

SCPI Command Reference Volume 3

Agilent Technologies E4428C/38C ESG Signal Generators

This guide applies to the following signal generator models:

E4428C ESG Analog Signal Generator

E4438C ESG Vector Signal Generator

Due to our continuing efforts to improve our products through firmware and hardware revisions, signal generator design and operation may vary from descriptions in this guide. We recommend that you use the latest revision of this guide to ensure you have up-to-date product information. Compare the print date of this guide (see bottom of page) with the latest revision, which can be downloaded from the following website:

<http://www.agilent.com/find/esg>



Agilent Technologies

Manufacturing Part Number: E4400-90594

Printed in USA

August 2005

© Copyright 2001–2005 Agilent Technologies, Inc.

Notice

The material contained in this document is provided “as is”, and is subject to being changed, without notice, in future editions.

Further, to the maximum extent permitted by applicable law, Agilent disclaims all warranties, either express or implied with regard to this manual and to any of the Agilent products to which it pertains, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Agilent shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or any of the Agilent products to which it pertains. Should Agilent have a written contract with the User and should any of the contract terms conflict with these terms, the contract terms shall control.

Questions or Comments about our Documentation?

We welcome any questions or comments you may have about our documentation. Please send us an E-mail at sources_manuals@am.exch.agilent.com.

SCPI Command Reference, Volume 1

1. SCPI Basics	1
Command Reference Information	2
SCPI Command Listings	2
Key and Data Field Cross Reference	2
Supported Field	2
SCPI Basics	3
Common Terms	3
Command Syntax	4
Command Types	5
Command Tree	6
Command Parameters and Responses	7
Program Messages	12
File Name Variables	13
File Types and Directory Structure	14
MSUS (Mass Storage Unit Specifier) Variable	16
Quote Usage with SCPI Commands	17
Binary, Decimal, Hexadecimal, and Octal Formats	18
2. Basic Function Commands	19
Correction Subsystem ([:SOURce]:CORRection)	20
:FLATness:LOAD	20
:FLATness:PAIR	20
:FLATness:POINts	20
:FLATness:PRESet	21
:FLATness:STORe	21
[:STATe]	21
Digital Modulation Subsystem—E4438C ([:SOURce])	22
:BURSt:SOURce	22
:BURSt:STATe	22
:DM:EXTernal:ALC:BANDwidth BWIDTH	22
:DM:EXTernal:HCRest[:STATe]	23
:DM:EXTernal:FILTer	23
:DM:EXTernal:FILTer:AUTO	23
:DM:EXTernal:POLarity	24
:DM:EXTernal:SOURce	24

Contents

:DM:IQADjustment:EXTErnal:COFFset	25
:DM:IQADjustment:EXTErnal:DIOFFset	25
:DM:IQADjustment:EXTErnal:DQOFFset	26
:DM:IQADjustment:EXTErnal:GAIN	26
:DM:IQADjustment:EXTErnal:IOFFset	26
:DM:IQADjustment:EXTErnal:IQATten	27
:DM:IQADjustment:EXTErnal:QOFFset	27
:DM:IQADjustment:GAIN	28
:DM:IQADjustment:IOFFset	28
:DM:IQADjustment:QOFFset	29
:DM:IQADjustment:QSKew	29
:DM:IQADjustment:SKEW	30
:DM:IQADjustment:SKEW:Path	31
:DM:IQADjustment[:STATE]	31
:DM:MODulation:FILTer	31
:DM:MODulation:FILTer:AUTO	32
:DM:MODulation:ATTen	32
:DM:MODulation:ATTen:AUTO	33
:DM:POLarity[:ALL]	33
:DM:SKEW:PATH	34
:DM:SKEW[:STATE]	34
:DM:SOURce	34
:DM:SRATio	35
:DM:STATE	36
Frequency Subsystem ([:SOURce])	37
:FREQuency:CHANnels:BAND	37
:FREQuency:CHANnels:NUMBer	39
:FREQuency:CHANnels[:STATE]	40
:FREQuency:FIXed	40
:FREQuency:MODE	41
:FREQuency:MULTiplier	41
:FREQuency:OFFSet	42
:FREQuency:OFFSet:STATE	42
:FREQuency:REFerence	42
:FREQuency:REFerence:STATE	43
:FREQuency:START	43
:FREQuency:STOP	44
:FREQuency:SYNThesis	44

:FREQuency[:CW]	45
:FREQuency[:CW][:STEP[:INCRement]	45
:PHASe:REFerence	46
:PHASe[:ADJust]	46
:ROSCillator:SOURce	46
:ROSCillator:SOURce:AUTO	46
List/Sweep Subsystem ([:SOURce])	48
:LIST:DIRection	49
:LIST:DWELI	49
:LIST:DWELI:POINts	50
:LIST:DWELI:TYPE	50
:LIST:FREQuency	50
:LIST:FREQuency:POINts	51
:LIST:MANual	51
:LIST:MODE	52
:LIST:POWer	52
:LIST:POWer:POINts	52
:LIST:RETRace	53
:LIST:TRIGger:SOURce	53
:LIST:TYPE	54
:LIST:TYPE:LIST:INITialize:FSTep	54
:LIST:TYPE:LIST:INITialize:PRESet	55
:SWEep:DWELI	55
:SWEep:POINts	56
Power Subsystem ([:SOURce]:POWer)	57
:ALC:BANDwidth BWIDTH	57
:ALC:BANDwidth	58
:ALC:LEVel	59
:ALC:SEARch	59
:ALC:SEARch:REFerence	60
:ALC:SEARch:SPAN:START	60
:ALC:SEARch:SPAN:STOP:SPAN:STOP	60
:ALC:SEARch:SPAN:TYPE	61
:ALC:SEARch:SPAN[:STATe]	61
:ALC[:STATe]	61
:ALTerminate:AMPLitude	62
:ALTerminate:MANual	62
:ALTerminate:STATe	63

Contents

:ALternate:TRIGger[:SOURce].	63
:ATTenuation.	64
:ATTenuation:AUTO	64
:MODE	65
:REFerence	65
:REFerence:STATe	66
:STARt	66
:STOP	67
[:LEVel][:IMMediate]:OFFSet	67
[:LEVel][:IMMediate][:AMPLitude]	68
[:LEVel][:IMMediate][:AMPLitude]:STEP	68
3. System Commands.	69
Calibration Subsystem (:CALibration).	70
:DCFM	70
:IQ	70
:IQ:DC	70
:IQ:DEFault	71
:IQ:FULL	71
:IQ:STARt	72
:IQ:STOP	72
Communication Subsystem (:SYSTEM:COMMunicate)	73
:GPIB:ADDRess	73
:GTLocal	73
:LAN:CONFig	73
:LAN:GATEway	74
:LAN:HOSTname	74
:LAN:IP	74
:LAN:SUBNet	75
:PMETer:ADDRess.	75
:PMETer:CHANnel	75
:PMETer:IDN	76
:PMETer:TIMEout	76
:SERial:BAUD	77
:SERial:ECHO	77
:SERial:RESet.	77
:SERial:TOUT	78
Diagnostic Subsystem (:DIAGnostic[:CPU]:INFORmation)	79

:BOARds	79
:CCOut:ATTenuator	79
:CCOut:PON	79
:CCOut:PROTection	79
:DISPlay:OTIME	80
:LICE:AUxiary	80
:LICE:WAVEform	81
:OPTions	81
:OPTions:DETail	81
:OTIME	82
:REVision	82
:SDATe	82
:WLICE[:VALue]	82
Display Subsystem (:DISPlay)	83
:ANNotation:AMPLitude:UNIT	83
:ANNotation:CLOCK:DATE:FORMat	83
:ANNotation:CLOCK[:STATe]	83
:BRIGhtness	84
:CAPTure	84
:CONTrast	84
:INVerse	85
:REMote	85
[:WINDow][:STATe]	85
IEEE 488.2 Common Commands	86
*CLS	86
*ESE	86
*ESE?	86
*ESR?	87
*IDN?	87
*OPC	87
*OPC?	88
*PSC	88
*PSC?	88
*RCL	88
*RST	89
*SAV	89
*SRE	89
*SRE?	90

Contents

- *STB? 90
- *TRG 90
- *TST? 90
- *WAI 91
- Memory Subsystem (:MEMory) 92
 - :CATalog:BINary 92
 - :CATalog:BIT 92
 - :CATalog:CDMa 93
 - :CATalog:DMOD 93
 - :CATalog:DWCDma 94
 - :CATalog:FCDMa 94
 - :CATalog:FIR 95
 - :CATalog:FSK 95
 - :CATalog:IQ 96
 - :CATalog:LIST 96
 - :CATalog:MCDMa 97
 - :CATalog:MDMod 97
 - :CATalog:MDWCdma 98
 - :CATalog:MFCdma 98
 - :CATalog:MTONe 99
 - :CATalog:RCDMa 99
 - :CATalog:SEQ 100
 - :CATalog:SHAPE 100
 - :CATalog:STATE 101
 - :CATalog:UFLT 101
 - :CATalog:UWCDma 102
 - :CATalog[:ALL] 102
 - :COPY[:NAME] 103
 - :DATA 103
 - :DATA:APPend 104
 - :DATA:BIT 105
 - :DATA:FIR 106
 - :DATA:FSK 107
 - :DATA:IQ 108
 - :DATA:PRAM:FILE:BLOCK 110
 - :DATA:PRAM:FILE:LIST 111
 - :DATA:PRAM 112
 - :DATA:PRAM:BLOCK 112

