        |

## SCPI.SENSE(*Ch*).MULTiplexer(*Id*).OUTPut.DATA

Object type

Property

Syntax

SCPI.SENSE(*Ch*).MULTiplexer(*Id*).OUTPut.DATA = *Value*

*Value* = SCPI.SENSE(*Ch*).MULTiplexer(*Id*).OUTPut.DATA

Description

Sets HIGH/LOW of all the control lines of the E5091A whose ID is 1 to 2 (*Id*) when measuring channel 1 to 16 (*Ch*) in the measurement using the E5091A.

To set the control lines, use the values obtained by converting 8-bit binary values expressed HIGH (1) / LOW (0) of individual lines to decimal values, assuming line 1 as LSB and line 8 as MSB.

Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Sets/gets control line value                                                                                                                                                                                 |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 1 to 255                                                                                                                                                                                                     |
| Preset value | 0                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Id*), see Table 7-13, “Variable (Ckit),” on page 420 and Table 7-22, “Variable(Id),” on page 566, respectively.

Examples

```
Dim OData As Long
SCPI.SENSE.MULTiplexer(1).OUTPut.DATA = "E5091_16"
MultName = SCPI.SENSE.MULTiplexer(1).OUTPut.DATA
```

Related objects

SCPI.SENSE(*Ch*).MULTiplexer(*Id*).STATe on page 574

Equivalent key

**[System] - Multiport Test Set Setup - Test Set 1|Test Set 2 - Control Lines**

## **SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog**

|                 |                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type     | Property                                                                                                                                                                                                                                                                                                                                                                                  |
| Syntax          | <i>String</i> = SCPI.SENSE.MULTiplexer( <i>Id</i> ).PORT( <i>Pt</i> ).CATalog                                                                                                                                                                                                                                                                                                             |
| Description     | Selects a port assigned to Port 1 to 20 ( <i>Pt</i> ) of the E5091A whose ID is 1 to 2 ( <i>Id</i> ) when measuring channel 1 to 16 ( <i>Ch</i> ) in the measurement using the E5091A.                                                                                                                                                                                                    |
| Variable        | For information on the variable ( <i>Ch</i> ), the variable ( <i>Id</i> ) and the variable ( <i>Pt</i> ), see Table 7-6, “Variable (Ch),” on page 203, Table 7-22, “Variable(Id),” on page 566 and Table 7-9, “Variable (Pt),” on page 235, respectively.                                                                                                                                 |
| Examples        | <pre>Dim PortCat As String PortCat = SCPI.SENSE.MULTiplexer(1).PORT(4).CATalog</pre>                                                                                                                                                                                                                                                                                                      |
| Related objects | <p>SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT1 on page 576</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2 on page 577</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3 on page 578</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4 on page 579</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATe on page 567</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).SElect on page 572</p> |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                                                                                                                                                                        |

**SCPI.SENSE(Ch).MULTIPlexer(Id).PORT(Pt).SElect**

Object type

Property

Syntax

SCPI.SENSE.MULTIPlexer(*Id*).PORT(*Pt*).SElect = *String**String* = SCPI.SENSE.MULTIPlexer(*Id*).PORT(*Pt*).SElect

Description

Turns ON/OFF the control (switching the internal switch that connects between the ports and changing control line output) of the E5091A whose ID is *Id*.

Variable

**When the E5091A-009 is Connected**

|              | <i>Status</i>                       |            |             |             |
|--------------|-------------------------------------|------------|-------------|-------------|
| Description  | ON/OFF of the control of the E5091A |            |             |             |
| Data type    | Boolean type (Boolean)              |            |             |             |
| Range        | Port 1                              | Port 2     | Port 3      | Port 4      |
|              | A or T1*1                           | T1*1 or T2 | R1+,R2+,R3+ | R1-,R2-,R3- |
| Preset value | A                                   | T1         | R1+         | R1-         |

\*1. If port T1 has already been assigned to port 2 when you try to assign port T1 to port 1, port T2 is automatically assigned to port 2. If port T1 has already been assigned to port 1 when you try to assign port T1 to port 2, port A is automatically assigned to port 1.

**When the E5091A-013 is Connected**

|              | <i>Status</i>                       |             |                 |                 |
|--------------|-------------------------------------|-------------|-----------------|-----------------|
| Description  | ON/OFF of the control of the E5091A |             |                 |                 |
| Data type    | Boolean type (Boolean)              |             |                 |                 |
| Range        | Port 1                              | Port 2      | Port 3          | Port 4          |
|              | A1,T1,T2,T3                         | T1,T2,T3,T4 | R1+,R2+,R3+,R4+ | R1-,R2-,R3-,R4- |
| Preset value | A                                   | T1          | R1+             | R1-             |

**When the E5091A-016 is Connected**

|              | <i>Status</i>                       |                          |                 |                 |        |        |        |
|--------------|-------------------------------------|--------------------------|-----------------|-----------------|--------|--------|--------|
| Description  | ON/OFF of the control of the E5091A |                          |                 |                 |        |        |        |
| Data type    | Boolean type (Boolean)              |                          |                 |                 |        |        |        |
| Range        | Port 1                              | Port 2                   | Port 3          | Port 4          | Port 5 | Port 6 | Port 7 |
|              | A1(A),A2,A3,A4,T1,T2,T3             | B1(T4),B2,B3,B4,T1,T2,T3 | R1+,R2+,R3+,R4+ | R1-,R2-,R3-,R4- | X1ÇY2  | Y1ÇY2  | Z1ÇZ2  |
| Preset value | A1                                  | B1                       | R1+             | R1-             | X1     | Y1     | Z1     |

For information on the variable (*Ch*), the variable (*Id*) and the variable (*Pt*), see Table 7-6, “Variable (Ch),” on page 203, Table 7-22, “Variable (Id),” on page 566 and Table 7-9, “Variable (Pt),” on page 235, respectively.

Examples

Dim PortSel As String

```
SCPI.SENSE.MULTiplexer(1).PORT(4).SElect = "R2"
PortSel = SCPI.SENSE.MULTiplexer(1).PORT(4).SElect
```

Related objects

- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT1 on page 576
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2 on page 577
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3 on page 578
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4 on page 579
- SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATE on page 567
- SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog on page 571
- SCPI.SENSE(Ch).MULTiplexer(Id).STATE on page 574

Equivalent key

**[System] - Multiport Test Set Setup - Test Set 1|Test Set 2 - Port 1|Port 2|Port 3|Port 4|Port 5|Port 6|Port 7**

## SCPI.SENSE(*Ch*).MULTiplexer(*Id*).STATE

|             |                                                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                        |
| Syntax      | SCPI.SENSE(Ch).MULTiplexer( <i>Id</i> ).STATE = <i>Status</i><br><i>Status</i> = SCPI.SENSE(Ch).MULTiplexer( <i>Id</i> ).STATE                                  |
| Description | Turns ON/OFF the control (switching the internal switch that connects between the ports and changing control line output) of the E5091A whose ID is <i>Id</i> . |
| Variable    |                                                                                                                                                                 |

|              |                                                                                                                                                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                                  |
| Description  | ON/OFF of the control of the E5091A                                                                                                                                                                                                   |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the control of the E5091A.</li> <li>• False or 0                      Turns OFF the control of the E5091A.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                            |

For information on the variable (*Id*), see Table 7-22, “Variable(*Id*),” on page 566.

**Examples**

```
Dim Cont As Boolean
SCPI.SENSE.MULTiplexer(1).STATE = True
Cont = SCPI.SENSE.MULTiplexer(1).STATE
```

**Related objects**

- SCPI.SENSE(Ch).MULTiplexer(*Id*).OUTPut.DATA on page 570
- SCPI.SENSE(Ch).MULTiplexer(*Id*).PORT(*Pt*).SElect on page 572
- SCPI.SENSE(Ch).MULTiplexer(*Id*).TSET9.PORT1 on page 576
- SCPI.SENSE(Ch).MULTiplexer(*Id*).TSET9.PORT2 on page 577
- SCPI.SENSE(Ch).MULTiplexer(*Id*).TSET9.PORT3 on page 578
- SCPI.SENSE(Ch).MULTiplexer(*Id*).TSET9.PORT4 on page 579
- SCPI.SENSE(Ch).MULTiplexer(*Id*).TSET9.OUTPut.DATA on page 575

**Equivalent key**      **[System] - Multiport Test Set Setup - Test Set 1|Test Set 2 - Control**

## SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.OUTPut.DATA

Object type      Property

Syntax            SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.OUTPut.DATA = *Value*  
*Value* = SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.OUTPut.DATA

Description      Sets the HIGH/LOW of all the control line of the E5091A whose ID is *Id* when measuring channels 1 to 16 (*Ch*) in the measurement using the E5091A.  
  
 To set the control lines, use values obtained by converting 8-bit binary values expressed by HIGH (1)/LOW (0) of individual lines to decimal values, assuming line 1 as LSB and line 8 as MSB.

Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting value the control line                                                                                                                                                                               |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 0 to 255                                                                                                                                                                                                     |
| Preset value | 0                                                                                                                                                                                                            |
| Resolution   | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Id*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-22, “Variable (Id),” on page 566, respectively.

Examples            Dim C\_line As Long  
 SCPI.SENSE(1).MULTiplexer(1).TSET9.OUTPut.DATA = 5  
 C\_line = SCPI.SENSE(1).MULTiplexer(1).TSET9.OUTPut.DATA

Related objects    SCPI.SENSE(Ch).MULTiplexer(Id).STATE on page 574

Equivalent key     **[System] - Multiport Test Set Setup - Test Set 1|Test Set 2 - Control Lines - Line 1|...|Line 8**

## SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.PORT1

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.PORT1 = *Param*  
*Param* = SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.PORT1

**Description** Selects a port assigned to Port 1 of the E5091A whose ID is *Id* when measuring channels 1 to 16 (*Ch*) in the measurement using the E5091A.  
 If the port assigned to Port 2 is T1 and you select T1 as the port assigned to Port 1, the port assigned to Port 2 is changed to T2 automatically.

**Variable**

|             | <i>Param</i>                                                                                                                                                                                                                                            |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | The port assigned to Port 1                                                                                                                                                                                                                             |
| Data type   | Character string type (String)                                                                                                                                                                                                                          |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•"A"                                 Selects A as the port assigned to Port 1.</li> <li>•"T1"                                Selects T1 as the port assigned to Port 1.</li> </ul> |

For information on the variable (*Ch*) and the variable (*Id*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-22, “Variable(Id),” on page 566, respectively.

**Examples**

```
Dim Port As String
SCPI.SENSE(1).MULTiplexer(1).TSET9.PORT1 = "T1"
Port = SCPI.SENSE(1).MULTiplexer(1).TSET9.PORT1
```

**Related objects**

- SCPI.SENSE(Ch).MULTiplexer(Id).STATE on page 574
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2 on page 577
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3 on page 578
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4 on page 579
- SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATE on page 567
- SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog on page 571

**Equivalent key** **[System] - Multiport Test Set Setup - Test Set 1|Test Set 2 - Port 1 - A|T1**

## SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2

Object type Property

Syntax SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2 = *Param*  
*Param* = SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2

Description Selects a port assigned to Port 2 of the E5091A whose ID is *Id* when measuring channels 1 to 16 (*Ch*) in the measurement using the E5091A.  
 If the port assigned to Port 1 is T1 and you select T1 as the port assigned to Port 2, the port assigned to Port 1 is changed to A automatically.

Variable

|             | <i>Param</i>                                                                                                                       |
|-------------|------------------------------------------------------------------------------------------------------------------------------------|
| Description | The port assigned to Port 2                                                                                                        |
| Data type   | Character string type (String)                                                                                                     |
| Range       | Select from the following.<br>•"T1" Selects T1 as the port assigned to Port 2.<br>•"T2" Selects T2 as the port assigned to Port 2. |

For information on the variable (*Ch*) and the variable (*Id*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-22, "Variable (Id)," on page 566, respectively.

Examples  

```
Dim Port As String
SCPI.SENSE(1).MULTiplexer(1).TSET9.PORT2 = "T2"
Port = SCPI.SENSE(1).MULTiplexer(1).TSET9.PORT2
```

Related objects  
 SCPI.SENSE(Ch).MULTiplexer(Id).STATE on page 574  
 SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT1 on page 576  
 SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3 on page 578  
 SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4 on page 579  
 SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATE on page 567  
 SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog on page 571

Equivalent key **[System] - Multiport Test Set Setup - Test Set 1|Test Set 2 - Port2 - T1|T2**

## SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.PORT3

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.PORT3 = *Param*  
*Param* = SCPI.SENSE(*Ch*).MULTiplexer(*Id*).TSET9.PORT3

**Description** Selects a port assigned to Port 3 of the E5091A whose ID is *Id* when measuring channels 1 to 16 (*Ch*) in the measurement using the E5091A.

**Variable**

|             |                                                                                                                                                                                                                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <b><i>Param</i></b>                                                                                                                                                                                                                                                                                                      |
| Description | The port assigned to Port 3                                                                                                                                                                                                                                                                                              |
| Data type   | Character string type (String)                                                                                                                                                                                                                                                                                           |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•"R1"                      Selects R1+ as the port assigned to Port 3.</li> <li>•"R2"                      Selects R2+ as the port assigned to Port 3.</li> <li>•"R3"                      Selects R3+*1 as the port assigned to Port 3.</li> </ul> |

\*1. For Option 007 (7 ports), R2+.

For information on the variable (*Ch*) and the variable (*Id*), see Table 7-6, “Variable (Ch),” on page 203 and Table 7-22, “Variable(Id),” on page 566, respectively.

**Examples**

```
Dim Port As String
SCPI.SENSE(1).MULTiplexer(1).TSET9.PORT3 = "R2"
Port = SCPI.SENSE(1).MULTiplexer(1).TSET9.PORT3
```

**Related objects**

SCPI.SENSE(Ch).MULTiplexer(Id).STATe on page 574

SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT1 on page 576

SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2 on page 577

SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4 on page 579

SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATe on page 567

SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog on page 571

**Equivalent key** **[System] - Multiport Test Set Setup - Test Set 1|Test Set 2 - Port3 - R1+|R2+|R3+**

## SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4

|             |                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                 |
| Syntax      | SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3 = <i>Param</i><br><i>Param</i> = SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3                                   |
| Description | Selects a port assigned to Port 4 of the E5091A whose ID is <i>Id</i> when measuring channels 1 to 16 ( <i>Ch</i> ) in the measurement using the E5091A. |
| Variable    |                                                                                                                                                          |

|             | <i>Param</i>                                                                                                                                                                                                                                                                                                                        |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | The port assigned to Port 4                                                                                                                                                                                                                                                                                                         |
| Data type   | Character string type (String)                                                                                                                                                                                                                                                                                                      |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•"R1"                      Selects R1- as the port assigned to Port 4.</li> <li>•"R2"                      Selects R2- as the port assigned to Port 4.</li> <li>•"R3"                      Selects R3-<sup>*1</sup> as the port assigned to Port 4.</li> </ul> |

\*1. For Option 007 (7 ports), R2-.

For information on the variable (*Ch*) and the variable (*Id*), see Table 7-6, "Variable (Ch)," on page 203 and Table 7-22, "Variable(Id)," on page 566, respectively.

|                 |                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Port As String SCPI.SENSE(1).MULTiplexer(1).TSET9.PORT4 = "R2" Port = SCPI.SENSE(1).MULTiplexer(1).TSET9.PORT4</pre>                                                                                                                                                                                                                                                        |
| Related objects | <p>SCPI.SENSE(Ch).MULTiplexer(Id).STATE on page 574</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT1 on page 576</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2 on page 577</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3 on page 578</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).DISPlay.STATE on page 567</p> <p>SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog on page 571</p> |
| Equivalent key  | <b>[System] - Multiport Test Set Setup - Test Set 1 Test Set 2 - Port4 - R1- R2- R3-</b>                                                                                                                                                                                                                                                                                             |

## SCPI.SENSE(*Ch*).OFFSET.ASPurious

|                |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                                                                                                                                                                                                                                                                                        |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.ASPurious = <i>Status</i><br><i>Status</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.ASPurious                                                                                                                                                                                                                                                                                            |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), turns on/off the spurious avoidance mode.<br>When the spurious avoidance is on, measurement is performed avoiding spurious that occurs due to the following signals. <ul style="list-style-type: none"> <li>• Source signal and its harmonics</li> <li>• When the frequency setting for the external signal source is enabled, the set signal and its harmonics.</li> </ul> |

Variable

|              | <i>Status</i>                                                                                                                                                                                                                          |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | On/off of the spurious avoidance mode for frequency offset measurement                                                                                                                                                                 |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                 |
| Range        | Select from the following. <ul style="list-style-type: none"> <li>• True or -1                      Turns on the spurious avoidance mode.</li> <li>• False or 0                      Turns off the spurious avoidance mode.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                             |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                |                                                                                                                       |
|----------------|-----------------------------------------------------------------------------------------------------------------------|
| Example of use | <pre>Dim ASpurious As Boolean SCPI.SENSE(1).OFFSET.ASPurious = False ASpurious = SCPI.SENSE(1).OFFSET.ASPurious</pre> |
|----------------|-----------------------------------------------------------------------------------------------------------------------|

|                |                                                          |
|----------------|----------------------------------------------------------|
| Equivalent key | <b>[Sweep Setup] - Frequency Offset - Avoid Spurious</b> |
|----------------|----------------------------------------------------------|

## SCPI.SENSE(*Ch*).OFFSET.LOCAL.CONTROL.STATE

|                |                                                                                                                                          |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                 |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.CONTROL.STATE = <i>Status</i><br><i>Status</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.CONTROL.STATE |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), turns on/off the external signal source control mode.                                                |
| Variable       |                                                                                                                                          |

|              | <i>Status</i>                                                                                                                                                                                                                                                     |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | On/off of the external signal source                                                                                                                                                                                                                              |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                                            |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns on the external signal source control mode.</li> <li>• False or 0                      Turns off the external signal source control mode.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                                                        |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                |                                                                                                                              |
|----------------|------------------------------------------------------------------------------------------------------------------------------|
| Example of use | Dim State As Boolean<br>SCPI.SENSE(1).OFFSET.LOCAL.CONTROL.STATE = False<br>State = SCPI.SENSE(1).OFFSET.LOCAL.CONTROL.STATE |
| Equivalent key | <b>[Sweep Setup] - Frequency Offset - External Source - Control</b>                                                          |

## **SCPI.SENSE(*Ch*).OFFSET.LOCAL.FREQUENCY.DATA**

Type of object

Syntax

*Data* = SCPI.SENSE(*Ch*).OFFSET.LOCAL.FREQUENCY.DATA

Description

For channels 1 to 16 (*Ch*), acquires the external signal source frequency data. (Read only)

Variable

|             | <i>Data</i>                                                      |
|-------------|------------------------------------------------------------------|
| Description | Reads out the frequencies of all measurement points as an array. |
| Data type   | Variant type (Variant)                                           |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Example of use

```
Dim LoData As Variant
LoData = SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.DATA
```

Related objects

SCPI.SENSE(*Ch*).OFFSET.LOCAL.FREQUENCY.DIVISOR on page 583  
SCPI.SENSE(*Ch*).OFFSET.LOCAL.FREQUENCY.MULTIPLIER on page 584  
SCPI.SENSE(*Ch*).OFFSET.LOCAL.FREQUENCY.OFFSET on page 585  
SCPI.SENSE(*Ch*).OFFSET.LOCAL.FREQUENCY.START on page 586  
SCPI.SENSE(*Ch*).OFFSET.LOCAL.FREQUENCY.STOP on page 587

Equivalent key

No equivalent key is available on the front panel.

## SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.DIVISOR

Type of object      Property

Syntax                SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.DIVISOR = *Value*  
*Value* = SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.DIVISOR

Description         For channels 1 to 16 (*Ch*), the external signal source frequency is set by using a divisor value for the basic frequency. This command sets a divisor value.

Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a divisor value for the basic frequency                                                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 1 to 100                                                                                                                                                                                                     |
| Preset value | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

Example of use      `Dim Divisor As Double`  
`SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.DIVISOR = 50`  
`Divisor = SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.DIVISOR`

Related objects     SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.MULTIPLIER on page 584  
SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.OFFSET on page 585  
SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.START on page 586  
SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.STOP on page 587

Equivalent key      **[Sweep Setup] - Frequency Offset - External Source - Divisor**

**NOTE**              The basic frequency range is set by using “SCPI.SENSE(Ch).FREQUENCY.START” on page 563 and “SCPI.SENSE(Ch).FREQUENCY.STOP” on page 564.

**SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.MULTIPLIER**

|                |                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                                                   |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.FREQUENCY.MULTIPLIER = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.FREQUENCY.MULTIPLIER                       |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), the external signal source frequency is set by using a multiplier value for the basic frequency. This command sets a multiplier value. |
| Variable       |                                                                                                                                                                            |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a multiplier value for the basic frequency                                                                                                                                                        |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -100 to 100                                                                                                                                                                                                  |
| Preset value | 0                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                                                                                               |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example of use  | <pre>Dim Multiplier As Double SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.MULTIPLIER = -10 Multiplier = SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.MULTIPLIER</pre>                                                                                                        |
| Related objects | <p>SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.DIVISOR on page 583</p> <p>SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.OFFSET on page 585</p> <p>SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.START on page 586</p> <p>SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.STOP on page 587</p> |
| Equivalent key  | <b>[Sweep Setup] - Frequency Offset - External Source - Multiplier</b>                                                                                                                                                                                        |

**NOTE** The basic frequency range is set by using “SCPI.SENSE(Ch).FREQUENCY.START” on page 563 and “SCPI.SENSE(Ch).FREQUENCY.STOP” on page 564.

## SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.OFFSET

**Type of object** Property

**Syntax** SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.OFFSET = *Value*  
*Value* = SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.OFFSET

**Description** For channels 1 to 16 (*Ch*), the external signal source frequency is set by using an offset value for the basic frequency. This command sets an offset value.

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of an offset value for the basic frequency                                                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E12 to 1E12                                                                                                                                                                                                |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Resolution   | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

**Example of use** Dim Offset As Double  
 SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.OFFSET = -10  
 Offset = SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.OFFSET

**Related objects** SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.DIVISOR on page 583  
 SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.MULTIPLIER on page 584  
 SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.START on page 586  
 SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.STOP on page 587

**Equivalent key** **[Sweep Setup] - Frequency Offset - External Source - Offset**

---

**NOTE** The basic frequency range is set by using “SCPI.SENSE(Ch).FREQUENCY.START” on page 563 and “SCPI.SENSE(Ch).FREQUENCY.STOP” on page 564.

---

## SCPI.SENSE(*Ch*).OFFSET.LOCAL.FREQUENCY.START

|                |                                                                                                                                            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                   |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.FREQUENCY.START = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.FREQUENCY.START |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), sets a start value for the external signal source frequency setting.                                   |
| Variable       |                                                                                                                                            |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a start value for the external signal source                                                                                                                                                      |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 0 to 1E12                                                                                                                                                                                                    |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Resolution   | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                                                                                                                                                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example of use  | <pre>Dim Start As Double SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.START = 100E6 Start = SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.START</pre>                                                                                                                                                           |
| Related objects | <p>SCPI.SENSE(<i>Ch</i>).OFFSET.LOCAL.FREQUENCY.DIVISOR on page 583</p> <p>SCPI.SENSE(<i>Ch</i>).OFFSET.LOCAL.FREQUENCY.MULTIPLIER on page 584</p> <p>SCPI.SENSE(<i>Ch</i>).OFFSET.LOCAL.FREQUENCY.OFFSET on page 585</p> <p>SCPI.SENSE(<i>Ch</i>).OFFSET.LOCAL.FREQUENCY.STOP on page 587</p> |
| Equivalent key  | <b>[Sweep Setup] - Frequency Offset - External Source - Start</b>                                                                                                                                                                                                                              |

## SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.STOP

|                |                                                                                                                        |
|----------------|------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                               |
| Syntax         | SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.STOP = <i>Value</i><br><i>Value</i> = SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.STOP |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), sets a stop value for the external signal source frequency setting.                |
| Variable       |                                                                                                                        |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a stop value for the external signal source                                                                                                                                                       |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 0 to 1E12                                                                                                                                                                                                    |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Resolution   | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example of use  | Dim Stop As Double<br>SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.STOP = 100E6<br>Stop = SCPI.SENSE(1).OFFSET.LOCAL.FREQUENCY.STOP                                                                                                                      |
| Related objects | SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.DIVISOR on page 583<br>SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.MULTIPLIER on page 584<br>SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.OFFSET on page 585<br>SCPI.SENSE(Ch).OFFSET.LOCAL.FREQUENCY.START on page 586 |
| Equivalent key  | <b>[Sweep Setup] - Frequency Offset - External Source - Stop</b>                                                                                                                                                                                 |

**SCPI.SENSE(*Ch*).OFFSET.LOCAL.POWER.LEVEL.IMMEDIATE.AMPLITUDE**

|                |                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                                                   |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.POWER.LEVEL.IMMEDIATE.AMPLITUDE = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.POWER.LEVEL.IMMEDIATE.AMPLITUDE |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), sets a power level value for the external signal source power setting.                                                                 |
| Variable       |                                                                                                                                                                            |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a power level value for the external signal source                                                                                                                                                |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -150 to 30                                                                                                                                                                                                   |
| Preset value | -10                                                                                                                                                                                                          |
| Unit         | dBm                                                                                                                                                                                                          |
| Resolution   | 0.01                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                               |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example of use  | Dim Power As Double<br>SCPI.SENSE(1).OFFSET.LOCAL.POWER.LEVEL.IMMEDIATE.AMPLITUDE = -10<br>Power = SCPI.SENSE(1).OFFSET.LOCAL.POWER.LEVEL.IMMEDIATE.AMPLITUDE |
| Related objects | SCPI.SENSE(Ch).OFFSET.LOCAL.POWER.LEVEL.SLOPE.DATA on page 589<br>SCPI.SENSE(Ch).OFFSET.LOCAL.POWER.LEVEL.SLOPE.STATE on page 590                             |
| Equivalent key  | <b>[Sweep Setup] - Frequency Offset - External Source - Power</b>                                                                                             |

## SCPI.SENSE(*Ch*).OFFSET.LOCAL.POWER.LEVEL.SLOPE.DA TA

- Type of object Property
- Syntax SCPI.SENSE(*Ch*).OFFSET.LOCAL.POWER.LEVEL.SLOPE.DATA = *Value*  
*Value* = SCPI.SENSE(*Ch*).OFFSET.LOCAL.POWER.LEVEL.SLOPE.DATA
- Description For channels 1 to 16 (*Ch*), sets a power slope value for the external signal source.
- Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a power slope value for the external signal source                                                                                                                                                |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -2 to 2                                                                                                                                                                                                      |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | dB/GHz                                                                                                                                                                                                       |
| Resolution   | 0.01                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

- Example of use  
 Dim Slope As Double  
 SCPI.SENSE(1).OFFSET.LOCAL.POWER.LEVEL.SLOPE.DATA = -1  
 Slope = SCPI.SENSE(1).OFFSET.LOCAL.POWER.LEVEL.SLOPE.DATA
- Related objects  
 SCPI.SENSE(Ch).OFFSET.LOCAL.POWER.LEVEL.IMMEDIATE.AMPLITUDE on page 588  
 SCPI.SENSE(Ch).OFFSET.LOCAL.POWER.LEVEL.SLOPE.STATE on page 590
- Equivalent key **[Sweep Setup] - Frequency Offset - External Source - Slope**

**SCPI.SENSE(*Ch*).OFFSET.LOCAL.POWER.LEVEL.SLOPE.STATE**

|                |                                                                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                                     |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.POWER.LEVEL.SLOPE.STATE = <i>Status</i><br><i>Status</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.POWER.LEVEL.SLOPE.STATE |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), turns on/off the power slope value setting mode for the external signal source.                                          |

## Variable

|              | <i>Status</i>                                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | On/off of the power slope setting for the external signal source                                                                                                                                                            |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                      |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns on the power slope mode.</li> <li>• False or 0                      Turns off the power slope mode.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                  |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Example of use  | Dim State As Boolean<br>SCPI.SENSE(1).OFFSET.LOCAL.POWER.LEVEL.SLOPE.STATE = False<br>State = SCPI.SENSE(1).OFFSET.LOCAL.POWER.LEVEL.SLOPE.STATE |
| Related objects | SCPI.SENSE(Ch).OFFSET.LOCAL.POWER.LEVEL.IMMEDIATE.AMPLITUDE on page 588<br>SCPI.SENSE(Ch).OFFSET.LOCAL.POWER.LEVEL.SLOPE.DATA on page 589        |
| Equivalent key  | <b>[Sweep Setup] - Frequency Offset - External Source - Slope</b>                                                                                |

## SCPI.SENSE(*Ch*).OFFSET.LOCAL.STATE

|                |                                                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                         |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.STATE = <i>Status</i><br><i>Status</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.LOCAL.STATE                         |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), turns on/off the external signal source frequency setting mode regardless of on/off of the frequency offset. |
| Variable       |                                                                                                                                                  |

|              | <i>Status</i>                                                                                                                                                                                                                 |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | On/off of external signal source frequency setting                                                                                                                                                                            |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                        |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns on the frequency setting.</li> <li>• False or 0                      Turns off the frequency setting.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                    |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                |                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------|
| Example of use | Dim State As Boolean<br>SCPI.SENSE(1).OFFSET.LOCAL.STATE = False<br>State = SCPI.SENSE(1).OFFSET.LOCAL.STATE |
|----------------|--------------------------------------------------------------------------------------------------------------|

|                |                                                                    |
|----------------|--------------------------------------------------------------------|
| Equivalent key | <b>[Setup] - Frequency Offset - External Source - LO Frequency</b> |
|----------------|--------------------------------------------------------------------|

**SCPI.SENSE(*Ch*).OFFSET.PORT(*Pt*).FREQUENCY.DATA**

|                |                                                                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                            |
| Syntax         | <i>Data</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.PORT( <i>Pt</i> ).FREQUENCY.DATA                                                                       |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), acquires the frequency data for ports 1 to 4 ( <i>Pt</i> ) when the frequency offset feature is on. (Read only) |

## Variable

|             | <i>Data</i>                                                      |
|-------------|------------------------------------------------------------------|
| Description | Reads out the frequencies of all measurement points as an array. |
| Data type   | Variant type (Variant)                                           |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (Pt),” on page 235.

**Example of use**  

```
Dim Freqdata As Variant
Freqdata = SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.DATA
```

**Related objects**  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR on page 593  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.MULTIPLIER on page 594  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET on page 595  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.START on page 596  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.STOP on page 597

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR

Type of object      Property

Syntax                SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR = *Value*  
*Value* = SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR

Description         For channels 1 to 16 (*Ch*), the ports 1 to 4 (*Pt*) frequencies are set by using a divisor value for the basic frequency when the frequency offset feature is on. This command sets a divisor value.

Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a frequency divisor value for the basic frequency                                                                                                                                                 |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 1 to 100                                                                                                                                                                                                     |
| Preset value | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (Pt),” on page 235.

Example of use      Dim Divisor As Double  
 SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.DIVISOR = 50  
 Divisor = SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.DIVISOR

Related objects     SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.MULTIPLIER on page 594  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET on page 595  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.START on page 596  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.STOP on page 597

Equivalent key      **[Sweep Setup] - Frequency Offset - Port n - Divisor**

**NOTE**                The basic frequency range is set by using “SCPI.SENSE(Ch).FREQUENCY.START” on page 563 and “SCPI.SENSE(Ch).FREQUENCY.STOP” on page 564.

**SCPI.SENSE(*Ch*).OFFSET.PORT(*Pt*).FREQUENCY.MULTIPLIER**

Type of object      Property

Syntax                SCPI.SENSE(*Ch*).OFFSET.PORT(*Pt*).FREQUENCY.MULTIPLIER = *Value*  
*Value* = SCPI.SENSE(*Ch*).OFFSET.PORT(*Pt*).FREQUENCY.MULTIPLIER

Description         For channels 1 to 16 (*Ch*), the ports 1 to 4 (*Pt*) frequencies are set by using a multiplier value for the basic frequency when the frequency offset feature is on. This command sets a divisor value.

Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a frequency multiplier value for the basic frequency                                                                                                                                              |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -100 to 100                                                                                                                                                                                                  |
| Preset value | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (Pt),” on page 235.

Example of use      Dim Multiplier As Double  
SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.MULTIPLIER = -10  
Multiplier = SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.MULTIPLIER

Related objects     SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR on page 593  
SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET on page 595  
SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.START on page 596  
SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.STOP on page 597

Equivalent key      **[Sweep Setup] - Frequency Offset - Port n - Multiplier**

**NOTE**              The basic frequency range is set by using “SCPI.SENSE(Ch).FREQUENCY.START” on page 563 and “SCPI.SENSE(Ch).FREQUENCY.STOP” on page 564.

## SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET

Type of object      Property

Syntax                SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET = *Value*  
*Value* = SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET

Description         For channels 1 to 16 (*Ch*), the ports 1 to 4 (*Pt*) frequencies are set by using an offset value for the basic frequency when the frequency offset feature is on. This command sets an offset value.

Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a frequency offset value for the basic frequency                                                                                                                                                  |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -1E12 to 1E12                                                                                                                                                                                                |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Resolution   | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (Pt),” on page 235.

Example of use      Dim Offset As Double  
 SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.OFFSET = 1E9  
 Offset = SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.OFFSET

Related objects     SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR on page 593  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.MULTIPLIER on page 594  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.START on page 596  
 SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.STOP on page 597

Equivalent key     **[Sweep Setup] - Frequency Offset - Port n - Offset**

---

**NOTE**                The basic frequency range is set by using “SCPI.SENSE(Ch).FREQUENCY.START” on page 563 and “SCPI.SENSE(Ch).FREQUENCY.STOP” on page 564.

---

**SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.START**

|                |                                                                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                                           |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.PORT( <i>Pt</i> ).FREQUENCY.START = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.PORT( <i>Pt</i> ).FREQUENCY.START |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), sets a frequency start value for ports 1 to 4 ( <i>Pt</i> ) when the frequency offset feature is on.                           |
| Variable       |                                                                                                                                                                    |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a frequency start value                                                                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 3E5 to 8.5E9 (3E9)                                                                                                                                                                                           |
| Preset value | 3E5                                                                                                                                                                                                          |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Resolution   | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (Pt),” on page 235.

|                 |                                                                                                                                                                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example of use  | <pre>Dim Start As Double SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.START = 100E6 Start = SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.START</pre>                                                                                                                                       |
| Related objects | <p>SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR on page 593</p> <p>SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.MULTIPLIER on page 594</p> <p>SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET on page 595</p> <p>SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.STOP on page 597</p> |
| Equivalent key  | <b>[Sweep Setup] - Frequency Offset - Port n - Start</b>                                                                                                                                                                                                                       |

## SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.STOP

|                |                                                                                                                                                                  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of object | Property                                                                                                                                                         |
| Syntax         | SCPI.SENSE( <i>Ch</i> ).OFFSET.PORT( <i>Pt</i> ).FREQUENCY.STOP = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).OFFSET.PORT( <i>Pt</i> ).FREQUENCY.STOP |
| Description    | For channels 1 to 16 ( <i>Ch</i> ), sets a frequency stop value for ports 1 to 4 ( <i>Pt</i> ) when the frequency offset feature is on.                          |
| Variable       |                                                                                                                                                                  |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Setting of a frequency stop value                                                                                                                                                                            |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 3E5 to 8.5E9 (3E9)                                                                                                                                                                                           |
| Preset value | 8.5E9 (3E9)                                                                                                                                                                                                  |
| Unit         | Hz (hertz)                                                                                                                                                                                                   |
| Resolution   | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

For information on the variable (*Pt*), refer to Table 7-9, “Variable (Pt),” on page 235.

|                 |                                                                                                                                                                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example of use  | Dim Stop As Double<br>SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.STOP = 100E6<br>Stop = SCPI.SENSE(1).OFFSET.PORT(1).FREQUENCY.STOP                                                                                                                              |
| Related objects | SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR on page 593<br>SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.MULTIPLIER on page 594<br>SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET on page 595<br>SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.START on page 596 |
| Equivalent key  | <b>[Sweep Setup] - Frequency Offset - Port n - Stop</b>                                                                                                                                                                                                      |

## SCPI.SENSE(*Ch*).OFFSet.STATe

Type of object

Property

Syntax

SCPI.SENSE(*Ch*).OFFSet.STATe = *Status*  
*Status* = SCPI.SENSE(*Ch*).OFFSet.STATe

Description

For channels 1 to 16 (*Ch*), turns on/off the frequency offset.