:DATA:PRAM:LIST	112
:DATA:SHAPE	112
:DATA:SHAPE	113
:DATA:UNPRotected	114
:DELeTe:ALL	115
:DELeTe:BINary	116
:DELeTe:BIT	116
:DELeTe:CDMa	116
:DELeTe:DMOD	116
:DELeTe:DWCDma	116
:DELeTe:FCDMa	117
:DELeTe:FIR	117
:DELeTe:FSK	117
:DELeTe:IQ	117
:DELeTe:LIST	117
:DELeTe:MCDMa	118
:DELeTe:MMod	118
:DELeTe:MDWCdma	118
:DELeTe:MFCdma	118
:DELeTe:MTONE	118
:DELeTe:RCDMa	119
:DELeTe:SEQ	119
:DELeTe:SHAPE	119
:DELeTe:STATe	119
:DELeTe:UFLT	119
:DELeTe:UWCDma	120
:DELeTe[:NAME]	120
:FREE[:ALL]	120
:LOAD:LIST	120
:MOVE	121
:STATe:COMMeNt	121
:STORe:LIST	121
Mass Memory Subsystem (:MMEMory)	122
:CATalog	122
:COpy	122
:DATA	123
:DELeTe:NVWFm	123
:DELeTe:WFM	123

Contents

:DELeTe:WFM1	123
:DELeTe[:NAME]	124
:HEADer:CLEAr	124
:HEADer:DESCRiption	124
:LOAD:LIST	125
:MOVE	125
:STORe:LIST	125
Output Subsystem (:OUTPut)	126
:BLANKing:AUTO	126
:BLANKing:STATe	126
:MODulation[:STATe]	127
[:STATe]	127
Route Subsystem (:ROUte:HARDware:DGENerator)	128
:INPut:BPOLarity	128
:INPut:CPOLarity	128
:INPut:DPOLarity	129
:INPut:SPOLarity	129
:IPOLarity:BGATe	129
:IPOLarity:CLOCK	130
:IPOLarity:DATA	130
:IPOLarity:SSYNc	130
:OPOLarity:CLOCK	131
:OPOLarity:DATA	131
:OPOLarity:SSYNc	132
:OUTPut:CPOLarity	132
:OUTPut:DCS[:STATe]	133
:OUTPut:DPOLarity	133
:OUTPut:SPOLarity	133
Status Subsystem (:STATus)	134
:OPERation:BASeband:CONDition	134
:OPERation:BASeband:ENABLe	134
:OPERation:BASeband:NTRansition	135
:OPERation:BASeband:PTRansition	135
:OPERation:BASeband[:EVENT]	136
:OPERation:CONDition	136
:OPERation:ENABLe	137
:OPERation:NTRansition	137
:OPERation:PTRansition	138

:OPERation[:EVENT]	138
:PRESet	138
:QUEStionable:BERT:CONDition	139
:QUEStionable:BERT:ENABle	139
:QUEStionable:BERT:NTRansition	140
:QUEStionable:BERT:PTRansition	140
:QUEStionable:BERT[:EVENT]	141
:QUEStionable:CALibration:CONDition	141
:QUEStionable:CALibration:ENABle	141
:QUEStionable:CALibration:NTRansition	142
:QUEStionable:CALibration:PTRansition	142
:QUEStionable:CALibration[:EVENT]	143
:QUEStionable:CONDition	143
:QUEStionable:ENABle	144
:QUEStionable:FREQuency:CONDition	144
:QUEStionable:FREQuency:ENABle	144
:QUEStionable:FREQuency:NTRansition	145
:QUEStionable:FREQuency:PTRansition	145
:QUEStionable:FREQuency[:EVENT]	145
:QUEStionable:MODulation:CONDition	146
:QUEStionable:MODulation:ENABle	146
:QUEStionable:MODulation:NTRansition	147
:QUEStionable:MODulation:PTRansition	147
:QUEStionable:MODulation[:EVENT]	147
:QUEStionable:NTRansition	148
:QUEStionable:POWer:CONDition	148
:QUEStionable:POWer:ENABle	149
:QUEStionable:POWer:NTRansition	149
:QUEStionable:POWer:PTRansition	149
:QUEStionable:POWer[:EVENT]	150
:QUEStionable:PTRansition	150
:QUEStionable[:EVENT]	151
System Subsystem (:SYSTem)	152
:CAPability	152
:DATE	152
:ERRor[:NEXT]	153
:ERRor:SCPI[:SYNTax]	153
:FILEsystem:SAFEmode	153

Contents

:HELP:MODE	154
:IDN	154
:LANGUage	154
:PON:TYPE	155
:PRESet	156
:PRESet:ALL	156
:PRESet:LANGUage	156
:PRESet:PERSiStent	157
:PRESet:PN9	157
:PRESet:TYPE	157
:PRESet[:USER]:SAVE	158
:SECurity:DISPlay	158
:SECurity:ERASeall	159
:SECurity:LEVel	159
:SECurity:LEVel:STATe	160
:SECurity:OVERwrite	161
:SECurity:SANitize	161
:SSAVer:DELay	161
:SSAVer:MODE	162
:SSAVer:STATe	162
:TIME	163
:VERSion	163
Trigger Subsystem	164
:ABORt	164
:INITiate:CONTInuous[:ALL]	164
:INITiate[:IMMediate][:ALL]	165
:TRIGger:OUTPut:POLarity	165
:TRIGger[:SEQuence]:SLOPe	166
:TRIGger[:SEQuence]:SOURce	166
:TRIGger[:SEQuence][:IMMediate]	167
Unit Subsystem (:UNIT)	168
:POWer	168
4. Analog Commands	169
Amplitude Modulation Subsystem ([:SOURce])	170
:AM[1]2...	170
:AM:INTernal:FREQuency:STEP[:INCRement]	170
:AM:WIDeband:STATe	171

:AM[1]2:EXternal[1]2:COUPLing	171
:AM[1]2:INternal[1]:FREQuency	172
:AM[1]2:INternal[1]:FREQuency:ALternate	172
:AM[1]2:INternal[1]:FREQuency:ALternate:AMPLitude:PERCent	173
:AM[1]2:INternal[1]:FUNctIon:SHAPE	173
:AM[1]2:INternal[1]:SWEep:TIME	173
:AM[1]2:INternal[1]:SWEep:TRIGger	174
:AM[1]2:SOURce	174
:AM[1]2:STATe	175
:AM[1]2[:DEPTh]	175
:AM[1]2[:DEPTh]:TRACk	176
:AM[:DEPTh]:STEP[:INCRement]	176
Frequency Modulation Subsystem ([:SOURce])	177
:FM[1]2...	177
:FM:INternal:FREQuency:STEP[:INCRement]	178
:FM[1]2:EXternal[1]2:COUPLing	178
:FM[1]2:INternal[1]:FREQuency	179
:FM[1]2:INternal[1]:FREQuency:ALternate	179
:FM[1]2:INternal[1]:FREQuency:ALternate:AMPLitude:PERCent	180
:FM[1]2:INternal[1]:FUNctIon:SHAPE	180
:FM[1]2:INternal[1]:SWEep:TIME	181
:FM[1]2:INternal[1]:SWEep:TRIGger	181
:FM[1]2:SOURce	182
:FM[1]2:STATe	182
:FM[1]2[:DEViation]	183
:FM[1]2[:DEViation]:TRACk	183
Low Frequency Output Subsystem ([:SOURce]:LFOutput)	184
:AMPLitude	184
:FUNctIon[1]:FREQuency	184
:FUNctIon[1]:FREQuency:ALternate	185
:FUNctIon[1]:FREQuency:ALternate:AMPLitude:PERCent	185
:FUNctIon[1]:PERiod	186
:FUNctIon[1]:PWIDth	186
:FUNctIon[1]:SHAPE	187
:FUNctIon[1]:SWEep:TIME	187
:FUNctIon[1]:SWEep:TRIGger	187
:SOURce	188
:STATe	188

Contents

Phase Modulation Subsystem ([:SOURce])	189
:PM[1]2	189
:PM:INTErnal:FREQuency:STEP[:INCRement]	190
:PM[1]2:BANDwidth BWIDth	190
:PM[1]2:EXTErnal[1]:COUPling	191
:PM[1]2:INTErnal[1]:FREQuency	191
:PM[1]2:INTErnal[1]:FREQuency:ALTErnate	192
:PM[1]2:INTErnal[1]:FREQuency:ALTErnate:AMPLitude:PERCent	192
:PM[1]2:INTErnal[1]:FUNCTion:SHAPE	193
:PM[1]2:INTErnal[1]:SWEep:TIME	193
:PM[1]2:INTErnal[1]:SWEep:TRIGger	193
:PM[1]2:SOURce	194
:PM[1]2:STATe	194
:PM[1]2[:DEVIation]	195
:PM[1]2[:DEVIation]:TRACk	195
:PM[:DEVIation]:STEP[:INCRement]	196
Pulse Modulation Subsystem ([:SOURce]:PULM)	197
:INTErnal[1]:FREQuency	197
:INTErnal[1]:FREQuency:STEP	197
:INTErnal[1]:FUNCTion:SHAPE	198
:INTErnal[1]:PERiod	198
:INTErnal[1]:PERiod:STEP[:INCRement]	198
:INTErnal[1]:PWIDth	199
:INTErnal[1]:PWIDth:STEP	199
:SOURce	200
:STATe	200
5. Component Test Digital Commands	201
All Subsystem–Option 001/601 or 002/602 ([:SOURce])	202
:RADio:ALL:OFF	202
AWGN ARB Subsystem–Option 403 ([:SOURce]:RADio:AWGN:ARB)	203
:BWIDth	203
:IQ:EXTErnal:FILTEr	203
:IQ:EXTErnal:FILTEr:AUTO	204
:HEADer:CLEAr	204
:HEADer:SAVE	204
:IQ:MODulation:ATTen	205
:IQ:MODulation:ATTen:AUTO	205