When the frequency offset feature is on, different frequencies can be used for measurement for each port. Frequencies set for each port are used regardless of whether the port is on the stimulus side or response side.

Variable

|              | <i>Status</i>                                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | On/off of the frequency offset                                                                                                                                                                                              |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                      |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns on the frequency offset.</li> <li>• False or 0                      Turns off the frequency offset.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                  |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

Example of use

```
Dim State As Boolean
SCPI.SENSE(1).OFFSet.STATe = False
State = SCPI.SENSE(1).OFFSet.STATe
```

Equivalent key

**[Sweep Setup] - Frequency Offset - Frequency Offset**

## SCPI.SENSE(*Ch*).ROSCillator.SOURce

|             |                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                           |
| Syntax      | <i>Param</i> = SCPI.SENSE( <i>Ch</i> ).ROSCillator.SOURce                                                          |
| Description | Reads out whether the external reference signal is inputted to the Ref In connector on the rear panel. (Read only) |
| Variable    |                                                                                                                    |

|             | <i>Param</i>                                                                                                                                                                                                                                    |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Whether the external reference signal is inputted or not.                                                                                                                                                                                       |
| Data type   | Character string type (String)                                                                                                                                                                                                                  |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•"INTernal"                    The external reference signal is not inputted.</li> <li>•"EXTernal"                   The external reference signal is inputted.</li> </ul> |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim Ref As String
Ref = SCPI.SENSE(1).ROSCillator.SOURce
```

**Equivalent key**                    Displayed on the instrument status bar (at the bottom of the LCD display).

## SCPI.SENSE(*Ch*).SEGMENT.DATA

|             |                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                 |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).SEGMENT.DATA = <i>Data</i><br><i>Data</i> = SCPI.SENSE( <i>Ch</i> ).SEGMENT.DATA |
| Description | Creates the segment sweep table of channels 1 to 16 ( <i>Ch</i> ).                                       |
| Variable    |                                                                                                          |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p>Indicates the array data arranged in the following order (for the segment sweep table). Where N is the number of segments (specified with &lt;segm&gt;) and n is an integer between 1 and N.</p> <p><i>Data</i> = {&lt;buf&gt;,&lt;stim&gt;,&lt;ifbw&gt;,&lt;pow&gt;,&lt;del&gt;,&lt;swp&gt;,&lt;time&gt;,&lt;segm&gt;,&lt;star 1&gt;,&lt;stop 1&gt;,&lt;nop 1&gt;,&lt;ifbw 1&gt;,&lt;pow 1&gt;,&lt;del 1&gt;,&lt;swp 1&gt;,&lt;time 1&gt;,...,&lt;star n&gt;,&lt;stop n&gt;,&lt;nop n&gt;,&lt;ifbw n&gt;,&lt;pow n&gt;,&lt;del n&gt;,&lt;swp n&gt;,&lt;time n&gt;,...,&lt;star N&gt;,&lt;stop N&gt;,&lt;nop N&gt;,&lt;ifbw N&gt;,&lt;pow N&gt;,&lt;del N&gt;,&lt;swp N&gt;,&lt;time N&gt;}</p> <p>Each parameter in the above array data is detailed below.</p> <ul style="list-style-type: none"> <li>• &lt;buf&gt; Always specify 5 or 6. You have to specify 6 if you need to set up the sweep mode setting for each segment.</li> <li>• &lt;stim&gt; Stimulus setting mode<br/>0: Specifies with start/stop values<br/>1: Specifies with center/span values</li> <li>• &lt;ifbw&gt; ON/OFF of the IF bandwidth setting for each segment<br/>0: OFF, 1: ON</li> <li>• &lt;pow&gt; ON/OFF of the power setting for each segment<br/>0: OFF, 1: ON</li> <li>• &lt;del&gt; ON/OFF of the sweep delay time setting for each segment<br/>0: OFF, 1: ON</li> <li>• &lt;swp&gt; ON/OFF of the sweep mode setting for each segment<br/>0: OFF, 1: ON<br/>Not necessary when &lt;buf&gt; is 5.</li> <li>• &lt;time&gt; ON/OFF of the sweep time setting for each segment<br/>0: OFF, 1: ON</li> <li>• &lt;segm&gt; Number of segments<br/>Specify an integer ranging 1 to 201.</li> <li>• &lt;star n&gt; Start value/center value of the n-th segment</li> <li>• &lt;stop n&gt; Stop value/span value of the n-th segment</li> <li>• &lt;nop n&gt; Number of measurement points of the n-th segment</li> <li>• &lt;ifbw n&gt; IF bandwidth of the n-th segment Not necessary when the IF bandwidth setting for each segment is OFF (&lt;ifbw&gt;:0).</li> <li>• &lt;pow n&gt; Power of the n-th segment Not necessary when the power setting for each segment is OFF (&lt;pow&gt;:0).</li> <li>• &lt;del n&gt; Sweep delay time of the n-th segment Not necessary when the sweep delay time setting for each segment is OFF (&lt;del&gt;:0).</li> </ul> |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <ul style="list-style-type: none"> <li>• &lt;swp n&gt; Sweep mode of the n-th segment<br/>           0: Stepped mode<br/>           1: Swept mode<br/>           2: Fast stepped mode<br/>           3: Fast swept mode<br/>           Not necessary when &lt;buf&gt; is 5 or the sweep mode setting for each segment is OFF (&lt;del&gt;:0).</li> <li>• &lt;time n&gt; Sweep time of the n-th segment Not necessary when the sweep time setting for each segment is OFF (&lt;time&gt;:0).</li> </ul>                                                                                                                                  |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Note        | If there is not the necessary amount of array data for the specified number of segments when setting the segment sweep table, an error occurs when executed and the object is ignored. For <stim>, <ifbw>, <pow>, <del>, <swp>, and <time>, if the specified value is not the allowable integer, an error occurs when executed. For <star n>, <stop n>, <nop n>, <ifbw n>, <pow n>, <del n>, and <time n> in the array data, if the specified value is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim SegmData As Variant
SCPI.SENSE(1).SEGMENT.DATA = Array(5,0,0,1,0,0,2, _
100E6,1E9,31,0,2E9,3E9,51,-10)
SegmData = SCPI.SENSE(1).SEGMENT.DATA
```

```
Dim SegmData(14) As Variant
Dim Ref As Variant
SegmData(0) = 5
SegmData(1) = 0
SegmData(2) = 0
SegmData(3) = 1
SegmData(4) = 0
SegmData(5) = 0
SegmData(6) = 2
SegmData(7) = 100E6
SegmData(8) = 1E9
SegmData(9) = 31
SegmData(10) = 0
SegmData(11) = 2E9
SegmData(12) = 3E9
SegmData(13) = 51
SegmData(14) = -10
SCPI.SENSE(1).SEGMENT.DATA = SegmData
Ref = SCPI.SENSE(1).SEGMENT.DATA
```

Related objects **SCPI.SENSE(Ch).SWEep.TYPE** on page 609

Equivalent key **[Sweep Setup] - Edit Segment Table**

## **SCPI.SENSE(Ch).SEGMENT.SWEep.POINTs**

|             |                                                                                                                                                  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                         |
| Syntax      | <i>Value</i> = SCPI.SENSE( <i>Ch</i> ).SEGMENT.SWEep.POINTs                                                                                      |
| Description | For the segment sweep table of channels 1 to 16 ( <i>Ch</i> ), reads out the total number of the measurement points of all segments. (Read only) |

### Variable

|             | <i>Value</i>                                       |
|-------------|----------------------------------------------------|
| Description | Total number of measurement points of all segments |
| Data type   | Long integer type (Long)                           |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**  

```
Dim SegmPoin As Long
SegmPoin = SCPI.SENSE(1).SEGMENT.SWEep.POINTs
```

**Related objects** SCPI.SENSE(Ch).SEGMENT.DATA on page 600

**Equivalent key** No equivalent key is available on the front panel.

## **SCPI.SENSE(Ch).SEGMENT.SWEep.TIME.DATA**

|             |                                                                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                |
| Syntax      | <i>Value</i> = SCPI.SENSE( <i>Ch</i> ).SEGMENT.SWEep.TIME.DATA                                                                                          |
| Description | For the segment sweep table of channels 1 to 16 ( <i>Ch</i> ), reads out the total sweep time (including sweep delay time) of all segments. (Read only) |

### Variable

|             | <i>Value</i>                                  |
|-------------|-----------------------------------------------|
| Description | Total sweep time of all segments              |
| Data type   | Double precision floating point type (Double) |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**  

```
Dim SegmTime As Double
SegmTime = SCPI.SENSE(1).SEGMENT.SWEep.TIME.DATA
```

**Related objects** SCPI.SENSE(Ch).SEGMENT.DATA on page 600

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.SENSE(*Ch*).SWEep.ASPurious

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).SWEep.ASPurious = *Status*  
*Status* = SCPI.SENSE(*Ch*).SWEep.ASPurious

**Description** Turns ON/OFF the spurious avoidance mode of channels 1 to 16 (*Ch*).

**Variable**

|              | <i>Status</i>                                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the spurious avoidance mode                                                                                                                                                                                                     |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                    |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the spurious avoidance mode.</li> <li>• False or 0                      Turns OFF the spurious avoidance mode.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                                                                                |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim ASpurious As Boolean
SCPI.SENSE(1).SWEep.ASPurious = False
ASpurious = SCPI.SENSE(1).SWEep.ASPurious
```

**Equivalent key** **[System] - Service Menu - Avoid Spurious**

## SCPI.SENSE(*Ch*).SWEep.DELay

|             |                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                 |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).SWEep.DELay = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).SWEep.DELay |
| Description | Sets the sweep delay time of channels 1 to 16 ( <i>Ch</i> ).                                             |
| Variable    |                                                                                                          |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Sweep delay time                                                                                                                                                                                             |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 0 to 1                                                                                                                                                                                                       |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | s (second)                                                                                                                                                                                                   |
| Resolution   | 0.001                                                                                                                                                                                                        |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|          |                                                                                                     |
|----------|-----------------------------------------------------------------------------------------------------|
| Examples | <pre>Dim SweDel As Double SCPI.SENSE(1).SWEep.DELay = 0.05 SweDel = SCPI.SENSE(1).SWEep.DELay</pre> |
|----------|-----------------------------------------------------------------------------------------------------|

|                |                                    |
|----------------|------------------------------------|
| Equivalent key | <b>[Sweep Setup] - Sweep Delay</b> |
|----------------|------------------------------------|

## SCPI.SENSE(*Ch*).SWEep.GENERation

**Object type** Property

**Syntax** SCPI.SENSE(*Ch*).SWEep.GENERation = *Param*  
*Param* = SCPI.SENSE(*Ch*).SWEep.GENERation

**Description** Selects the sweep mode of channels 1 to 16 (*Ch*).

When the sweep type is the power sweep (POW specified with the SCPI.SENSE(*Ch*).SWEep.TYPE object), when the power calibration is on (ON specified with the SCPI.SOURCE(*Ch*).POWER.PORT(*Pt*).CORREction.STATE object), or the power slope value is other than 0 and the power slope function is on (ON specified with the SCPI.SOURCE(*Ch*).POWER.LEVel.SLOPe.STATE object), if you execute this object to try to set the sweep mode to the swept mode or the fast swept mode, an error occurs and the sweep mode is automatically set to the step mode or the fast step mode, respectively.

**Variable**

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Sweep mode                                                                                                                                                                                                                                                                                                                                                                                 |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                                             |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"STEPped"                Sets the sweep mode to the stepped mode.</li> <li>•"ANALog"                Sets the sweep mode to the swept mode.</li> <li>•"FSTepped"              Sets the sweep mode to the fast stepped mode.</li> <li>•"FANalog"                Sets the sweep mode to the fast swept mode.</li> </ul> |
| Preset value | "STEPped"                                                                                                                                                                                                                                                                                                                                                                                  |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples**

```
Dim SwptMode As String
SCPI.SENSE(1).SWEep.GENERation = "anal"
SwptMode = SCPI.SENSE(1).SWEep.GENERation
```

**Related objects** SCPI.SENSE(*Ch*).SWEep.TYPE on page 609  
SCPI.SOURCE(*Ch*).POWER.PORT(*Pt*).CORREction.STATE on page 629  
SCPI.SOURCE(*Ch*).POWER.LEVel.SLOPe.STATE on page 619

**Equivalent key** **[Sweep Setup] - Sweep Mode - Std Stepped|Std Swept|Fast Stepped|Fast Swept**

## SCPI.SENSE(*Ch*).SWEep.POINTs

|             |                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                   |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).SWEep.POINTs = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).SWEep.POINTs |
| Description | Sets the number of measurement points of channels 1 to 16 ( <i>Ch</i> ).                                   |
| Variable    |                                                                                                            |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Number of measurement points                                                                                                                                                                                 |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 2 to 1601                                                                                                                                                                                                    |
| Preset value | 201                                                                                                                                                                                                          |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|          |                                                                                              |
|----------|----------------------------------------------------------------------------------------------|
| Examples | <pre>Dim Nop As Long SCPI.SENSE(1).SWEep.POINTs = 801 Nop = SCPI.SENSE(1).SWEep.POINTs</pre> |
|----------|----------------------------------------------------------------------------------------------|

|                |                               |
|----------------|-------------------------------|
| Equivalent key | <b>[Sweep Setup] - Points</b> |
|----------------|-------------------------------|

## SCPI.SENSE(*Ch*).SWEep.TIME.AUTO

|             |                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                           |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).SWEep.TIME.AUTO = <i>Status</i><br><i>Status</i> = SCPI.SENSE( <i>Ch</i> ).SWEep.TIME.AUTO |
| Description | Sets whether to automatically set the sweep time of channels 1 to 16 ( <i>Ch</i> ).                                |
| Variable    |                                                                                                                    |

|              | <i>Status</i>                                                                                                                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | ON/OFF of the auto setting of the sweep time                                                                                                                                                                        |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                              |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns ON the auto setting.</li> <li>• False or 0                      Turns OFF the auto setting.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                                                          |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples**

```
Dim SweAuto As Boolean
SCPI.SENSE(1).SWEep.TIME.AUTO = False
SweAuto = SCPI.SENSE(1).SWEep.TIME.AUTO
```

**Related objects**      SCPI.SENSE(*Ch*).SWEep.TIME.DATA on page 608

**Equivalent key**      **[Sweep Setup] - Sweep Time**

**NOTE**                      When performing the operation from the front panel, the auto setting of the sweep time is turned ON by setting the sweep time to 0 s.

## SCPI.SENSE(*Ch*).SWEep.TIME.DATA

|             |                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                         |
| Syntax      | SCPI.SENSE( <i>Ch</i> ).SWEep.TIME.DATA = <i>Value</i><br><i>Value</i> = SCPI.SENSE( <i>Ch</i> ).SWEep.TIME.DATA |
| Description | Sets the sweep time of channels 1 to 16 ( <i>Ch</i> ).                                                           |

---

**NOTE** Before using this object to set the sweep time, turns OFF the auto setting of the sweep time (specify False with the SCPI.SENSE(*Ch*).SWEep.TIME.AUTO object).

---

### Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Sweep time                                                                                                                                                                                                   |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the measurement conditions                                                                                                                                                               |
| Preset value | Varies depending on the measurement conditions                                                                                                                                                               |
| Unit         | s (second)                                                                                                                                                                                                   |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim SweTime As Double
SCPI.SENSE(1).SWEep.TIME.AUTO = False
SCPI.SENSE(1).SWEep.TIME.DATA = 1.5
SweTime = SCPI.SENSE(1).SWEep.TIME.DATA
```

**Related objects** SCPI.SENSE(*Ch*).SWEep.TIME.AUTO on page 607

**Equivalent key** **[Sweep Setup] - Sweep Time**

## SCPI.SENSE(*Ch*).SWEep.TYPE

Object type      Property

Syntax            SCPI.SENSE(*Ch*).SWEep.TYPE = *Param*  
*Param* = SCPI.SENSE(*Ch*).SWEep.TYPE

Description      Sets the sweep type of channels 1 to 16 (*Ch*).

Variable

|              | <i>Param</i>                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Sweep type                                                                                                                                                                                                                                                                                                                                                                   |
| Data type    | Character string type (String)                                                                                                                                                                                                                                                                                                                                               |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>•"LINear"                Sets the sweep type to the linear sweep.</li> <li>•"LOGarithmic"        Sets the sweep type to the log sweep. *1</li> <li>•"SEGment"             Sets the sweep type to the segment sweep.</li> <li>•"POWer"                Sets the sweep type to the power sweep.</li> </ul> |
| Preset value | "LINear"                                                                                                                                                                                                                                                                                                                                                                     |

\*1. If you execute this object to try to specify the log sweep when the frequency span condition necessary for the log sweep is not satisfied (the stop frequency is about 4 times or more the start frequency), an error occurs and the object is ignored.

For information on the variable (*Ch*), see Table 7-6, "Variable (Ch)," on page 203.

Examples

```
Dim SweType As String
SCPI.SENSE(1).SWEep.TYPE = "segm"
SweType = SCPI.SENSE(1).SWEep.TYPE
```

Equivalent key    **[Sweep Setup] - Sweep Type - Lin Freq|Log Freq|Segment**

## SCPI.SERVICE.CHANNEL.ACTIVE

|             |                                                  |
|-------------|--------------------------------------------------|
| Object type | Property                                         |
| Syntax      | <i>Value</i> = SCPI.SERVICE.CHANNEL.ACTIVE       |
| Description | Reads out the active channel number. (Read only) |
| Variable    |                                                  |

|             | <i>Value</i>             |
|-------------|--------------------------|
| Description | Active channel number    |
| Data type   | Long integer type (Long) |

**Examples**  

```
Dim ActChan As Long
ActChan = SCPI.SERVICE.CHANNEL.ACTIVE
```

**Related objects** SCPI.DISPLAY.WINDOW(Ch).ACTIVATE on page 383

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.SERVICE.CHANNEL.COUNT

|             |                                                                                       |
|-------------|---------------------------------------------------------------------------------------|
| Object type | Property                                                                              |
| Syntax      | <i>Value</i> = SCPI.SERVICE.CHANNEL.COUNT                                             |
| Description | Reads out the upper limit of the number of channels of the E5070B/E5071B. (Read only) |
| Variable    |                                                                                       |

|             | <i>Value</i>                           |
|-------------|----------------------------------------|
| Description | Upper limit of the number of channels. |
| Data type   | Long integer type (Long)               |

**Examples**  

```
Dim MaxChan As Long
MaxChan = SCPI.SERVICE.CHANNEL.COUNT
```

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.SERVICE.CHANNEL(*Ch*).TRACE.ACTIVE

- Object type      Property
- Syntax            *Value* = SCPI.SERVICE.CHANNEL(*Ch*).TRACE.ACTIVE
- Description      Reads out the active trace number of channels 1 to 16 (*Ch*). (Read only)
- Variable

|             | <i>Value</i>             |
|-------------|--------------------------|
| Description | Active trace number      |
| Data type   | Long integer type (Long) |

- Examples            `Dim ActTrac As Long`  
`ActTrac = SCPI.SERVICE.CHANNEL(1).TRACE.ACTIVE`
- Related objects    SCPI.CALCULATE(Ch).PARAMETER(Tr).SELECT on page 253
- Equivalent key     No equivalent key is available on the front panel.

## SCPI.SERVICE.CHANNEL.TRACE.COUNT

- Object type      Property
- Syntax            *Value* = SCPI.SERVICE.CHANNEL.TRACE.COUNT
- Description      Reads out the upper limit of the number of traces per channel. (Read only)
- Variable

|             | <i>Value</i>                         |
|-------------|--------------------------------------|
| Description | Upper limit of the number of traces. |
| Data type   | Long integer type (Long)             |

- Examples            `Dim MaxTrac As Long`  
`MaxTrac = SCPI.SERVICE.CHANNEL.TRACE.COUNT`
- Equivalent key     No equivalent key is available on the front panel.

## **SCPI.SERVICE.PORT.COUNT**

|             |                                                                 |
|-------------|-----------------------------------------------------------------|
| Object type | Property                                                        |
| Syntax      | <i>Value</i> = SCPI.SERVICE.PORT.COUNT                          |
| Description | Reads out the number of ports of the E5070B/E5071B. (Read only) |
| Variable    |                                                                 |

|             | <i>Value</i>             |
|-------------|--------------------------|
| Description | Number of ports          |
| Data type   | Long integer type (Long) |

**Examples**  

```
Dim MaxPort As Long
MaxPort = SCPI.SERVICE.PORT.COUNT
```

**Equivalent key** No equivalent key is available on the front panel.

## **SCPI.SERVICE.SREVISION**

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| Object type | Property                                                            |
| Syntax      | <i>Value</i> = SCPI.SERVICE.SREVISION                               |
| Description | Reads out the system spec version of the E5070B/E5071B. (Read only) |
| Variable    |                                                                     |

|             | <i>Value</i>                                                                               |
|-------------|--------------------------------------------------------------------------------------------|
| Description | 1 means applying new system specifications.<br>0 means applying old system specifications. |
| Data type   | Long integer type (Long)                                                                   |

**Examples**  

```
Dim SystemRevision As Long
SystemRevision = SCPI.SERVICE.PORT.COUNT
```

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.SOURce(Ch).POWer.ATTenuation.DATA

|             |                                                                                                                                                                                                                                                                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                                                                                                                                                                              |
| Syntax      | SCPI.SOURce(Ch).POWer.ATTenuation.DATA = <i>Value</i><br><i>Value</i> = SCPI.SOURce(Ch).POWer.ATTenuation.DATA                                                                                                                                                                                                                                        |
| Description | <p>Selects the attenuator used for channels 1 to 16 (<i>Ch</i>). The power ranges are determined depending on the attenuator to be used.</p> <p>When the Auto Power Range function is ON (Default settin is ON with firmware version 3.60 and later), this command is ignored and a proper attenuator and power range are selected automatically.</p> |

---

**NOTE** This object is available only when extended power range function (Option 214, 314, 414) is installed.

---

### Variable

|                                    | <i>Value</i>                                                                                                                                                                                                 |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description                        | Power ranges                  Setting                                                                                                                                                                        |
|                                    | -20 to +10[dB]                  0                                                                                                                                                                            |
|                                    | -25 to +7 [dB]                  5                                                                                                                                                                            |
|                                    | -30 to +2 [dB]                  10                                                                                                                                                                           |
|                                    | -35 to -3 [dB]                  15                                                                                                                                                                           |
|                                    | -40 to -8 [dB]                  20                                                                                                                                                                           |
|                                    | -45 to -13[dB]                  25                                                                                                                                                                           |
|                                    | -50 to -18[dB]                  30                                                                                                                                                                           |
| -55 to -23[dB]                  35 |                                                                                                                                                                                                              |
| Data type                          | Long integer type (Long)                                                                                                                                                                                     |
| Range                              | 0 to 35                                                                                                                                                                                                      |
| Preset value                       | 0                                                                                                                                                                                                            |
| Unit                               | dB                                                                                                                                                                                                           |
| Resolution                         | 5                                                                                                                                                                                                            |
| Note                               | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim Att As Long
SCPI.SOURce(1).POWer.ATTenuation.DATA = 10
Att = SCPI.SOURce(1).POWer.ATTenuation.DATA
```

**Related objects** SCPI.SOURce(Ch).POWer.LEVel.IMMEDIATE. AMPLitude on page 617





## SCPI.SOURce(*Ch*).POWER.CENTer

|             |                                                                                                              |
|-------------|--------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                     |
| Syntax      | SCPI.SOURce( <i>Ch</i> ).POWER.CENTer = <i>Value</i><br><i>Value</i> = SCPI.SOURce( <i>Ch</i> ).POWER.CENTer |
| Description | Sets the center value of the sweep range for the power sweep for channels 1 to 16 ( <i>Ch</i> ).             |
| Variable    |                                                                                                              |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Center value                                                                                                                                                                                                 |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the power range.                                                                                                                                                                         |
| Preset value | -7.5                                                                                                                                                                                                         |
| Unit         | dBm                                                                                                                                                                                                          |
| Resolution   | 0.05 or 0.025                                                                                                                                                                                                |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Pcntr As Double SCPI.SOURce(1).POWER.CENTer = 0 Pcntr = SCPI.SOURce(1).POWER.CENTer</pre>                                                                        |
| Related objects | <p>SCPI.SENSE(<i>Ch</i>).SWEep.TYPE on page 609</p> <p>SCPI.SOURce(<i>Ch</i>).POWER.ATTenuation.DATA on page 613</p> <p>SCPI.SOURce(<i>Ch</i>).POWER.SPAN on page 632</p> |
| Equivalent key  | <b>[Center]</b>                                                                                                                                                           |

## SCPI.SOURce(Ch).POWer.LEVel.IMMEdiate. AMPLitude

|             |                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                           |
| Syntax      | SCPI.SOURce( <i>Ch</i> ).POWer.LEVel.IMMEdiate.AMPLitude = <i>Value</i><br><i>Value</i> = SCPI.SOURce( <i>Ch</i> ).POWer.LEVel.IMMEdiate.AMPLitude |
| Description | Sets the power level of channels 1 to 16 ( <i>Ch</i> ).                                                                                            |
| Variable    |                                                                                                                                                    |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Power level                                                                                                                                                                                                  |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the power range.                                                                                                                                                                         |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | dBm                                                                                                                                                                                                          |
| Resolution   | 0.05                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim PowLev As Double SCPI.SOURce(1).POWer.LEVel.IMMEdiate.AMPLitude = -10 PowLev = SCPI.SOURce(1).POWer.LEVel.IMMEdiate.AMPLitude</pre> |
| Related objects | SCPI.SOURce(Ch).POWer.ATTenuation.DATA on page 613<br>SCPI.SOURce(Ch).POWer.ATTenuation.AUTO on page 614                                     |
| Equivalent key  | <b>[Sweep Setup] - Power</b>                                                                                                                 |

## SCPI.SOURce(*Ch*).POWer.LEVel.SLOPe.DATA

|             |                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                         |
| Syntax      | SCPI.SOURce( <i>Ch</i> ).POWer.LEVel.SLOPe.DATA = <i>Value</i><br><i>Value</i> = SCPI.SOURce( <i>Ch</i> ).POWer.LEVel.SLOPe.DATA |
| Description | Sets the correction value of the power slope feature of channels 1 to 16 ( <i>Ch</i> ).                                          |
| Variable    |                                                                                                                                  |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Correction value of the power slope feature                                                                                                                                                                  |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | -2 to 2                                                                                                                                                                                                      |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | dB/GHz                                                                                                                                                                                                       |
| Resolution   | 0.01                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim SlopLev As Double
SCPI.SOURce(1).POWer.LEVel.SLOPe.DATA = 0.1
SlopLev = SCPI.SOURce(1).POWer.LEVel.SLOPe.DATA
```

**Related objects** SCPI.SOURce(Ch).POWer.LEVel.SLOPe.STATe on page 619

**Equivalent key** **[Sweep Setup] - Power - Slop [xxx dB/GHz]**

## SCPI.SOURce(Ch).POWer.LEVel.SLOPe.STATe

**Object type** Property

**Syntax** SCPI.SOURce(Ch).POWer.LEVel.SLOPe.STATe = *Status*  
*Status* = SCPI.SOURce(Ch).POWer.LEVel.SLOPe.STATe

**Description** Turns on/off the power slope feature for channels 1 to 16 (*Ch*). This function is a function to correct the attenuation of simple power level proportional to the frequency (attenuation due to cables and so on).

**Variable**

|              |                                                                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                            |
| Description  | On/off of the power slope feature                                                                                                                                                                                               |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                          |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns on the power slop feature.</li> <li>• False or 0                      Turns off the power slop feature.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                      |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim Slop As Boolean
SCPI.SOURce(1).POWer.LEVel.SLOPe.STATe = True
Slop = SCPI.SOURce(1).POWer.LEVel.SLOPe.STATe
```

**Related objects** SCPI.SOURce(Ch).POWer.LEVel.SLOPe.DATA on page 618  
 SCPI.SENSE(Ch).SWEep.GENERation on page 605

**Equivalent key** **[Sweep Setup] - Power - Slop [ON/OFF]**

**SCPI.SOURce(*Ch*).POWer.PORT(*Pt*).CORRection.  
COLLeCt.ACQuire**

Object type Property

Syntax SCPI.SOURce(*Ch*).POWer.PORT(*Pt*).CORRection.COLLeCt.ACQuire = *Param*

Description For ports 1 to 4 (*Pt*) of channels 1 to 16 (*Ch*), measure the power calibration data using the specified power sensor. When the measurement is complete successfully, the power level error correction is automatically turned on.

If the power meter is not connected correctly, an error occurs and the object is ignored. (No read)

## Variable

|             |                                                                                                                                                                                                              |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <i>Param</i>                                                                                                                                                                                                 |
| Description | Selection of the power sensor                                                                                                                                                                                |
| Data type   | Character string type (String)                                                                                                                                                                               |
| Range       | Select from the following.<br><ul style="list-style-type: none"> <li>•"ASENsor"                      Specifies power sensor A.</li> <li>•"BSENsor"                      Specifies power sensor B.</li> </ul> |

For information on the variable (*Ch*) and the variable (*Pt*), refer to Table 7-6, "Variable (Ch)," on page 203 and Table 7-9, "Variable (Pt)," on page 235, respectively.

Examples

```
Dim Dmy As Long
SCPI.SOURce(1).POWer.PORT(1).CORRection.COLLeCt.ACQuire = "asen"
Dmy = SCPI.IEEE4882.OPC
```

Related objects SCPI.IEEE4882.OPC on page 408

Equivalent key **[Cal] - Power Calibration - Take Cal Sweep**

## SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.ASENSor.RCFactor

|             |                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                               |
| Syntax      | SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.ASENSor.RCFactor = <i>Value</i><br><i>Value</i> = SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.ASENSor.RCFactor |
| Description | Sets the reference calibration coefficient (the calibration coefficient at 50 MHz) for power sensor A.                                                 |

### Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Reference calibration coefficient                                                                                                                                                                            |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 1 to 150                                                                                                                                                                                                     |
| Preset value | 100                                                                                                                                                                                                          |
| Unit         | % (percent)                                                                                                                                                                                                  |
| Resolution   | 0.01                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

|                 |                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim CalRef As Double SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.ASENSor.RCFactor = 99.5 CalRef = SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.ASENSor.RCFactor</pre> |
| Related objects | SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.BSENSor.RCFactor on page 623                                                                                                |
| Equivalent key  | <b>[Cal] - Power Calibration - Sensor A Settings - Ref Cal Factor</b>                                                                                                 |

## SCPI.SOURCE(*Ch*).POWER.PORT(*Pt*).CORREction. COLLECT.AVERAge.COUNT

|             |                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                             |
| Syntax      | SCPI.SOURCE( <i>Ch</i> ).POWER.PORT( <i>Pt</i> ).CORREction.COLLECT.AVERAge.COUNT = <i>Value</i><br><i>Value</i> = SCPI.SOURCE( <i>Ch</i> ).POWER.PORT( <i>Pt</i> ).CORREction.COLLECT.AVERAge.COUNT |
| Description | For ports 1 to 4 ( <i>Pt</i> ) of channels 1 to 16 ( <i>Ch</i> ), sets the number of power calibration data measurements per measurement point (averaging factor).                                   |

### Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Averaging factor                                                                                                                                                                                             |
| Data type    | Long integer type (Long)                                                                                                                                                                                     |
| Range        | 1 to 100                                                                                                                                                                                                     |
| Preset value | 1                                                                                                                                                                                                            |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Pt*), refer to Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

### Examples

```
Dim AvgCnt As Long
SCPI.SOURCE(1).POWER.PORT(1).CORREction.COLLECT.AVERAge.COUNT = 6
AvgCnt =
SCPI.SOURCE(1).POWER.PORT(1).CORREction.COLLECT.AVERAge.COUNT
```

|                 |                                                                        |
|-----------------|------------------------------------------------------------------------|
| Related objects | SCPI.SOURCE(Ch).POWER.PORT(Pt).CORREction. COLLECT.ACQUIRE on page 620 |
| Equivalent key  | <b>[Cal] - Power Calibration - Num of Readings</b>                     |

## SCPI.SOURce.POWER.PORT.CORRection.COLLeCt. BSEnsor.RCFactor

|             |                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                               |
| Syntax      | SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.BSEnsor.RCFactor = <i>Value</i><br><i>Value</i> = SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.BSEnsor.RCFactor |
| Description | Sets the reference calibration coefficient (the calibration coefficient at 50 MHz) for power sensor B.                                                 |
| Variable    |                                                                                                                                                        |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Reference calibration coefficient                                                                                                                                                                            |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | 1 to 150                                                                                                                                                                                                     |
| Preset value | 100                                                                                                                                                                                                          |
| Unit         | % (percent)                                                                                                                                                                                                  |
| Resolution   | 0.01                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

|                 |                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim CalRef As Double SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.BSEnsor.RCFactor = 99 CalRef = SCPI.SOURce.POWER.PORT.CORRection.COLLeCt.BSEnsor.RCFactor</pre> |
| Related objects | SCPI.SOURce.POWER.PORT.CORRection.COLLeCt. ASENsor.RCFactor on page 621                                                                                             |
| Equivalent key  | <b>[Cal] - Power Calibration - Sensor B Settings - Ref Cal Factor</b>                                                                                               |

## SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA

|             |                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                 |
| Syntax      | SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA = <i>Data</i><br><i>Data</i> = SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA |
| Description | Sets the calibration coefficient table for power sensor A.                                                                                               |
| Variable    |                                                                                                                                                          |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p>Indicates the array data (for the calibration coefficient table) of 1 + Num (number of set data items)×2. Where n is an integer between 1 and Num.</p> <ul style="list-style-type: none"> <li>• <i>Data</i>(0)                      The number of data items you want to set. Specify an integer between 0 to 100. When you set the number of data items to 0 (to clear the calibration coefficient table), you specify only <i>Data</i>(0) as the Data variable.</li> <li>• <i>Data</i>(n×2-1)                      The frequency of the n-th data item (1 kHz to 500 GHz).</li> <li>• <i>Data</i>(n×2)                      The calibration coefficient of the n-th data item (1% to 150%).</li> </ul> <p>The index of the array starts from 0.</p> |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Note        | If the array data does not contain 1+Num (number of set data items)×2 when setting a calibration coefficient table, a runtime error occurs. For <i>Data</i> (n×2-1) and <i>Data</i> (n×2) in the array data, if the specified value is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                                                                                                                                                                                                                                                                   |

### Examples

```
Dim CalFac As Variant
SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA = Array(2,1e7,99.8,
1e9,98.7)
CalFac = SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA
'''Clear Cal Factor Table
SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA = Array(0)
```