:IQ:MODulation:FILTer	206
:IQ:MODulation:FILTer:AUTO	206
:MDEStination:AAMPlitude	207
:MDEStination:ALCHold	207
:MDEStination:PULSe	208
:MPOLarity:MARKer1 2 3 4	210
:LENgth	210
:REFErence:EXTErnal:FREQUency	210
:REFErence[:SOURce]	211
:SCLock:RATE	211
:SEED	212
[:STATE]	212
CDMA ARB Subsystem–Option 401 ([:SOURce]:RADio:CDMA:ARB)	213
:CLIPping:I	213
:CLIPping:POSition	213
:CLIPping:Q	213
:CLIPping:TYPE	214
:CLIPping[:IJQ]	214
:CRATe	214
:IQ:EXTErnal:FILTer	215
:IQ:EXTErnal:FILTer:AUTO	215
:FILTer	216
:FILTer:ALPHa	217
:FILTer:BBT	217
:FILTer:CHANnel	218
:HEADer:CLear	218
:HEADer:SAVE	218
:IQMap	219
:IQ:MODulation:ATTen	219
:IQ:MODulation:ATTen:AUTO	219
:IQ:MODulation:FILTer	220
:IQ:MODulation:FILTer:AUTO	220
:MDEStination:AAMPlitude	220
:MDEStination:ALCHold	221
:MDEStination:PULSe	222
:MPOLarity:MARKer1 2 3 4	224
:OSAMple	224
:REFErence:EXTErnal:FREQUency	224

Contents

:REfERENCE[:SOURce]	225
:RETRigger	225
:SCLock:RATE	226
:SETup	226
:SETup:CHANnel	227
:SETup:MCARrier	228
:SETup:MCARrier:STORe	229
:SETup:MCARrier:TABLE	229
:SETup:STORe	230
:TRIGger:TYPE	231
:TRIGger:TYPE:CONTInuous[:TYPE]	232
:TRIGger:TYPE:GATE:ACTive	233
:TRIGger[:SOURce]	233
:TRIGger[:SOURce]:EXTernal:DELay	234
:TRIGger[:SOURce]:EXTernal:DELay:STATe	235
:TRIGger[:SOURce]:EXTernal:SLOPe	235
:TRIGger[:SOURce]:EXTernal[:SOURce]	236
:WLENgth	236
[:STATe]	237
CDMA2000 ARB Subsystem–Option 401 ([:SOURce]:RADio:CDMA2000:ARB)	238
:CLIPping:I	238
:CLIPping:POSition	238
:CLIPping:Q	238
:CLIPping:TYPE	239
:CLIPping[:IJQ]	239
:IQ:EXTernal:FILTer	239
:IQ:EXTernal:FILTer:AUTO	240
:FILTer	240
:FILTer:ALPHa	241
:FILTer:BBT	242
:FILTer:CHANnel	242
:HEADer:CLear	243
:HEADer:SAVE	243
:IQ:MODulation:ATTen	243
:IQ:MODulation:ATTen:AUTO	244
:IQ:MODulation:FILTer	244
:IQ:MODulation:FILTer:AUTO	244
:IQMap	245

:LINK	.245
:LINK:FORWard:SETup	.245
:LINK:FORWard:SETup:MCARrier	.246
:LINK:FORWard:SETup:MCARrier:STORE	.247
:LINK:FORWard:SETup:MCARrier:TABLE	.247
:LINK:FORWard:SETup:MCARrier:TABLE:NCARriers	.248
:LINK:FORWard:SETup:STORE	.249
:LINK:FORWard:SETup:TABLE:APPLY	.249
:LINK:FORWard:SETup:TABLE:CHANnel	.250
:LINK:FORWard:SETup:TABLE:NCHannels	.251
:LINK:FORWard:SETup:TABLE:PADJust	.251
:LINK:REVerse:RCONfig	.251
:LINK:REVerse:SETup	.252
:LINK:REVerse:SETup:STORE	.252
:LINK:REVerse:SETup:TABLE:APPLY	.253
:LINK:REVerse:SETup:TABLE:CHANnel	.253
:LINK:REVerse:SETup:TABLE:NCHannels	.254
:LINK:REVerse:SETup:TABLE:PADJust	.254
:MDEStination:AAMPlitude	.255
:MDEStination:ALCHold	.255
:MDEStination:PULSe	.256
:MPOLarity:MARKer1 2 3 4	.258
:REFerence:EXTernal:FREQuency	.258
:REFerence[:SOURce]	.258
:RETRigger	.259
:REVision	.259
:SCLock:RATE	.260
:SPReading:RATE	.260
:SPReading:TYPE	.261
:SPReading:TYPE:MCARrier:SPACing	.261
:TRIGger:TYPE	.261
:TRIGger:TYPE:CONTInuous[:TYPE]	.263
:TRIGger:TYPE:GATE:ACTive	.264
:TRIGger[:SOURce]	.264
:TRIGger[:SOURce]:EXTernal:DELay	.265
:TRIGger[:SOURce]:EXTernal:DELay:STATe	.266
:TRIGger[:SOURce]:EXTernal:SLOPe	.266
:TRIGger[:SOURce]:EXTernal[:SOURce]	.267

Contents

[:STATE]	267
Dmodulation Subsystem–Option 001/601 or 002/602 ([:SOURCE]:RADio:DMODulation:ARB)	268
:IQ:EXTernal:FILTer	268
:IQ:EXTernal:FILTer:AUTO	268
:FILTer	269
:FILTer:ALPHa	270
:FILTer:BBT	270
:FILTer:CHANnel	271
:HEADer:CLEar	271
:HEADer:SAVE	271
	272
:IQ:MODulation:ATTen:AUTO	272
:IQ:MODulation:FILTer	273
:IQ:MODulation:FILTer:AUTO	273
:MDESTination:AAMPLitude	274
:MDESTination:ALCHold	274
:MDESTination:PULSe	275
:MODulation:FSK[:DEViation]	277
:MODulation[:TYPE]	277
:MPOLarity:MARKer1 2 3 4	278
:REFerence:EXTernal:FREQuency	278
:REFerence[:SOURCE]	279
:RETRigger	279
:SCLock:RATE	280
:SETup	280
:SETup:MCARrier	281
:SETup:MCARrier:PHASe	281
:SETup:MCARrier:STORE	282
:SETup:MCARrier:TABLE	282
:SETup:MCARrier:TABLE:NCARriers	283
:SETup:STORE	283
:SRATe	284
:TRIGger:TYPE	285
:TRIGger:TYPE:CONTinuous[:TYPE]	286
:TRIGger:TYPE:GATE:ACTive	287
:TRIGger[:SOURCE]	288
:TRIGger[:SOURCE]:EXTernal:DELay	289
:TRIGger[:SOURCE]:EXTernal:DELay:STATe	289

:TRIGger[:SOURce]:EXTernal:SLOPe	290
:TRIGger[:SOURce]:EXTernal[:SOURce]	290
[:STATe]	291
Dual ARB Subsystem–Option 001/601 or 002/602 (:SOURce):RADio:ARB	292
:CLIPping	292
:GENerate:SINE	292
:HEADer:CLEar	293
:HEADer:RMS	293
:HEADer:SAVE	295
:HCRest[:STATe]	295
:IQ:EXTernal:FILTer	296
:IQ:EXTernal:FILTer:AUTO	296
:IQ:MODulation:ATTen	296
:IQ:MODulation:ATTen:AUTO	297
:IQ:MODulation:FILTer	297
:IQ:MODulation:FILTer:AUTO	298
:MARKer:CLEar	298
:MARKer:CLEar:ALL	299
:MARKer:ROTate	300
:MARKer:[SET]	300
:MDESTination:AAMPLitude	303
:MDESTination:ALCHold	303
:MDESTination:PULSe	304
:MPOLarity:MARKer1 2 3 4	306
:NOISe:BFACTOR	306
:NOISe:CBWidth	307
:NOISe:CN	307
:NOISe[:STATe]	308
:REFerence:EXTernal:FREQuency	308
:REFerence[:SOURce]	309
:RETRigger	309
:RSCALing	310
:SCALing	310
:SCLock:RATE	311
:SEQuence	311
:TRIGger:TYPE	313
:TRIGger:TYPE:CONTinuous[:TYPE]	315
:TRIGger:TYPE:GATE:ACTive	315

Contents

:TRIGger:TYPE:SADVance[:TYPE]	316
:TRIGger:TYPE:SADVance[:TYPE]	316
:TRIGger[:SOURce]	318
:TRIGger[SOURce]:EXTernal:DELay	319
:TRIGger[:SOURce]:EXTernal:DELay:STATe	319
:TRIGger[:SOURce]:EXTernal:SLOPe	320
:TRIGger[:SOURce]:EXTernal[:SOURce]	320
:WAVEform	321
:Waveform:NHEAders	321
[:STATe]	322
Multitone Subsystem–Option 001/601 or 002/602 ([:SOURce]:RADio:MTONe:ARB)	323
Creating a Multitone Waveform	323
:HEADer:CLear	323
:HEADer:SAVE	323
:IQ:EXTernal:FILTer	324
:IQ:EXTernal:FILTer:AUTO	324
:IQ:MODulation:ATTen	325
:IQ:MODulation:ATTen:AUTO	325
:IQ:MODulation:FILTer	326
:IQ:MODulation:FILTer:AUTO	326
:MDEStination:AAMPLitude	326
:MDEStination:ALCHold	327
:MDEStination:PULSe	328
:MPOLarity:MARKer1 2 3 4	330
:REFerence:EXTernal:FREQUency	330
:REFerence[:SOURce]	330
:ROW	331
:SCLock:RATE	332
:SETup	332
:SETup:STORe	332
:SETup:TABLE	333
:SETup:TABLE:FSPacing	333
:SETup:TABLE:NTONes	334
:SETup:TABLE:PHASe:INITialize	334
:SETup:TABLE:PHASe:INITialize:SEED	335
[:STATe]	335
Wideband CDMA ARB Subsystem–Option 400 ([:SOURce]:RADio:WCDMA:TGPP:ARB)	336
:CLIPping:I	336

:CLIPping:POSition	336
:CLIPping:Q	336
:CLIPping:TYPE	337
:CLIPping[:IJQ]	337
:CRATe	338
:FILTer	338
:FILTer:ALPHa	339
:FILTer:BBT	339
:FILTer:CHANnel	340
:HEADer:CLEar	340
:HEADer:SAVE	340
:IQ:EXTernal:FILTer	340
:IQ:EXTernal:FILTer:AUTO	341
:IQMap	341
:IQ:MODulation:ATTen	342
:IQ:MODulation:ATTen:AUTO	342
:IQ:MODulation:FILTer	342
:IQ:MODulation:FILTer:AUTO	343
:LINK	343
:LINK:DOWN:OACP	343
:LINK:DOWN:SETup	344
:LINK:DOWN:SETup:MCARrier	345
:LINK:DOWN:SETup:MCARrier:CLIPping:I	346
:LINK:DOWN:SETup:MCARrier:CLIPping:Q	347
:LINK:DOWN:SETup:MCARrier:CLIPping:TYPE	347
:LINK:DOWN:SETup:MCARrier:CLIPping[:IJQ]	347
:LINK:DOWN:SETup:MCARrier:SCODE:AINCrement	348
:LINK:DOWN:SETup:MCARrier:STORE	348
:LINK:DOWN:SETup:MCARrier:TABLE	349
:LINK:DOWN:SETup:MCARrier:TABLE:NCARriers	351
:LINK:DOWN:SETup:MCARrier:TOFFset:AINCrement	351
:LINK:DOWN:SETup:STORE	351
:LINK:DOWN:SETup:TABLE:APPLY	352
:LINK:DOWN:SETup:TABLE:CHANnel	352
:LINK:DOWN:SETup:TABLE:NCHannels?	357
:LINK:DOWN:SETup:TABLE:PADJust	357
:LINK:DOWN:TFCI	357
:LINK:UP:OACP	358

Contents

:LINK:UP:SCRAMBLE	358
:LINK:UP:SDPDch	358
:LINK:UP:SETup	359
:LINK:UP:SETup:STORe	360
:LINK:UP:SETup:TABLE:APPLy	360
:LINK:UP:SETup:TABLE:CHANnel	360
:LINK:UP:SETup:TABLE:GUNit	362
:LINK:UP:SETup:TABLE:NCHannel	362
:LINK:UP:TFCI	362
:MDEStination:AAMPLitude	363
:MDEStination:ALCHold	363
:MDEStination:PULSe	364
:MPOLarity:MARKer1 2 3 4	366
:REFerence:EXTernal:FREQuency	366
:REFerence[:SOURce]	366
:RETRigger	367
:REVision	367
:SCLock:RATE	368
:TRIGger:TYPE	368
:TRIGger:TYPE:CONTInuous[:TYPE]	370
:TRIGger:TYPE:GATE:ACTive	370
:TRIGger[:SOURce]	371
:TRIGger[:SOURce]:EXTernal:DELay	372
:TRIGger[:SOURce]:EXTernal:DELay:STATe	372
:TRIGger[:SOURce]:EXTernal:SLOPe	373
:TRIGger[:SOURce]:EXTernal[:SOURce]	373
[:STATe]	374

SCPI Command Reference, Volume 2

6. Digital Signal Interface Module Commands	375
Digital Subsystem—Option 003 and 004 ([:SOURce])	376
:DIgital:CLOck:CPS 1 2 4	376
:DIgital:CLOck:PHASe	376
:DIgital:CLOck:POLarity	377
:DIgital:CLOck:RATE	378
:DIgital:CLOck:REFerence:FREQuency	378
:DIgital:CLOck:SKEW	379
:DIgital:CLOck:SOURCe	379
:DIgital:DATA:ALIGNment	380
:DIgital:DATA:BORDER	380
:DIgital:DATA:DIRection	381
:DIgital:DATA:IGain	381
:DIgital:DATA:INEGate	382
:DIgital:DATA:IOFFset	382
:DIgital:DATA:IQSWap	383
:DIgital:DATA:NFORmat	383
:DIgital:DATA:POLarity:FRAME	383
:DIgital:DATA:POLarity:IQ	384
:DIgital:DATA:QGain	384
:DIgital:DATA:QNEGate	385
:DIgital:DATA:QOFFset	386
:DIgital:DATA:ROTation	386
:DIgital:DATA:SCALing	387
:DIgital:DATA:SIZE	387
:DIgital:DATA:STYPE	388
:DIgital:DATA:TYPE	388
:DIgital:DIAGnostic:LOOPback	389
:DIgital:LOGic[:TYPE]	389
:DIgital:PCONfig	390
:DIgital:PRESet:PTHROUGH	391
:DIgital[:STATe]	391
7. Bit Error Rate Test (BERT) Commands	393
Calculate Subsystem—Option UN7 and 300 (:CALCulate:BERT)	394

Contents

:BTS:LOOPback:EDGE:ETCH:F43:COMParator:CRITeria:ERATe	394
:BTS:LOOPback:EDGE:ETCH:F43:COMParator:CRITeria[:SElect]	394
:BTS:LOOPback:EDGE:MCS5:COMParator:CRITeria:ERATe	395
:BTS:LOOPback:EDGE:MCS5:COMParator:CRITeria[:SElect]	395
:BTS:LOOPback:EDGE:MCS9:COMParator:CRITeria:ERATe	395
:BTS:LOOPback:EDGE:MCS9:COMParator:CRITeria[:SElect]	396
:BTS:LOOPback:EDGE:UNCoded:COMParator:CRITeria:ERATe	396
:BTS:LOOPback:EDGE:UNCoded:COMParator:CRITeria[:SElect]	397
:BTS:LOOPback:GSM:CS1:COMParator:CRITeria:ERATe	397
:BTS:LOOPback:GSM:CS1:COMParator:CRITeria[:SElect]	398
:BTS:LOOPback:GSM:CS4:COMParator:CRITeria:ERATe	398
:BTS:LOOPback:GSM:CS4:COMParator:CRITeria[:SElect]	398
:BTS:LOOPback:GSM:MCS1:COMParator:CRITeria:ERATe	399
:BTS:LOOPback:GSM:MCS1:COMParator:CRITeria[:SElect]	399
:BTS:LOOPback:GSM:COMParator:CRITeria:CIB	400
:BTS:LOOPback:GSM:COMParator:CRITeria:CII	400
:BTS:LOOPback:GSM:COMParator:CRITeria:FERasure	400
:BTS:LOOPback:GSM:COMParator:CRITeria[:SElect]	401
[:BAsEband]:COMParator:MODE	401
[:BAsEband]:COMParator:THReshold	402
[:BAsEband]:COMParator[:STATe]	402
[:BAsEband]:DISPlay:MODE:	403
[:BAsEband]:DISPlay:UPDate:	403
Data Subsystem–Option UN7 and 300 (:DATA)	404
:BERT:BTS:LOOPback:EDGE:ETCH:F43[:DATA]	404
:BERT:BTS:LOOPback:EDGE:MCS5[:DATA]	405
:BERT:BTS:LOOPback:EDGE:MCS9[:DATA]	406
:BERT:BTS:LOOPback:EDGE:UNCoded[:DATA]	406
:BERT:BTS:LOOPback:GSM[:DATA]	406
:BERT:BTS:LOOPback:GSM:CS1[:DATA]	408
:BERT:BTS:LOOPback:GSM:CS4[:DATA]	409
:BERT:BTS:LOOPback:GSM:MCS1[:DATA]	409
:BERT:AUXout	409
[:DATA]	411
Input Subsystem–Option UN7 (:INPut:BERT[: BAsEband])	412
:CGATe:DELay:CLOCK	412
:CGATe:DELay:MODE	412
:CGATe:DELay:TIME	413