```
Dim CalFac(4) As Variant
Dim Ref As Variant
CalFac(0) = 2
CalFac(1) = 1e7
CalFac(2) = 99.8
CalFac(3) = 1e9
CalFac(4) = 98.7
SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA = CalFac
Ref = SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA
'''Clear Cal Factor Table
Dim CalFac(0) As Variant
CalFac(0) = 0
SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.ASEnSor.DATA = CalFac
```

|                 |                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------|
| Related objects | SCPI.SOURCE.POWER.PORT.CORREction.COLLECT.TABLE.BSEnSor.DATA on page 625                     |
| Equivalent key  | <b>[Cal] - Power Calibration - Sensor A Settings - Delete   Add   Clear Cal Factor Table</b> |

## SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA

|             |                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                 |
| Syntax      | SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA = <i>Data</i><br><i>Data</i> = SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA |
| Description | Sets the calibration coefficient table for power sensor B.                                                                                               |
| Variable    |                                                                                                                                                          |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p>Indicates the array data (for the calibration coefficient table) of <math>1 + \text{Num}</math> (number of set data items)<math>\times 2</math>. Where <math>n</math> is an integer between 1 and Num.</p> <ul style="list-style-type: none"> <li><i>Data</i>(0) The number of data items you want to set. Specify an integer between 0 to 100. When you set the number of data items to 0 (to clear the calibration coefficient table), you specify only <i>Data</i>(0) as the Data variable.</li> <li><i>Data</i>(<math>n\neq 2-1</math>) The frequency of the <math>n</math>-th data item (1 kHz to 500 GHz).</li> <li><i>Data</i>(<math>n\neq 2</math>) The calibration coefficient of the <math>n</math>-th data item (1% to 150%).</li> </ul> <p>The index of the array starts from 0.</p> |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Note        | If the array data does not contain $1 + \text{Num}$ (number of set data items) $\times 2$ when setting a calibration coefficient table, a runtime error occurs. For <i>Data</i> ( $n\neq 2-1$ ) and <i>Data</i> ( $n\neq 2$ ) in the array data, if the specified value is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                                                                                                                                                                                                                                                                          |

### Examples

```
Dim CalFac As Variant
SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA = Array(2, 1e7, 99.8,
1e9, 98.7)
CalFac = SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA
'''Clear Cal Factor Table
SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA = Array(0)
```

```
Dim CalFac(4) As Variant
Dim Ref As Variant
CalFac(0) = 2
CalFac(1) = 1e7
CalFac(2) = 99.8
CalFac(3) = 1e9
CalFac(4) = 98.7
SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA = CalFac
Ref = SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA
'''Clear Cal Factor Table
Dim CalFac(0) As Variant
CalFac(0) = 0
SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.BSENSOR.DATA = CalFac
```

|                 |                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------|
| Related objects | SCPI.SOURCE.POWER.PORT.CORRECTION.COLLECT.TABLE.ASENSOR.DATA on page 624                     |
| Equivalent key  | <b>[Cal]</b> - Power Calibration - Sensor B Settings - Delete   Add   Clear Cal Factor Table |

## SCPI.SOURce(*Ch*).POWER.PORT(*Pt*).CORRection. COLLect.TABLE.LOSS.DATA

|             |                                                                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                                               |
| Syntax      | SCPI.SOURce( <i>Ch</i> ).POWER.PORT( <i>Pt</i> ).CORRection.COLLect.TABLE.LOSS.DATA = <i>Data</i><br><i>Data</i> = SCPI.SOURce( <i>Ch</i> ).POWER.PORT( <i>Pt</i> ).CORRection.COLLect.TABLE.LOSS.DATA |
| Description | For ports 1 to 4 ( <i>Pt</i> ) of channels 1 to 16 ( <i>Ch</i> ), sets the loss compensation table.                                                                                                    |
| Variable    |                                                                                                                                                                                                        |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p>Indicates the array data (for the loss compensation table) of 1 + Num (number of set data items)×2. Where n is an integer between 1 and Num.</p> <ul style="list-style-type: none"> <li>• <i>Data</i>(0)                      The number of data items you want to set. Specify an integer between 0 to 100. When you set the number of data items to 0 (to clear the loss compensation table), you specify only <i>Data</i>(0) as the <i>Data</i> variable.</li> <li>• <i>Data</i>(<i>n</i>×2-1)                The frequency of the n-th data item (1 kHz to 500 GHz).</li> <li>• <i>Data</i>(<i>n</i>×2)                    The loss of the n-th data item (-100 dB to 100 dB).</li> </ul> <p>The index of the array starts from 0.</p> |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Note        | If the array data does not contain 1+Num (number of set data items)×2 when setting a loss compensation table, a runtime error occurs. For <i>Data</i> ( <i>n</i> ×2-1) and <i>Data</i> ( <i>n</i> ×2) in the array data, if the specified value is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.                                                                                                                                                                                                                                                                                                            |

For information on the variable (*Ch*) and the variable (*Pt*), refer to Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

### Examples

```
Dim Loss As Variant
SCPI.SOURce(1).POWER.PORT(1).CORRection.COLLect.TABLE.LOSS.DATA = Array(2,1e8,0.5,1e9,0.8)
Loss = SCPI.SOURce(1).POWER.PORT(1).CORRection.COLLect.TABLE.LOSS.DATA
'''Clear Loss Table
SCPI.SOURce(1).POWER.PORT(1).CORRection.COLLect.TABLE.LOSS.DATA = Array(0)
```

```
Dim Loss(4) As Variant
Dim Ref As Variant
Loss(0) = 2
Loss(1) = 1e8
Loss(2) = 0.5
Loss(3) = 1e9
Loss(4) = 0.8
SCPI.SOURce(1).POWER.PORT(1).CORRection.COLLect.TABLE.LOSS.DATA = Loss
Ref = SCPI.SOURce(1).POWER.PORT(1).CORRection.COLLect.TABLE.LOSS.DATA
'''Clear Loss Table
Dim Loss(0) As Variant
Loss(0) = 0
SCPI.SOURce(1).POWER.PORT(1).CORRection.COLLect.TABLE.LOSS.DATA = Loss
```

Related objects      SCPI.SOURce(Ch).POWER.PORT(Pt).CORRection.  
COLLect.TABLE.LOSS.STATe on page 627

Equivalent key      **[Cal] - Power Calibration - Loss Compen - Delete | Add | Clear Loss Table**

## **SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection. COLLect.TABLe.LOSS.STATe**

**Object type** Property

**Syntax** SCPI.SOURce(*Ch*).POWer.PORT(*Pt*).CORRection.COLLect.TABLe.LOSS.STATe = *Status*  
*Status* = SCPI.SOURce(*Ch*).POWer.PORT(*Pt*).CORRection.COLLect.TABLe.LOSS.STATe

**Description** For ports 1 to 4 (*Pt*) of channels 1 to 16 (*Ch*), turns on/off the loss compensation.

**Variable**

|              |                                                                                                                                                                                                                               |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <b><i>Status</i></b>                                                                                                                                                                                                          |
| Description  | On/off of loss compensation                                                                                                                                                                                                   |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                        |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns on the loss compensation.</li> <li>• False or 0                      Turns off the loss compensation.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                    |

For information on the variable (*Ch*) and the variable (*Pt*), refer to Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

**Examples**

```
Dim LComp As Boolean
SCPI.SOURce(1).POWer.PORT(1).CORRection.COLLect.TABLe.LOSS.STATe = True
LComp = SCPI.SOURce(1).POWer.PORT(1).CORRection.COLLect.TABLe.LOSS.STATe
```

**Equivalent key** **[Cal] - Power Calibration - Loss Comp - Compensation**

**SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.DATA**

|             |                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                     |
| Syntax      | SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.DATA = <i>Data</i><br><i>Data</i> = SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.DATA |
| Description | For ports 1 to 4 ( <i>Pt</i> ) of channels 1 to 16 ( <i>Ch</i> ), sets/reads out the power calibration data array.           |
| Variable    |                                                                                                                              |

|             | <i>Data</i>                                                                                                                                                                                                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Indicates the array data (power calibration data array) of NOP (number of points). Where n is an integer between 1 and NOP.<br><ul style="list-style-type: none"> <li>• <i>Data(n-1)</i>                      Data at the n-th measurement point</li> </ul> The index of the array starts from 0. |
| Data type   | Variant type (Variant)                                                                                                                                                                                                                                                                            |
| Note        | If the array data does not contain NOP (number of measurement point))2 when setting a power calibration data array, a runtime error occurs.                                                                                                                                                       |

For information on the variable (*Ch*) and the variable (*Pt*), refer to Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

|                 |                                                                                                                                                                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim FreqData As Variant SCPI.SENSE(1).SWEep.POINTs = 201 FreqData = SCPI.SENSE(1).FREQuency.DATA  Dim CorData As Variant SCPI.SENSE(1).SWEep.POINTs = 201 CorData = SCPI.SOURce(1).POWer.PORT(1).CORRection.DATA SCPI.SOURce(1).POWer.PORT(2).CORRection.DATA = CorData</pre> |
| Related objects | <p>SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.STATe on page 629</p> <p>SCPI.SENSE(Ch).SWEep.POINTs on page 606</p>                                                                                                                                                                  |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                                                                                                                 |

## SCPI.SOURce(Ch).POWer.PORT(Pt).CORRection.STATe

|             |                                                                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                               |
| Syntax      | SCPI.SOURce( <i>Ch</i> ).POWer.PORT( <i>Pt</i> ).CORRection.STATe = <i>Status</i><br><i>Status</i> = SCPI.SOURce( <i>Ch</i> ).POWer.PORT( <i>Pt</i> ).CORRection.STATe |
| Description | For ports 1 to 4 ( <i>Pt</i> ) of channels 1 to 16 ( <i>Ch</i> ), turns on/off the power level error correction.                                                       |
| Variable    |                                                                                                                                                                        |

|              | <i>Status</i>                                                                                                                                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Turning on/off the power level error correction                                                                                                                                                                                                     |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                              |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Turns on the power level error correction.</li> <li>• False or 0                      Turns off the power level error correction.</li> </ul> |
| Preset value | False or 0                                                                                                                                                                                                                                          |

For information on the variable (*Ch*) and the variable (*Pt*), refer to Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

|                |                                                                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples       | <pre>Dim PowCorr As Boolean SCPI.SOURce(1).POWer.PORT(1).CORRection.STATe = True PowCorr = SCPI.SOURce(1).POWer.PORT(1).CORRection.STATe</pre> |
| Equivalent key | <b>[Cal] - Power Calibration - Correction</b>                                                                                                  |

## SCPI.SOURce(*Ch*).POWer.PORT.COUPle

**Object type** Property

**Syntax** SCPI.SOURce(*Ch*).POWer.PORT.COUPle = *Status*  
*Status* = SCPI.SOURce(*Ch*).POWer.PORT.COUPle

**Description** Sets whether to output the same power level for each port of channels 1 to 16 (*Ch*). When the power slope feature is on, the same power level is always outputted to all ports regardless of this setting because different power levels cannot be outputted for each port.

**Variable**

|              |                                                                                                                                                                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <i>Status</i>                                                                                                                                                                                                                                                      |
| Description  | Turning on/off the coupling between ports for the power level output                                                                                                                                                                                               |
| Data type    | Boolean type (Boolean)                                                                                                                                                                                                                                             |
| Range        | Select from the following.<br><ul style="list-style-type: none"> <li>• True or -1                      Outputs the same power level to individual ports.</li> <li>• False or 0                      Outputs different power levels to individual ports.</li> </ul> |
| Preset value | True or -1                                                                                                                                                                                                                                                         |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

**Examples**

```
Dim OutCpl As Boolean
SCPI.SOURce(1).POWer.PORT.COUPle = False
OutCpl = SCPI.SOURce(1).POWer.PORT.COUPle
```

**Related objects** SCPI.SOURce(Ch).POWer.PORT(Pt).LEVel.IMMediate. AMPLitude on page 631

**Equivalent key** **[Sweep Setup] - Power - Port Couple**

## **SCPI.SOURce(Ch).POWer.PORT(Pt).LEVel.IMMEDIATE.AMPLitude**

**Object type** Property

**Syntax** SCPI.SOURce(*Ch*).POWer.PORT(*Pt*).LEVel.IMMEDIATE.AMPLitude = *Value*  
*Value* = SCPI.SOURce(*Ch*).POWer.PORT(*Pt*).LEVel.IMMEDIATE.AMPLitude

**Description** For ports 1 to 4 (*Pt*) of channels 1 to 16 (*Ch*), sets the power level.

**Variable**

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Power level at the specified port.                                                                                                                                                                           |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the power range.                                                                                                                                                                         |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | dBm                                                                                                                                                                                                          |
| Resolution   | 0.05                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*) and the variable (*Pt*), refer to Table 7-6, “Variable (Ch),” on page 203 and Table 7-9, “Variable (Pt),” on page 235, respectively.

**Examples**

```
Dim PowLev As Double
SCPI.SOURce(1).POWer.PORT.COUPle = False
SCPI.SOURce(1).POWer.PORT(1).LEVel.IMMEDIATE.AMPLitude = -12.5
PowLev = SCPI.SOURce(1).POWer.PORT(1).LEVel.IMMEDIATE.AMPLitude
```

**Related objects** SCPI.SOURce(Ch).POWer.PORT.COUPle on page 630  
 SCPI.SOURce(Ch).POWer.ATTenuation.DATA on page 613

**Equivalent key** **[Sweep Setup] - Power - Port Power - Port 1 Power | Port 2 Power | Port 3 Power | Port 4 Power**

## SCPI.SOURce(*Ch*).POWer.SPAN

|             |                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                 |
| Syntax      | SCPI.SOURce( <i>Ch</i> ).POWer.SPAN = <i>Value</i><br><i>Value</i> = SCPI.SOURce( <i>Ch</i> ).POWer.SPAN |
| Description | Sets the span value of the sweep range for the power sweep for channels 1 to 16 ( <i>Ch</i> ).           |
| Variable    |                                                                                                          |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Span value                                                                                                                                                                                                   |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the power range.                                                                                                                                                                         |
| Preset value | 15                                                                                                                                                                                                           |
| Unit         | dBm                                                                                                                                                                                                          |
| Resolution   | 0.05                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Pspan As Double SCPI.SOURce(1).POWer.SPAN = 10 Pspan = SCPI.SOURce(1).POWer.SPAN</pre>                                                                             |
| Related objects | <p>SCPI.SENSE(<i>Ch</i>).SWEep.TYPE on page 609</p> <p>SCPI.SOURce(<i>Ch</i>).POWer.ATTenuation.DATA on page 613</p> <p>SCPI.SOURce(<i>Ch</i>).POWer.CENTer on page 616</p> |
| Equivalent key  | <b>[Span]</b>                                                                                                                                                               |

## SCPI.SOURce(Ch).POWer.START

- Object type      Property
- Syntax            SCPI.SOURce(Ch).POWer.START = *Value*  
*Value* = SCPI.SOURce(Ch).POWer.START
- Description      Sets the start value of the sweep range for the power sweep for channels 1 to 16 (*Ch*).
- Variable

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Start value                                                                                                                                                                                                  |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the power range.                                                                                                                                                                         |
| Preset value | -15                                                                                                                                                                                                          |
| Unit         | dBm                                                                                                                                                                                                          |
| Resolution   | 0.05                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

- Examples            

```
Dim Pstart As Double
SCPI.SOURce(1).POWer.START = -10
Pstart = SCPI.SOURce(1).POWer.START
```
- Related objects    SCPI.SENSE(Ch).SWEep.TYPE on page 609  
SCPI.SOURce(Ch).POWer.ATTenuation.DATA on page 613  
SCPI.SOURce(Ch).POWer.STOP on page 634
- Equivalent key    **[Start]**

## SCPI.SOURce(*Ch*).POWer.STOP

|             |                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                 |
| Syntax      | SCPI.SOURce( <i>Ch</i> ).POWer.STOP = <i>Value</i><br><i>Value</i> = SCPI.SOURce( <i>Ch</i> ).POWer.STOP |
| Description | Sets the stop value of the sweep range for the power sweep for channels 1 to 16 ( <i>Ch</i> ).           |
| Variable    |                                                                                                          |

|              | <i>Value</i>                                                                                                                                                                                                 |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description  | Stop value                                                                                                                                                                                                   |
| Data type    | Double precision floating point type (Double)                                                                                                                                                                |
| Range        | Varies depending on the power range.                                                                                                                                                                         |
| Preset value | 0                                                                                                                                                                                                            |
| Unit         | dBm                                                                                                                                                                                                          |
| Resolution   | 0.05                                                                                                                                                                                                         |
| Note         | If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set. |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Pstop As Double SCPI.SOURce(1).POWer.STOP = 10 Pstop = SCPI.SOURce(1).POWer.STOP</pre>                                                                            |
| Related objects | <p>SCPI.SENSE(<i>Ch</i>).SWEep.TYPE on page 609</p> <p>SCPI.SOURce(<i>Ch</i>).POWer.ATTenuation.DATA on page 613</p> <p>SCPI.SOURce(<i>Ch</i>).POWer.STARt on page 633</p> |
| Equivalent key  | <b>[Stop]</b>                                                                                                                                                              |

## SCPI.STATus.OPERation.CONDITION

Object type Property  
 Syntax *Value* = SCPI.STATus.OPERation.CONDITION  
 Description Reads out the value of the Operation Status Condition Register. (Read only)

### Variable

|             | <i>Value</i>                                     |
|-------------|--------------------------------------------------|
| Description | Value of the Operation Status Condition Register |
| Data type   | Long integer type (Long)                         |

Examples  

```
Dim Stat As Long
Stat = SCPI.STATus.OPERation.CONDITION
```

Related objects  
 SCPI.STATus.OPERation.NTRansition on page 636  
 SCPI.STATus.OPERation.PTRansition on page 637

Equivalent key No equivalent key is available on the front panel.

## SCPI.STATus.OPERation.ENABLE

Object type Property  
 Syntax SCPI.STATus.OPERation.ENABLE = *Value*  
*Value* = SCPI.STATus.OPERation.ENABLE  
 Description Sets the value of the Operation Status Enable Register.

### Variable

|              | <i>Value</i>                                               |
|--------------|------------------------------------------------------------|
| Description  | Value of the Operation Status Enable Register              |
| Data type    | Long integer type (Long)                                   |
| Range        | 0 to 65535                                                 |
| Preset value | 0                                                          |
| Note         | The bit 0 to 3, bit 6 to13 and bit 15 can not be set to 1. |

Examples  

```
Dim Stat As Long
SCPI.STATus.OPERation.ENABLE = 16
Stat = SCPI.STATus.OPERation.ENABLE
```

Related objects SCPI.IEEE4882.SRE on page 410

Equivalent key No equivalent key is available on the front panel.

## SCPI.STATUS.OPERation.EVENT

|             |                                                                         |
|-------------|-------------------------------------------------------------------------|
| Object type | Property                                                                |
| Syntax      | <i>Value</i> = SCPI.STATUS.OPERation.EVENT                              |
| Description | Reads out the value of the Operation Status Event Register. (Read only) |
| Variable    |                                                                         |

|             | <i>Value</i>                                 |
|-------------|----------------------------------------------|
| Description | Value of the Operation Status Event Register |
| Data type   | Long integer type (Long)                     |

**Examples**  

```
Dim Stat As Long
Stat = SCPI.STATUS.OPERation.EVENT
```

**Related objects**  
SCPI.IEEE4882.CLS on page 405  
SCPI.STATUS.OPERation.NTRansition on page 636  
SCPI.STATUS.OPERation.PTRansition on page 637

**Equivalent key**  
No equivalent key is available on the front panel.

## SCPI.STATUS.OPERation.NTRansition

|             |                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                             |
| Syntax      | SCPI.STATUS.OPERation.NTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATUS.OPERation.NTRansition |
| Description | Sets the value of negative transition filter of the Operation Status Register.                       |
| Variable    |                                                                                                      |

|              | <i>Value</i>                                                |
|--------------|-------------------------------------------------------------|
| Description  | Value of the negative transition filter                     |
| Data type    | Long integer type (Long)                                    |
| Range        | 0 to 65535                                                  |
| Preset value | 0                                                           |
| Note         | The bit 0 to 3, bit 6 to 13 and bit 15 can not be set to 1. |

**Examples**  

```
Dim Stat As Long
SCPI.STATUS.OPERation.NTRansition = 16
Stat = SCPI.STATUS.OPERation.NTRansition
```

**Related objects**  
SCPI.STATUS.OPERation.EVENT on page 636  
SCPI.STATUS.OPERation.PTRansition on page 637

**Equivalent key**  
No equivalent key is available on the front panel.

## SCPI.STATus.OPERation.PTRansition

- Object type** Property
- Syntax** SCPI.STATus.OPERation.PTRansition = *Value*  
*Value* = SCPI.STATus.OPERation.PTRansition
- Description** Sets the value of positive transition filter of the Operation Status Register.
- Variable**

|              | <i>Value</i>                                               |
|--------------|------------------------------------------------------------|
| Description  | Value of the positive transition filter                    |
| Data type    | Long integer type (Long)                                   |
| Range        | 0 to 65535                                                 |
| Preset value | 16432                                                      |
| Note         | The bit 0 to 3, bit 6 to13 and bit 15 can not be set to 1. |

- Examples**
- ```
Dim Stat As Long
SCPI.STATus.OPERation.PTRansition = 0
Stat = SCPI.STATus.OPERation.PTRansition
```
- Related objects** SCPI.STATus.OPERation.EVENT on page 636
SCPI.STATus.OPERation.NTRansition on page 636
- Equivalent key** No equivalent key is available on the front panel.

SCPI.STATus.PRESet

- Object type** Method
- Syntax** SCPI.STATus.PRESet
- Description** Initialize the Operation Status Register, Questionable Status Register, Questionable Limit Status Register, Questionable Limit Extra Status Register, Questionable Limit Chnel{1-16} Status Register, and Questionable Limit Chnel{1-16} Extra Status Register. (No read)
- Examples**
- ```
SCPI.STATus.PRESet
```
- Equivalent key** No equivalent key is available on the front panel.

**SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(*Ch*).CONDITION**

|             |                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                           |
| Syntax      | <i>Value</i> = SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL( <i>Ch</i> ).CONDITION                                                      |
| Description | Reads out the value of the Questionable Bandwidth Limit Channel Status Condition Register of channel 1 to channel 16 . (Read only) |
| Variable    |                                                                                                                                    |

|             | <i>Value</i>                                                                    |
|-------------|---------------------------------------------------------------------------------|
| Description | The value of the Questionable Bandwidth Limit Channel Status Condition Register |
| Data type   | Long integer type (Long)                                                        |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long Stat = SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(1).CONDITION</pre>                                                                             |
| Related objects | <p>SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(<i>Ch</i>).NTRANSITION on page 646</p> <p>SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(<i>Ch</i>).PTRANSITION on page 647</p> |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                  |

**SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).ECHannel.CONDITION**

|             |                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                             |
| Syntax      | <i>Value</i> = SCPI.STATus.QUEStionable.BLIMit.CHANnel( <i>Ch</i> ).ECHannel.CONDITION                                               |
| Description | Reads out the value of the Questionable Bandwidth Limit Channel Extra Status Event Register of channel 1 to channel 16 . (Read only) |
| Variable    |                                                                                                                                      |

|             | <i>Value</i>                                                                      |
|-------------|-----------------------------------------------------------------------------------|
| Description | The value of the Questionable Bandwidth Limit Channel Extra Status Event Register |
| Data type   | Long integer type (Long)                                                          |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long Stat = SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).ECHannel.CONDITION</pre>                                                                                      |
| Related objects | <p>SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).ECHannel.NTRansition on page 642</p> <p>SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).ECHannel.PTRansition on page 643</p> |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                                    |

**SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).ECHannel.ENABLE**

|             |                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                   |
| Syntax      | SCPI.STATus.QUEStionable.BLIMit.CHANnel( <i>Ch</i> ).ECHannel.ENABLE = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.BLIMit.CHANnel( <i>Ch</i> ).ECHannel.ENABLE |
| Description | Sets the value of the Questionable Bandwidth Limit Channel Extra Status Enable Register of channel 1 to channel 16 .                                                       |

## Variable

|              | <i>Value</i>                                                                  |
|--------------|-------------------------------------------------------------------------------|
| Description  | Value of the enable register                                                  |
| Data type    | Long integer type (Long)                                                      |
| Range        | 0 to 65535                                                                    |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces. |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                        |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

## Examples

```
Dim Stat As Long
SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).ECHannel.ENABLE = 6
Stat = SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).ECHannel.ENABLE
```

Related objects SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).ENABLE on page 644

Equivalent key No equivalent key is available on the front panel.

## SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.EVENT

|             |                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                             |
| Syntax      | <i>Value</i> = SCPI.STATus.QUEStionable.BLIMit.CHANnel( <i>Ch</i> ).ECHannel.EVENT                                                   |
| Description | Reads out the value of the Questionable Bandwidth Limit Channel Extra Status Event Register of channel 1 to channel 16 . (Read only) |
| Variable    |                                                                                                                                      |

|             | <i>Value</i>                                                                      |
|-------------|-----------------------------------------------------------------------------------|
| Description | the value of the Questionable Bandwidth Limit Channel Extra Status Event Register |
| Data type   | Long integer type (Long)                                                          |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long Stat = SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).ECHannel.EVENT</pre> |
| Related objects | SCPI.IEEE4882.CLS on page 405                                                                |
| Equivalent key  | No equivalent key is available on the front panel.                                           |

**SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).ECHannel.NTRansition**

|             |                                                                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                                             |
| Syntax      | SCPI.STATus.QUEStionable.BLIMit.CHANnel( <i>Ch</i> ).ECHannel.NTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.BLIMit.CHANnel( <i>Ch</i> ).ECHannel.NTRansition |
| Description | Sets the value of the negative transition filter of the Questionable Bandwidth Limit Channel Extra Status Register of channel 1 to channel 16 .                                      |

## Variable

|              | <i>Value</i>                                                                                                  |
|--------------|---------------------------------------------------------------------------------------------------------------|
| Description  | The value of the negative transition filter of the Questionable Bandwidth Limit Channel Extra Status Register |
| Data type    | Long integer type (Long)                                                                                      |
| Range        | 0 to 65535                                                                                                    |
| Preset value | 0                                                                                                             |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                                                        |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                                                                                                                 |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).ECHannel.NTRansition = 6 Stat = SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).ECHannel.NTRansition</pre>          |
| Related objects | <p>SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).ECHannel.EVENT on page 641</p> <p>SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).ECHannel.PTRansition on page 643</p> |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                                              |

## SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.PTRansition

- Object type** Property
- Syntax** SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).ECHannel.PTRansition = *Value*  
*Value* = SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).ECHannel.PTRansition
- Description** Sets the value of the positive transition filter of the Questionable Bandwidth Limit Channel Extra Status Register of channel 1 to channel 16 .
- Variable**

|              | <i>Value</i>                                                                                                  |
|--------------|---------------------------------------------------------------------------------------------------------------|
| Description  | The value of the positive transition filter of the Questionable Bandwidth Limit Channel Extra Status Register |
| Data type    | Long integer type (Long)                                                                                      |
| Range        | 0 to 65535                                                                                                    |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces.                                 |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                                                        |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim Stat As Long
SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).ECHannel.PTRansition = 6
Stat =
SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).ECHannel.PTRansition
```
- Related objects** SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.EVENT on page 641
SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.NTRansition on page 642
- Equivalent key** No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(*Ch*).ENABLE

Object type	Property
Syntax	SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(<i>Ch</i>).ENABLE = <i>Value</i> <i>Value</i> = SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(<i>Ch</i>).ENABLE
Description	Sets the value of the Questionable Bandwidth Limit Channel Status Enable Register of channel 1 to channel 16 .
Variable	

	<i>Value</i>
Description	The value of the Questionable Bandwidth Limit Channel Status Enable Register
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 15 cannot be set to 1.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Stat As Long SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(1).ENABLE = 16 Stat = SCPI.STATUS.QUESTIONABLE.BLIMIT.CHANNEL(1).ENABLE</pre>
Related objects	SCPI.STATUS.QUESTIONABLE.BLIMIT.ENABLE on page 652
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).EVENT

- Object type** Property
- Syntax** *Value* = SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).EVENT
- Description** Reads out the value of the Questionable Bandwidth Limit Channel Status Event Register of channel 1 to channel 16 . (Read only)

Variable

	<i>Value</i>
Description	The value of the Questionable Bandwidth Limit Channel Status Event Register
Data type	Long integer type (Long)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**

```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).EVENT
```
- Related objects** SCPI.IEEE4882.CLS on page 405
- Equivalent key** No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).NTRansition

Object type	Property
Syntax	SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).NTRansition = <i>Value</i> <i>Value</i> = SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).NTRansition
Description	Sets the value of the negative transition filter of the Questionable Bandwidth Limit Channel Status Register of channel 1 to channel 16 .
Variable	

	<i>Value</i>
Description	The value of the negative transition filter of the Questionable Bandwidth Limit Channel Status Register
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	0
Note	Bits 15 cannot be set to 1.

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples	<pre>Dim Stat As Long SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).NTRansition = 16 Stat = SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).NTRansition</pre>
Related objects	<p>SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).EVENT on page 645</p> <p>SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).PTRansition on page 647</p>
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.BLIMit.CHANnel(*Ch*).PTRansition

Object type	Property
Syntax	SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).PTRansition = <i>Value</i> <i>Value</i> = SCPI.STATus.QUEStionable.BLIMit.CHANnel(<i>Ch</i>).PTRansition
Description	Sets the value of the positive transition filter of the Questionable Bandwidth Limit Channel Status Register of channel 1 to channel 16 .
Variable	

	<i>Value</i>
Description	The value of the positive transition filter of the Questionable Bandwidth Limit Channel Status Register
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 15 cannot be set to 1.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Stat As Long SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).PTRansition = 0 Stat = SCPI.STATus.QUEStionable.BLIMit.CHANnel(1).PTRansition</pre>
Related objects	SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).EVENTt on page 645 SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).NTRansition on page 646
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.BLIMIT.CONDITION

Object type Property

Syntax *Value* = SCPI.STATUS.QUESTIONABLE.BLIMIT.CONDITION

Description Reads out the value of the Questionable Bandwidth Limit Status Condition Register. (Read only)

Variable

	<i>Value</i>
Description	The value of the Questionable Bandwidth Limit Status Condition Register.
Data type	Long integer type (Long)

Examples

```
Dim Stat As Long
Stat = SCPI.STATUS.QUESTIONABLE.BLIMIT.CONDITION
```

Related objects SCPI.STATUS.QUESTIONABLE.BLIMIT.NTRANSITION on page 653
SCPI.STATUS.QUESTIONABLE.BLIMIT.PTRANSITION on page 654

Equivalent key No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.CONDITION

Object type Property

Syntax *Value* = SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.CONDITION

Description Reads out the value of the Questionable Bandwidth Limit Extra Status Condition Register. (Read only)

Variable

	<i>Value</i>
Description	The value of the Questionable Bandwidth Limit Extra Status Condition Register.
Data type	Long integer type (Long)

Examples

```
Dim Stat As Long
Stat = SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.CONDITION
```

Related objects SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.NTRANSITION on page 650
SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.PTRANSITION on page 651

Equivalent key No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.BLIMit.ELIMit.ENABLE

Object type Property

Syntax SCPI.STATus.QUEStionable.BLIMit.ELIMit.ENABLE = *Value*
Value = SCPI.STATus.QUEStionable.BLIMit.ELIMit.ENABLE

Description Sets the value of the Questionable Bandwidth Limit Extra Status Enable Register.

Variable

	<i>Value</i>
Description	The value of the Questionable Bandwidth Limit Extra Status Enable Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 0 and 3 to 15 cannot be set to 1.

Examples

```
Dim Stat As Long
SCPI.STATus.QUEStionable.BLIMit.ELIMit.ENABLE = 6
Stat = SCPI.STATus.QUEStionable.BLIMit.ELIMit.ENABLE
```

Related objects SCPI.STATus.QUEStionable.BLIMit.ENABLE on page 652

Equivalent key No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.BLIMit.ELIMit.EVENT

Object type Property

Syntax *Value* = SCPI.STATus.QUEStionable.BLIMit.ELIMit.EVENT

Description Reads out the value of the Questionable Bandwidth Limit Extra Status Event Register.
 (Read only)

Variable

	<i>Value</i>
Description	The value of the Questionable Bandwidth Limit Extra Status Event Register.
Data type	Long integer type (Long)

Examples

```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.BLIMit.ELIMit.EVENT
```

Related objects SCPI.IEEE4882.CLS on page 405

Equivalent key No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.NTRANSITION

Object type

Property

Syntax

SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.NTRANSITION = *Value**Value* = SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.NTRANSITION

Description

Sets the value of the negative transition filter of the Questionable Bandwidth Limit Extra Status Register.

Variable

	<i>Value</i>
Description	The value of the negative transition filter of the Questionable Bandwidth Limit Extra Status Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	0
Note	Bits 0 and 3 to 15 cannot be set to 1.

Examples

```
Dim Stat As Long
SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.NTRANSITION = 6
Stat = SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.NTRANSITION
```

Related objects

SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.EVENT on page 649

SCPI.STATUS.QUESTIONABLE.BLIMIT.ELIMIT.PTRANSITION on page 651

Equivalent key

No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.BLIMit.ELIMit.PTRansition

Object type Property

Syntax SCPI.STATus.QUEStionable.BLIMit.ELIMit.PTRansition = *Value*
Value = SCPI.STATus.QUEStionable.BLIMit.ELIMit.PTRansition

Description Sets the value of the positive transition filter of the Questionable Bandwidth Limit Extra Status Register.

Variable

	<i>Value</i>
Description	The value of the positive transition filter of the Questionable Bandwidth Limit Extra Status Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 0 and 3 to 15 cannot be set to 1.

Examples

```
Dim Stat As Long
SCPI.STATus.QUEStionable.BLIMit.ELIMit.PTRansition = 6
Stat = SCPI.STATus.QUEStionable.BLIMit.ELIMit.PTRansition
```

Related objects SCPI.STATus.QUEStionable.BLIMit.ELIMit.EVENT on page 649
 SCPI.STATus.QUEStionable.BLIMit.ELIMit.NTRansition on page 650

Equivalent key No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.BLIMIT.ENABLE

Object type	Property
Syntax	SCPI.STATUS.QUESTIONABLE.BLIMIT.ENABLE = <i>Value</i> <i>Value</i> = SCPI.STATUS.QUESTIONABLE.BLIMIT.ENABLE
Description	Sets the value of the Questionable Bandwidth Limit Status Enable Register.
Variable	

	<i>Value</i>
Description	The value of the Questionable Bandwidth Limit Status Enable Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 15 cannot be set to 1.

Examples

```
Dim Stat As Long
SCPI.STATUS.QUESTIONABLE.BLIMIT.ENABLE = 16
Stat = SCPI.STATUS.QUESTIONABLE.BLIMIT.ENABLE
```

Related objects SCPI.STATUS.QUESTIONABLE.ENABLE on page 656

Equivalent key No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.BLIMIT.EVENT

Object type	Property
Syntax	<i>Value</i> = SCPI.STATUS.QUESTIONABLE.BLIMIT.EVENT
Description	Reads out the value of the Questionable Bandwidth Limit Status Event Register. (Read only)
Variable	

	<i>Value</i>
Description	The value of the Questionable Bandwidth Limit Status Event Register.
Data type	Long integer type (Long)

Examples

```
Dim Stat As Long
Stat = SCPI.STATUS.QUESTIONABLE.BLIMIT.EVENT
```

Related objects SCPI.IEEE4882.CLS on page 405

Equivalent key No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.BLIMit.NTRansition

Object type	Property
Syntax	SCPI.STATus.QUEStionable.BLIMit.NTRansition = <i>Value</i> <i>Value</i> = SCPI.STATus.QUEStionable.BLIMit.NTRansition
Description	Sets the value of the negative transition filter of the Questionable Bandwidth Limit Status Register.
Variable	

	<i>Value</i>
Description	The value of the negative transition filter of the Questionable Bandwidth Limit Status Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	0
Note	Bits 0 and 3 to 15 cannot be set to 1.