:CGATe:DELAy[:STATe].	413
:CGATe:POLarity	414
:CGATe[:STATe].	414
:CLOCK:DELAy:RESolution	414
:CLOCK:DELAy:TIME.	415
:CLOCK:DELAy[:STATe].	415
:CLOCK:POLarity	416
:DATA:POLarity	416
:IMPedance	416
:THReshold	417
Measure Subsystem–Option 300 (:MEASure[:SCALar]:BERT:BTS:LOOPback)	418
:EDGE:MCS5[:SENSitivity]	418
:EDGE:MCS9[:SENSitivity]	418
:EDGE:UNCoded[:SENSitivity].	419
:GSM[:SENSitivity]	420
Sense Subsystem–Options UN7 and 300 ([:SOURce]:SENSe:BERT)	421
:BTS:LOOPback:EDGE:ETCH:F43:BLOCK:COUNt	421
:BTS:LOOPback:EDGE:ETCH:F43:CONTAin	421
:BTS:LOOPback:EDGE:ETCH:F43:STOP:CRITeria:EBLock	422
:BTS:LOOPback:EDGE:ETCH:F43:STOP:CRITeria[:SElect]	422
:BTS:LOOPback:EDGE:FTRigger:EXTernal:DELAy	423
:BTS:LOOPback:EDGE:FTRigger:EXTernal:POLarity	423
:BTS:LOOPback:EDGE:FTRigger[SElect]	424
:BTS:LOOPback:EDGE:MCS5:BLOCK:COUNt.	424
:BTS:LOOPback:EDGE:MCS5:CONTAin	425
:BTS:LOOPback:EDGE:MCS5:ESENSitivity	425
:BTS:LOOPback:EDGE:MCS5:HAMPLitude	425
:BTS:LOOPback:EDGE:MCS5:LAMPLitude.	426
:BTS:LOOPback:EDGE:MCS5:PAMPLitude	426
:BTS:LOOPback:EDGE:MCS5:SBLock:COUNt	426
:BTS:LOOPback:EDGE:MCS5:SBLock:INITial.	427
:BTS:LOOPback:EDGE:MCS5:STOP:CRITeria:EBLock.	427
:BTS:LOOPback:EDGE:MCS5:STOP:CRITeria[:SElect]	427
:BTS:LOOPback:EDGE:MCS9:BLOCK:COUNt.	428
:BTS:LOOPback:EDGE:MCS9:CONTAin	428
:BTS:LOOPback:EDGE:MCS9:ESENSitivity	428
:BTS:LOOPback:EDGE:MCS9:HAMPLitude	429
:BTS:LOOPback:EDGE:MCS9:LAMPLitude.	429

Contents

:BTS:LOOPback:EDGE:MCS9:PAMPlitude	430
:BTS:LOOPback:EDGE:MCS9:SBLock:COUNT	430
:BTS:LOOPback:EDGE:MCS9:SBLock:INITial	430
:BTS:LOOPback:EDGE:MCS9:STOP:CRITeria:EBLock	431
:BTS:LOOPback:EDGE:MCS9:STOP:CRITeria[:SElect]	431
:BTS:LOOPback:EDGE:MEASurement:STOP	431
:BTS:LOOPback:EDGE:MEASurement:TSLot	432
:BTS:LOOPback:EDGE:MEASurement[:MODE]	432
:BTS:LOOPback:EDGE:SINVert	433
:BTS:LOOPback:EDGE:SYNC:AGain	433
:BTS:LOOPback:EDGE:SYNC:RF	433
:BTS:LOOPback:EDGE:SYNC[:SOURce]	434
:BTS:LOOPback:EDGE:TRIGger[:SOURce]	434
:BTS:LOOPback:EDGE:ULINK:OFFSet	435
:BTS:LOOPback:EDGE:UNCoded:BIT:COUNT	435
:BTS:LOOPback:EDGE:UNCoded:ESENSitivity	435
:BTS:LOOPback:EDGE:UNCoded:HAMPLitude	436
:BTS:LOOPback:EDGE:UNCoded:LAMPLitude	436
:BTS:LOOPback:EDGE:UNCoded:PAMPLitude	437
:BTS:LOOPback:EDGE:UNCoded:SBIT:COUNT	437
:BTS:LOOPback:EDGE:UNCoded:SBIT:INITial	437
:BTS:LOOPback:EDGE:UNCoded:STOP:CRITeria:EBIT	438
:BTS:LOOPback:EDGE:UNCoded:STOP:CRITeria[:SElect]	438
:BTS:LOOPback:EDGE[:STATe]	438
:BTS:LOOPback:GSM:CS1:BLock:COUNT	439
:BTS:LOOPback:GSM:CS1:CONTain	439
:BTS:LOOPback:GSM:CS1:STOP:CRITeria:EBLock	440
:BTS:LOOPback:GSM:CS1:STOP:CRITeria[:SElect]	440
:BTS:LOOPback:GSM:CS4:BLock:COUNT	440
:BTS:LOOPback:GSM:CS4:CONTain	441
:BTS:LOOPback:GSM:CS4:STOP:CRITeria:EBLock	441
:BTS:LOOPback:GSM:CS4:STOP:CRITeria[:SElect]	442
:BTS:LOOPback:GSM:ESENSitivity	442
:BTS:LOOPback:GSM:FRAMe:CIB	442
:BTS:LOOPback:GSM:FRAMe:CII	442
:BTS:LOOPback:GSM:FRAMe:COUNT	443
:BTS:LOOPback:GSM:HAMPLitude	443
:BTS:LOOPback:GSM:LAMPLitude	443

:BTS:LOOPback:GSM:MCS1:BLOCK:COUNT	444
:BTS:LOOPback:GSM:MCS1:CONTain	444
:BTS:LOOPback:GSM:MCS1:STOP:CRITeria:EBLock	444
:BTS:LOOPback:GSM:MCS1:STOP:CRITeria[:SElect]	445
:BTS:LOOPback:GSM:MEASurement:STOP	445
:BTS:LOOPback:GSM:MEASurement:TSLot	445
:BTS:LOOPback:GSM:MEASurement[:MODE]	446
:BTS:LOOPback:GSM:PAMplitude	446
:BTS:LOOPback:GSM:SFRame:COUNT	446
:BTS:LOOPback:GSM:SFRame:INITial	447
:BTS:LOOPback:GSM:SINVert	447
:BTS:LOOPback:GSM:STOP:CRITeria:CIB	447
:BTS:LOOPback:GSM:STOP:CRITeria:CII	448
:BTS:LOOPback:GSM:STOP:CRITeria:FERasure	448
:BTS:LOOPback:GSM:STOP:CRITeria[:SElect]	448
:BTS:LOOPback:GSM:SYNC:RF	449
:BTS:LOOPback:GSM:SYNC[:SOURce]	450
:BTS:LOOPback:GSM:TRIGger[:SOURce]	450
:BTS:LOOPback:GSM:ULINK:OFFSet	451
:BTS:LOOPback:GSM[:STATe]	451
[:BAsEband]:PRBS:FUNCTion:SPIGnore:DATA	451
[:BAsEband]:PRBS:FUNCTion:SPIGnore[:STATe]	452
[:BAsEband]:PRBS[:DATA]	452
[:BAsEband]:RSYNc:THReshold	452
[:BAsEband]:RSYNc[:STATe]	453
[:BAsEband]:STATe	453
[:BAsEband]:STOP:CRITeria:EBIT	453
[:BAsEband]:STOP:CRITeria[:SElect]	454
[:BAsEband]:TBITs	454
[:BAsEband]:TRIGger:BDELay	455
[:BAsEband]:TRIGger:BDELay:STATe	455
[:BAsEband]:TRIGger:COUNT	455
[:BAsEband]:TRIGger:POLarity	456
[:BAsEband]:TRIGger[:SOURce]	456
8. Receiver Test Digital Commands	457
All Subsystem–Option 001/601 or 002/602 ([:SOURce])	458
:RADio:ALL:OFF	458

Contents

AWGN Real-Time Subsystem–Option 403 ([:SOURCE]:RADio:AWGN:RT)	459
:BWIDth	459
[:STATe]	459
Bluetooth Subsystem–Option 406 ([:SOURCE]:RADio:BLUEtooth:ARB)	460
:AMADdr	460
:BDADdr.	460
:BURSt[:STATe]	460
:CGDelay	461
:DATA	461
:IQ:EXTernal:FILTer.	462
:IQ:EXTernal:FILTer:AUTO	462
:HEADer:CLEar	463
:HEADer:SAVE	463
:IMPairments	463
:IMPairments:AWGN	464
:IMPairments:AWGN:CNR	464
:IMPairments:AWGN:NSEed.	465
:IMPairments:DDEViation	465
:IMPairments:FDType	466
:IMPairments:FOFFset	466
:IMPairments:MINdex.	467
:IMPairments:STERror.	468
:IQ:MODulation:ATTen	468
:IQ:MODulation:ATTen:AUTO	469
:IQ:MODulation:FILTer	469
:IQ:MODulation:FILTer:AUTO	470
:MDEStination:AAMPliitude	470
:MDEStination:ALCHold.	470
:MDEStination:PULSe	471
:MPOLarity:MARKer1 2 3 4	471
:MPOLarity:MARKer1.	471
:MPOLarity:MARKer2.	472
:MPOLarity:MARKer3.	472
:MPOLarity:MARKer4.	472
:PACKet	472
:REFernce:EXTernal:FREQuency	473
:REFerence[:SOURCE]	473
:RSYMBOLs	474