Examples	<pre>Dim Stat As Long SCPI.STATus.QUEStionable.BLIMit.NTRansition = 6 Stat = SCPI.STATus.QUEStionable.BLIMit.NTRansition</pre>
Related objects	<p>SCPI.STATus.QUEStionable.BLIMit.EVENT on page 652</p> <p>SCPI.STATus.QUEStionable.BLIMit.PTRansition on page 654</p>
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.BLIMIT.PTRANSITION

Object type	Property
Syntax	SCPI.STATUS.QUESTIONABLE.BLIMIT.PTRANSITION = <i>Value</i> <i>Value</i> = SCPI.STATUS.QUESTIONABLE.BLIMIT.PTRANSITION
Description	Sets the value of the positive transition filter of the Questionable Bandwidth Limit Status Register.

Variable

	<i>Value</i>
Description	The value of the positive transition filter of the Questionable Bandwidth Limit Status Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 15 cannot be set to 1.

Examples

```
Dim Stat As Long
SCPI.STATUS.QUESTIONABLE.BLIMIT.PTRANSITION = 6
Stat = SCPI.STATUS.QUESTIONABLE.BLIMIT.PTRANSITION
```

Related objects

SCPI.STATUS.QUESTIONABLE.BLIMIT.EVENT on page 652
SCPI.STATUS.QUESTIONABLE.BLIMIT.NTRANSITION on page 653

Equivalent key

No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.CONDiTion

- Object type Property
- Syntax *Value* = SCPI.STATus.QUEStionable.CONDiTion
- Description Reads out the value of the Questionable Status Condition Register. (Read only)

Variable

	<i>Value</i>
Description	Value of the Questionable Status Condition Register
Data type	Long integer type (Long)

Examples

```
Dim Stat As Long  
Stat = SCPI.STATus.QUEStionable.CONDiTion
```

- Related objects SCPI.STATus.QUEStionable.NTRansition on page 674
SCPI.STATus.QUEStionable.PTRansition on page 675

- Equivalent key No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.ENABLE

Object type Property

Syntax SCPI.STATUS.QUESTIONABLE.ENABLE = *Value*
Value = SCPI.STATUS.QUESTIONABLE.ENABLE

Description Sets the value of the Questionable Status Enable Register.

Variable

	<i>Value</i>
Description	Value of the Questionable Status Enable Register
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	0
Note	The bit 0 to 9 and bit 11 to 15 can not be set to 1.

Examples

```
Dim Stat As Long
SCPI.STATUS.QUESTIONABLE.ENABLE = 6
Stat = SCPI.STATUS.QUESTIONABLE.ENABLE
```

Related objects SCPI.IEEE4882.SRE on page 410

Equivalent key No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.EVENT

- Object type Property
- Syntax *Value* = SCPI.STATus.QUEStionable.EVENT
- Description Reads out the value of the Questionable Status Event Register. (Read only)
- Variable

	<i>Value</i>
Description	Value of the Questionable Status Event Register
Data type	Long integer type (Long)

- Examples
- ```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.EVENT
```

- Related objects
- SCPI.IEEE4882.CLS on page 405
  - SCPI.STATus.QUEStionable.NTRansition on page 674
  - SCPI.STATus.QUEStionable.PTRansition on page 675

- Equivalent key No equivalent key is available on the front panel.

## SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*). **CONDition**

- Object type Property
- Syntax *Value* = SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*).CONDition
- Description Reads out the value of the Questionable Limit Channel Status Condition Register of channels 1 to 16 (*Ch*). (Read only)
- Variable

|             | <i>Value</i>                                                      |
|-------------|-------------------------------------------------------------------|
| Description | Value of the Questionable Limit Channel Status Condition Register |
| Data type   | Long integer type (Long)                                          |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

- Examples
- ```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).CONDition
```
- Related objects
- SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*). NTRansition on page 665
 - SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*). PTRansition on page 666
- Equivalent key No equivalent key is available on the front panel.

**SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*).
ECHannel.CONDition**

Object type	Property
Syntax	<i>Value</i> = SCPI.STATus.QUEStionable.LIMit.CHANnel(<i>Ch</i>).CONDition
Description	Reads out the value of the Questionable Limit Channel Extra Status Condition Register of channels 1 to 16 (<i>Ch</i>). (Read only)

Variable

	<i>Value</i>
Description	Value of the Questionable Limit Channel Extra Status Condition Register
Data type	Long integer type (Long)

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ECHannel.CONDition
```

Related objects

SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*). ECHannel.NTRansition on page 661

SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*). ECHannel.PTRansition on page 662

Equivalent key

No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). ECHannel.ENABLE

- Object type** Property
- Syntax** SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.ENABLE = *Value*
Value = SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.ENABLE
- Description** Sets the value of the Questionable Limit Channel Extra Status Enable Register of channels 1 to 16 (*Ch*).
- Variable**

	<i>Value</i>
Description	Value of the Questionable Limit Channel Extra Status Enable Register
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 0 and 3 to 15 cannot be set to 1.

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim Stat As Long
SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ECHannel.ENABLE = 6
Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ECHannel.ENABLE
```
- Related objects** SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ENABLE on page 663
- Equivalent key** No equivalent key is available on the front panel.

**SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*).  
ECHannel.EVENT**

|             |                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                         |
| Syntax      | <i>Value</i> = SCPI.STATus.QUEStionable.LIMit.CHANnel( <i>Ch</i> ).ECHannel.EVENT                                                |
| Description | Reads out the value of the Questionable Limit Channel Extra Status Event Register of channels 1 to 16 ( <i>Ch</i> ). (Read only) |
| Variable    |                                                                                                                                  |

|             | <i>Value</i>                                                        |
|-------------|---------------------------------------------------------------------|
| Description | Value of the Questionable Limit Channel Extra Status Event Register |
| Data type   | Long integer type (Long)                                            |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ECHannel.EVENT</pre> |
| Related objects | SCPI.IEEE4882.CLS on page 405                                                               |
| Equivalent key  | No equivalent key is available on the front panel.                                          |

## **SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). ECHannel.NTRansition**

**Object type** Property

**Syntax** SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.NTRansition = *Value*  
*Value* = SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.NTRansition

**Description** Sets the value of the negative transition filter of the Questionable Limit Channel Extra Status Register of channels 1 to 16 (*Ch*).

**Variable**

|              | <i>Value</i>                            |
|--------------|-----------------------------------------|
| Description  | Value of the negative transition filter |
| Data type    | Long integer type (Long)                |
| Range        | 0 to 65535                              |
| Preset value | 0                                       |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.  |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

**Examples** Dim Stat As Long  
 SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ECHannel.NTRansition = 6  
 Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ECHannel.NTRansition

**Related objects** SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). ECHannel.EVENT on page 660  
 SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). ECHannel.PTRansition on page 662

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). ECHannel.PTRansition

|             |                                                                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                         |
| Syntax      | SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.PTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHannel.PTRansition |
| Description | Sets the value of the positive transition filter of the Questionable Limit Channel Extra Status Register of channels 1 to 16 ( <i>Ch</i> ).                      |
| Variable    |                                                                                                                                                                  |

|              | <i>Value</i>                                                                  |
|--------------|-------------------------------------------------------------------------------|
| Description  | Value of the positive transition filter                                       |
| Data type    | Long integer type (Long)                                                      |
| Range        | 0 to 65535                                                                    |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces. |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                        |

For information on the variable (*Ch*), refer to Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim Stat As Long<br>SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ECHannel.PTRansition = 6<br>Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ECHannel.PTRansition |
| Related objects | SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). ECHannel.EVENT on page 660<br>SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). ECHannel.NTRansition on page 661          |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                              |

## SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*).ENABLE

|             |                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                               |
| Syntax      | SCPI.STATus.QUEStionable.LIMit.CHANnel( <i>Ch</i> ).ENABLE = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.LIMit.CHANnel( <i>Ch</i> ).ENABLE |
| Description | Sets the value of the Questionable Limit Channel Status Enable Register of channels 1 to 16 ( <i>Ch</i> ).                                             |
| Variable    |                                                                                                                                                        |

|              | <i>Value</i>                                                              |
|--------------|---------------------------------------------------------------------------|
| Description  | Value of the Questionable Limit Channel Status Enable Register            |
| Data type    | Long integer type (Long)                                                  |
| Range        | 0 to 65535                                                                |
| Preset value | Varies depending on the upper limit setting for the channel/trace number. |
| Note         | The bit 15 can not be set to 1.                                           |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ENABLE = 16 Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).ENABLE</pre> |
| Related objects | SCPI.STATus.QUEStionable.LIMit.ENABLE on page 671                                                                                         |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                        |

**SCPI.STATUS.QUESTIONABLE.LIMIT.CHANNEL(*Ch*).EVENT**

|             |                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                   |
| Syntax      | <i>Value</i> = SCPI.STATUS.QUESTIONABLE.LIMIT.CHANNEL( <i>Ch</i> ).EVENT                                                   |
| Description | Reads out the value of the Questionable Limit Channel Status Event Register of channels 1 to 16 ( <i>Ch</i> ). (Read only) |

## Variable

|             | <i>Value</i>                                                                           |
|-------------|----------------------------------------------------------------------------------------|
| Description | Value of the Questionable Limit Channel Status Event Register of the specified channel |
| Data type   | Long integer type (Long)                                                               |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

## Examples

```
Dim Stat As Long
Stat = SCPI.STATUS.QUESTIONABLE.LIMIT.CHANNEL(1).EVENT
```

Related objects SCPI.IEEE4882.CLS on page 405

Equivalent key No equivalent key is available on the front panel.

## SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). NTRansition

|             |                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                       |
| Syntax      | SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).NTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).NTRansition |
| Description | Sets the value of the negative transition filter of the Questionable Limit Status Register of channels 1 to 16 ( <i>Ch</i> ).                  |
| Variable    |                                                                                                                                                |

|              | <i>Value</i>                            |
|--------------|-----------------------------------------|
| Description  | Value of the negative transition filter |
| Data type    | Long integer type (Long)                |
| Range        | 0 to 65535                              |
| Preset value | 0                                       |
| Note         | The bit 15 can not be set to 1.         |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATus.QUEStionable.LIMit.CHANnel(1).NTRansition = 16 Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).NTRansition</pre> |
| Related objects | SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).EVENT on page 664<br>SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch). PTRansition on page 666                 |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                  |

**SCPI.STATus.QUEStionable.LIMit.CHANnel(*Ch*).  
PTRansition**

|             |                                                                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                         |
| Syntax      | SCPI.STATus.QUEStionable.LIMit.CHANnel( <i>Ch</i> ).PTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.LIMit.CHANnel( <i>Ch</i> ).PTRansition |
| Description | Sets the value of the positive transition filter of the Questionable Limit Channel Status Register of channels 1 to 16 ( <i>Ch</i> ).                            |

## Variable

|              | <i>Value</i>                                                              |
|--------------|---------------------------------------------------------------------------|
| Description  | Value of the positive transition filter                                   |
| Data type    | Long integer type (Long)                                                  |
| Range        | 0 to 65535                                                                |
| Preset value | Varies depending on the upper limit setting for the channel/trace number. |
| Note         | The bit 15 can not be set to 1.                                           |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATus.QUEStionable.LIMit.CHANnel(1).PTRansition = 0 Stat = SCPI.STATus.QUEStionable.LIMit.CHANnel(1).PTRansition</pre>           |
| Related objects | <p>SCPI.STATus.QUEStionable.LIMit.CHANnel(<i>Ch</i>).EVENT on page 664</p> <p>SCPI.STATus.QUEStionable.LIMit.CHANnel(<i>Ch</i>). NTRansition on page 665</p> |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                           |

## SCPI.STATus.QUEStionable.LIMit.CONDiTion

- Object type** Property
- Syntax** *Value* = SCPI.STATus.QUEStionable.LIMit.CONDiTion
- Description** Reads out the value of the Questionable Limit Status Condition Register. (Read only)
- Variable**

|             | <i>Value</i>                                              |
|-------------|-----------------------------------------------------------|
| Description | Value of the Questionable Limit Status Condition Register |
| Data type   | Long integer type (Long)                                  |

- Examples**
- ```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.LIMit.CONDiTion
```
- Related objects**
- SCPI.STATus.QUEStionable.LIMit.NTRansition on page 672
 - SCPI.STATus.QUEStionable.LIMit.PTRansition on page 673
- Equivalent key** No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.LIMit.ELIMit.CONDiTion

- Object type** Property
- Syntax** *Value* = SCPI.STATus.QUEStionable.LIMit.ELIMit.CONDiTion
- Description** Reads out the value of the Questionable Limit Extra Status Condition Register. (Read only)
- Variable**

	<i>Value</i>
Description	Value of the Questionable Limit Extra Status Condition Register
Data type	Long integer type (Long)

- Examples**
- ```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.LIMit.ELIMit.CONDiTion
```
- Related objects**
- SCPI.STATus.QUEStionable.LIMit.ELIMit.NTRansition on page 669
  - SCPI.STATus.QUEStionable.LIMit.ELIMit.PTRansition on page 670
- Equivalent key** No equivalent key is available on the front panel.

## **SCPI.STATUS.QUESTIONABLE.LIMIT.ELIMIT.ENABLE**

|             |                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                   |
| Syntax      | SCPI.STATUS.QUESTIONABLE.LIMIT.ELIMIT.ENABLE = <i>Value</i><br><i>Value</i> = SCPI.STATUS.QUESTIONABLE.LIMIT.ELIMIT.ENABLE |
| Description | Sets the value of the Questionable Limit Extra Status Enable Register.                                                     |
| Variable    |                                                                                                                            |

|              | <i>Value</i>                                                                  |
|--------------|-------------------------------------------------------------------------------|
| Description  | Value of the Questionable Limit Extra Status Enable Register                  |
| Data type    | Long integer type (Long)                                                      |
| Range        | 0 to 65535                                                                    |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces. |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                        |

|          |                                                                                                                                  |
|----------|----------------------------------------------------------------------------------------------------------------------------------|
| Examples | <pre>Dim Stat As Long SCPI.STATUS.QUESTIONABLE.LIMIT.ELIMIT.ENABLE = 6 Stat = SCPI.STATUS.QUESTIONABLE.LIMIT.ELIMIT.ENABLE</pre> |
|----------|----------------------------------------------------------------------------------------------------------------------------------|

|                 |                                                   |
|-----------------|---------------------------------------------------|
| Related objects | SCPI.STATUS.QUESTIONABLE.LIMIT.ENABLE on page 671 |
|-----------------|---------------------------------------------------|

|                |                                                    |
|----------------|----------------------------------------------------|
| Equivalent key | No equivalent key is available on the front panel. |
|----------------|----------------------------------------------------|

## **SCPI.STATUS.QUESTIONABLE.LIMIT.ELIMIT.EVENT**

|             |                                                                                        |
|-------------|----------------------------------------------------------------------------------------|
| Object type | Property                                                                               |
| Syntax      | <i>Value</i> = SCPI.STATUS.QUESTIONABLE.LIMIT.ELIMIT.EVENT                             |
| Description | Reads out the value of the Questionable Limit Extra Status Event Register. (Read only) |
| Variable    |                                                                                        |

|             | <i>Value</i>                                                |
|-------------|-------------------------------------------------------------|
| Description | Value of the Questionable Limit Extra Status Event Register |
| Data type   | Long integer type (Long)                                    |

|          |                                                                                |
|----------|--------------------------------------------------------------------------------|
| Examples | <pre>Dim Stat As Long Stat = SCPI.STATUS.QUESTIONABLE.LIMIT.ELIMIT.EVENT</pre> |
|----------|--------------------------------------------------------------------------------|

|                 |                               |
|-----------------|-------------------------------|
| Related objects | SCPI.IEEE4882.CLS on page 405 |
|-----------------|-------------------------------|

|                |                                                    |
|----------------|----------------------------------------------------|
| Equivalent key | No equivalent key is available on the front panel. |
|----------------|----------------------------------------------------|

## SCPI.STATus.QUEStionable.LIMit.ELIMit.NTRansition

|             |                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                             |
| Syntax      | SCPI.STATus.QUEStionable.LIMit.ELIMit.NTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.LIMit.ELIMit.NTRansition |
| Description | Sets the value of the negative transition filter of the Questionable Limit Extra Status Register.                                    |

### Variable

|              | <i>Value</i>                            |
|--------------|-----------------------------------------|
| Description  | Value of the negative transition filter |
| Data type    | Long integer type (Long)                |
| Range        | 0 to 65535                              |
| Preset value | 0                                       |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.  |

|                 |                                                                                                                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATus.QUEStionable.LIMit.ELIMit.NTRansition = 6 Stat = SCPI.STATus.QUEStionable.LIMit.ELIMit.NTRansition</pre> |
| Related objects | SCPI.STATus.QUEStionable.LIMit.ELIMit.EVENT on page 668<br>SCPI.STATus.QUEStionable.LIMit.ELIMit.PTRansition on page 670                   |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                         |

## SCPI.STATus.QUEStionable.LIMit.ELIMit.PTRansition

|             |                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                             |
| Syntax      | SCPI.STATus.QUEStionable.LIMit.ELIMit.PTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.LIMit.ELIMit.PTRansition |
| Description | Sets the value of the positive transition filter of the Questionable Limit Extra Status Register.                                    |

### Variable

|              | <i>Value</i>                                                                  |
|--------------|-------------------------------------------------------------------------------|
| Description  | Value of the positive transition filter                                       |
| Data type    | Long integer type (Long)                                                      |
| Range        | 0 to 65535                                                                    |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces. |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                        |

**Examples**

```
Dim Stat As Long
SCPI.STATus.QUEStionable.LIMit.ELIMit.PTRansition = 6
Stat = SCPI.STATus.QUEStionable.LIMit.ELIMit.PTRansition
```

**Related objects**

SCPI.STATus.QUEStionable.LIMit.ELIMit.EVENT on page 668  
SCPI.STATus.QUEStionable.LIMit.ELIMit.NTRansition on page 669

**Equivalent key**

No equivalent key is available on the front panel.

## SCPI.STATus.QUEStionable.LIMit.ENABLE

- Object type** Property
- Syntax** SCPI.STATus.QUEStionable.LIMit.ENABLE = *Value*  
*Value* = SCPI.STATus.QUEStionable.LIMit.ENABLE
- Description** Sets the value of the Questionable Limit Status Enable Register.
- Variable**

|              | <i>Value</i>                                                              |
|--------------|---------------------------------------------------------------------------|
| Description  | Value of the Questionable Limit Status Enable Register                    |
| Data type    | Long integer type (Long)                                                  |
| Range        | 0 to 65535                                                                |
| Preset value | Varies depending on the upper limit setting for the channel/trace number. |
| Note         | The bit 15 can not be set to 1.                                           |

- Examples**
- ```
Dim Stat As Long
SCPI.STATus.QUEStionable.LIMit.ENABLE = 16
Stat = SCPI.STATus.QUEStionable.LIMit.ENABLE
```

- Related objects** SCPI.STATus.QUEStionable.ENABLE on page 656
- Equivalent key** No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.LIMit.EVENT

- Object type** Property
- Syntax** *Value* = SCPI.STATus.QUEStionable.LIMit.EVENT
- Description** Reads out the value of the Questionable Limit Status Event Register. (Read only)
- Variable**

	<i>Value</i>
Description	Value of the Questionable Limit Status Event Register
Data type	Long integer type (Long)

- Examples**
- ```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.LIMit.EVENT
```

- Related objects** SCPI.IEEE4882.CLS on page 405
- Equivalent key** No equivalent key is available on the front panel.

## SCPI.STATUS.QUESTIONABLE.LIMIT.NTRANSITION

|             |                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                               |
| Syntax      | SCPI.STATUS.QUESTIONABLE.LIMIT.NTRANSITION = <i>Value</i><br><i>Value</i> = SCPI.STATUS.QUESTIONABLE.LIMIT.NTRANSITION |
| Description | Sets the value of negative transition filter of the Questionable Limit Status Register.                                |
| Variable    |                                                                                                                        |

|              | <i>Value</i>                            |
|--------------|-----------------------------------------|
| Description  | Value of the negative transition filter |
| Data type    | Long integer type (Long)                |
| Range        | 0 to 65535                              |
| Preset value | 0                                       |
| Note         | The bit 15 can not be set to 1.         |

|                 |                                                                                                                              |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATUS.QUESTIONABLE.LIMIT.NTRANSITION = 6 Stat = SCPI.STATUS.QUESTIONABLE.LIMIT.NTRANSITION</pre> |
| Related objects | SCPI.STATUS.QUESTIONABLE.LIMIT.EVENT on page 671<br>SCPI.STATUS.QUESTIONABLE.LIMIT.PTRANSITION on page 673                   |
| Equivalent key  | No equivalent key is available on the front panel.                                                                           |

## SCPI.STATus.QUEStionable.LIMit.PTRansition

|             |                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                               |
| Syntax      | SCPI.STATus.QUEStionable.LIMit.PTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.LIMit.PTRansition |
| Description | Sets the value of positive transition filter of the Questionable Limit Status Register.                                |
| Variable    |                                                                                                                        |

|              | <i>Value</i>                                                              |
|--------------|---------------------------------------------------------------------------|
| Description  | Value of the positive transition filter                                   |
| Data type    | Long integer type (Long)                                                  |
| Range        | 0 to 65535                                                                |
| Preset value | Varies depending on the upper limit setting for the channel/trace number. |
| Note         | The bit 15 can not be set to 1.                                           |

|                 |                                                                                                                              |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATus.QUEStionable.LIMit.PTRansition = 6 Stat = SCPI.STATus.QUEStionable.LIMit.PTRansition</pre> |
| Related objects | <p>SCPI.STATus.QUEStionable.LIMit.EVENT on page 671</p> <p>SCPI.STATus.QUEStionable.LIMit.NTRansition on page 672</p>        |
| Equivalent key  | No equivalent key is available on the front panel.                                                                           |

## SCPI.STATUS.QUESTIONABLE.NTRANSITION

|             |                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                   |
| Syntax      | SCPI.STATUS.QUESTIONABLE.NTRANSITION = <i>Value</i><br><i>Value</i> = SCPI.STATUS.QUESTIONABLE.NTRANSITION |
| Description | Sets the value of negative transition filter of the Questionable Status Register.                          |
| Variable    |                                                                                                            |

|              | <i>Value</i>                                         |
|--------------|------------------------------------------------------|
| Description  | Value of the negative transition filter              |
| Data type    | Long integer type (Long)                             |
| Range        | 0 to 65535                                           |
| Preset value | 0                                                    |
| Note         | The bit 0 to 9 and bit 11 to 15 can not be set to 1. |

|                 |                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATUS.QUESTIONABLE.NTRANSITION = 6 Stat = SCPI.STATUS.QUESTIONABLE.NTRANSITION</pre> |
| Related objects | SCPI.STATUS.QUESTIONABLE.EVENT on page 657<br>SCPI.STATUS.QUESTIONABLE.PTRANSITION on page 675                   |
| Equivalent key  | No equivalent key is available on the front panel.                                                               |

## SCPI.STATus.QUEStionable.PTRansition

- Object type** Property
- Syntax** SCPI.STATus.QUEStionable.PTRansition = *Value*  
*Value* = SCPI.STATus.QUEStionable.PTRansition
- Description** Sets the value of positive transition filter of the Questionable Status Register.
- Variable**

|              | <i>Value</i>                                         |
|--------------|------------------------------------------------------|
| Description  | Value of the positive transition filter              |
| Data type    | Long integer type (Long)                             |
| Range        | 0 to 65535                                           |
| Preset value | 1024                                                 |
| Note         | The bit 0 to 9 and bit 11 to 15 can not be set to 1. |

- Examples**
- ```
Dim Stat As Long
SCPI.STATus.QUEStionable.PTRansition = 6
Stat = SCPI.STATus.QUEStionable.PTRansition
```
- Related objects** SCPI.STATus.QUEStionable.EVENTt on page 657
SCPI.STATus.QUEStionable.NTRansition on page 674
- Equivalent key** No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).CONDition

Object type	Property
Syntax	<i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).CONDition
Description	Reads out the value of the Questionable Ripple Limit Channel Status Condition Register of channel 1 to channel 16 . (Read only)

Variable

	<i>Value</i>
Description	The value of the Questionable Ripple Limit Channel Status Condition Register.
Data type	Long integer type (Long)

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

Examples

```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).CONDition
```

Related objects

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).NTRansition on page 684
 SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).PTRansition on page 685

Equivalent key

No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).ECHannel.CONDITION

Object type	Property
Syntax	<i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.CONDITION
Description	Reads out the value of the Questionable Ripple Limit Channel Extra Status Condition Register of channel 1 to channel 16 . (Read only)
Variable	

	<i>Value</i>
Description	The value of the Questionable Ripple Limit Channel Extra Status Condition Register.
Data type	Long integer type (Long)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Stat As Long Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ECHannel.CONDITION</pre>
Related objects	<p>SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.NTRansition on page 680</p> <p>SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.PTRansition on page 681</p>
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).ECHannel.ENABLE

Object type	Property
Syntax	SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.ENABLE = <i>Value</i> <i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.ENABLE
Description	Sets the value of the Questionable Ripple Limit Channel Extra Status Enable Register of channel 1 to channel 16 .

Variable

	<i>Value</i>
Description	The value of the Questionable Ripple Limit Channel Extra Status Enable Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 0 and 3 to 15 cannot be set to 1.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples

```
Dim Stat As Long
SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ECHannel.ENABLE = 6
Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ECHannel.ENABLE
```

Related objects SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).ENABLE on page 682

Equivalent key No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).ECHannel.EVENT

Object type	Property
Syntax	<i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.EVENT
Description	Reads out the value of the Questionable Ripple Limit Channel Extra Status Event Register of channel 1 to channel 16 . (Read only)
Variable	

	<i>Value</i>
Description	The value of the Questionable Ripple Limit Channel Extra Status Event Register.
Data type	Long integer type (Long)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Stat As Long Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ECHannel.EVENT</pre>
Related objects	SCPI.IEEE4882.CLS on page 405
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).ECHannel.NTRansition

Object type	Property
Syntax	SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.NTRansition = <i>Value</i> <i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.NTRansition
Description	Sets the value of the negative transition filter of the Questionable Ripple Limit Channel Extra Status Register of channel 1 to channel 16 .

Variable

	<i>Value</i>
Description	The value of the negative transition filter of the Questionable Ripple Limit Channel Extra Status Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	0
Note	Bits 0 and 3 to 15 cannot be set to 1.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Stat As Long SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ECHannel.NTRansition = 6 Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ECHannel.NTRansition</pre>
Related objects	<p>SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.EVENT on page 679</p> <p>SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.PTRansition on page 681</p>
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).ECHannel.PTRansition

Object type	Property
Syntax	SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.PTRansition = <i>Value</i> <i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ECHannel.PTRansition
Description	Sets the value of the positive transition filter of the Questionable Ripple Limit Channel Extra Status Register of channel 1 to channel 16 .
Variable	

	<i>Value</i>
Description	The value of the positive transition filter of the Questionable Ripple Limit Channel Extra Status Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 0 and 3 to 15 cannot be set to 1.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Stat As Long SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ECHannel.PTRansition = 6 Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ECHannel.PTRansition</pre>
Related objects	<p>SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.EVENT on page 679</p> <p>SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.NTRansition on page 680</p>
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).ENABLE

Object type	Property
Syntax	SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ENABLE = <i>Value</i> <i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel(<i>Ch</i>).ENABLE
Description	Sets the value of the Questionable Ripple Limit Channel Status Enable Register of channel 1 to channel 16 .
Variable	

	<i>Value</i>
Description	The value of the Questionable Ripple Limit Channel Status Enable Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits cannot be set to 1.

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

Examples	<pre>Dim Stat As Long SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ENABLE = 16 Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).ENABLE</pre>
Related objects	SCPI.STATus.QUEStionable.RLIMit.ENABLE on page 690
Equivalent key	No equivalent key is available on the front panel.

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).EVENT

- Object type** Property
- Syntax** *Value* = SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).EVENT
- Description** Reads out the value of the Questionable Ripple Limit Channel Status Event Register of channel 1 to channel 16 . (Read only)

Variable

	<i>Value</i>
Description	The value of the Questionable Ripple Limit Channel Status Event Register.
Data type	Long integer type (Long)

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

- Examples**
- ```
Dim Stat As Long
Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).EVENT
```
- Related objects** SCPI.IEEE4882.CLS on page 405
- Equivalent key** No equivalent key is available on the front panel.

**SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).NTRan  
sition**

|             |                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                           |
| Syntax      | SCPI.STATus.QUEStionable.RLIMit.CHANnel( <i>Ch</i> ).NTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel( <i>Ch</i> ).NTRansition |
| Description | Sets the value of the negative transition filter of the Questionable Ripple Limit Channel Status Register of channel 1 to channel 16 .                             |

## Variable

|              | <i>Value</i>                                                                                          |
|--------------|-------------------------------------------------------------------------------------------------------|
| Description  | The value of the negative transition filter of the Questionable Ripple Limit Channel Status Register. |
| Data type    | Long integer type (Long)                                                                              |
| Range        | 0 to 65535                                                                                            |
| Preset value | 0                                                                                                     |
| Note         | Bits 15 cannot be set to 1.                                                                           |

For information on the variable (*Ch*), see Table 7-6, “Variable (*Ch*),” on page 203.

**Examples**

```
Dim Stat As Long
SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).NTRansition = 16
Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).NTRansition
```

**Related objects**

SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).EVENT on page 683  
SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).PTRansition on page 685

**Equivalent key** No equivalent key is available on the front panel.

## **SCPI.STATus.QUEStionable.RLIMit.CHANnel(*Ch*).PTRansition**

|             |                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                                                           |
| Syntax      | SCPI.STATus.QUEStionable.RLIMit.CHANnel( <i>Ch</i> ).PTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CHANnel( <i>Ch</i> ).PTRansition |
| Description | Sets the value of the positive transition filter of the Questionable Ripple Limit Channel Status Register of channel 1 to channel 16 .                             |
| Variable    |                                                                                                                                                                    |

|              | <i>Value</i>                                                                                          |
|--------------|-------------------------------------------------------------------------------------------------------|
| Description  | The value of the positive transition filter of the Questionable Ripple Limit Channel Status Register. |
| Data type    | Long integer type (Long)                                                                              |
| Range        | 0 to 65535                                                                                            |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces.                         |
| Note         | Bits 15 cannot be set to 1.                                                                           |

For information on the variable (*Ch*), see Table 7-6, “Variable (Ch),” on page 203.

|                 |                                                                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).PTRansition = 0 Stat = SCPI.STATus.QUEStionable.RLIMit.CHANnel(1).PTRansition</pre> |
| Related objects | SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).EVENT on page 683<br>SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).NTRansition on page 684                 |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                                   |

## SCPI.STATus.QUEStionable.RLIMit.CONDiTion

|             |                                                                                             |
|-------------|---------------------------------------------------------------------------------------------|
| Object type | Property                                                                                    |
| Syntax      | <i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.CONDiTion                                    |
| Description | Reads out the value of the Questionable Ripple Limit Status Condition Register. (Read only) |
| Variable    |                                                                                             |

|             | <i>Value</i>                                                          |
|-------------|-----------------------------------------------------------------------|
| Description | The value of the Questionable Ripple Limit Status Condition Register. |
| Data type   | Long integer type (Long)                                              |

|                 |                                                                                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long Stat = SCPI.STATus.QUEStionable.RLIMit.CONDiTion</pre>                                       |
| Related objects | SCPI.STATus.QUEStionable.RLIMit.NTRansition on page 691<br>SCPI.STATus.QUEStionable.RLIMit.PTRansition on page 692 |
| Equivalent key  | No equivalent key is available on the front panel.                                                                 |

## SCPI.STATus.QUEStionable.RLIMit.ELIMit.CONDiTion

|             |                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                          |
| Syntax      | <i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.ELIMit.CONDiTion                                   |
| Description | Reads out the value of the Questionable Ripple Limit Extra Status Condition Register. (Read only) |
| Variable    |                                                                                                   |

|             | <i>Value</i>                                                                |
|-------------|-----------------------------------------------------------------------------|
| Description | The value of the Questionable Ripple Limit Extra Status Condition Register. |
| Data type   | Long integer type (Long)                                                    |

|                 |                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| Examples        | <pre>Dim Stat As Long Stat = SCPI.STATus.QUEStionable.RLIMit.ELIMit.CONDiTion</pre>                                              |
| Related objects | SCPI.STATus.QUEStionable.RLIMit.ELIMit.NTRansition on page 688<br>SCPI.STATus.QUEStionable.RLIMit.ELIMit.PTRansition on page 689 |
| Equivalent key  | No equivalent key is available on the front panel.                                                                               |

## SCPI.STATus.QUEStionable.RLIMit.ELIMit.ENABLE

|             |                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                     |
| Syntax      | SCPI.STATus.QUEStionable.RLIMit.ELIMit.ENABLE = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.ELIMit.ENABLE |
| Description | Sets the value of the Questionable Ripple Limit Extra Status Enable Register.                                                |
| Variable    |                                                                                                                              |

|              | <i>Value</i>                                                                  |
|--------------|-------------------------------------------------------------------------------|
| Description  | The value of the Questionable Ripple Limit Extra Status Enable Register.      |
| Data type    | Long integer type (Long)                                                      |
| Range        | 0 to 65535                                                                    |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces. |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                        |

|          |                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------|
| Examples | <pre>Dim Stat As Long SCPI.STATus.QUEStionable.RLIMit.ELIMit.ENABLE = 6 Stat = SCPI.STATus.QUEStionable.RLIMit.ELIMit.ENABLE</pre> |
|----------|------------------------------------------------------------------------------------------------------------------------------------|

Related objects SCPI.STATus.QUEStionable.RLIMit.ENABLE on page 690

Equivalent key No equivalent key is available on the front panel.

## SCPI.STATus.QUEStionable.RLIMit.ELIMit.EVENT

|             |                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------|
| Object type | Property                                                                                      |
| Syntax      | <i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.ELIMit.EVENT                                   |
| Description | Reads out the value of the Questionable Ripple Limit Extra Status Event Register. (Read only) |
| Variable    |                                                                                               |

|             | <i>Value</i>                                                            |
|-------------|-------------------------------------------------------------------------|
| Description | The value of the Questionable Ripple Limit Extra Status Event Register. |
| Data type   | Long integer type (Long)                                                |

|          |                                                                                 |
|----------|---------------------------------------------------------------------------------|
| Examples | <pre>Dim Stat As Long Stat = SCPI.STATus.QUEStionable.RLIMit.ELIMit.EVENT</pre> |
|----------|---------------------------------------------------------------------------------|

Related objects SCPI.IEEE4882.CLS on page 405

Equivalent key No equivalent key is available on the front panel.

**SCPI.STATUS.QUESTIONABLE.RLIMIT.ELIMIT.NTRANSITION**

|             |                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                               |
| Syntax      | SCPI.STATUS.QUESTIONABLE.RLIMIT.ELIMIT.NTRANSITION = <i>Value</i><br><i>Value</i> = SCPI.STATUS.QUESTIONABLE.RLIMIT.ELIMIT.NTRANSITION |
| Description | Sets the value of the negative transition filter of the Questionable Ripple Limit Extra Status Register.                               |

## Variable

|              | <i>Value</i>                                                                                        |
|--------------|-----------------------------------------------------------------------------------------------------|
| Description  | The value of the negative transition filter of the Questionable Ripple Limit Extra Status Register. |
| Data type    | Long integer type (Long)                                                                            |
| Range        | 0 to 65535                                                                                          |
| Preset value | 0                                                                                                   |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                                              |

## Examples

```
Dim Stat As Long
SCPI.STATUS.QUESTIONABLE.RLIMIT.ELIMIT.NTRANSITION = 6
Stat = SCPI.STATUS.QUESTIONABLE.RLIMIT.ELIMIT.NTRANSITION
```

## Related objects

SCPI.STATUS.QUESTIONABLE.RLIMIT.ELIMIT.EVENT on page 687  
SCPI.STATUS.QUESTIONABLE.RLIMIT.ELIMIT.PTRANSITION on page 689

## Equivalent key

No equivalent key is available on the front panel.

## SCPI.STATus.QUEStionable.RLIMit.ELIMit.PTRansition

|             |                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                                               |
| Syntax      | SCPI.STATus.QUEStionable.RLIMit.ELIMit.PTRansition = <i>Value</i><br><i>Value</i> = SCPI.STATus.QUEStionable.RLIMit.ELIMit.PTRansition |
| Description | Sets the value of the positive transition filter of the Questionable Ripple Limit Extra Status Register.                               |

### Variable

|              | <i>Value</i>                                                                                        |
|--------------|-----------------------------------------------------------------------------------------------------|
| Description  | The value of the positive transition filter of the Questionable Ripple Limit Extra Status Register. |
| Data type    | Long integer type (Long)                                                                            |
| Range        | 0 to 65535                                                                                          |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces.                       |
| Note         | Bits 0 and 3 to 15 cannot be set to 1.                                                              |

|                 |                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Examples        | Dim Stat As Long<br>SCPI.STATus.QUEStionable.RLIMit.ELIMit.PTRansition = 6<br>Stat = SCPI.STATus.QUEStionable.RLIMit.ELIMit.PTRansition |
| Related objects | SCPI.STATus.QUEStionable.RLIMit.ELIMit.EVENT on page 687<br>SCPI.STATus.QUEStionable.RLIMit.ELIMit.NTRansition on page 688              |
| Equivalent key  | No equivalent key is available on the front panel.                                                                                      |

## **SCPI.STATUS.QUESTIONABLE.RLIMIT.ENABLE**

|             |                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------|
| Object type | Property                                                                                                       |
| Syntax      | SCPI.STATUS.QUESTIONABLE.RLIMIT.ENABLE = <i>Value</i><br><i>Value</i> = SCPI.STATUS.QUESTIONABLE.RLIMIT.ENABLE |
| Description | Sets the value of the Questionable Ripple Limit Status Enable Register.                                        |
| Variable    |                                                                                                                |

|              | <i>Value</i>                                                                  |
|--------------|-------------------------------------------------------------------------------|
| Description  | The value of the Questionable Ripple Limit Status Enable Register.            |
| Data type    | Long integer type (Long)                                                      |
| Range        | 0 to 65535                                                                    |
| Preset value | Varies depending on the upper limit setting of the number of channels/traces. |
| Note         | Bits 15 cannot be set to 1.                                                   |

**Examples**

```
Dim Stat As Long
SCPI.STATUS.QUESTIONABLE.RLIMIT.ENABLE = 16
Stat = SCPI.STATUS.QUESTIONABLE.RLIMIT.ENABLE
```

**Related objects** SCPI.STATUS.QUESTIONABLE.ENABLE on page 656

**Equivalent key** No equivalent key is available on the front panel.

## **SCPI.STATUS.QUESTIONABLE.RLIMIT.EVENT**

|             |                                                                                         |
|-------------|-----------------------------------------------------------------------------------------|
| Object type | Property                                                                                |
| Syntax      | <i>Value</i> = SCPI.STATUS.QUESTIONABLE.RLIMIT.EVENT                                    |
| Description | Reads out the value of the Questionable Ripple Limit Status Event Register. (Read only) |
| Variable    |                                                                                         |

|             | <i>Value</i>                                                      |
|-------------|-------------------------------------------------------------------|
| Description | The value of the Questionable Ripple Limit Status Event Register. |
| Data type   | Long integer type (Long)                                          |

**Examples**

```
Dim Stat As Long
Stat = SCPI.STATUS.QUESTIONABLE.RLIMIT.EVENT
```

**Related objects** SCPI.IEEE4882.CLS on page 405

**Equivalent key** No equivalent key is available on the front panel.

## SCPI.STATus.QUEStionable.RLIMit.NTRansition

- Object type** Property
- Syntax** SCPI.STATus.QUEStionable.RLIMit.NTRansition = *Value*  
*Value* = SCPI.STATus.QUEStionable.RLIMit.NTRansition
- Description** Sets the value of the negative transition filter of the Questionable Ripple Limit Status Register.
- Variable**

|              | <i>Value</i>                                                                                  |
|--------------|-----------------------------------------------------------------------------------------------|
| Description  | The value of the negative transition filter of the Questionable Ripple Limit Status Register. |
| Data type    | Long integer type (Long)                                                                      |
| Range        | 0 to 65535                                                                                    |
| Preset value | 0                                                                                             |
| Note         | Bits 15 cannot be set to 1.                                                                   |

- Examples**
- ```
Dim Stat As Long
SCPI.STATus.QUEStionable.RLIMit.NTRansition = 6
Stat = SCPI.STATus.QUEStionable.RLIMit.NTRansition
```
- Related objects** SCPI.STATus.QUEStionable.RLIMit.EVENT on page 690
SCPI.STATus.QUEStionable.RLIMit.PTRansition on page 692
- Equivalent key** No equivalent key is available on the front panel.

SCPI.STATUS.QUESTIONABLE.RLIMIT.PTRANSITION

Object type Property

Syntax SCPI.STATUS.QUESTIONABLE.RLIMIT.PTRANSITION = *Value*
Value = SCPI.STATUS.QUESTIONABLE.RLIMIT.PTRANSITION

Description Sets the value of the positive transition filter of the Questionable Ripple Limit Status Register.

Variable

	<i>Value</i>
Description	The value of the positive transition filter of the Questionable Ripple Limit Status Register.
Data type	Long integer type (Long)
Range	0 to 65535
Preset value	Varies depending on the upper limit setting of the number of channels/traces.
Note	Bits 15 cannot be set to 1.

Examples

```
Dim Stat As Long
SCPI.STATUS.QUESTIONABLE.RLIMIT.PTRANSITION = 6
Stat = SCPI.STATUS.QUESTIONABLE.RLIMIT.PTRANSITION
```

Related objects SCPI.STATUS.QUESTIONABLE.RLIMIT.EVENT on page 690
SCPI.STATUS.QUESTIONABLE.RLIMIT.NTRANSITION on page 691

Equivalent key No equivalent key is available on the front panel.

SCPI.SYSTem.BACKlight

Object type	Property
Syntax	SCPI.SYSTem.BACKlight = <i>Status</i> <i>Status</i> = SCPI.SYSTem.BACKlight
Description	Turns ON/OFF the backlight of the LCD display. When the backlight is OFF, you cannot read the information on the display.
Variable	

	<i>Status</i>
Description	ON/OFF of the backlight
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the backlight. • False or 0 Turns OFF the backlight.
Preset value	True or -1

Examples

```
Dim BckLght As Boolean
SCPI.SYSTem.BACKlight = False
BckLght = SCPI.SYSTem.BACKlight
```

Equivalent key **[System] - Backlight**

NOTE To turn the backlight ON, press any key on the front panel.

SCPI.SYSTem.BEEPer.COMPLete.IMMEdiate

Object type	Method
Syntax	SCPI.SYSTem.BEEPer.COMPLete.IMMEdiate
Description	Generates a beep for the notification of the completion of the operation. (No read)
Examples	<code>SCPI.SYSTem.BEEPer.COMPLete.IMMEdiate</code>
Related objects	SCPI.SYSTem.BEEPer.COMPLete.STATe on page 694 SCPI.SYSTem.BEEPer.WARNIng.IMMEdiate on page 695
Equivalent key	[System] - Misc Setup - Beeper - Test Beep Complete

SCPI.SYSTem.BEEPer.COMPLete.STATe

Object type	Property
Syntax	SCPI.SYSTem.BEEPer.COMPLete.STATe = <i>Status</i> <i>Status</i> = SCPI.SYSTem.BEEPer.COMPLete.STATe
Description	Turns ON/OFF the beeper for the notification of the completion of the operation.
Variable	

	<i>Status</i>
Description	ON/OFF of the beeper for the notification of the completion of the operation
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> •True or -1 Turns ON the beeper for the notification of the completion of the operation. •False or 0 Turns OFF the beeper for the notification of the completion of the operation.
Preset value	True or -1

Examples

```
Dim BeepComp As Boolean
SCPI.SYSTem.BEEPer.COMPLete.STATe = False
BeepComp = SCPI.SYSTem.BEEPer.COMPLete.STATe
```

Related objects	SCPI.SYSTem.BEEPer.COMPLete.IMMEdiate on page 694 SCPI.SYSTem.BEEPer.WARNIng.STATe on page 695
Equivalent key	[System] - Misc Setup - Beeper - Beep Complete

SCPI.SYSTem.BEEPer.WARning.IMMediate

Object type	Method
Syntax	SCPI.SYSTem.BEEPer.WARning.IMMediate
Description	Generates a beep for the notification of warning/limit test result. (No read)
Examples	<code>SCPI.SYSTem.BEEPer.WARning.IMMediate</code>
Related objects	SCPI.SYSTem.BEEPer.WARning.STATe on page 695 SCPI.SYSTem.BEEPer.COMPLete.IMMediate on page 694
Equivalent key	[System] - Misc Setup - Beeper - Test Beep Warning

SCPI.SYSTem.BEEPer.WARning.STATe

Object type	Property
Syntax	SCPI.SYSTem.BEEPer.WARning.STATe = <i>Status</i> <i>Status</i> = SCPI.SYSTem.BEEPer.WARning.STATe
Description	Turns ON/OFF the beeper for the notification of warning/limit test result.
Variable	

	<i>Status</i>
Description	ON/OFF of the beeper for the notification of warning/limit test result
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Turns ON the beeper for the notification of warning/limit test result. • False or 0 Turns OFF the beeper for the notification of warning/limit test result.
Preset value	True or -1

Examples	<code>Dim BeepWarn As Boolean</code> <code>SCPI.SYSTem.BEEPer.WARning.STATe = False</code> <code>BeepWarn = SCPI.SYSTem.BEEPer.WARning.STATe</code>
Related objects	SCPI.SYSTem.BEEPer.WARning.IMMediate on page 695 SCPI.SYSTem.BEEPer.COMPLete.STATe on page 694
Equivalent key	[System] - Misc Setup - Beeper - Beep Warning

SCPI.SYSem.COMMunicate.GPIB.PMEter.ADDress

Object type	Property
Syntax	SCPI.SYSem.COMMunicate.GPIB.PMEter.ADDress = <i>Value</i> <i>Value</i> = SCPI.COMMunicate.GPIB.PMEter.ADDress
Description	Sets/reads out the GPIB address of the power meter in use.
Variable	

	<i>Value</i>
Description	GPIB address of the power meter
Data type	Long integer type (Long)
Range	0 to 30
Preset value	13
Note	If the specified parameter is out of the allowable setting range, a runtime error occurs.

Examples	<pre>Dim Paddr As Long SCPI.SYSem.COMMunicate.GPIB.PMEter.ADDress = 15 Paddr = SCPI.SYSem.COMMunicate.GPIB.PMEter.ADDress</pre>
----------	---

Equivalent key	[System] - Misc Setup - GPIB Setup - Power Meter Address
----------------	---

SCPI.SYSem.COMMunicate.GPIB.SGENerator.ADDress

Type of object Property

Syntax SCPI.SYSem.COMMunicate.GPIB.SGENerator.ADDress = *Value*
Value = SCPI.SYSem.COMMunicate.GPIB.SGENerator.ADDress

Description Sets/reads out the GPIB address of the external signal source in use.

Variable

	<i>Value</i>
Description	The GPIB address of the external signal source
Data type	Long integer type (Long)
Range	0 to 30
Preset value	19
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Example of use Dim SGaddr As Long
SCPI.SYSem.COMMunicate.GPIB.SGENerator.ADDress = 20
SGaddr = SCPI.SYSem.COMMunicate.GPIB.SGENerator.ADDress

Equivalent key **[System] - Misc Setup - GPIB Setup - Signal Generator Address**

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency

Type of object	Property
Syntax	SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency = <i>Param</i> <i>Param</i> = SCPI.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency
Description	Sets the output frequency setting command for the external signal source in use. This command is available when the type of the external signal source is 1 (user-defined external signal source).

Variable

	<i>Value</i>
Description	Frequency setting command for the user-defined external signal source
Data type	Character string type (String)
Range	254 characters or less
Preset value	"FR %f% HZ"
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. The output frequency in the command string is written as "%f%." The frequency of the external signal source, which changes for each measurement point, is set and the setting command is sent to the external signal source.

Example of use

```
Dim SGcomm As String
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency = "FREQ
%f%HZ"
SGcomm = SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency
```

Related objects

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWER on page 699
 SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet on page 700
 SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON on page 701
 SCPI.SYSTem.COMMunicate.GPIB.SGENerator.DWELL on page 702
 SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE on page 703

Equivalent key

[System] - Misc Setup - GPIB Setup - Signal Generator Address - Custom Commands - Set Frequency

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWer

Type of object Property

Syntax SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWer = *Param*
Param = SCPI.COMMunicate.GPIB.SGENerator.CCOMmand.POWer

Description Sets the output level setting command for the external signal source in use.
 This command is available when the type of the external signal source is 1 (user-defined external signal source).

Variable

	<i>Value</i>
Description	Level setting command for the user-defined external signal source
Data type	Character string type (String)
Range	254 characters or less
Preset value	"AP %p% DM"
Note	If the specified variable is out of the allowable setup range, an error occurs when executed. The output level in the command string is written as "%p%." The output level of the external signal source, which changes for each measurement point, is set and the setting command is sent to the external signal source.

Example of use

```
Dim SGcomm As String
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWer = "AMPL
%p%DBM"
SGcomm = SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWer
```

Related objects

- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQUency on page 698
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet on page 700
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON on page 701
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.DWELI on page 702
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE on page 703

Equivalent key **[System] - Misc Setup - GPIB Setup - Signal Generator Address - Custom Commands - Set Power Level**

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet

Type of object	Property
Syntax	SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet = <i>Param</i> <i>Param</i> = SCPI.COMMunicate.GPIB.SGENerator.CCOMmand.POWER
Description	Sets the preset command for the external signal source in use. This command is available when the type of the external signal source is 1 (user-defined external signal source).

Variable

	<i>Value</i>
Description	Preset command for the user-defined external signal source
Data type	Character string type (String)
Range	254 characters or less
Preset value	""
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Example of use

```
Dim SGcomm As String
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet = "*RST"
SGcomm = SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet
```

Related objects

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency on page 698

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWER on page 699

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON on page 701

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.DWELL on page 702

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE on page 703

Equivalent key **[System] - Misc Setup - GPIB Setup - Signal Generator Address - Custom Commands - Preset**

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON

Type of object Property

Syntax SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON = *Param*
Param = SCPI.COMMunicate.GPIB.SGENerator.CCOMmand.RFON

Description Sets the command to turn on RF for the external signal source in use.

This command is available when the type of the external signal source is 1 (user-defined external signal source).

Variable

	<i>Value</i>
Description	RF:on setting command for the user-defined external signal source
Data type	Character string type (String)
Range	254 characters or less
Preset value	"R3"
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Example of use Dim SGcomm As String
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON = "AMPL:STATE
ON"
SGcomm = SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON

Related objects SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency on
page 698
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWer on page 699
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet on page 700
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.DWELI on page 702
SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE on page 703

Equivalent key **[System] - Misc Setup - GPIB Setup - Signal Generator Address - Custom Commands
- Turn RF Out On**

SCPI.SYSem.COMMunicate.GPIB.SGENerator.DWELI

Type of object	Property
Syntax	SCPI.SYSem.COMMunicate.GPIB.SGENerator.DWELI = <i>Value</i> <i>Value</i> = SCPI.COMMunicate.GPIB.SGENerator.DWELI
Description	Sets a wait time after setting the frequency or output level for the external signal source in use.
Variable	

	<i>Value</i>
Description	Wait time setting for the user-defined external signal source
Data type	Double precision floating point type (Double)
Range	0 to 1
Preset value	0.1
Unit	s (second)
Resolution	0.001
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Example of use	<pre>Dim SGdelay As Double SCPI.SYSem.COMMunicate.GPIB.SGENerator.DWELI = 0.2 SGdelay = SCPI.SYSem.COMMunicate.GPIB.SGENerator.DWELI</pre>
Related objects	SCPI.SYSem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency on page 698 SCPI.SYSem.COMMunicate.GPIB.SGENerator.CCOMmand.POWER on page 699 SCPI.SYSem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet on page 700 SCPI.SYSem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON on page 701 SCPI.SYSem.COMMunicate.GPIB.SGENerator.TYPE on page 703
Equivalent key	[System] - Misc Setup - GPIB Setup - Signal Generator Address - Switching Time

SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE

Type of object	Property
Syntax	SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE = <i>Value</i> <i>Value</i> = SCPI.COMMunicate.GPIB.SGENerator.TYPE
Description	Sets the type of the external signal source in use.
Variable	

	<i>Value</i>
Description	Type setting of the external signal source 1: User-defined 2: 8643A, 8644B, 8664A, 8665A/B 3: 8648A/B/C/D, ESG Series, PSG Series
Data type	Long integer type (long)
Range	1 to 3
Preset value	3
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Example of use	Dim SGtype As long SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE = 2 SGtype = SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE
Related objects	SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency on page 698 SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWer on page 699 SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet on page 700 SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON on page 701 SCPI.SYSTem.COMMunicate.GPIB.SGENerator.DWELI on page 702
Equivalent key	[System] - Misc Setup - GPIB Setup - Signal Generator Address - Custom Commands 8643A,8644B,8664A,8665A/B 8648A/B/C/D,ESG Series,PSG Series

SCPI.SYSem.CORRection.STATe

Object type	Property
Syntax	SCPI.SYSem.CORRection.STATe = <i>Status</i> <i>Status</i> = SCPI.SYSem.CORRection.STATe
Description	Turns ON/OFF the system correction.
Variable	

	<i>Status</i>
Description	ON/OFF of the system correction
Data type	Boolean type (Boolean)
Range	Select from the following. •True or -1 Turns ON the system correction. •False or 0 Turns OFF the system correction.
Preset value	True or -1

Examples

```
Dim SysCal As Boolean  
SCPI.SYSem.CORRection.STATe = False  
SysCal = SCPI.SYSem.CORRection.STATe
```

Equivalent key **[System] - Misc Setup - Service Menu - System Correction**

SCPI.SYSTem.DATE

Object type Property

Syntax SCPI.SYSTem.DATE = *Data*
Data = SCPI.SYSTem.DATE

Description Sets the date of the clock built in the E5070B/E5071B.

Variable

	<i>Data</i>
Description	Indicates 3-element array data (date of the built-in clock). <ul style="list-style-type: none"> • <i>Data(0)</i> Sets year. • <i>Data(1)</i> Sets month. • <i>Data(2)</i> Sets day. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	<ul style="list-style-type: none"> • <i>Data(0)</i> 1980 to 2099 • <i>Data(1)</i> 1 to 12 • <i>Data(2)</i> 1 to 31
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

Examples

```
Dim Day As Variant
SCPI.SYSTem.DATE = Array(2001,12,24)
Day = SCPI.SYSTem.DATE
```

```
Dim Day(2) As Variant
Dim Ref As Variant
Day(0) = 2001
Day(1) = 12
Day(2) = 24
SCPI.SYSTem.DATE = Day
Ref = SCPI.SYSTem.DATE
```

Related objects SCPI.SYSTem.TIME on page 716
SCPI.DISPlay.CLOCK on page 366

Equivalent key **[System] - Misc Setup - Clock Setup - Set Date and Time**

SCPI.SYSTem.ERROR

Object type	Property
Syntax	<i>Err</i> = SCPI.SYSTem.ERROR
Description	Reads out the oldest error of the errors stored in the error queue of the E5070B/E5071B. The read-out error is deleted from the error queue. The size of the error queue is 100. Executing the SCPI.IEEE4882.CLS object clears the errors stored in the error queue. (Read only)

NOTE This object can not return an error that occurs by the manual operation or the SCPI command used in controlling the E5070B/E5071B from the external controller.

Variable

	<i>Err</i>
Description	Indicates 2-element array data (for error). <ul style="list-style-type: none">• <i>Err(0)</i> Error number• <i>Err(1)</i> Error message The index of the array starts from 0.
Data type	Variant type (Variant)
Note	If no error is stored in the error queue, 0 and "No error" are read out as the error number and the error message.

Examples

```
Dim Err As Variant  
Err = SCPI.SYSTem.ERROR
```

Related objects SCPI.IEEE4882.CLS on page 405

Equivalent key No equivalent key is available on the front panel.

SCPI.SYSTem.ISPC.PORT

Object type Property

Syntax SCPI.SYSTem.ISPCControl.PORT = *Value*
Status = SCPI.SYSTem.ISPCControl.PORT

Description Specifies a test port to be selected for stimulus destination when the Initial Source Port Control feature is on.

Variable

	<i>Value</i>
Description	Selected Port
Data type	Long integer type (Long)
Range	1~4
Preset value	1

Examples

```
SCPI.INIT(ch).CONT = False
SCPI.SYST.ISPC.STAT = True
SCPI.SYST.ISPC.PORT = 1
```

Related objects SCPI.SYSTem.ISPC.STAT on page 708

Equivalent key **[System] - Service - Init Src Port [1|2|3|4]**

SCPI.SYSTem.ISPC.STAT

Object type	Property
Syntax	SCPI.SYSTem.ISPCControl.STATe = <i>Status</i> <i>Status</i> = SCPI.SYSTem.ISPCControl.STATe
Description	Turns on/off the Initial Source Port Control feature (to switch the stimulus output in the trigger hold state to a test port).
Variable	

	<i>Status</i>
Description	ON/OFF Initial Source Port Control feature
Data type	Boolean type (Boolean)
Range	Select from the following. •True or 1 ON Control feature. •False or 0 OFF Control feature.
Preset value	True or 1

Examples
SCPI.INIT(ch).CONT = False
SCPI.SYST.ISPC.STAT = True
SCPI.SYST.ISPC.PORT = 1

Related objects SCPI.SYSTem.ISPC.PORT on page 707

Equivalent key **[System] - Service - Init Src Ctrl [ON]**

SCPI.SYSTem.KLOCK.KBD

Object type	Property
Syntax	SCPI.SYSTem.KLOCK.KBD = <i>Status</i> <i>Status</i> = SCPI.SYSTem.KLOCK.KBD
Description	Sets whether to lock the operation of the front panel (key and rotary knob) and keyboard.
Variable	

	<i>Status</i>
Description	ON/OFF of lock
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Specifies lock. • False or 0 Specifies unlock.
Preset value	False or 0

Examples

```
Dim FKLock As Boolean
SCPI.SYSTem.KLOCK.KBD = True
FKLock = SCPI.SYSTem.KLOCK.KBD
```

Related objects SCPI.SYSTem.KLOCK.MOUSE on page 710

Equivalent key **[System] - Misc Setup - Front Panel & Keyboard Lock**

SCPI.SYSTem.KLOCK.MOUSe

Object type	Property
Syntax	SCPI.SYSTem.KLOCK.MOUSe = <i>Status</i> <i>Status</i> = SCPI.SYSTem.KLOCK.MOUSe
Description	Sets whether to lock the operation of the mouse and touch screen.
Variable	

	<i>Status</i>
Description	ON/OFF of lock
Data type	Boolean type (Boolean)
Range	Select from the following. •True or -1 Specifies lock. •False or 0 Specifies unlock.
Preset value	False or 0

Examples	<pre>Dim MTLock As Boolean SCPI.SYSTem.KLOCK.MOUSe = True MTLock = SCPI.SYSTem.KLOCK.MOUSe</pre>
Related objects	SCPI.SYSTem.KLOCK.KBD on page 709
Equivalent key	[System] - Key Lock - Mouse Lock

SCPI.SYSTem.POFF

Object type	Method
Syntax	SCPI.SYSTem.POFF
Description	Turns OFF the E5070B/E5071B. (No read)
Examples	<pre>SCPI.SYSTem.POFF</pre>
Equivalent key	Standby switch

SCPI.SYSTem.PRESet

Object type	Method
Syntax	SCPI.SYSTem.PRESet
Description	<p>Presets the setting state of the E5070B/E5071B. There is the following difference from the setting state preset with the SCPI.IEEE4882.RST object. For details, see Appendix “List of Default Values” in the <i>E5070B/E5071B User’s Guide</i>. (No read)</p> <ul style="list-style-type: none">• The continuous startup mode (see the SCPI.INITiate(Ch).CONTinuous object) of channel 1 is set to ON.
Examples	<code>SCPI.SYSTem.PRESet</code>
Related objects	SCPI.IEEE4882.RST on page 409
Equivalent key	[Preset] - OK

SCPI.SYSTem.SECurity.LEVel

Object type	Property
Syntax	SCPI.SYSTem.SECurity.LEVel = <i>Param</i> <i>Param</i> = SCPI.SYSTem.SECurity.LEVel
Description	Sets/Reads the security level.
Variable	

	<i>Param</i>
Description	The security level.
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"NON" Specifies OFF to the security level. •"LOW" Specifies LOW level to the security level. •"HIGH" Specifies HIGH level to the security level.
Preset value	"NON"
Note	When the setting is LOW, it is able to change to NON or HIGH. But when this setting is HIGH, it is not able to change NON or LOW. The setting can be turned NON by executing the preset or recalling when the setting of frequency blank function is HIGH. Even if the setting is LOW and HIGH, the command that reads out the frequency is not influenced.

Examples

```
Dim SecLev As String
SCPI.SYSTem.SECurity.LEVel = "LOW"
SecLev = SCPI.SYSTem.SECurity.LEVel
```

Equivalent key **[System] - Service Menu - Security Level - None|Low|High**

SCPI.SYSTem.SERvice

Object type	Property
Syntax	<i>Status</i> = SCPI.SYSTem.SERvice
Description	Reads out whether to be in the service mode. (Read only)
Variable	

	<i>Status</i>
Description	Whether to be in the service mode
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 In the service mode. • False or 0 Not in the service mode.

Examples

```
Dim SvMode As Boolean
SvMode = SCPI.SYSTem.SERvice
```

Equivalent key Displayed on the instrument status bar (at the bottom of the LCD display).

SCPI.SYSTem.TEMPerature.HIGH

Object type	Property
Syntax	SCPI.SYSTem.TEMPerature.HIGH = <i>Status</i> <i>Status</i> = SCPI.SYSTem.TEMPerature.HIGH
Description	Turns ON/OFF the high temperature mode.
Variable	

	<i>Status</i>
Description	ON/OFF of the high temperature mode
Data type	Boolean type (Boolean)
Range	Select from the following. •True or -1 Turns ON the high temperature mode. •False or 0 Turns OFF the high temperature mode.
Preset value	False or 0

Examples	<pre>Dim TempMode As Boolean SCPI.SYSTem.TEMPerature.HIGH = True TempMode = SCPI.SYSTem.TEMPerature.HIGH</pre>
----------	--

Equivalent key	[System] - Service Menu - High Temperature
----------------	---

SCPI.SYSTem.TEMPerature.STATe

Object type Property

Syntax *Status* = SCPI.SYSTem.TEMPerature.STATe

Description Reads out whether the warm-up is enough to satisfy the specifications of the E5070B/E5071B. (Read only)

Variable

	<i>Status</i>
Description	Whether the warm-up is enough or not.
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> • True or -1 Enough warm-up • False or 0 Not enough warm-up

Examples

```
Dim WarmUp As Boolean
WarmUp = SCPI.SYSTem.TEMPerature.STATe
```

Equivalent key Displayed on the instrument status bar (at the bottom of the LCD display).

SCPI.SYS^Tem.TIME

Object type	Property
Syntax	SCPI.SYS ^T em.TIME = <i>Data</i> <i>Data</i> = SCPI.SYS ^T em.TIME
Description	Sets the time of the clock built in the E5070B/E5071B.
Variable	

	<i>Data</i>
Description	Indicates 3-element array data (time of the built-in clock). <ul style="list-style-type: none"> • <i>Data</i>(0) Sets hour (24-hour basis) • <i>Data</i>(1) Sets minute. • <i>Data</i>(2) Sets second. The index of the array starts from 0.
Data type	Variant type (Variant)
Range	<ul style="list-style-type: none"> • <i>Data</i>(0) 0 to 23 • <i>Data</i>(1) 0 to 59 • <i>Data</i>(2) 0 to 59
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

Examples

```
Dim Time As Variant
SCPI.SYSTem.TIME = Array(21, 30, 0)
Time = SCPI.SYSTem.TIME

Dim Time(2) As Variant
Dim Ref As Variant
Time(0) = 21
Time(1) = 30
Time(2) = 0
SCPI.SYSTem.TIME = Time
Ref = SCPI.SYSTem.TIME
```

Related objects SCPI.SYS^Tem.DATE on page 705
 SCPI.DISPLAY.CLOCK on page 366

Equivalent key **[System] - Misc Setup - Clock Setup - Set Date and Time**

SCPI.SYSTem.UPReset

Object type	Method
Syntax	SCPI.SYSTem.UPReset
Description	<p>Performs presets with the user settings.</p> <p>The command is executed regardless of the operation mode in preset state. (No read)</p> <p>If you try to specify a file for a preset (D:\UserPreset.sta) that does not exist, a warning message is displayed and “SCPI.SYSTem.PRESet” will be executed.</p>
Examples	<code>CPI.SYSTem.UPReset</code>
Related objects	<p>SCPI.IEEE4882.RST on page 409</p> <p>SCPI.SYSTem.PRESet on page 711</p>
Equivalent key	[Preset] - OK

SCPI.TRIGger.SEQuence.IMMediate

Object type	Method
Syntax	SCPI.TRIGger.SEQuence.IMMediate
Description	<p>Regardless of the setting of the trigger mode, generates a trigger immediately and executes a measurement.</p> <p>There is the following difference from the trigger with the SCPI.TRIGger.SEQuence.SINGle object.</p> <ul style="list-style-type: none">• The execution of the object finishes at the time of a trigger. <p>If you execute this object when the trigger system is not in the trigger wait state (trigger event detection state), an error occurs when executed and the object is ignored.</p> <p>For details about the trigger system, see Section “Trigger System” in the <i>E5070B/E5071B Programmer’s Guide</i>. (No read)</p>
Examples	<pre>SCPI.TRIGger.SEQuence.SOURce = "bus" SCPI.INITiate(1).CONTinuous = True SCPI.TRIGger.SEQuence.IMMediate</pre>
Related objects	SCPI.TRIGger.SEQuence.IMMediate on page 718
Equivalent key	No equivalent key is available on the front panel.

SCPI.TRIGger.SEQuence.POINT

Type of object Property

Syntax SCPI.TRIGger.SEQuence.POINT = *Status*
Status = SCPI.TRIGger.SEQuence.POINT

Description Turns on/off of the point trigger feature.

Variable

	<i>Status</i>
Description	On/off of the point trigger
Data type	Boolean type (Boolean)
Range	Select from the following. <ul style="list-style-type: none"> •True or -1 Turns on the point trigger. •False or 0 Turns off the point trigger.
Preset value	False or 0
Note	When the point trigger feature is turned on, if the sweep mode is Swept, it changes to Stepped. When the trigger source is set to the internal trigger (Internal), the setting is ignored.

Example of use `Dim Ptrig As Boolean`
 `SCPI.TRIGger.SEQuence.POINT = True`
 `Ptrig = TRIGger.SEQuence.POINT`

Related objects SCPI.TRIGger.SEQuence.SOURce on page 721

Equivalent key **[Trigger] - Trigger Event**

SCPI.TRIGger.SEQuence.SINGle

Object type	Method
Syntax	SCPI.TRIGger.SEQuence.SINGle
Description	<p>Regardless of the setting of the trigger mode, generates a trigger immediately and executes a measurement.</p> <p>There is the following difference from the trigger with the SCPI.TRIGger.SEQuence.IMMEDIATE object.</p> <ul style="list-style-type: none">• The execution of the object finishes when the measurement (all of the sweep) initiated with this object is complete. In other words, you can wait for the end of the measurement using the SCPI.IEEE4882.OPC object. <p>If you execute this object when the trigger system is not in the trigger wait state (trigger event detection state), an error occurs when executed and the object is ignored.</p> <p>For details about the trigger system, see Section “Trigger System” in the <i>E5070B/E5071B Programmer’s Guide</i>. (No read)</p>
Examples	<pre>Dim Dmy As Long SCPI.TRIGger.SEQuence.SOURce = "bus" SCPI.INITiate(1).CONTinuous = True SCPI.TRIGger.SEQuence.SINGle Dmy = SCPI.IEEE4882.OPC</pre>
Related objects	SCPI.TRIGger.SEQuence.IMMEDIATE on page 718 SCPI.IEEE4882.OPC on page 408
Equivalent key	No equivalent key is available on the front panel.

SCPI.TRIGger.SEQuence.SOURce

- Object type** Property
- Syntax** SCPI.TRIGger.SEQuence.SOURce = *Param*
Param = SCPI.TRIGger.SEQuence.SOURce
- Description** Selects the trigger source from the following 4 types.
- Internal trigger** Uses the internal trigger to generate continuous triggers automatically.
 - External trigger** Generates a trigger when the trigger signal is inputted externally via the Ext Trig connector or the handler interface.
 - Manual trigger** Generates a trigger when the key operation of **[Trigger] - Trigger** is executed from the front panel.
 - Bus trigger** Generates a trigger when the SCPI.IEEE4882.TRG object is executed.
- When you change the trigger source during sweep, the sweep is aborted.

Variable

	<i>Param</i>
Description	Trigger source
Data type	Character string type (String)
Range	Select from the following. <ul style="list-style-type: none"> •"INternal" Specifies internal trigger. •"EXternal" Specifies external trigger. •"MANual" Specifies manual trigger. •"BUS" Specifies bus trigger.
Preset value	"INternal"

Examples

```
Dim TrigSour As String
SCPI.TRIGger.SEQuence.SOURce = "bus"
TrigSour = SCPI.TRIGger.SEQuence.SOURce
```

Equivalent key **[Trigger] - Trigger Source - Internal|External|Manual|Bus**

COM Object Reference
SCPI.TRIGger.SEQuence.SOURce

8**Waveform Analysis Library**

This chapter describes how to use the ripple analysis library and the procedures in the ripple analysis library.

Ripple Analysis Library

By combining the COM objects provided for the E5070B/E5071B and the ripple analysis library, you can easily perform the ripple analysis of waveforms.

Flow of Programming Using the Ripple Analysis Library

Below table shows the flow of program development using the ripple analysis library. First, set up the analysis range and peak definition to use the procedures for ripple analysis.

STEP 1. Condition setting before using the ripple analysis library
<input type="checkbox"/> Specifying the analysis range
<input type="checkbox"/> Setting the peak definition
STEP 2. Using the ripple analysis library

Condition Setting Before Using the Ripple Analysis Library

Since the analysis conditions are not specified in the ripple analysis library, before using the procedure for ripple analysis, set up the analysis range and the peak definition using COM objects.