:SCLock:RATE	474
[:STATe]	474
CDMA2000 BBG Subsystem–Option 401 ([:SOURce]:RADio:CDMA2000[:BBG])	475
:LMODe	475
[:FORWard]:BBCLock	476
[:FORWard]:CHIPrate	476
[:FORWard]:ESDeLay	476
[:FORWard]:FILTer	477
[:FORWard]:FILTer:ALPHa	478
[:FORWard]:FILTer:BBT	478
[:FORWard]:FILTer:CHANnel	478
[:FORWard]:LCStAtE	479
[:FORWard]:FFCH:DATA	479
[:FORWard]:FFCH:DATA:FIX4	480
[:FORWard]:FFCH:EBNO	480
[:FORWard]:FFCH:FOFFset	481
[:FORWard]:FFCH:LCMask	481
[:FORWard]:FFCH:LCMask:ESN	482
[:FORWard]:FFCH:LCMask:HEADer	482
[:FORWard]:FFCH:POWer	482
[:FORWard]:FFCH:PRAMp	483
[:FORWard]:FFCH:PRTime	483
[:FORWard]:FFCH:QOF	483
[:FORWard]:FFCH:RATE	484
[:FORWard]:FFCH:RCONfig	484
[:FORWard]:FFCH:WALSh	484
[:FORWard]:FFCH[:STATe]	485
[:FORWard]:FPCH:DATA	485
[:FORWard]:FPCH:EBNO	485
[:FORWard]:FPCH:LCMask	486
[:FORWard]:FPCH:LCMask:F1	486
[:FORWard]:FPCH:LCMask:F2	486
[:FORWard]:FPCH:LCMask:F3	487
[:FORWard]:FPCH:MESSAge	487
[:FORWard]:FPCH:POWer	487
[:FORWard]:FPCH:RATE	488
[:FORWard]:FPCH:WALSh	488
[:FORWard]:FPCH[:STATe]	488

Contents

[:FORWard]:FPICh:ECNO	489
[:FORWard]:FPICh:POWEr	489
[:FORWard]:FPICh[:STATe].	490
[:FORWard]:FSCH[1]2:DATA.	490
[:FORWard]:FSCH[1]2:DATA:FIX4.	490
[:FORWard]:FSCH[1]2:EBNO	491
[:FORWard]:FSCH[1]2:FOFFset.	491
[:FORWard]:FSCH[1]2:LCMask.	492
[:FORWard]:FSCH[1]2:LCMask:ESN	492
[:FORWard]:FSCH[1]2:LCMask:HEADer	492
[:FORWard]:FSCH[1]2:POWEr.	493
[:FORWard]:FSCH[1]2:QOF.	493
[:FORWard]:FSCH[1]2:RATE.	493
[:FORWard]:FSCH[1]2:RCONfig	494
[:FORWard]:FSCH[1]2:TCODE	494
[:FORWard]:FSCH[1]2:WALSh	494
[:FORWard]:FSCH[1]2[:STATe]	495
[:FORWard]:FSYNc:CFRequency	495
[:FORWard]:FSYNc:DAYLt.	495
[:FORWard]:FSYNc:EBNO	496
[:FORWard]:FSYNc:ECFRequency	496
[:FORWard]:FSYNc:LPSec	497
[:FORWard]:FSYNc:LTMoff	497
[:FORWard]:FSYNc:MPREv	497
[:FORWard]:FSYNc:MSGType	498
[:FORWard]:FSYNc:NID	498
[:FORWard]:FSYNc:POWEr.	498
[:FORWard]:FSYNc:PRATe	499
[:FORWard]:FSYNc:PREV	499
[:FORWard]:FSYNc:RESErved	499
[:FORWard]:FSYNc:SID	500
[:FORWard]:FSYNc:STYPE.	500
[:FORWard]:FSYNc:SYSTime.	500
[:FORWard]:FSYNc:WALSh	501
[:FORWard]:FSYNc[:STATe].	501
[:FORWard]:NOISE:CN	501
[:FORWard]:NOISE[:STATe]	502
[:FORWard]:OCNS:EBNO	502

[:FORWard]:OCNS:POWer	503
[:FORWard]:OCNS:WALSh	504
[:FORWard]:OCNS[:STATe]	504
[:FORWard]:PADJust	504
[:FORWard]:POLarity	505
[:FORWard]:QPCH:CCI	505
[:FORWard]:QPCH:EBNO	505
[:FORWard]:QPCH:PI	506
[:FORWard]:QPCH:POWer	506
[:FORWard]:QPCH:RATE	507
[:FORWard]:QPCH:WALSh	507
[:FORWard]:QPCH[:STATe]	507
[:FORWard]:SRATe	507
:PNOFFset	508
:REVerse:BBCLock	508
:REVerse:CHIPrate	509
:REVerse:ESDelay	509
:REVerse:FILTer	510
:REVerse:FILTer:ALPHa	511
:REVerse:FILTer:BBT	511
:REVerse:FILTer:CHANnel	512
:REVerse:LCMask	512
:REVerse:LCSTate	512
:REVerse:PADJust	513
:REVerse:POLarity[:ALL]	513
:REVerse:NOISe:CN	513
:REVerse:NOISe[:STATe]	514
:REVerse:RC12:ACCess:RACH:DATA	514
:REVerse:RC12:ACCess:RACH:DATA:FIX4	515
:REVerse:RC12:ACCess:RACH:EBNO	515
:REVerse:RC12:ACCess:RACH:FLENgth	516
:REVerse:RC12:ACCess:RACH:FOFFset	516
:REVerse:RC12:ACCess:RACH:POWer	516
:REVerse:RC12:ACCess:RACH:RCONfig	517
:REVerse:RC12:ACCess:RACH:RATE	517
:REVerse:RC12:ACCess:RACH[:STATe]	517
:REVerse:RC12:TRAFfic:RSCH:DATA	518
:REVerse:RC12:TRAFfic:RSCH:DATA:FIX4	518

Contents

:REVerse:RC12:TRAFfic:RSCH:FLENgth	518
:REVerse:RC12:TRAFfic:RSCH:FOFFset	519
:REVerse:RC12:TRAFfic:RSCH:POWer	519
:REVerse:RC12:TRAFfic:RSCH:RATE	519
:REVerse:RC12:TRAFfic:RSCH:RCONfig	520
:REVerse:RC12:TRAFfic:RSCH[:STATe]	520
:REVerse:RC34:CCONtrol:RCCCh:DATA	520
:REVerse:RC34:CCONtrol:RCCCh:DATA:FIX4	521
:REVerse:RC34:CCONtrol:RCCCh:EBNO	521
:REVerse:RC34:CCONtrol:RCCCh:FLENgth	522
:REVerse:RC34:CCONtrol:RCCCh:FOFFset	522
:REVerse:RC34:CCONtrol:RCCCh:POWer	522
:REVerse:RC34:CCONtrol:RCCCh:RCONfig	523
:REVerse:RC34:CCONtrol:RCCCh:RATE	523
:REVerse:RC34:CCONtrol:RCCCh:WALSh	523
:REVerse:RC34:CCONtrol:RCCCh[:STATe]	524
:REVerse:RC34:CCONtrol:RPICh:ECNO	524
:REVerse:RC34:CCONtrol:RPICh:GRATe	525
:REVerse:RC34:CCONtrol:RPICh:POWer	525
:REVerse:RC34:CCONtrol:RPICh:WALSh	525
:REVerse:RC34:CCONtrol:RPICh[:STATe]	526
:REVerse:RC34:EACCess:REACH:DATA	526
:REVerse:RC34:EACCess:REACH:DATA:FIX4	526
:REVerse:RC34:EACCess:REACH:EBNO	527
:REVerse:RC34:EACCess:REACH:FOFFset	527
:REVerse:RC34:EACCess:REACH:POWer	528
:REVerse:RC34:EACCess:REACH:RCONfig	528
:REVerse:RC34:EACCess:REACH:RATE	528
:REVerse:RC34:EACCess:REACH:WALSh	529
:REVerse:RC34:EACCess:REACH[:STATe]	529
:REVerse:RC34:EACCess:RPICh:ECNO	529
:REVerse:RC34:EACCess:RPICh:GRATe	530
:REVerse:RC34:EACCess:RPICh:POWer	530
:REVerse:RC34:EACCess:RPICh:WALSh	530
:REVerse:RC34:EACCess:RPICh[:STATe]	531
:REVerse:RC34:TRAFfic:RDCCh:DATA	531
:REVerse:RC34:TRAFfic:RDCCh:DATA:FIX4	531
:REVerse:RC34:TRAFfic:RDCCh:EBNO	532