Specifying the Analysis Range

Use the following COM objects to specify the analysis range for ripple analysis. For more information on each object, see Chapter 7, “COM Object Reference.”

- SCPI.CALCulate(Ch).SELEcted.FUNcTion.DOMain.START on page 283
- SCPI.CALCulate(Ch).SELEcted.FUNcTion.DOMain.STOP on page 285
- SCPI.CALCulate(Ch).SELEcted.FUNcTion.DOMain.STATe on page 284
- SCPI.CALCulate(Ch).SELEcted.FUNcTion.DOMain.COUPle on page 282

Setting the Peak Definition

Use the following COM objects to set up the peak definition for ripple analysis. For more information on each object, see Chapter 7, “COM Object Reference.”

- SCPI.CALCulate(Ch).SELEcted.FUNcTion.PEXcursion on page 287
- SCPI.CALCulate(Ch).SELEcted.FUNcTion.PPOLarity on page 289

List of the Ripple Analysis Library

Use the provided procedures for ripple analysis to analyze the ripple of waveforms and output the result. All procedures perform analysis only within the stimulus range for the specified channel.

For more information on the E5070B/E5071B ripple analysis library, refer to Procedure Reference on page 727.

List of ripple analysis library
<ul style="list-style-type: none"> Returns the maximum value of the difference between a positive peak and a negative peak. MaxPeakToPeak(Chan) on page 735
<ul style="list-style-type: none"> Returns the maximum value of the difference between a positive peak and its right adjacent negative peak. MaxRightGap(Chan) on page 736
<ul style="list-style-type: none"> Returns the maximum value of the difference between a positive peak and its left adjacent negative peak. MaxLeftGap(Chan) on page 734
<ul style="list-style-type: none"> Returns the maximum value of the difference between a positive peak and its adjacent negative peak. MaxGap(Chan) on page 733
<ul style="list-style-type: none"> Returns the maximum value of the vertical distance between a line segment connecting 2 adjacent positive peaks and the negative peak between them. MaxEnvelopeGap(Chan) on page 732
<ul style="list-style-type: none"> Returns the mean value of the differences between a negative peak and its right and left adjacent positive peaks. GapMean(Chan) on page 731
<ul style="list-style-type: none"> Returns the maximum value of the total of the differences between a negative peak and its right and left adjacent positive peaks. MaxRippleValue(Chan) on page 738
<ul style="list-style-type: none"> Returns the maximum value of the total of the differences between a negative peak and its right and left adjacent positive peaks and the stimulus value (<i>Stim</i>) of the valley of the ripple. MaxRipplePoint(Chan,Stim) on page 737
<ul style="list-style-type: none"> Returns the values (<i>LeftValue</i> and <i>RightValue</i>) and the stimulus values (<i>LeftStimulus</i> and <i>RightStimulus</i>) of the right and left negative peaks detected first below the specified value (<i>D</i>) relative to the maximum value. Pole(Chan,D,LeftStim,LeftValue,RightStim,RightValue) on page 739
<ul style="list-style-type: none"> Returns the difference between the positive peak detected first when searched from the left edge toward the right edge and its right adjacent negative peak. FirstRightGap(Chan) on page 729

List of ripple analysis library
<ul style="list-style-type: none">Returns the difference between the positive peak detected first when searched from the right edge toward the left edge and its left adjacent negative peak. FirstLeftGap(Chan) on page 727
<ul style="list-style-type: none">Returns the difference of the stimulus value between the positive peak detected first when searched from the left edge toward the right edge and its right adjacent negative peak. FirstRightInterval(Chan) on page 730
<ul style="list-style-type: none">Returns the difference of the stimulus value between the positive peak detected first when searched from the left edge toward the right edge and its left adjacent negative peak. FirstLeftInterval(Chan) on page 728

Simple Use Example

Here is a simple sample program using the ripple analysis procedures.

```
Sub Sample()  
  
Dim Val As Double (1)  
  
SCPI.CALCulate(1).SElected.FUNction.PEXCursion = 1.5 (2)  
SCPI.CALCulate(1).SElected.FUNction.PPOLarity = "BOTH" (2)  
SCPI.CALCulate(1).SElected.FUNction.DOMain.START = 935E6 (3)  
SCPI.CALCulate(1).SElected.FUNction.DOMain.STOP = 960E6 (3)  
SCPI.CALCulate(1).SElected.FUNction.DOMain.STATE = True (3)  
.  
.  
Val = MaxPeakToPeak(1) (4)  
  
End Sub
```

Let us break down the code into a number of blocks and see what they do.

1. Defines a variable Val as Double.
2. Sets the lower limit of the peak excursion value and polarity for the peak search to 1.5 and both of positive peak and negative peak, respectively.
3. Sets the analysis range for channel 1 to 935 MHz to 960 MHz.
4. For channel 1, substitutes the return value from the MaxPeakToPeak function (procedure) in the ripple analysis library to the Val variable.

Procedure Reference

This section describes the procedures in the ripple analysis library provided by the E5070B/E5071B in alphabetical order.

FirstLeftGap(*Chan*)

Syntax

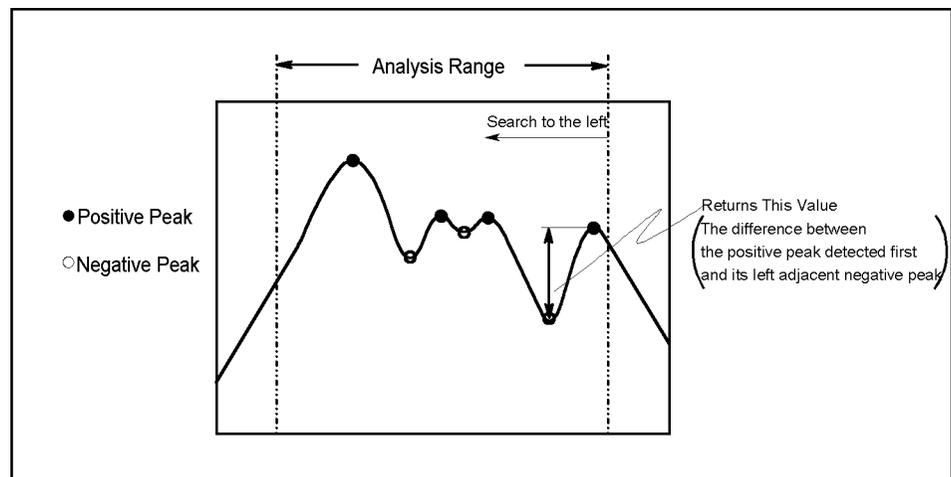
Value = FirstLeftGap(*Chan*)

Description

Returns the response difference between the positive peak detected first when searched from the right edge toward the left edge within the analysis range and its left adjacent negative peak.

Figure 8-1

FirstLeftGap



e5070ave031

Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the response difference between the positive peak detected first when searched from the right edge toward the left edge within the analysis range and its left adjacent negative peak.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double

Value = FirstLeftGap(1)
MsgBox "First Left Gap =" & Value
```

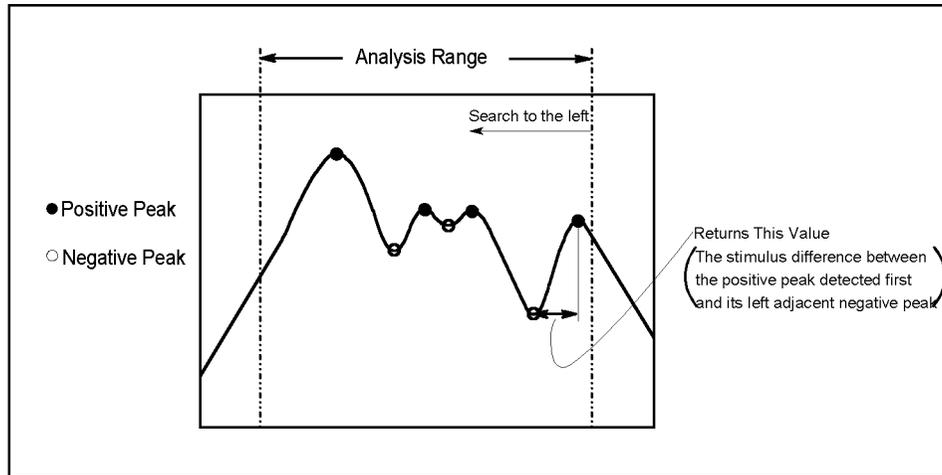
FirstLeftInterval(*Chan*)

Syntax *Value* = FirstLeftInterval(*Chan*)

Description Returns the stimulus difference between the positive peak detected first when searched from the right edge toward the left edge within the analysis range and its left adjacent negative peak.

Figure 8-2

FirstLeftInterval



Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the stimulus difference between the positive peak detected first when searched from the right edge toward the left edge within the analysis range and its left adjacent negative peak.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Value = FirstLeftInterval(1)
MsgBox "First Left Interval =" & Value
```

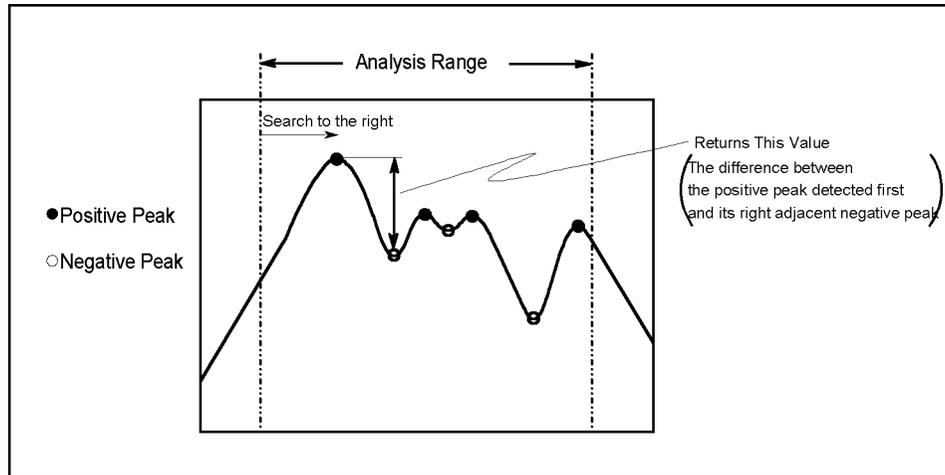
FirstRightGap(*Chan*)

Syntax *Value* = FirstRightGap(*Chan*)

Description Returns the response difference between the positive peak detected first when searched from the left edge toward the right edge within the analysis range and its right adjacent negative peak.

Figure 8-3

FirstRightGap



Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the response difference between the positive peak detected first when searched from the left edge toward the right edge within the analysis range and its right adjacent negative peak.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Value = FirstRightGap(1)
MsgBox "First Right Gap =" & Value
```

FirstRightInterval(*Chan*)

Syntax

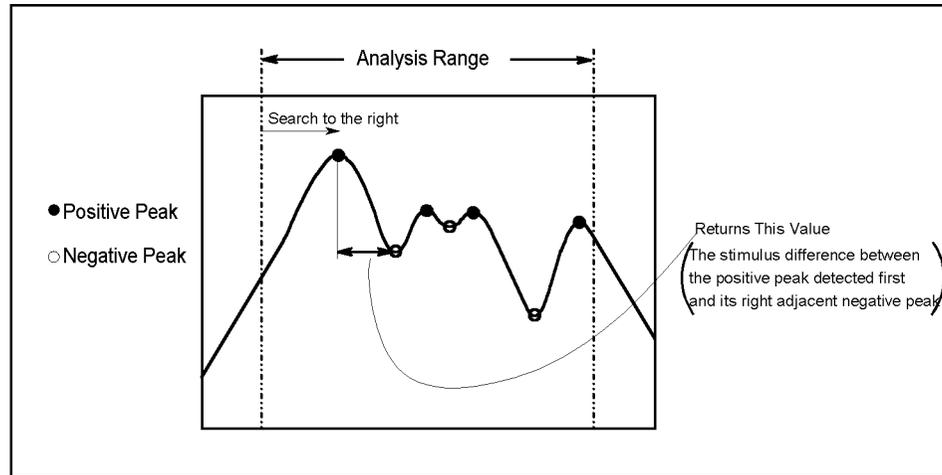
Value = FirstRightInterval(*Chan*)

Description

Returns the stimulus difference between the positive peak detected first when searched from the left edge toward the right edge within the analysis range and its right adjacent negative peak.

Figure 8-4

FirstRightInterval



Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the stimulus difference between the positive peak detected first when searched from the left edge toward the right edge within the analysis range and its right adjacent negative peak.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Value = FirstRightInterval(1)
MsgBox "First Right Interval =" & Value
```

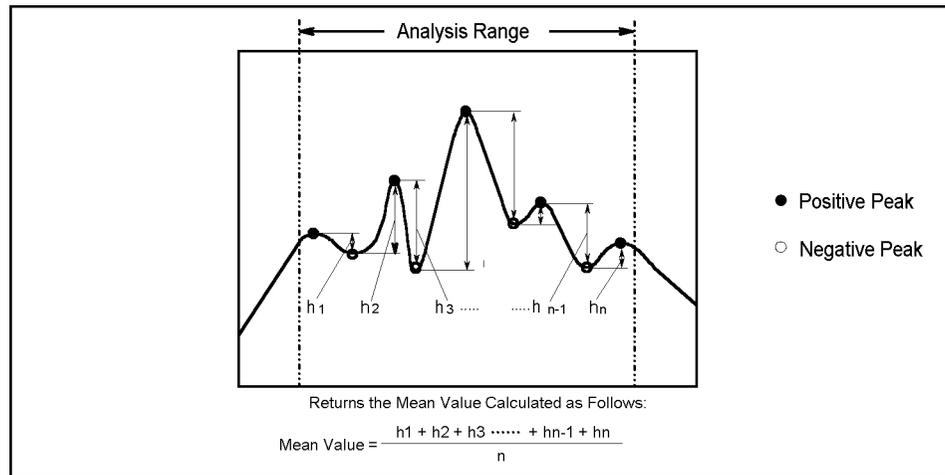
GapMean(*Chan*)

Syntax *Value* = GapMean(*Chan*)

Description Returns the mean value of the response differences between the negative peaks and its adjacent positive peaks within the analysis range.

Figure 8-5

GapMean



e5070ave027

Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the mean value of the response differences between the negative peaks and its right and left adjacent positive peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

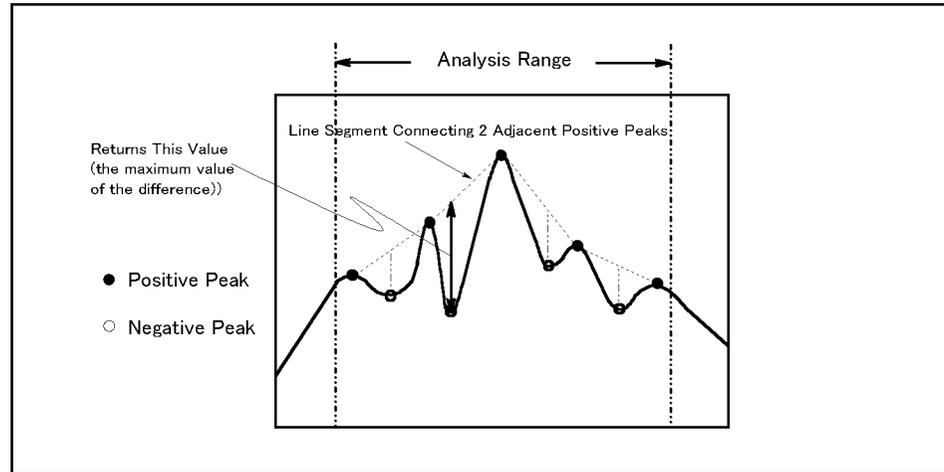
```
Dim Value As Double
Value = GapMean(1)
MsgBox "Gap Mean =" & Value
```

MaxEnvelopeGap(*Chan*)

Syntax *Value* = MaxEnvelopeGap(*Chan*)

Description Returns the maximum value of the vertical distance between the line segments connecting 2 adjacent positive peaks and the negative peaks between them within the analysis range.

Figure 8-6 MaxEnvelopeGap



e5070ave026

Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the maximum value of the vertical distance between the line segments connecting 2 adjacent positive peaks and the negative peaks between them.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Value = MaxEnvelopeGap(1)
MsgBox "Max Envelope Gap =" & Value
```

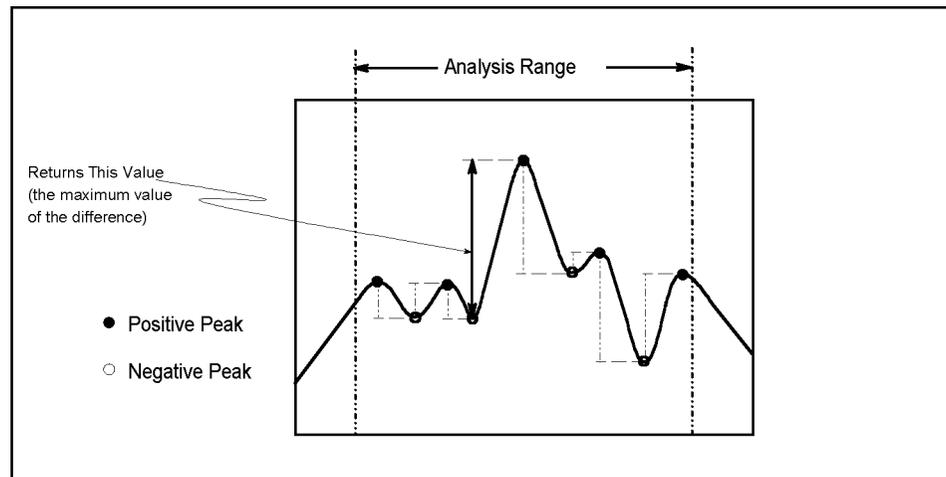
MaxGap(*Chan*)

Syntax *Value* = MaxGap(*Chan*)

Description Returns the maximum value of the response differences between the positive peaks and its adjacent negative peaks within the analysis range.

Figure 8-7

MaxGap



Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the maximum value of the response differences between the positive peaks and its adjacent negative peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Value = MaxGap(1)
MsgBox "Max Gap =" & Value
```

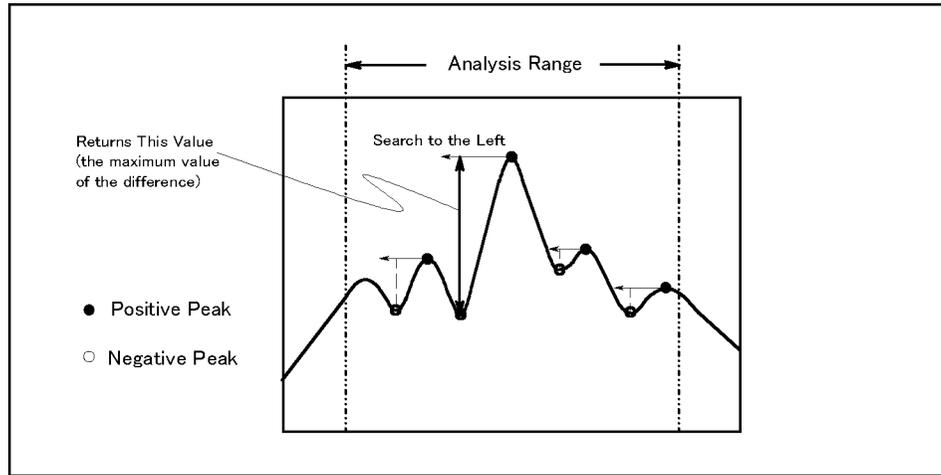
MaxLeftGap(*Chan*)

Syntax *Value* = MaxLeftGap(*Chan*)

Description Returns the maximum value of the response differences between the positive peaks and its left adjacent negative peaks within the analysis range.

Figure 8-8

MaxLeftGap



Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the maximum value of the response differences between the positive peaks and its left adjacent negative peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Value = MaxLeftGap(1)
MsgBox "Max Left Gap =" & Value
```

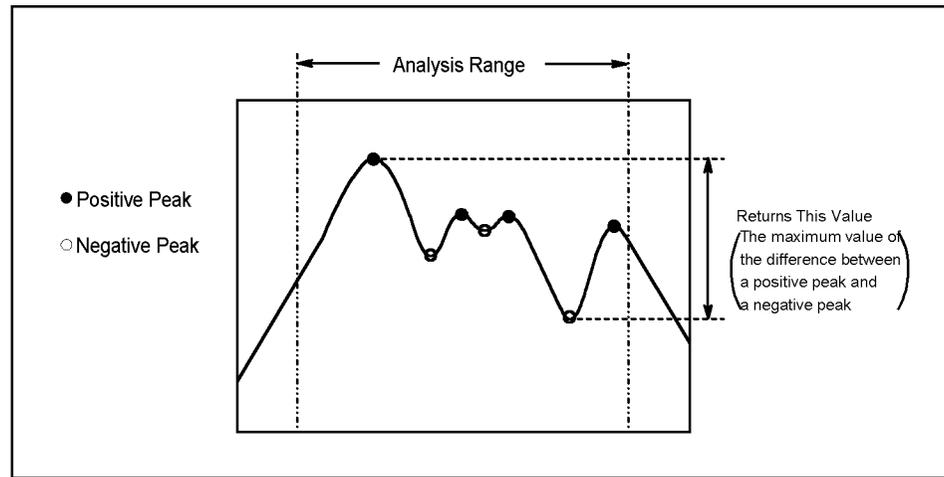
MaxPeakToPeak(*Chan*)

Syntax *Value* = MaxPeakToPeak(*Chan*)

Description Returns the maximum value of the response differences between the positive peaks and the negative peaks within the analysis range.

Figure 8-9

MaxPeakToPeak



Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the maximum value of the response differences between the positive peaks and the negative peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double

Value = MaxPeakToPeak(1)
MsgBox "Max Peak To Peak =" & Value
```

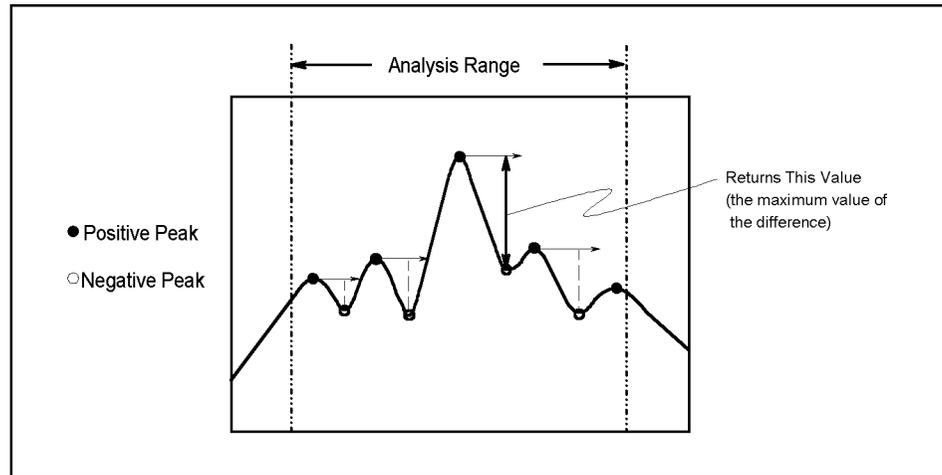
MaxRightGap(*Chan*)

Syntax *Value* = MaxRightGap(*chan*)

Description Returns the maximum value of the response differences between the positive peaks and its right adjacent negative peaks within the analysis range.

Figure 8-10

MaxRightGap



e5070ave023

Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the maximum value of the response differences between the positive peaks and its right adjacent negative peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Value = MaxRightGap(1)
MsgBox "Max Right Gap =" & Value
```

MaxRipplePoint(*Chan*,*Stim*)

Syntax

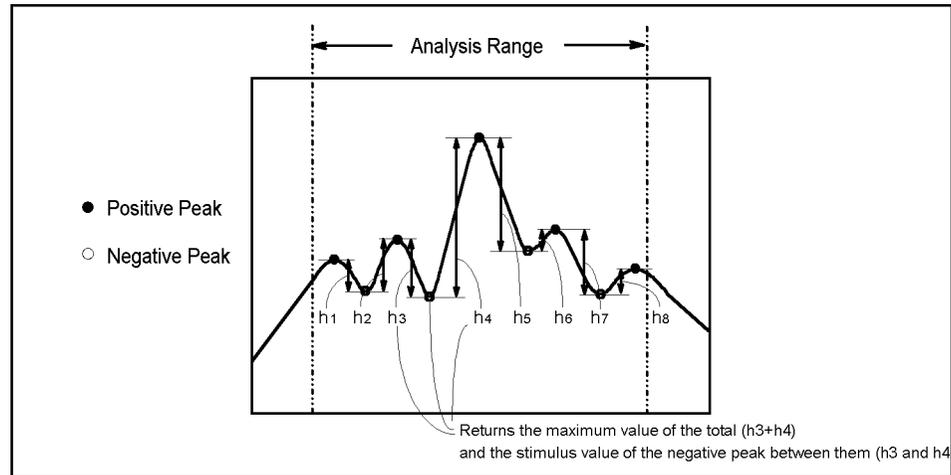
Value = MaxRipplePoint(*Chan*,*Stim*)

Description

Returns the maximum value of the sum of the response differences between the negative peaks and its adjacent positive peaks and the stimulus value of the applicable negative peaks within the analysis range.

Figure 8-11

MaxRipplePoint



e5070ave028

Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the maximum value of the sum of the response differences between the negative peaks and its adjacent positive peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

	<i>Stim</i>
Description	Returns the stimulus value of the negative peak at which the sum of the response differences between the negative peak and its adjacent positive peaks is maximum.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Dim Stim As Double

Value = MaxRipplePoint(1, Stim)
MsgBox "Max Ripple Value =" & Value & " , Stimulus =" & Stim
```

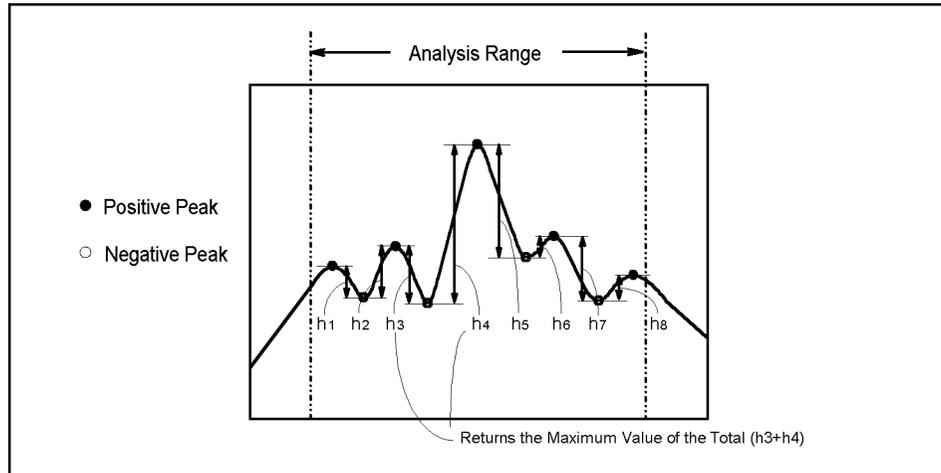
MaxRippleValue(*Chan*)

Syntax $Value = \text{MaxRippleValue}(Chan)$

Description Returns the maximum value of the sum of the response differences between the negative peaks and its adjacent positive peaks within the analysis range.

Figure 8-12

MaxRippleValue



e5070ave029

Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

Return value

	<i>Value</i>
Description	Returns the maximum value of the sum of the response differences between the negative peaks and its adjacent positive peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim Value As Double
Value = MaxRippleValue(1)
MsgBox "Max Ripple Value =" & Value
```

Pole(*Chan,D,LeftStim,LeftValue,RightStim,RightValue*)

Syntax

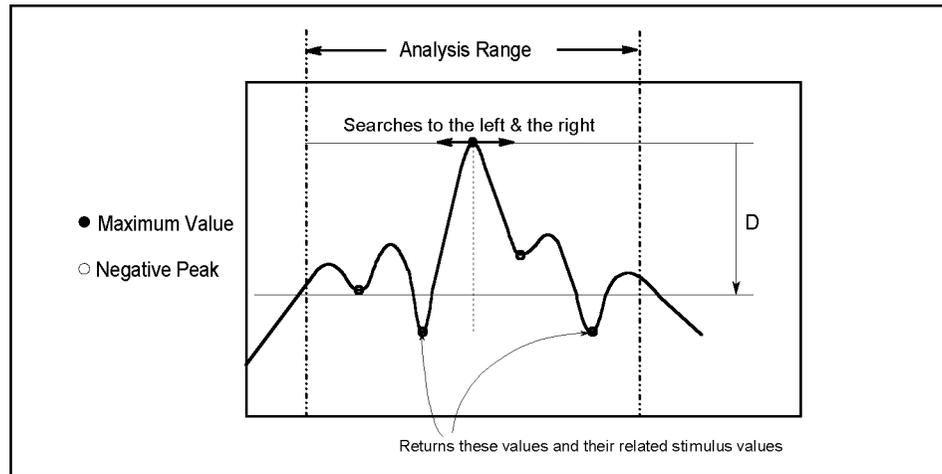
Call Pole(*Chan,D,LeftStim,LeftValue,RightStim,RightValue*)

Description

For the negative peaks below the specified value (*D*) relative to the maximum value of the positive peaks within the analysis range, returns the response value (*LeftValue*) and stimulus value (*LeftStimulus*) of the negative peak first detected when searched to the left from the maximum value of the positive peaks, and the response value (*RightValue*) and stimulus value (*RightStimulus*) of the negative peak first detected when searched to the right from the maximum value of the positive peaks.

Figure 8-13

Pole



e5070ave030

Variable

	<i>Chan</i>
Description	Specifies the channel number.
Data type	Integer type (Integer)
Range	1 to 9
Note	If the specified variable is out of the allowable setup range, an error occurs when executed.

	<i>D</i>
Description	Specifies the difference from the maximum value.
Data type	Double precision floating point type (Double)

**Return value
 (arguments)**

	<i>LeftStim</i>
Description	Returns the stimulus value of the negative peak first detected to the left from the maximum value of the positive peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

	<i>LeftValue</i>
Description	Returns the response value of the negative peak first detected to the left from the maximum value of the positive peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

	<i>RightStim</i>
Description	Returns the stimulus value of the negative peak first detected to the right from the maximum value of the positive peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

	<i>RightValue</i>
Description	Returns the response value of the negative peak first detected to the right from the maximum value of the positive peaks.
Data type	Double precision floating point type (Double)
Note	If no applicable point is detected, 0 is returned.

Example of use

```
Dim LeftStim As Double
Dim LeftValue As Double
Dim RightStim As Double
Dim RightValue As Double

Call Pole(1, 1, LeftStim, LeftValue, RightStim, RightValue)

MsgBox "Left Pole =" & LeftStim & ":" & LeftValue
MsgBox "Right Pole =" & RightStim & ":" & RightValue
```

9**Complex Operation Library**

This chapter describes the complex operation library.

Complex operation library

By using the complex operation library, you can perform operations of complex numbers.

Data of the complex type

In the complex operation library, you can use the complex type (Complex) as a data type. Data of the complex type consists of a real part (.real) and an imaginary part (.imag) as shown in the following example.

```
Dim Num as Complex
Num.real=1.0
Num.imag=2.0
```

List of procedures

The following table lists the procedures included in the complex operation library.

Procedure name	Function
ComplexSet(x,y) on page 746	Sets a complex number. (Specify a real part and an imaginary part.)
ComplexPolar(x,y) on page 746	Sets a complex number. (Specify an absolute value and a phase angle.)
ComplexSetArray(x) on page 747	Converts a variant type or double floating point type array to a complex type array.
ComplexAdd(x,y) on page 743	Returns the result of the addition.
ComplexSub(x,y) on page 748	Returns the result of the subtraction.
ComplexMul(x,y) on page 745	Returns the result of the multiplication.
ComplexDiv(x,y) on page 744	Returns the result of the division.
ComplexAbs(x) on page 743	Returns the absolute value.
ComplexArg(x) on page 743	Returns the phase angle.
ComplexNorm(x) on page 746	Returns the square of the absolute value.
ComplexConj(x) on page 744	Returns the conjugate complex number.
ComplexCos(x) on page 744	Returns the cosine.
ComplexCosh(x) on page 744	Returns the hyperbolic cosine.
ComplexSin(x) on page 747	Returns the sine.
ComplexSinh(x) on page 747	Returns the hyperbolic sine.
ComplexExp(x) on page 745	Returns e^x .
ComplexLog(x) on page 745	Returns the natural logarithm.
ComplexLog10(x) on page 745	Returns the common logarithm.
ComplexSqrt(x) on page 748	Returns the square root.

Procedure Reference

This section describes the procedures in the complex operation library in alphabetical order.

ComplexAbs(x)

Syntax	<i>Result</i> = ComplexAbs(x)
Description	Returns the absolute value of a complex number <i>x</i> .
Data type	<i>x</i> Complex type (Complex) <i>Result</i> Double precision floating point type (Double)
Example of use	Dim a As Complex, b As Double a = ComplexSet(1.5, 2.0) b = ComplexAbs(a)

ComplexAdd(x,y)

Syntax	<i>Result</i> = ComplexAdd(x,y)
Description	Returns the result (x+y) of the addition of a complex number <i>x</i> and another <i>y</i> .
Data type	<i>x</i> Complex type (Complex) <i>y</i> Complex type (Complex) <i>Result</i> Complex type (Complex)
Example of use	Dim a As Complex, b As Complex, c As Complex a = ComplexSet(1.5, 2.0) b = ComplexSet(0.5, 3.5) c = ComplexAdd(a, b)

ComplexArg(x)

Syntax	<i>Result</i> = ComplexArg(x)
Description	Returns the phase angle (radian) of a complex number <i>x</i> .
Data type	<i>x</i> Complex type (Complex) <i>Result</i> Double precision floating point type (Double)
Example of use	Dim a As Complex, b As Double, c As Double, pi As Double a = ComplexSet(1.5, 2.0) b = ComplexArg(a) pi = 3.14159265 c = b * 180 / pi ` radian -> degree

ComplexConj(x)

Syntax	<i>Result</i> = ComplexConj(<i>x</i>)	
Description	Returns the conjugate complex number of a complex number <i>x</i> .	
Data type	<i>x</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexConj(a)</pre>	

ComplexCos(x)

Syntax	<i>Result</i> = ComplexCos(<i>x</i>)	
Description	Returns the cosine (cos(<i>x</i>)) of a complex number <i>x</i> .	
Data type	<i>x</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexCos(a)</pre>	

ComplexCosh(x)

Syntax	<i>Result</i> = ComplexCosh(<i>x</i>)	
Description	Returns the hyperbolic cosine (cosh(<i>x</i>)) of a complex number <i>x</i> .	
Data type	<i>x</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexCosh(a)</pre>	

ComplexDiv(x,y)

Syntax	<i>Result</i> = ComplexDiv(<i>x</i> , <i>y</i>)	
Description	Returns the result (<i>x</i> / <i>y</i>) of the division of a complex number <i>x</i> and another <i>y</i> .	
Data type	<i>x</i>	Complex type (Complex)
	<i>y</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex, c As Complex a = ComplexSet(1.5, 2.0) b = ComplexSet(0.5, 3.5) c = ComplexDiv(a, b)</pre>	

ComplexExp(x)

Syntax	<i>Result</i> = ComplexExp(x)	
Description	Returns e^x .	
Data type	<i>x</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexExp(a)</pre>	

ComplexLog(x)

Syntax	<i>Result</i> = ComplexLog(x)	
Description	Returns the natural logarithm ($\log(x)$) of a complex number x .	
Data type	<i>x</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexLog(a)</pre>	

ComplexLog10(x)

Syntax	<i>Result</i> = ComplexLog(x)	
Description	Returns the common logarithm ($\log_{10}(x)$) of a complex number x .	
Data type	<i>x</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexLog10(a)</pre>	

ComplexMul(x,y)

Syntax	<i>Result</i> = ComplexMul(x,y)	
Description	Returns the result ($x \times y$) of the multiplication of a complex number x and another y .	
Data type	<i>x</i>	Complex type (Complex)
	<i>y</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex, c As Complex a = ComplexSet(1.5, 2.0) b = ComplexSet(0.5, 3.5) c = ComplexMul(a, b)</pre>	

ComplexNorm(x)

Syntax	$Result = \text{ComplexNorm}(x)$	
Description	Returns the square of the absolute value of a complex number x .	
Data type	x	Complex type (Complex)
	$Result$	Double precision floating point type (Double)
Example of use	<pre>Dim a As Complex, b As Double a = ComplexSet(1.5, 2.0) b = ComplexNorm(a)</pre>	

ComplexPolar(x,y)

Syntax	$z = \text{ComplexPolar}(x,y)$	
Description	Sets a complex number to a complex type variable z . Specify a complex number with an absolute value x and a phase angle y (radian).	
Data type	x	Double precision floating point type (Double)
	y	Double precision floating point type (Double)
	z	Complex type (Complex)
Example of use	<pre>Dim a As Complex, pi As Double pi = 3.14159265 a = ComplexPolar(2.5, 60 * pi / 180)</pre>	

ComplexSet(x,y)

Syntax	$z = \text{ComplexSet}(x,y)$	
Description	Sets a complex number to a complex type variable z . Specify a complex number with a real part x and an imaginary part y . (Sets x and y to $z.real$ and $z.imag$ respectively.)	
Data type	x	Double precision floating point type (Double)
	y	Double precision floating point type (Double)
	z	Complex type (Complex)
Example of use	<pre>Dim a as Complex a = ComplexSet(1.5, 2.0)</pre>	

ComplexSetArray(x)

Syntax	$y = \text{ComplexSetArray}(x)$				
Description	Converts a variant type or double floating point type array x that contains complex numbers using 2 elements to store each complex number in the order of the real part and imaginary part to a complex type array y .				
Data type	<table> <tr> <td>x</td> <td>Variant type (Variant) array or Double precision floating point type (Double) array</td> </tr> <tr> <td>y</td> <td>Complex type (Complex) array</td> </tr> </table>	x	Variant type (Variant) array or Double precision floating point type (Double) array	y	Complex type (Complex) array
x	Variant type (Variant) array or Double precision floating point type (Double) array				
y	Complex type (Complex) array				
Example of use	<pre>Dim a as Variant, b as Complex a = SCPI.CALCulate(1).SElected.DATA.SDATA b = ComplexSetArray(a)</pre>				

ComplexSin(x)

Syntax	$Result = \text{ComplexSin}(x)$				
Description	Returns the sine ($\sin(x)$) of a complex number x .				
Data type	<table> <tr> <td>x</td> <td>Complex type (Complex)</td> </tr> <tr> <td><i>Result</i></td> <td>Complex type (Complex)</td> </tr> </table>	x	Complex type (Complex)	<i>Result</i>	Complex type (Complex)
x	Complex type (Complex)				
<i>Result</i>	Complex type (Complex)				
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexSin(a)</pre>				

ComplexSinh(x)

Syntax	$Result = \text{ComplexSinh}(x)$				
Description	Returns the hyperbolic sine ($\sinh(x)$) of a complex number x .				
Data type	<table> <tr> <td>x</td> <td>Complex type (Complex)</td> </tr> <tr> <td><i>Result</i></td> <td>Complex type (Complex)</td> </tr> </table>	x	Complex type (Complex)	<i>Result</i>	Complex type (Complex)
x	Complex type (Complex)				
<i>Result</i>	Complex type (Complex)				
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexSinh(a)</pre>				

ComplexSqrt(x)

Syntax	<i>Result</i> = ComplexSqrt(<i>x</i>)	
Description	Returns the square root (\sqrt{x}) of a complex number <i>x</i> .	
Data type	<i>x</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex a = ComplexSet(1.5, 2.0) b = ComplexSqrt(a)</pre>	

ComplexSub(x,y)

Syntax	<i>Result</i> = ComplexSub(<i>x</i> , <i>y</i>)	
Description	Returns the result ($x - y$) of the subtraction of a complex number <i>x</i> and another <i>y</i> .	
Data type	<i>x</i>	Complex type (Complex)
	<i>y</i>	Complex type (Complex)
	<i>Result</i>	Complex type (Complex)
Example of use	<pre>Dim a As Complex, b As Complex, c As Complex a = ComplexSet(1.5, 2.0) b = ComplexSet(0.5, 3.5) c = ComplexSub(a, b)</pre>	

Sample Program

```

:
:

Dim Dmy As Long
Dim s21_raw As Variant
Dim s31_raw As Variant
Dim s21_Comp As Complex
Dim s31_Comp As Complex
Dim trAce_ratio_comp As Complex
Dim trAce_ratio(401) As Double

SCPI.DISPlay.Split = "D1"
SCPI.DISPlay.WINDow(1).Split = "D12_34"
SCPI.CALCulate(1).PARAmeter.Count = 2
SCPI.CALCulate(1).PARAmeter(1).DEFine = "s21"
SCPI.CALCulate(1).PARAmeter(2).DEFine = "s31"
SCPI.SENSE(1).SWEp.POINTs = 201

:
:
:

SCPI.TRIGger.SEQuence.Source = "bus"
SCPI.TRIGger.SEQuence.SINGLE
Dmy = SCPI.IEEE4882.OPC

''' Get corrected data array
SCPI.CALCulate(1).PARAmeter(1).SElect
s21_raw = SCPI.CALCulate(1).SElected.DATA.SDATA
SCPI.CALCulate(1).PARAmeter(2).SElect
s31_raw = SCPI.CALCulate(1).SElected.DATA.SDATA

For i = 0 To 200

    ''' Copy corrected data array to the complex data array
    ''' to take advantage of complex operation library
    s21_Comp = ComplexSet(s21_raw(2 * i), s21_raw(2 * i + 1))
    s31_Comp = ComplexSet(s31_raw(2 * i), s31_raw(2 * i + 1))

    ''' Calculate the ratio of S31 and S21
    ''' S31/S21
    trAce_ratio_comp = ComplexDiv(s31_Comp, s21_Comp)

    trAce_ratio(2 * i) = trAce_ratio_comp.real
    trAce_ratio(2 * i + 1) = trAce_ratio_comp.imag

Next i

SCPI.CALCulate(1).PARAmeter.Count = 4

''' Write "S31/S21" data to corrected data array for the trace 3 (LogMag)
SCPI.CALCulate(1).PARAmeter(3).SElect
SCPI.CALCulate(1).SElected.Format = "MLOG"
SCPI.CALCulate(1).SElected.DATA.SDATA = trAce_ratio

''' Write "S31/S21" data to corrected data array for the trace 4 (Phase)
SCPI.CALCulate(1).PARAmeter(4).SElect
SCPI.CALCulate(1).SElected.Format = "PHASe"
SCPI.CALCulate(1).SElected.DATA.SDATA = trAce_ratio