:REVerse:RC34:TRAFfic:RDCCh:FLENgth	532
:REVerse:RC34:TRAFfic:RDCCh:FOFFset	532
:REVerse:RC34:TRAFfic:RDCCh:POWer	533
:REVerse:RC34:TRAFfic:RDCCh:RATE	533
:REVerse:RC34:TRAFfic:RDDCh:RCONfig	533
:REVerse:RC34:TRAFfic:RDCCh:WALSh	534
:REVerse:RC34:TRAFfic:RDCCh[:STATe]	534
:REVerse:RC34:TRAFfic:RFCH:DATA	534
:REVerse:RC34:TRAFfic:RFCH:DATA:FIX4	535
:REVerse:RC34:TRAFfic:RFCH:EBNO	535
:REVerse:RC34:TRAFfic:RFCH:FLENgth	536
:REVerse:RC34:TRAFfic:RFCH:FOFFset	536
:REVerse:RC34:TRAFfic:RFCH:POWer	536
:REVerse:RC34:TRAFfic:RFCH:RCONfig	537
:REVerse:RC34:TRAFfic:RFCH:RATE	537
:REVerse:RC34:TRAFfic:RFCH:WALSh	537
:REVerse:RC34:TRAFfic:RFCH[:STATe]	537
:REVerse:RC34:TRAFfic:RSCH[1]2:DATA	538
:REVerse:RC34:TRAFfic:RSCH[1]2:DATA:FIX4	538
:REVerse:RC34:TRAFfic:RSCH[1]2:DATA:EBNO	538
:REVerse:RC34:TRAFfic:RSCH[1]2:FLENgth	539
:REVerse:RC34:TRAFfic:RSCH[1]2:FOFFset	539
:REVerse:RC34:TRAFfic:RSCH[1]2:POWer	540
:REVerse:RC34:TRAFfic:RSCH[1]2:RCONfig	540
:REVerse:RC34:TRAFfic:RSCH[1]2:RATE	540
:REVerse:RC34:TRAFfic:RSCH[1]2:TCODE	541
:REVerse:RC34:TRAFfic:RSCH[1]2:WALSh	541
:REVerse:RC34:TRAFfic:RSCH[1]2[:STATe]	541
:REVerse:REFeRence:EXTeRnal:FREQuency	542
:REVerse:REFeRence[:SOURce]	542
:REVerse:TADVance	542
:REVerse:TEDGE	543
:REVerse:SRATE	543
[:STATe]	543
Custom Subsystem–Option 001/601or 002/602 ([:SOURce]:RADio:CUSTom)	544
:ALPha	544
:ASK	544
:BBCLock	545

Contents

:BBT	545
:BRATe	546
:BURSt:SHAPe:FALL:DELay	548
:BURSt:SHAPe:FALL:TIME	548
:BURSt:SHAPe:FDELay	549
:BURSt:SHAPe:FTIME	549
:BURSt:SHAPe:RDELay	550
:BURSt:SHAPe:RISE:DELay	550
:BURSt:SHAPe:RISE:TIME	551
:BURSt:SHAPe:RTIME	552
:BURSt:SHAPe[:TYPE]	552
:CHANnel	553
:DATA	553
:DATA:FIX4	554
:DATA:PRAM.	554
:DENCode.	555
:EDATa:DELay	555
:EDCLock	555
:EREFerence	556
:EREFerence:VALue.	556
:FILTer	557
:IQ:SCALE	558
:MODulation:FSK[:DEViation]	559
:MODulation:MSK[:PHASe]	559
:MODulation:UFSK	560
:MODulation:UIQ	560
:MODulation[:TYPE]	560
:POLarity[:ALL]	561
:SRATe	561
:STANdard:SELEct	563
:TRIGger:TYPE	563
:TRIGger:TYPE:CONTInuous[:TYPE]	564
:TRIGger:TYPE:GATE:ACTive.	564
:TRIGger[:SOURce]	565
:TRIGger[:SOURce]:EXTErnal:DELay	566
:TRIGger[:SOURce]:EXTErnal:DELay:STATe	566
:TRIGger[:SOURce]:EXTErnal:SLOPe	567
:TRIGger[:SOURce]:EXTErnal[:SOURce]	567

[:STATe]	568
DECT Subsystem–Option 402 ([:SOURce]:RADio:DECT)	569
:ALPha	569
:BBCLock	569
:BBT	570
:BRATe	570
:BURSt:PN9	571
:BURSt:SHAPe:FALL:DELay	572
:BURSt:SHAPe:FALL:TIME	572
:BURSt:SHAPe:FDELay	573
:BURSt:SHAPe:FTIME	573
:BURSt:SHAPe:RDELay	574
:BURSt:SHAPe:RISE:DELay	574
:BURSt:SHAPe:RISE:TIME	575
:BURSt:SHAPe:RTIME	576
:BURSt:SHAPe[:TYPE]	576
:BURSt[:STATe]	577
:CHANnel	577
:DATA	578
:DATA:FIX4	578
:DATA:PRAM	579
:DEFault	579
:EDATa:DELay	579
:EDCLock	580
:EREFerence	580
:EREFerence:VALue	581
:FILTer	581
:IQ:SCALE	582
:MODulation:FSK[:DEViation]	582
:MODulation:MSK[:PHASe]	583
:MODulation:UFSK	583
:MODulation:UIQ	584
:MODulation[:TYPE]	584
:POLarity[:ALL]	584
:PPart:SLOT0 [1] 2 3 4 5 6 7 8 9 10 11[:TYPE]	585
:PPart:SLOT0 [1] 2 3 4 5 6 7 8 9 10 11:CUSTom	585
:PPart:SLOT0 [1] 2 3 4 5 6 7 8 9 10 11:CUSTom:FIX4	586
:PPart:SLOT0 [1] 2 3 4 5 6 7 8 9 10 11:LCAPacity:A	586

Contents

:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity:P	587
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity:S	587
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity[:B]	588
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity[:B]:FIX4	588
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity:POWer	589
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:STATe	589
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:TRAFfic:A	589
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:TRAFfic:P	590
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:TRAFfic:S	590
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:TRAFfic[:B]	591
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:TRAFfic[:B]:FIX4	591
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZLCapacity:A	592
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZLCapacity:P	592
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZLCapacity:A	592
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZLCapacity[:B]	593
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZLCapacity[:B]:FIX4	593
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZTRaffic:A	594
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZTRaffic:P	594
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZTRaffic:S	594
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZTRaffic[:B]	595
:PPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:ZTRaffic[:B]:FIX4	595
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11[:TYPE]	596
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:CUSTom	596
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:CUSTom:FIX4	597
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:DUMM2:A	597
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:DUMM2:P	598
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:DUMM2:S	598
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:DUMM[1]:A	598
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:DUMM[1]:P	599
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:DUMM[1]:S	599
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity:A	599
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity:P	600
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity:S	600
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity[:B]	600
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity[:B]:FIX4	601
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:LCAPacity:POWer	601
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:STATe	602
:RFPart:SLOT0[1]2 3 4 5 6 7 8 9 10 11:TRAFfic:A	602

:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:TRAFfic:P	602
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:TRAFfic:S	603
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:TRAFfic[:B]	603
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:TRAFfic[:B]:FIX4	604
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZLCapacity:A	604
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZLCapacity:P	604
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZLCapacity:S	605
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZLCapacity[:B]	605
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZLCapacity[:B]:FIX4	606
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZTRaffic:A	606
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZTRaffic:P	606
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZTRaffic:S	607
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZTRaffic[:B]	607
:RFPart:SLOT0[1] 2 3 4 5 6 7 8 9 10 11:ZTRaffic[:B]:FIX4	608
:SECondary:RECall	608
:SECondary:SAVE	608
:SECondary:TRIGger[:SOURce]	609
:SECondary[:STATe]	609
:SOUT	610
:SOUT:OFFSet	610
:SOUT:SLOT	611
:SRATe	611
:TRIGger:TYPE	612
:TRIGger:TYPE:CONTInuous[:TYPE]	613
:TRIGger:TYPE:GATE:ACTive	614
:TRIGger[:SOURce]	614
:TRIGger[:SOURce]:EXTernal:DELay	615
:TRIGger[:SOURce]:EXTernal:SLOPe	616
:TRIGger[:SOURce]:EXTernal[:SOURce]	616
:TRIGger[:SOURce]:EXTernal:DELay:STATe	617
[:STATe]	617
EDGE Subsystem–Option 402 ([:SOURce]:RADio:EDGE)	618
:ALPHa	618
:BBCLock	618
:BBT	619
:BURSt:SHAPe:FALL:DELay	619
:BURSt:SHAPe:FDELay	620
:BURSt:SHAPe:FALL:TIME	621