:
:

```

A Manual Changes

This appendix contains the information required to adapt this manual to versions or configurations of the E5070B/E5071B manufactured earlier than the current printing date of this manual.

Manual Changes

To adapt this manual to your E5070B/E5071B, refer to Table A-1 and Table A-2.

Table A-1 Manual Changes by Serial Number

Serial Prefix or Number	Make Manual Changes
MY423	Change 6

Table A-2 Manual Changes by Firmware Version

Version	Make Manual Changes
A.03.0x	Change 1
A.03.53	Change 2
A.03.54	Change 3
A.03.62	Change 4
A.04.00	Change 5
A.05.00	Change 7

Agilent Technologies uses a two-part, ten-character serial number that is stamped on the serial number plate (Figure A-1). The first five characters are the serial prefix and the last five digits are the suffix.

Figure A-1 Example of Serial Number Plate



e5070bu|7013

Change 7

The firmware revision A.05.00 and below does not support the following COM objects. Please delete their descriptions in this manual.

- SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).IMAGinary on page 203
- SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion. BPORT(Bpt).REAL on page 205
- SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).IMAGinary on page 216
- SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion. BPORT(Bpt).REAL on page 217
- SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).IMAGinary on page 246
- SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion. PORT(Pt).REAL on page 247
- SCPI.CALCulate(Ch).SELEcted.CORRection.EDELAY. MEdium on page 265
- SCPI.CALCulate(Ch).SELEcted.CORRection.EDELAY. WGCutoff on page 267
- SCPI.DISPlay.WINDow(Ch).ANNotation.MARKer.ALIGN. STATE on page 384
- SCPI.DISPlay.WINDow(Ch).ANNotation.MARKer.SINGLE. STATE on page 385
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNotation.MARKer.POSition.X on page 391
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNotation.MARKer.POSition.Y on page 392
- SCPI.MMEMory.LOAD.CKIT(Ckit) on page 420
- SCPI.MMEMory.STORe.CKIT(Ckit) on page 430
- SCPI.SENSE(Ch).CORRection.COLLEct.ACQUIRE.SUBCLass on page 459
- SCPI.SENSE(Ch).CORRection.COLLEct.ACQUIRE.TRLLine on page 461
- SCPI.SENSE(Ch).CORRection.COLLEct.ACQUIRE. TRLReflect on page 462
- SCPI.SENSE(Ch).CORRection.COLLEct.ACQUIRE. TRLThru on page 463
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. SELEct on page 468
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. TRLLine(Cpt_m,Cpt_n) on page 472
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. TRLReflect on page 473
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. TRLThru(Cpt_m,Cpt_n) on page 474
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.STAN(Std). CHARacter on page 482
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.STAN(Std) .FMAXimum on page 484
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.STAN(Std) .FMINimum on

Manual Changes

Manual Changes

page 485

- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.TRLoption. IMPedance on page 494
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.TRLoption. RPLane on page 495
- SCPI.SENSE(Ch).CORRection.COLLEct.ECAL.ORIentation .STATE on page 500
- SCPI.SENSE(Ch).CORRection.COLLEct.ECAL.PATH(Cpt) on page 501
- SCPI.SENSE(Ch).CORRection.COLLEct.METHod.TRL2 on page 514
- SCPI.SENSE(Ch).CORRection.COLLEct.METHod.TRL3 on page 515
- SCPI.SENSE(Ch).CORRection.COLLEct.METHod.TRL4 on page 516
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.CONFIg on page 520
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOFFset on page 521
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.LOSS on page 522
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.MEASure on page 523
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.PORT(Pt) on page 524
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.RESet on page 525
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STARt on page 526
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STOP on page 527
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt). FREQUency(Fq) on page 528
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt). INCLUde(II).STATE on page 530
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).LDC on page 532
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt) .LOSS(Loss) on page 533
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).TIME on page 535
- SCPI.SENSE.MULTiplexer.CATalog on page 565
- SCPI.SENSE.MULTiplexer(Id).INCount on page 568
- SCPI.SENSE.MULTiplexer(Id).NAME on page 569
- SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog on page 571
- SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).SELEct on page 572
- SCPI.SYSTem.UPReset on page 717

The following COM objects include parameters, which cannot be chosen with the firmware revision A.05.00 and below.

- SCPI.DISPlay.SPLit on page 379
- SCPI.DISPlay.WINDow(Ch).SPLit on page 388
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. LOAD(Cpt) on page 465
- SCPI.SENSE(Ch).CORRection.COLLEct.CKIT.ORDER. OPEN(Cpt) on page 467

- SCPI.SENSE(Ch).CORREction.COLLECT.CKIT.ORDER. SElect on page 468
- SCPI.SENSE(Ch).CORREction.COLLECT.CKIT.ORDER. SHORt(Cpt) on page 469
- SCPI.SENSE(Ch).CORREction.COLLECT.CKIT.ORDER. THRU(Cpt_m,Cpt_n) on page 470
- SCPI.SENSE(Ch).CORREction.COLLECT.METHod.TYPE on page 517
- SCPI.SENSE(Ch).MULTIplexer(Id).COUNT on page 566

The firmware revision A.05.00 or below does not support the following functions. Please delete the descriptions about these functions in this manual.

- User preset function
- Function to display the marker value for non-active traces.
- Function to the display position where the marker value are displayed.
- Function to align the marker value.
- User recovery function*¹
- TRL calibration by softkeys
- Function to set the Waveguide for the media type.
- Loss correction.
- Auto port extension and auto loss value calculation.
- Function to turn off the auto-detect function of the Ecal module (Manual setting is available).
- Conversion function of differential/common port reference impedance of the fixture simulator in complex format.
- Function to have the E5091A-016 multiport test set correspond to this instrument.
- Function to select the 85052C for the calibration kit.
- Function to specify up to eight calibration standards for each calibration class.
- Reading/Writing of the calibration standard files.
- Function to set the measurement point to a maximum of 20001.*²

Change 6

The serial prefix MY423 or below dose not support the USB(USBTMC) interface port. Please delete the discription in this manual.

Change 5

The firmware revision A.04.00 and below does not support the following COM objects. Please delete their descriptions in this manual.

- SCPI.CALCulate(Ch).SElected.BLIMit.STATe on page 262

*1. This function is available when the volume label on the C-drive is CP600 or higher.

*2. This function is available when the channel/trace is set to Ch 1 / Tr 4 20001 Points.

Manual Changes
Manual Changes

- SCPI.CALCulate(Ch).SELEcted.BLIMit.DB on page 255
- SCPI.CALCulate(Ch).SELEcted.BLIMit.DISPlay.MARKer on page 256
- SCPI.CALCulate(Ch).SELEcted.BLIMit.DISPlay.VALue on page 257
- SCPI.CALCulate(Ch).SELEcted.BLIMit.FAIL on page 258
- SCPI.CALCulate(Ch).SELEcted.BLIMit.MAXimum on page 259
- SCPI.CALCulate(Ch).SELEcted.BLIMit.MINimum on page 260
- SCPI.CALCulate(Ch).SELEcted.BLIMit.REPort.DATA on page 261
- SCPI.CALCulate(Ch).SELEcted.LIMit.REPort.ALL on page 300
- SCPI.CALCulate(Ch).SELEcted.LIMit.OFFSet.AMPLitude on page 297
- SCPI.CALCulate(Ch).SELEcted.LIMit.OFFSet.MARKer on page 298
- SCPI.CALCulate(Ch).SELEcted.LIMit.OFFSet.STIMulus on page 299
- SCPI.CALCulate(Ch).SELEcted.RLIMit.STATe on page 340
- SCPI.CALCulate(Ch).SELEcted.RLIMit.DATA on page 333
- SCPI.CALCulate(Ch).SELEcted.RLIMit.DISPlay.SELEct on page 336
- SCPI.CALCulate(Ch).SELEcted.RLIMit.DISPlay.VALue on page 337
- SCPI.CALCulate(Ch).SELEcted.RLIMit.DISPlay.LINE on page 335
- SCPI.CALCulate(Ch).SELEcted.RLIMit.FAIL on page 338
- SCPI.CALCulate(Ch).SELEcted.RLIMit.REPort.DATA on page 339
- SCPI.MMEMory.LOAD.RLIMit on page 423
- SCPI.MMEMory.STORe.RLIMit on page 435
- SCPI.SENSE(Ch).CORRection.COEFficient.DATA on page 446
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.ERESponse on page 448
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.RESPonse.OPEN on page 449
- SCPI.SENSE(Ch).CORRection.COEFficient.METHod.RESPonse.SHORt on page 449

- SCPI.SENSE(Ch).CORREction.COEFFicient.METHod.SOLT1 on page 451
- SCPI.SENSE(Ch).CORREction.COEFFicient.METHod.SOLT2 on page 452
- SCPI.SENSE(Ch).CORREction.COEFFicient.METHod.SOLT3 on page 453
- SCPI.SENSE(Ch).CORREction.COEFFicient.METHod.SOLT4 on page 454
- SCPI.SENSE(Ch).CORREction.COEFFicient.METHod.RESPonse.THRU on page 450
- SCPI.SENSE(Ch).CORREction.COEFFicient.SAVE on page 455
- SCPI.SENSE(Ch).CORREction.COLLECT.ECAL.ERESponse on page 498
- SCPI.SENSE(Ch).CORREction.COLLECT.METHod.ERESponse on page 508
- SCPI.STATus.QUEStionable.BLIMit.EVENT on page 652
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).EVENT on page 645
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).CONDition on page 638
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.EVENT on page 641
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.CONDition on page 639
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.ENABLE on page 640
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.NTRansition on page 642
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHannel.PTRansition on page 643
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ENABLE on page 644
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).NTRansition on page 646
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).PTRansition on page 647
- SCPI.STATus.QUEStionable.BLIMit.CONDition on page 648
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.EVENT on page 649
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.CONDition on page 648
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.ENABLE on page 649
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.NTRansition on page 650
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.PTRansition on page 651
- SCPI.STATus.QUEStionable.BLIMit.ENABLE on page 652
- SCPI.STATus.QUEStionable.BLIMit.NTRansition on page 653
- SCPI.STATus.QUEStionable.BLIMit.PTRansition on page 654
- SCPI.STATus.QUEStionable.RLIMit.EVENT on page 690
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).EVENT on page 683
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).CONDition on page 676

Manual Changes

Manual Changes

- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.EVENT on page 679
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.CONDItion on page 677
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.ENABLE on page 678
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.NTRansition on page 680
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHannel.PTRansition on page 681
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ENABLE on page 682
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).NTRansition on page 684
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).PTRansition on page 685
- SCPI.STATus.QUEStionable.RLIMit.CONDItion on page 686
- SCPI.STATus.QUEStionable.RLIMit.ELIMit.CONDItion on page 686
- SCPI.STATus.QUEStionable.RLIMit.ELIMit.ENABLE on page 687
- SCPI.STATus.QUEStionable.RLIMit.ELIMit.NTRansition on page 688
- SCPI.STATus.QUEStionable.RLIMit.ELIMit.PTRansition on page 689
- SCPI.STATus.QUEStionable.RLIMit.ENABLE on page 690
- SCPI.STATus.QUEStionable.RLIMit.NTRansition on page 691
- SCPI.STATus.QUEStionable.RLIMit.PTRansition on page 692
- SCPI.SYSTem.SECurity.LEVel on page 712

The following COM objects include parameters, which cannot be chosen with the firmware revision A.04.00 and below.

- SCPI.DISPlay.TABLe.TYPE on page 382
- SCPI.SENSE(Ch).CORRection.COLLEct.METHod.TYPE on page 517
- SCPI.SENSE(Ch).CORRection.TYPE(Tr) on page 556

The firmware revision A.04.00 and below does not support the following functions. Please delete the descriptions about these functions in this manual.

- Offset limit line function
- Ripple test function
- Bandwidth test function
- Enhanced response calibration
- Frequency information appearing as asterisks
- Disable USB mass storage devices

Change 4

The firmware revision A.03.62 and below does not support the following COM objects. Please delete their descriptions in this manual.

- SCPI.CALCulate(Ch).PARAmeter(Tr).SPORt on page 254
- SCPI.CALCulate(Ch).SELEcted.MIXer.XAXis on page 329
- SCPI.CALCulate(Ch).SELEcted.OFFset.XAXis on page 332
- SCPI.SENSE(Ch).CORREction.CLEAR on page 445
- SCPI.SENSE(Ch).CORREction.COLLECT.CLEAR on page 496
- SCPI.SENSE(Ch).CORREction.OFFSet.CLEAR on page 538
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.ACQUIRE.LOAD on page 539
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.ACQUIRE.OPEN on page 540
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.ACQUIRE.PMETer on page 541
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.ACQUIRE.SHORT on page 543
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.ACQUIRE.THROUGH on page 544
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.CLEAR on page 545
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.ECAL.SMIX2 on page 546
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.ECAL.SOLT1 on page 547
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.METHOD.SMIX2 on page 548
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.METHOD.SOLT1 on page 549
- SCPI.SENSE(Ch).CORREction.OFFSet.COLLECT.SAVE on page 550
- SCPI.SENSE(Ch).CORREction.RECEiver(Pt).COLLECT.ACQUIRE on page 552
- SCPI.SENSE(Ch).CORREction.RECEiver(Pt).STATE on page 553
- SCPI.SENSE(Ch).OFFSet.ASPurious on page 580
- SCPI.SENSE(Ch).OFFSet.LOCal.CONTRol.STATE on page 581
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQUENCY.DATA on page 582
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQUENCY.DIVISor on page 583
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQUENCY.MULTIplier on page 584
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQUENCY.OFFSet on page 585
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQUENCY.START on page 586
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQUENCY.STOP on page 587
- SCPI.SENSE(Ch).OFFSet.LOCal.POWER.LEVel.IMMEDIATE.AMPLitude on page 588
- SCPI.SENSE(Ch).OFFSet.LOCal.POWER.LEVel.SLOPe.DATA on page 589
- SCPI.SENSE(Ch).OFFSet.LOCal.POWER.LEVel.SLOPe.STATE on page 590
- SCPI.SENSE(Ch).OFFSet.LOCal.STATE on page 591
- SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQUENCY.DATA on page 592

Manual Changes

Manual Changes

- SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.DIVISOR on page 593
- SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.MULTIPLIER on page 594
- SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.OFFSET on page 595
- SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.START on page 596
- SCPI.SENSE(Ch).OFFSET.PORT(Pt).FREQUENCY.STOP on page 597
- SCPI.SENSE(Ch).OFFSET.STATE on page 598
- SCPI.SYSTEM.COMMUNICATE.GPIB.SGENERATOR.ADDRESS on page 697
- SCPI.SYSTEM.COMMUNICATE.GPIB.SGENERATOR.CCOMMAND.FREQUENCY on page 698
- SCPI.SYSTEM.COMMUNICATE.GPIB.SGENERATOR.CCOMMAND.POWER on page 699
- SCPI.SYSTEM.COMMUNICATE.GPIB.SGENERATOR.CCOMMAND.PRESET on page 700
- SCPI.SYSTEM.COMMUNICATE.GPIB.SGENERATOR.CCOMMAND.RFON on page 701
- SCPI.SYSTEM.COMMUNICATE.GPIB.SGENERATOR.DWELL on page 702
- SCPI.SYSTEM.COMMUNICATE.GPIB.SGENERATOR.TYPE on page 703
- SCPI.TRIGGER.SEQUENCE.POINT on page 719

The following COM objects include parameters, which cannot be chosen with the firmware revision A.03.62 and below.

- SCPI.CALCULATE(Ch).FSIMULATOR.BALUN.PARAMETER(Tr).SSBALANCED.DEFINE on page 222
- SCPI.CALCULATE(Ch).PARAMETER(Tr).DEFINE on page 252
- SCPI.CALCULATE(Ch).SELECTED.CONVERSION.FUNCTION on page 263
- SCPI.SENSE(Ch).CORRECTION.TYPE(Tr) on page 556

The firmware revision A.03.62 and below does not support the following functions. Please delete the descriptions about these functions in this manual.

- Scalar-mixer calibration
- Vector-mixer calibration
- Absolute measurement function and receiver calibration
- Frequency offset function (including the avoid spurious function)
- External signal generator control function
- Point trigger function
- Z/Y Transmission-Shunt conversion
- Imbalance 3 and 4 parameters for SE-SE-Bal measurement (Fixture simulator)
- Assignable x-axis such as RF+LO, RF-LO, and LO-RF frequencies for each active trace
- Conjugation for converting vector mixer measurement parameters

- 7 mm calibration kits such as 85031B and 85050C/D
- Calibration data and calibration coefficient clear functions

Change 3

The firmware revision A.03.54 and below does not support the following COM objects. Please delete their descriptions in this manual.

- SCPI.SERVICE.SREVISION on page 612
- SCPI.SOURCE(Ch).POWER.ATTENUATION.AUTO on page 614

The firmware revision A.03.54 and below does not support the following functions. Please delete the descriptions about these functions in this manual

- Auto Power Range set function

Change 2

The firmware revision A.03.53 and below does not support the following COM objects. Please delete their descriptions in this manual.

- SCPI.SYSTEM.ISPC.PORT on page 707
- SCPI.SYSTEM.ISPC.STAT on page 708

The firmware revision A.03.53 and below does not support the following functions. Please delete the descriptions about these functions in this manual

- Initial Source Port Control function

Change 1

The firmware revision A.03.0x does not support the following COM objects. Please delete their descriptions in this manual.

- SCPI.CALCULATE(Ch).FSIMULATOR.EMBED.NETWORK(Nwk).FILENAME on page 228
- SCPI.CALCULATE(Ch).FSIMULATOR.EMBED.NETWORK(Nwk).TYPE on page 229
- SCPI.CALCULATE(Ch).FSIMULATOR.EMBED.STATE on page 230
- SCPI.CALCULATE(Ch).FSIMULATOR.EMBED.TOPOLGY.A. PORTS on page 231
- SCPI.CALCULATE(Ch).FSIMULATOR.EMBED.TOPOLGY.B. PORTS on page 232
- SCPI.CALCULATE(Ch).FSIMULATOR.EMBED.TOPOLGY.C. PORTS on page 233
- SCPI.CALCULATE(Ch).FSIMULATOR.EMBED.TYPE on page 234
- SCPI.SENSE(Ch).CORRECTION.COLLECT.ECAL.CHECK.ACQUIRE on page 497
- SCPI.SENSE(Ch).CORRECTION.COLLECT.ECAL.UCHAR on page 507
- SCPI.SENSE(Ch).CORRECTION.COLLECT.SIMPLIFIED.SAVE on page 519

The firmware revision A.03.0x does not support the following functions. Please delete the descriptions about these functions in this manual

- Loading and executing program in batch process

Manual Changes
Manual Changes

A

- analysis
 - ripple analysis library, 724
- Application objects, 134
- array data
 - storing array data, 75
- Array function, 44
- automatic Loading
 - Loading a project at power-on, 50

B

- break point, 59

C

- Calib_Solt
 - procedure for full n-port calibration, 96
- calibration
 - Calib_Solt procedure, 96
- class module, 37
 - inserting class module, 40
- Clear
 - Error queue, 405
 - Status register, 405
- Clear Echo button, 63
- Close Editor button, 36
- code window, 42
- coding
 - auto-complete function, 45
 - coding a VBA program, 42
- COM OBJECT
 - NAME, 193
 - OnPress Event, 198
 - Parse, 194
 - Prompt, 195
 - SCPI.ABORT, 202
 - SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion.BPORT(Bpt).IMAGinary, 203
 - SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion.BPORT(Bpt).REAL, 205
 - SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion.BPORT(Bpt).Z0.R, 206
 - SCPI.CALCulate(Ch).FSIMulator.BALun.CZConversion.STATE, 207
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DEVice, 208
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).PARAMeters.C, 209
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).PARAMeters.G, 210
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).PARAMeters.L, 211
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).PARAMeters.R, 212
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).TYPE, 213
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.BPORT(Bpt).USER.FILEName, 214
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DMCircuit.STATE, 215
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.BPORT(Bpt).IMAGinary, 216
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.BPORT(Bpt).REAL, 217
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.BPORT(Bpt).Z0.R, 218
 - SCPI.CALCulate(Ch).FSIMulator.BALun.DZConversion.STATE, 219
 - SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr).BBALanced.DEFIne, 220
 - SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr).SBBALanced.DEFIne, 221
 - SCPI.CALCulate(Ch).FSIMulator.BALun.PARAmeter(Tr).SSBALanced.DEFIne, 222
 - SCPI.CALCulate(Ch).FSIMulator.BALun.STATE, 223
 - SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology.BBALanced.PPORTs, 224
 - SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology.PROPerTy.STATE, 225
 - SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology.SBALanced.PPORTs, 226
 - SCPI.CALCulate(Ch).FSIMulator.BALun.TOPology.SSBalanced.PPORTs, 227
 - SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk).FILEName, 228
 - SCPI.CALCulate(Ch).FSIMulator.EMBed.NETWork(Nwk).TYPE, 229
 - SCPI.CALCulate(Ch).FSIMulator.EMBed.STATE, 230
 - SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.A.PORTs, 231
 - SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.B.PORTs, 232
 - SCPI.CALCulate(Ch).FSIMulator.EMBed.TOPology.C.PORTs, 233
 - SCPI.CALCulate(Ch).FSIMulator.EMBed.TYPE, 234
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed.PORT(Pt).TYPE, 235
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed.PORT(Pt).USER.FILEName, 237
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.DEEMbed.STATE, 238
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).PARAMeters.C, 239
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).PARAMeters.L, 241
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).PARAMeters.R, 242
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).TYPE, 243
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.PORT(Pt).USER.FILEName, 244
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.PMCircuit.STATE, 245
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion.PORT(Pt).IMAGinary, 246

-
- SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion.PORT(Pt).REAL, 247
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion.PORT(Pt).Z0.R, 248
 - SCPI.CALCulate(Ch).FSIMulator.SENDEd.ZCONversion.STATe, 249
 - SCPI.CALCulate(Ch).FSIMulator.STATe, 250
 - SCPI.CALCulate(Ch).PARAmeter(Tr).COUNt, 251
 - SCPI.CALCulate(Ch).PARAmeter(Tr).DEFine, 252
 - SCPI.CALCulate(Ch).PARAmeter(Tr).SElect, 253
 - SCPI.CALCulate(Ch).PARAmeter(Tr).SPORt, 254
 - SCPI.CALCulate(Ch).SElected.BLIMit.DB, 255
 - SCPI.CALCulate(Ch).SElected.BLIMit.DISPlay.MARKeR, 256
 - SCPI.CALCulate(Ch).SElected.BLIMit.DISPlay.VALue, 257
 - SCPI.CALCulate(Ch).SElected.BLIMit.FAIL, 258
 - SCPI.CALCulate(Ch).SElected.BLIMit.MAXimum, 259
 - SCPI.CALCulate(Ch).SElected.BLIMit.MINimum, 260
 - SCPI.CALCulate(Ch).SElected.BLIMit.REPORt.DATA, 261
 - SCPI.CALCulate(Ch).SElected.BLIMit.STATe, 262
 - SCPI.CALCulate(Ch).SElected.CONVersion.FUNcTION, 263
 - SCPI.CALCulate(Ch).SElected.CONVersion.STATe, 264
 - SCPI.CALCulate(Ch).SElected.CORRection.EDELay.MEDIum, 265
 - SCPI.CALCulate(Ch).SElected.CORRection.EDELay.TI ME, 266
 - SCPI.CALCulate(Ch).SElected.CORRection.EDELay.W GCutoff, 267
 - SCPI.CALCulate(Ch).SElected.CORRection.OFFSet.PH ASe, 268
 - SCPI.CALCulate(Ch).SElected.DATA.FDATA, 269
 - SCPI.CALCulate(Ch).SElected.DATA.FMEMory, 270
 - SCPI.CALCulate(Ch).SElected.DATA.SDATA, 271
 - SCPI.CALCulate(Ch).SElected.DATA.SMEMory, 272
 - SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.CEN Ter, 273
 - SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.SHA Pe, 274
 - SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.SPA N, 275
 - SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.STA Rt, 276
 - SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.STA Te, 277
 - SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.STO P, 278
 - SCPI.CALCulate(Ch).SElected.FILTer.GATE.TIME.TYP E, 279
 - SCPI.CALCulate(Ch).SElected.FORMat, 280
 - SCPI.CALCulate(Ch).SElected.FUNcTION.DATA, 281
 - SCPI.CALCulate(Ch).SElected.FUNcTION.DOMain.COU Ple, 282
 - SCPI.CALCulate(Ch).SElected.FUNcTION.DOMain.STA Rt, 283
 - SCPI.CALCulate(Ch).SElected.FUNcTION.DOMain.STA Te, 284
 - SCPI.CALCulate(Ch).SElected.FUNcTION.DOMain.STO P, 285
 - SCPI.CALCulate(Ch).SElected.FUNcTION.EXECute, 286
 - SCPI.CALCulate(Ch).SElected.FUNcTION.PEXCursion, 287
 - SCPI.CALCulate(Ch).SElected.FUNcTION.POINts, 288
 - SCPI.CALCulate(Ch).SElected.FUNcTION.PPOLarity, 289
 - SCPI.CALCulate(Ch).SElected.FUNcTION.TARGet, 290
 - SCPI.CALCulate(Ch).SElected.FUNcTION.TTRansition, 291
 - SCPI.CALCulate(Ch).SElected.FUNcTION.TYPE, 292
 - SCPI.CALCulate(Ch).SElected.LIMit.DATA, 293
 - SCPI.CALCulate(Ch).SElected.LIMit.DISPlay.STATe, 295
 - SCPI.CALCulate(Ch).SElected.LIMit.FAIL, 296
 - SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.AMPLitud e, 297
 - SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.MARKeR, 298
 - SCPI.CALCulate(Ch).SElected.LIMit.OFFSet.STIMulus, 299
 - SCPI.CALCulate(Ch).SElected.LIMit.REPORt.ALL, 300
 - SCPI.CALCulate(Ch).SElected.LIMit.REPORt.DATA, 301
 - SCPI.CALCulate(Ch).SElected.LIMit.REPORt.POINts, 302
 - SCPI.CALCulate(Ch).SElected.LIMit.STATe, 303
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).ACTivate, 304
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).BWIDTH.D ATA, 305
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).BWIDTH.S TATE, 306
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).BWIDTH.T HReshhold, 307
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).COUPlE, 308
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).DISCrete, 309
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).FUNcTION.DOMain.COUPlE, 310
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).FUNcTION.DOMain.STARt, 311
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).FUNcTION.DOMain.STATe, 312
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).FUNcTION.DOMain.STOP, 313
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).FUNcTION.EXECute, 314
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).FUNcTION.PPOLarity, 316
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).FUNcTION.TARGet, 317
 - SCPI.CALCulate(Ch).SElected.MARKeR(Mk).FUNcTION.TRACKing, 318

- SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNctIon.
TTRansition, 319
- SCPI.CALCulate(Ch).SElected.MARKer(Mk).FUNctIon.
TYPE, 320
- SCPI.CALCulate(Ch).SElected.MARKer(Mk).REFerence
.STATe, 322
- SCPI.CALCulate(Ch).SElected.MARKer(Mk).SET, 323
- SCPI.CALCulate(Ch).SElected.MARKer(Mk).STATe,
324
- SCPI.CALCulate(Ch).SElected.MARKer(Mk).X, 325
- SCPI.CALCulate(Ch).SElected.MARKer(Mk).Y, 326
- SCPI.CALCulate(Ch).SElected.MATH.FUNctIon, 327
- SCPI.CALCulate(Ch).SElected.MATH.MEMorize, 328
- SCPI.CALCulate(Ch).SElected.MIXer.XAXis, 329
- SCPI.CALCulate(Ch).SElected.MSTatistics.DATA, 330
- SCPI.CALCulate(Ch).SElected.MSTatistics.STATe, 331
- SCPI.CALCulate(Ch).SElected.OFFset.XAXis, 332
- SCPI.CALCulate(Ch).SElected.RLIMit.DATA, 333
- SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.LINE,
335
- SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.SELect,
336
- SCPI.CALCulate(Ch).SElected.RLIMit.DISPlay.VAlue,
337
- SCPI.CALCulate(Ch).SElected.RLIMit.FAIL, 338
- SCPI.CALCulate(Ch).SElected.RLIMit.REPort.DATA,
339
- SCPI.CALCulate(Ch).SElected.RLIMit.STATe, 340
- SCPI.CALCulate(Ch).SElected.SMOothing.APERture,
341
- SCPI.CALCulate(Ch).SElected.SMOothing.STATe, 342
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.CEN
Ter, 343
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.IMPul
se.WIDTh, 344
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.KBES
sel, 345
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.LPFR
equency, 346
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.SPAN
, 347
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STAR
t, 348
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STAT
e, 349
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STEP.
RTIME, 350
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STIM
ulus, 351
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.STOP
, 352
- SCPI.CALCulate(Ch).SElected.TRANSform.TIME.TYPE
, 353
- SCPI.CALCulate(Cn).FSIMulator.SENDED.PMCircuit.PO
RT(Pt).PARAmeters.G, 240
- SCPI.CALCulate(Cn).SElected.MARKer(Mk).FUNctIon.
PEXCursion, 315
- SCPI.CONTRol.HANDler.A.DATA, 354
- SCPI.CONTRol.HANDler.B.DATA, 355
- SCPI.CONTRol.HANDler.C.DATA, 356
- SCPI.CONTRol.HANDler.C.MODE, 357
- SCPI.CONTRol.HANDler.D.DATA, 358
- SCPI.CONTRol.HANDler.D.MODE, 359
- SCPI.CONTRol.HANDler.E.DATA, 360
- SCPI.CONTRol.HANDler.EXTension.INDEX.STATe, 361
- SCPI.CONTRol.HANDler.EXTension.RTRigger.STATe,
362
- SCPI.CONTRol.HANDler.F.DATA, 363
- SCPI.CONTRol.HANDler.OUTPut(Num).DATA, 364
- SCPI.DISPlay.ANNotation.FREQuency.STATe, 365
- SCPI.DISPlay.CCLear, 365
- SCPI.DISPlay.CLOCK, 366
- SCPI.DISPlay.COLOr(Dnum).BACK, 367
- SCPI.DISPlay.COLOr(Dnum).GRATicule(Gnum), 368
- SCPI.DISPlay.COLOr(Dnum).LIMit(Lnum), 369
- SCPI.DISPlay.COLOr(Dnum).RESet, 370
- SCPI.DISPlay.COLOr(Dnum).TRACe(Tr).DATA, 371
- SCPI.DISPlay.COLOr(Dnum).TRACe(Tr).MEMory, 372
- SCPI.DISPlay.ECHO.CLEAr, 373
- SCPI.DISPlay.ECHO.DATA, 373
- SCPI.DISPlay.ENABLE, 374
- SCPI.DISPlay.FSIGn, 375
- SCPI.DISPlay.IMAGe, 376
- SCPI.DISPlay.MAXimize, 377
- SCPI.DISPlay.SKEY.STATe, 378
- SCPI.DISPlay.SPLit, 379
- SCPI.DISPlay.TABLE.STATe, 381
- SCPI.DISPlay.TABLE.TYPE, 382
- SCPI.DISPlay.UPDate.IMMEDIATE, 383
- SCPI.DISPlay.WINDow(Ch).ACTivate, 383
- SCPI.DISPlay.WINDow(Ch).ANNotation.MARKer.ALIG
n. STATe, 384
- SCPI.DISPlay.WINDow(Ch).ANNotation.MARKer.SINGl
e.STATe, 385
- SCPI.DISPlay.WINDow(Ch).LABel, 386
- SCPI.DISPlay.WINDow(Ch).MAXimize, 387
- SCPI.DISPlay.WINDow(Ch).SPLit, 388
- SCPI.DISPlay.WINDow(Ch).TITLe.DATA, 389
- SCPI.DISPlay.WINDow(Ch).TITLe.STATe, 390
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNotation.MA
RKer.POSition.X, 391
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).ANNotation.MA
RKer.POSition.Y, 392
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).MEMory.STATe,
393
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).STATe, 394
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALE.AUTO
, 394
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALE.PDIVi
sion, 395
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALE.RLEV
el, 396
- SCPI.DISPlay.WINDow(Ch).TRACe(Tr).Y.SCALE.RPOS
ition, 397

-
- SCPI.DISPlay.WINdow(Ch).X.SPACing, 398
 - SCPI.DISPlay.WINdow(Ch).Y.SCALe.DIVisions, 399
 - SCPI.FORMat.BORDer, 400
 - SCPI.FORMat.DATa, 401
 - SCPI.HCOPy.ABORt, 403
 - SCPI.HCOPy.IMAGe, 403
 - SCPI.HCOPy.IMMediate, 404
 - SCPI.IEEE4882.CLS, 405
 - SCPI.IEEE4882.ESE, 406
 - SCPI.IEEE4882.ESR, 407
 - SCPI.IEEE4882.IDN, 407
 - SCPI.IEEE4882.OPC, 408
 - SCPI.IEEE4882.OPT, 409
 - SCPI.IEEE4882.RST, 409
 - SCPI.IEEE4882.SRE, 410
 - SCPI.IEEE4882.STB, 411
 - SCPI.IEEE4882.TRG, 411
 - SCPI.IEEE4882.WAI, 411
 - SCPI.INITiate(Ch).CONTinuous, 412
 - SCPI.INITiate(Ch).IMMediate, 413
 - SCPI.MMEMory.CATalog(Dir), 414
 - SCPI.MMEMory.COPI, 415
 - SCPI.MMEMory.DELete, 416
 - SCPI.MMEMory.LOAD.ASCFactor, 417
 - SCPI.MMEMory.LOAD.BSCFactor, 418
 - SCPI.MMEMory.LOAD.CHANnel.STATe, 419
 - SCPI.MMEMory.LOAD.CKIT(Ckit), 420
 - SCPI.MMEMory.LOAD.LIMit, 421
 - SCPI.MMEMory.LOAD.PLOSs(Pt), 422
 - SCPI.MMEMory.LOAD.RLIMit, 423
 - SCPI.MMEMory.LOAD.SEGMent, 424
 - SCPI.MMEMory.LOAD.STATe, 425
 - SCPI.MMEMory.MDIRectory, 426
 - SCPI.MMEMory.STORe.ASCFactor, 427
 - SCPI.MMEMory.STORe.BSCFactor, 428
 - SCPI.MMEMory.STORe.CHANnel.CLEar, 429
 - SCPI.MMEMory.STORe.CHANnel.STATe, 429
 - SCPI.MMEMory.STORe.CKIT(Ckit), 430
 - SCPI.MMEMory.STORe.FDATa, 431
 - SCPI.MMEMory.STORe.IMAGe, 432
 - SCPI.MMEMory.STORe.LIMit, 433
 - SCPI.MMEMory.STORe.PLOSs(Pt), 434
 - SCPI.MMEMory.STORe.RLIMit, 435
 - SCPI.MMEMory.STORe.SALL, 436
 - SCPI.MMEMory.STORe.SEGMent, 437
 - SCPI.MMEMory.STORe.STATe, 438
 - SCPI.MMEMory.STORe.STYPe, 439
 - SCPI.OUTPUT.STATe, 440
 - SCPI.SENS(Ch).CORRection.COEFFicient.DATa, 446
 - SCPI.SENS(Ch).CORRection.COEFFicient.METHod.ERESponse, 448
 - SCPI.SENSE(Ch).AVERAge.CLEar, 441
 - SCPI.SENSE(Ch).AVERAge.COUNT, 441
 - SCPI.SENSE(Ch).AVERAge.STATe, 442
 - SCPI.SENSE(Ch).BANDwidth.RESolution, 443
 - SCPI.SENSE(Ch).BWIDth.RESolution, 444
 - SCPI.SENSE(Ch).CORRection.COLLECT.METHod.ERESponse, 508
 - SCPI.SENSE(Ch).CORRection.CLEar, 445
 - SCPI.SENSE(Ch).CORRection.COEFFicient.METHod.RESPonse.OPEN, 449
 - SCPI.SENSE(Ch).CORRection.COEFFicient.METHod.RESPonse.SHORT, 449
 - SCPI.SENSE(Ch).CORRection.COEFFicient.METHod.RESPonse.THRU, 450
 - SCPI.SENSE(Ch).CORRection.COEFFicient.METHod.SLOT2, 452
 - SCPI.SENSE(Ch).CORRection.COEFFicient.METHod.SLOT3, 453, 454
 - SCPI.SENSE(Ch).CORRection.COEFFicient.METHod.SOLUTION1, 451
 - SCPI.SENSE(Ch).CORRection.COEFFicient.SAVE, 455
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.ISOLation, 456
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.LOAD, 457
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.OPEN, 458
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.SHORT, 458
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.SUBCLASS, 459
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.THRU, 460
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.TRLLine, 461
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.TRLReflect, 462
 - SCPI.SENSE(Ch).CORRection.COLLECT.ACQUIRE.TRLThru, 463
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.LABEL, 464
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.ORDER.LOAD(Cpt), 465
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.ORDER.OPEN(Cpt), 467
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.ORDER.SELECT, 468
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.ORDER.SHORT(Cpt), 469
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.ORDER.THRU(Cpt_m,Cpt_n), 470
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.ORDER.TRLLine(Cpt_m,Cpt_n), 472
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.ORDER.TRLReflect, 473
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.ORDER.TRLThru(Cpt_m,Cpt_n), 474
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.RESet, 475
 - SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.SELect, 475

- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).ARbitrary, 477
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).C0, 478
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).C1, 479
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).C2, 480
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).C3, 481
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).CHARacter, 482
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).DElay, 483
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).FMAX, 484
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).FMIN, 485
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).L0, 486
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).L1, 487
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).L2, 488
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).L3, 489
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).LABel, 490
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).LOSS, 491
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).TYPE, 492
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.STAN(Std).Z0, 493
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.TRLoption.IMPedance, 494
- SCPI.SENSE(Ch).CORRection.COLLECT.CKIT.TRLoption.RPLane, 495
- SCPI.SENSE(Ch).CORRection.COLLECT.CLEAR, 496
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.CCHECK.ACQUIRE, 497
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.ERESponse, 498
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.ISOLation.STATe, 499
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.ORientation.STATe, 500
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.PATH(Cp t), 501
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.SOLT1, 502
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.SOLT2, 503
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.SOLT3, 504
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.SOLT4, 505
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.THURU, 506
- SCPI.SENSE(Ch).CORRection.COLLECT.ECAL.UCHar, 507
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.RESPonse.OPEN, 509
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.RESPonse.SHORT, 509
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.RESPonse.THURU, 510
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.SOLT1, 510
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.SOLT2, 511
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.SOLT3, 512
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.SOLT4, 513
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.TRL2, 514
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.TRL3, 515
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.TRL4, 516
- SCPI.SENSE(Ch).CORRection.COLLECT.METHOD.TYPE, 517
- SCPI.SENSE(Ch).CORRection.COLLECT.SAVE, 518
- SCPI.SENSE(Ch).CORRection.COLLECT.SIMPLified.SAVE, 519
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.CONF ig, 520
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.DCOFF set, 521
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.LOSS, 522
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.MEAS ure, 523
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.PORT(Pt), 524
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.RESet, 525
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.START, 526
- SCPI.SENSE(Ch).CORRection.EXTension.AUTO.STOP, 527
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).FREQuency(Fq), 528
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).INCLude(II).STATe, 530
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).LDC, 532
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).LOSS(Loss), 533
- SCPI.SENSE(Ch).CORRection.EXTension.PORT(Pt).TIME, 535
- SCPI.SENSE(Ch).CORRection.EXTension.STATe, 536

- SCPI.SENSE(Ch).CORRection.IMPedance.INPut.MAGNitude, 537
- SCPI.SENSE(Ch).CORRection.OFFSet.CLEar, 538
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.ACQuire.LOAD, 539
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.ACQuire.OPEN, 540
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.ACQuire.PMEter, 541
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.ACQuire.SHORt, 543
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.ACQuire.THRU, 544
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.CLEar, 545
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.ECAL.SMIX2, 546
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.ECAL.SOLT1, 547
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.METHOD.SMIX2, 548
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.METHOD.SOLT1, 549
- SCPI.SENSE(Ch).CORRection.OFFSet.COLlect.SAVE, 550
- SCPI.SENSE(Ch).CORRection.PROPerTy, 551
- SCPI.SENSE(Ch).CORRection.RECeiver(Pt).COLlect.ACQuire, 552
- SCPI.SENSE(Ch).CORRection.RECeiver(Pt).STATE, 553
- SCPI.SENSE(Ch).CORRection.RVELocity.COAX, 554
- SCPI.SENSE(Ch).CORRection.STATE, 555
- SCPI.SENSE(Ch).CORRection.TYPE, 556
- SCPI.SENSE(Ch).FREQuency.CENTer, 558
- SCPI.SENSE(Ch).FREQuency.CW, 559
- SCPI.SENSE(Ch).FREQuency.DATA, 560
- SCPI.SENSE(Ch).FREQuency.FIXed, 561
- SCPI.SENSE(Ch).FREQuency.SPAN, 562
- SCPI.SENSE(Ch).FREQuency.STARt, 563
- SCPI.SENSE(Ch).FREQuency.STOP, 564, 565
- SCPI.SENSE(Ch).MULTiplexer(Id).OUTPut.DATA, 570
- SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).CATalog, 571
- SCPI.SENSE(Ch).MULTiplexer(Id).PORT(Pt).SElect, 572
- SCPI.SENSE(Ch).MULTiplexer(Id).STATE, 574
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.OUTPut.DATa, 575
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT1, 576
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT2, 577
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT3, 578
- SCPI.SENSE(Ch).MULTiplexer(Id).TSET9.PORT4, 579
- SCPI.SENSE(Ch).OFFSet.ASPurious, 580
- SCPI.SENSE(Ch).OFFSet.LOCal.CONTRol.STATE, 581
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.DATA, 582
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.DIVisor, 583
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.MULTIplier, 584
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.OFFSet, 585
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.STARt, 586
- SCPI.SENSE(Ch).OFFSet.LOCal.FREQuency.STOP, 587
- SCPI.SENSE(Ch).OFFSet.LOCal.POWer.LEVel.IMMediate.AMPLitude, 588
- SCPI.SENSE(Ch).OFFSet.LOCal.POWer.LEVel.SLOPe.DATa, 589
- SCPI.SENSE(Ch).OFFSet.LOCal.POWer.LEVel.SLOPe.STATE, 590
- SCPI.SENSE(Ch).OFFSet.LOCal.STATE, 591
- SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.DATA, 592
- SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.DIVisor, 593
- SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.MULTIplier, 594
- SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.OFFSet, 595
- SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.STARt, 596
- SCPI.SENSE(Ch).OFFSet.PORT(Pt).FREQuency.STOP, 597
- SCPI.SENSE(Ch).OFFSet.STATE, 598
- SCPI.SENSE(Ch).ROSCillator.SOURce, 599
- SCPI.SENSE(Ch).SEGMENT.DATA, 600
- SCPI.SENSE(Ch).SEGMENT.SWEep.POINts, 602
- SCPI.SENSE(Ch).SEGMENT.SWEep.TIME.DATA, 602
- SCPI.SENSE(Ch).SWEep.ASPurious, 603
- SCPI.SENSE(Ch).SWEep.DELay, 604
- SCPI.SENSE(Ch).SWEep.GENeration, 605
- SCPI.SENSE(Ch).SWEep.POINts, 606
- SCPI.SENSE(Ch).SWEep.TIME.AUTO, 607
- SCPI.SENSE(Ch).SWEep.TIME.DATA, 608
- SCPI.SENSE(Ch).SWEep.TYPE, 609
- SCPI.SENSE.MULTIplexer(Id).DISPlay.STATE, 567
- SCPI.SENSE.MULTIplexer(Id).INCount, 568
- SCPI.SENSE.MULTIplexer(Id).NAME, 569
- SCPI.SENSE.MULTIplexer(Id).TSET9.OUTPut.DATA, 566
- SCPI.SERVICE.CHANnel(Ch).TRACe.ACTive, 611
- SCPI.SERVICE.CHANnel.ACTive, 610
- SCPI.SERVICE.CHANnel.COUNT, 610
- SCPI.SERVICE.CHANnel.TRACe.COUNT, 611
- SCPI.SERVICE.PORT.COUNT, 612
- SCPI.SERVICE.SREVision, 612
- SCPI.SOURCE(Ch).POWer.ATTenuation.AUTO, 614
- SCPI.SOURCE(Ch).POWer.ATTenuation.DATA, 613
- SCPI.SOURCE(Ch).POWer.CENTer, 616
- SCPI.SOURCE(Ch).POWer.LEVel.IMMediate.AMPLitude, 617
- SCPI.SOURCE(Ch).POWer.LEVel.SLOPe.DATA, 618
- SCPI.SOURCE(Ch).POWer.LEVel.SLOPe.STATE, 619
- SCPI.SOURCE(Ch).POWer.PORT(Pt).CORRection.COLlect.ACQuire, 620
- SCPI.SOURCE(Ch).POWer.PORT(Pt).CORRection.COLlect.AVERAge.COUNT, 622

- SCPI.SOURce(Ch).POWER.PORT(Pt).CORRection.COLLection.TABLe.LOSS.DATA, 626
- SCPI.SOURce(Ch).POWER.PORT(Pt).CORRection.COLLection.TABLe.LOSS.STATE, 627
- SCPI.SOURce(Ch).POWER.PORT(Pt).CORRection.DATA, 628
- SCPI.SOURce(Ch).POWER.PORT(Pt).CORRection.STATE, 629
- SCPI.SOURce(Ch).POWER.PORT(Pt).LEVel.IMMediate.AMPLitude, 631
- SCPI.SOURce(Ch).POWER.PORT.COUPLe, 630
- SCPI.SOURce(Ch).POWER.SPAN, 632
- SCPI.SOURce(Ch).POWER.START, 633
- SCPI.SOURce(Ch).POWER.STOP, 634
- SCPI.SOURce.POWER.PORT.CORRection.COLLection.ASEnsor.RCFactor, 621
- SCPI.SOURce.POWER.PORT.CORRection.COLLection.BE nsor.RCFactor, 623
- SCPI.SOURce.POWER.PORT.CORRection.COLLection.TABLe.ASEnsor.DATA, 624
- SCPI.SOURce.POWER.PORT.CORRection.COLLection.TABLe.BE nsor.DATA, 625
- SCPI.STATus.OPERation.CONDiTion, 635
- SCPI.STATus.OPERation.ENABLE, 635
- SCPI.STATus.OPERation.EVENT, 636
- SCPI.STATus.OPERation.NTRansition, 636
- SCPI.STATus.OPERation.PTRansition, 637
- SCPI.STATus.PRESet, 637
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).CON DiTion, 638
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHA nnel.CONDiTion, 639
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHA nnel.ENABLE, 640
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHA nnel.EVENT, 641
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHA nnel.NTRansition, 642
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ECHA nnel.PTRansition, 643
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).ENA Ble, 644
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).EVE Nt, 645
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).NTRa nsition, 646
- SCPI.STATus.QUEStionable.BLIMit.CHANnel(Ch).PTRa nsition, 647
- SCPI.STATus.QUEStionable.BLIMit.CONDiTion, 648
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.CONDiTion, 648
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.ENABLE, 649
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.EVENT, 649
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.NTRansition , 650
- SCPI.STATus.QUEStionable.BLIMit.ELIMit.PTRansition, 651
- SCPI.STATus.QUEStionable.BLIMit.ENABLE, 652
- SCPI.STATus.QUEStionable.BLIMit.EVENT, 652
- SCPI.STATus.QUEStionable.BLIMit.NTRansition, 653
- SCPI.STATus.QUEStionable.BLIMit.PTRansition, 654
- SCPI.STATus.QUEStionable.CONDiTion, 655
- SCPI.STATus.QUEStionable.ENABLE, 656
- SCPI.STATus.QUEStionable.EVENT, 657
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).CONDi tion, 657
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHAN nel.CONDiTion, 658
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHAN nel.ENABLE, 659
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHAN nel.EVENT, 660
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHAN nel.NTRansition, 661
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ECHAN nel.PTRansition, 662
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).ENABLe, 663
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).EVENT , 664
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).NTRan sition, 665
- SCPI.STATus.QUEStionable.LIMit.CHANnel(Ch).PTRan sition, 666
- SCPI.STATus.QUEStionable.LIMit.CONDiTion, 667
- SCPI.STATus.QUEStionable.LIMit.ELIMit.CONDiTion, 667
- SCPI.STATus.QUEStionable.LIMit.ELIMit.ENABLE, 668
- SCPI.STATus.QUEStionable.LIMit.ELIMit.EVENT, 668
- SCPI.STATus.QUEStionable.LIMit.ELIMit.NTRansition, 669
- SCPI.STATus.QUEStionable.LIMit.ELIMit.PTRansition, 670
- SCPI.STATus.QUEStionable.LIMit.ENABLE, 671
- SCPI.STATus.QUEStionable.LIMit.EVENT, 671
- SCPI.STATus.QUEStionable.LIMit.NTRansition, 672
- SCPI.STATus.QUEStionable.LIMit.PTRansition, 673
- SCPI.STATus.QUEStionable.NTRansition, 674
- SCPI.STATus.QUEStionable.PTRansition, 675
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).CON DiTion, 676
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHA nnel.CONDiTion, 677
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHA nnel.ENABLE, 678
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHA nnel.EVENT, 679
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHA nnel.NTRansition, 680
- SCPI.STATus.QUEStionable.RLIMit.CHANnel(Ch).ECHA nnel.PTRansition, 681

- SCPI.STATus.QUEStionable.RLiMit.CHANnel(Ch).ENABle, 682
- SCPI.STATus.QUEStionable.RLiMit.CHANnel(Ch).EVENt, 683
- SCPI.STATus.QUEStionable.RLiMit.CHANnel(Ch).NTRAnSition, 684
- SCPI.STATus.QUEStionable.RLiMit.CHANnel(Ch).PTRAnSition, 685
- SCPI.STATus.QUEStionable.RLiMit.CONDiTion, 686
- SCPI.STATus.QUEStionable.RLiMit.ELiMit.ENABle, 687
- SCPI.STATus.QUEStionable.RLiMit.ELiMit.EVENT, 687
- SCPI.STATus.QUEStionable.RLiMit.ELiMit.NTRAnSition, 688
- SCPI.STATus.QUEStionable.RLiMit.ELiMit.PTRAnSition, 689
- SCPI.STATus.QUEStionable.RLiMit.ENABle, 690
- SCPI.STATus.QUEStionable.RLiMit.EVENT, 690
- SCPI.STATus.QUEStionable.RLiMit.NTRAnSition, 691
- SCPI.STATus.QUEStionable.RLiMit.PTRAnSition, 692
- SCPI.SYSTem.BACKlight, 693
- SCPI.SYSTem.BEEPer.COMPLete.IMMediate, 694
- SCPI.SYSTem.BEEPer.COMPLete.STATe, 694
- SCPI.SYSTem.BEEPer.WARniNg.IMMediate, 695
- SCPI.SYSTem.BEEPer.WARniNg.STATe, 695
- SCPI.SYSTem.COMMunicate.GPIB.PMETer.ADDReSS, 696
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.ADDReSS, 697
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.FREQuency, 698
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.POWer, 699
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.PRESet, 700
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.CCOMmand.RFON, 701
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.DWELl, 702
- SCPI.SYSTem.COMMunicate.GPIB.SGENerator.TYPE, 703
- SCPI.SYSTem.CORRection.STATe, 704
- SCPI.SYSTem.DATE, 705
- SCPI.SYSTem.ERRor, 706
- SCPI.SYSTem.ISPControl.PORT, 707
- SCPI.SYSTem.ISPControl.STATe, 708
- SCPI.SYSTem.KLOCK.KBD, 709
- SCPI.SYSTem.KLOCK.MOUSe, 710
- SCPI.SYSTem.POFF, 710
- SCPI.SYSTem.PRESet, 711
- SCPI.SYSTem.SECurity.LEVel, 712
- SCPI.SYSTem.SERVice, 713
- SCPI.SYSTem.TEMPerature.HIGH, 714
- SCPI.SYSTem.TEMPerature.STATe, 715
- SCPI.SYSTem.TIME, 716, 717
- SCPI.TRIGger.SEQuence.IMMediate, 718
- SCPI.TRIGger.SEQuence.POINt, 719
- SCPI.TRIGger.SEQuence.SINgLe, 720
- SCPI.TRIGger.SEQuence.SOURce, 721
- UserMenu.Item(Key_id).Caption, 196
- UserMenu.Item(Key_id).Enabled, 197
- UserMenu.PRESet, 198
- UserMenu.PREss(Key_id), 199
- UserMenu.Show, 199
- UserMenu_OnPress(ByVal Key_id As Long), 198
- VBAVersion, 200
- WaitOnSRQ, 201
- COM object
 - about COM object, 31
 - accessing a list of COM objects, 66
 - auto-complete function, 45
 - control methods of the E5070B/E5071B, 31
 - conversion rules from SCPI commands, 135
 - ECHO, 192
 - list by front panel key, 156
 - list by function, 136
 - looking up COM objects, 24
 - major control difference between COM object and SCPI command, 32
 - object model, 134
 - object tree, 173
 - overview of E5070B/E5071B COM object, 31
- COM object reference
 - notational rules, 190
- Complex operation library, 742
 - ComplexAbs(x), 743
 - ComplexAdd(x,y), 743
 - ComplexArg(x), 743
 - ComplexConj(x), 744
 - ComplexCos(x), 744
 - ComplexCosh(x), 744
 - ComplexDiv(x,y), 744
 - ComplexExp(x), 745
 - ComplexLog(x), 745
 - ComplexLog10(x), 745
 - ComplexMul(x,y), 745
 - ComplexNorm(x), 746
 - ComplexPolar(x,y), 746
 - ComplexSet(x,y), 746
 - ComplexSetArray(x), 747
 - ComplexSin(x), 747
 - ComplexSinh(x), 747
 - ComplexSqrt(x), 748
 - ComplexSub(x,y), 748
- Complex type, 742
 - ComplexAbs(x), 743
 - ComplexAdd(x,y), 743
 - ComplexArg(x), 743
 - ComplexConj(x), 744
 - ComplexCos(x), 744
 - ComplexCosh(x), 744
 - ComplexDiv(x,y), 744
 - ComplexExp(x), 745
 - ComplexLog(x), 745

-
- ComplexLog10(x), 745
 - ComplexMul(x,y), 745
 - ComplexNorm(x), 746
 - ComplexPolar(x,y), 746
 - ComplexSet(x,y), 746
 - ComplexSetArray(x), 747
 - ComplexSin(x), 747
 - ComplexSinh(x), 747
 - ComplexSqrt(x), 748
 - ComplexSub(x,y), 748
 - control methods, 30
 - control system
 - control system based on the macro function, 29
 - controlling E5070B/E5071B
 - control methods of the E5070B/E5071B, 31
 - controlling peripherals
 - control methods, 30
 - implementing a control system, 29
 - overview, 86
- D**
- data
 - reading/writing measurement data, 75
 - data hint, 60
 - DC bias
 - application program for DC power supply, 88
 - debugging, 57
 - description
 - COM Object reference, 191
 - display
 - Display_Update procedure, 108
 - echo Window, 63
 - initial screen of Visual Basic Editor, 34
 - switching from Visual Basic Editor to E5070B/E5071B measurement screen, 36
 - Display_Update
 - procedure for displaying analysis results, 108
- E**
- echo window, 63
 - Echo Window button, 63
 - End statement
 - stopping a VBA program, 56
 - equivalent key
 - equivalent key to COM object, 191
 - error handling routine
 - On Error GoTo sentence, 96
 - errors
 - run-time errors, 57
 - syntax errors, 57
 - event
 - COM objects, 31
 - executing a procedure with assigned softkey, 80
 - examples
 - COM object reference, 191
 - Executing Power Calibration, 124
 - export
 - saving a module, 47
 - external instruments
 - controlling external instruments from E5070B/E5071B, 85
- F**
- F/W version, 407
 - FEM, 116
 - Firmware version, 407
 - FirstLeftGap(Chan), 727
 - FirstLeftInterval(Chan), 728
 - FirstLRightInterval(Chan), 730
 - FirstRightGap(Chan), 729
 - For...Next statement, 44
 - front panel key
 - equivalent key to COM object, 191
- G**
- GapMean(Chan), 731
- H**
- help
 - using VBA online help, 64
 - history
 - manual printing, 2
- I**
- I/O library
 - controlling peripherals from E5070B/E5071B, 85
 - immediate window, 60
 - import
 - loading a module, 50
 - index
 - storing array data, 75
 - Initialization
 - Error queue, 405
 - Status register, 405
 - Installation and Quick Start Guide, 4
- L**
- library references
 - automatic library references, 67
 - limit test setting
 - Setup_Limitline procedure, 107
 - Load & Run, 54
 - Load Project button, 49
 - loading
 - loading a module, 50
 - loading a project, 49
 - loading a project at power-on, 50
 - local window
 - debug toolbar, 58
- M**
- macro
 - introduction of the macro function, 28
-

Macro Break key, 55
macro function
 control system based on the macro function, 29
Macro Run key, 54
Macros dialog box, 53
manual changes, 751
manual printing history, 2
MaxEnvelopeGap(Chan), 732
MaxGap(Chan), 733
MaxLeftGap(Chan), 734
MaxPeakToPeak(Chan), 735
MaxRightGap(Chan), 736
MaxRipplePoint(Chan,Stim), 737
MaxRippleValue(Chan), 738
measurement
 detecting the end of measurement, 70
 program for measuring a band-pass filter, 94
 program for measuring a duplexer, 102
 program for measuring FEM, 116
measurement conditions
 Setup_Parameter, 106
Measurement using E5091A, 116
menu bar, 34
method
 COM objects, 31
modules
 class module, 37
 deleting modules, 41
 loading a module, 50
 saving a module, 47
 standard module, 37
 user form, 37

O

object box, 42
object browser, 66
object model, 134
option ID, 409

P

peripherals
 controlling peripherals from E5070B/E5071B, 85
Pole(Chan,D,LeftStim,LeftValue,RightStim,RightValue),
 739
Power Calibration, 124
Preset User Menu button, 81
procedure box, 42
Product information, 407
Programmer's Guide, 4
programming
 auto-complete function, 45
 coding a VBA program, 42
project, 37
 loading a project, 49
 saving a project file, 46
project explorer, 35
property

 COM objects, 31
 monitoring property values, 60
property window, 35

Q

quick watch, 62

R

reading
 reading/writing measurement data, 75
reference
 automatic library references, 67
related objects
 COM object reference, 191
Reset
 Error queue, 405
 Instrument setting, 409
 Status register, 405
Ripple
 Ripple Analysis Library, 724
ripple
 reading out a bandpass ripple value, 106
ripple Analysis
 setting the peak definition, 724
ripple analysis
 FirstLeftGap(Chan), 727
 FirstLeftInterval(Chan), 728
 FirstRightInterval(Chan), 730
 FirstRightGap(Chan), 729
 flow of programming, 724
 GapMean(Chan), 731
 MaxEnvelopeGap(Chan), 732
 MaxGap(Chan), 733
 MaxLeftGap(Chan), 734
 MaxPeakToPeak(Chan), 735
 MaxRightGap(Chan), 736
 MaxRipplePoint(Chan,Stim), 737
 MaxRippleValue(Chan), 738
 Pole(Chan,D,LeftStim,LeftValue,RightStim,RightValue),
 739
 simple use example, 726
 specifying analysis range, 724
running
 running a VBA program, 52

S

sample program
 apl_bsc.vba, 94
 apl_fem.vba, 116
 apl_sys.vba, 102
 ctrl_ext.vba, 91
 how to load, 24, 25
 map_drive.vba, 130
 meas_sing.vba, 73
 meas_srj.vba, 70
 meas_user.vba, 82

pow_cal.vba, 124
 read_write.vba, 76
 visa32.bas, 86
 vpptype.bas, 86
 sample program disk
 notice, 3
 Save Project button, 47
 saving
 saving a module, 47
 saving a project file, 46
 SCPI, 409
 SCPI command
 major control difference between COM object and SCPI
 command, 32
 SCPI objects, 135
 segment sweep setting
 Setup_Segment procedure, 106
 Select Macro button, 54
 Serial number plate, 752
 Service Request Enable Register
 Setting, 410
 Setup_Limitline
 procedure for limit test setting, 107
 Setup_Parameter
 procedure for setting measurement conditions, 106
 Setup_Register
 procedure for setting status register, 107
 Setup_Segment
 procedure for segment sweep setting, 106
 softkey
 executing a procedure with assigned softkey, 80
 executing a VBA program in the VBA folder, 54
 SRQ
 suspending program until detection, 70
 Standard Event Status Register
 Reading out, 407
 Setting valid registers, 406
 standard module, 37
 inserting standard module, 40
 Status Byte Register
 Reading out, 411
 status register
 detecting the end of measurement, 70
 status register setting
 Setup_Register procedure, 107
 step-in
 debug toolbar, 58
 step-out
 debug toolbar, 58
 step-over
 debug toolbar, 58
 Stop button, 55
 syntax
 COM object reference, 190

T

toolbar, 34

 debug toolbar, 58
 trigger, 411
 triggering
 detecting the end of measurement, 70
 type of object
 COM object reference, 190

U

user form, 37
 inserting UserForm, 38
 User Menu button, 81
 user menu function, 80
 User's Guide, 4
 UserMenu_OnPress Procedure, 80

V

variable
 COM object reference, 191
 monitoring variables, 60
 Variant type
 storing array data, 75
 VBA
 introduction of the macro function, 28
 VBA Editor button, 34
 VBA programmer's
 contents of this manual, 22
 how to use this manual, 24
 VBA Programmer's Guide, 4
 vbreadme.txt
 CD-ROM, 87
 viClose function
 VISA, 90
 viOpen function
 VISA, 88
 viOpenDefaultRM function
 VISA, 88
 VISA
 control flow with VISA, 87
 importing definition files, 86
 notes on using VISA library with VB, 87
 online help of VISA library, 87
 program to read out the product information on peripherals,
 91
 programming using VISA, 87
 visa.hlp
 CD-ROM, 87
 Visual Basic Editor
 closing Visual Basic Editor, 36
 displaying Visual Basic Editor, 34
 initial screen, 34
 viVPrintf function
 VISA, 89
 viVScanf function
 VISA, 90

W

wait, 411

WaitOnSRQ, 70

watch window, 61

writing

 reading/writing measurement data, 75

REGIONAL SALES AND SUPPORT OFFICES

For more information about Agilent Technologies test and measurement products, applications, services, and for a current sales office listing, visit our web site: <http://www.agilent.com/find/tmdir>. You can also contact one of the following centers and ask for a test and measurement sales representative. 21/01/2004

United States:

Test and Measurement Call Center
(tel) 1 800 452-4844
(fax) 1 888 900-8921

Australia/New Zealand:

(tel) (61 3) 9210-5555 (Australia)
(fax) (61 3) 9210-5899
(tel) (64 4) 939-0636 (New Zealand)
(fax) (64 4) 972-5364

Canada:

Test and Measurement Call Center
(tel) 1 877 894-4414
(fax) 1 888 900-8921

Asia Pacific:

(tel) (65) 6375-8100
(fax) (65) 6836-0252
Email: tm_asia@agilent.com

China:

(tel) 800 810-0189
(fax) 800 820-2816

Europe:

(tel) (31 20) 547-2323
(fax) (31 20) 547-2390

Japan:

Call Center
(tel) 0120 421-345
(tel) (81) 426 56-7832
(fax) (81) 426 56-7840

Korea:

(tel) (82 2) 2004-5004
(fax) (82 2) 2004-5115

Latin America:

(tel) (305) 269-7500
(fax) (305) 269-7599

Taiwan:

(tel) 0800 047 866
(fax) 0800 286 331