Contents

:BURSt:SHAPE:FTIME	621
:BURSt:SHAPE:RDElay	622
:BURSt:SHAPE:RISE:DElay	623
:BURSt:SHAPE:RISE:TIME	623
:BURSt:SHAPE:RTIME	624
:BURSt:SHAPE[:TYPE]	625
:BURSt[:STATe]	625
:CHANnel	626
:DATA	626
:DATA:PRAM	627
:DATA:FIX4	627
:DEFault	628
:EDATa:DElay	628
:EDCLock	628
:EREFerence	629
:EREFerence:VALue	629
:FILTer	630
:IQ:SCALE	631
:MODulation:FSK[:DEViation]	631
:MODulation:MSK[:PHASe]	632
:MODulation:UFSK	632
:MODulation:UIQ	632
:MODulation[:TYPE]	633
:POLarity[:ALL]	633
:SECondary:RECall	634
:SECondary:SAVE	634
:SECondary:TRIGger[:SOURce]	634
:SECondary[:STATe]	635
:SLOT0[1]2 3 4 5 6 7:CUSTom	635
:SLOT0[1]2 3 4 5 6 7:CUSTom:FIX4	636
:SLOT0[1]2 3 4 5 6 7:CUSTom:GUARd	636
:SLOT0[1]2 3 4 5 6 7:GMSK:ENCryption	637
:SLOT0[1]2 3 4 5 6 7:GMSK:ENCryption:CS1:DATA	638
:SLOT0[1]2 3 4 5 6 7:GMSK:ENCryption:CS4:DATA	639
:SLOT0[1]2 3 4 5 6 7:GMSK:ENCryption:DLINK:MCS1:DATA	639
:SLOT0[1]2 3 4 5 6 7:GMSK:ENCryption:FIX4	639
:SLOT0[1]2 3 4 5 6 7:GMSK:ENCryption:TCH:FS:DATA	640
:SLOT0[1]2 3 4 5 6 7:GMSK:ENCryption:ULINK:MCS1:DATA	640

:SLOT0[1]2 3 4 5 6 7:GMSK:STEal	641
:SLOT0[1]2 3 4 5 6 7:GMSK:TSEquence	641
:SLOT0[1]2 3 4 5 6 7:MULTIslot	642
:SLOT0[1]2 3 4 5 6 7:NORMal:ENCRyption	642
:SLOT0:NORMal:ENCRyption:BCH:BCC	644
:SLOT0:NORMal:ENCRyption:BCH:CELLid	645
:SLOT0:NORMal:ENCRyption:BCH:LAC	645
:SLOT0:NORMal:ENCRyption:BCH:MCC	645
:SLOT0:NORMal:ENCRyption:BCH:MNC	646
:SLOT0:NORMal:ENCRyption:BCH:PLMN	646
:SLOT0[1]2 3 4 5 6 7:NORMal:ENCRyption:DLINK:MCS5:DATA	646
:SLOT0[1]2 3 4 5 6 7:NORMal:ENCRyption:DLINK:MCS9:DATA	647
:SLOT0[1]2 3 4 5 6 7:NORMal:ENCRyption:ETCH:F43:DATA	647
:SLOT0[1]2 3 4 5 6 7:NORMal:ENCRyption:FIX4	648
:SLOT0[1]2 3 4 5 6 7:NORMal:ENCRyption:ULINK:MCS5:DATA	648
:SLOT0[1]2 3 4 5 6 7:NORMal:ENCRyption:ULINK:MCS9:DATA	649
:SLOT0[1]2 3 4 5 6 7:NORMal:ENCRyption:UNCodeD	649
:SLOT0[1]2 3 4 5 6 7:NORMal:GUARd	650
:SLOT0[1]2 3 4 5 6 7:NORMal:T1	650
:SLOT0[1]2 3 4 5 6 7:NORMal:T2	651
:SLOT0[1]2 3 4 5 6 7:NORMal:TSEquence	651
:SLOT0[1]2 3 4 5 6 7:LCAPacity:POWer	651
:SLOT0[1]2 3 4 5 6 7:STATe	652
:SLOT0[1]2 3 4 5 6 7[:TYPE]	652
:SOUT:	653
:SOUT:OFFSet	653
:SOUT:SLOT	654
:SRATe	654
:TRIGger:TYPE	656
:TRIGger:TYPE:CONTInuous[:TYPE]	656
:TRIGger:TYPE:GATE:ACTive	657
:TRIGger[:SOURce]	658
:TRIGger[:SOURce]:EXTernal:DELay	659
:TRIGger[:SOURce]:EXTernal:DELay:FINe	659
:TRIGger[:SOURce]:EXTernal:DELay:STATe	660
:TRIGger[:SOURce]:EXTernal:SLOPe	660
:TRIGger[:SOURce]:EXTernal[:SOURce]	661
[:STATe]	661

SCPI Command Reference, Volume 3

9. Receiver Test Digital Commands (continued)	663
GPS Subsystem–Option 409	
([:SOURCE]:RADio[1] 2 3 4:GPS)	664
:DATA	664
:DMODE	664
:DSHift	665
:FILTer	665
:FILTer:ALPHa	666
:FILTer:BBT	667
:FILTer:CHANnel	667
:IQPHase	668
:PCODE	668
:RCODE	668
:REFCIk	669
:REFFreq.	669
:SATid	670
[:STATE]	670
GSM Subsystem–Option 402 ([:SOURCE]:RADio:GSM)	671
:ALPha	671
:BBCLock	671
:BBT	672
:BRATe	672
:BURSt:PN9	673
:BURSt:SHAPe:FALL:DELay	674
:BURSt:SHAPe:FALL:TIME	674
:BURSt:SHAPe:FDELay	675
:BURSt:SHAPe:FTIME	676
:BURSt:SHAPe:RDELay	676
:BURSt:SHAPe:RISE:DELay	677
:BURSt:SHAPe:RISE:TIME	678
:BURSt:SHAPe:RTIME	678
:BURSt:SHAPe[:TYPE]	679
:BURSt[:STATE]	679
:CHANnel	680
:DATA	680

:DATA:PRAM	681
:DATA:FIX4	681
:DEFault	681
:DENCode	682
EDATa:DELay	682
:EDCLock	682
:EREFerence	683
:EREFerence:VALue	683
:FILTer	684
:IQ:SCALE	685
:MODulation:FSK[:DEViation]	685
:MODulation:MSK[:PHASe]	686
:MODulation:UFSK	686
:MODulation:UIQ	686
:MODulation[:TYPE]	687
:POLarity[:ALL]	687
:SECondary:RECall	688
:SECondary:SAVE	688
:SECondary:TRIGger[:SOURce]	688
:SECondary[:STATe]	689
:SLOT0[1] 2 3 4 5 6 7:ACCess:ENCRyption	689
:SLOT0[1] 2 3 4 5 6 7:ACCess:ENCRyption:FIX4	689
:SLOT0[1] 2 3 4 5 6 7:ACCess:ETAil	690
:SLOT0[1] 2 3 4 5 6 7:ACCess:SSEQuence	690
:SLOT0[1] 2 3 4 5 6 7:ACCess:CUSTom	690
:SLOT0[1] 2 3 4 5 6 7:CUSTom:FIX4	691
:SLOT0[1] 2 3 4 5 6 7:DUMMy:TSEQuence	691
:SLOT0[1] 2 3 4 5 6 7:MULTIslot	691
SLOT0[1] 2 3 4 5 6 7:NORMal:ENCRyption	692
:SLOT0:NORMal:ENCRyption:BCH1:BCC	694
:SLOT0:NORMal:ENCRyption:BCH1:CELLid	694
:SLOT0:NORMal:ENCRyption:BCH1:LAC	694
:SLOT0:NORMal:ENCRyption:BCH1:MCC	695
:SLOT0:NORMal:ENCRyption:BCH1:MNC	695
:SLOT0:NORMal:ENCRyption:BCH1:PLMN	695
:SLOT0[1] 2 3 4 5 6 7:NORMal:ENCRyption:CS1:DATA	696
:SLOT0[1] 2 3 4 5 6 7:NORMal:ENCRyption:CS4:DATA	696
:SLOT0[1] 2 3 4 5 6 7:NORMal:ENCRyption:DLINK:MCS1:DATA	696

Contents

:SLOT0[1]2 3 4 5 6 7:NORMAl:ENCRyption:FIX4	697
:SLOT0[1]2 3 4 5 6 7:NORMAl:ENCRyption:TCH:FS:DATA	697
:SLOT0[1]2 3 4 5 6 7:NORMAl:ENCRyption:ULINK:MCS1:DATA	697
:SLOT0[1]2 3 4 5 6 7:NORMAl:STeal	698
:SLOT0[1]2 3 4 5 6 7:NORMAl:TSEquence	698
:SLOT0[1]2 3 4 5 6 7:POWer	699
:SLOT0[1]2 3 4 5 6 7:STATe	699
:SLOT0[1]2 3 4 5 6 7:SYNC:ENCRyption	699
:SLOT0[1]2 3 4 5 6 7:SYNC:ENCRyption:FIX4	700
:SLOT0[1]2 3 4 5 6 7:SYNC:TSEquence	700
:SLOT0[1]2 3 4 5 6 7[:TYPE]	700
:SOUT	701
:SOUT:OFFSet	701
:SOUT:SLOT	702
:SRATe	702
:TRIGger:EXTernal:DELay	703
:TRIGger:TYPE	704
:TRIGger:TYPE:CONTInuous[:TYPE]	704
:TRIGger:TYPE:GATE:ACTive	705
:TRIGger[:SOURce]	705
:TRIGger[:SOURce]:EXTernal:DELay	706
:TRIGger[:SOURce]:EXTernal:DELay:FINE	707
:TRIGger[:SOURce]:EXTernal:DELay:STATe	707
:TRIGger[:SOURce]:EXTernal:SLOPe	707
:TRIGger[:SOURce]:EXTernal[:SOURce]	708
[:STATe]	709
HSDPA over W-CDMA Subsystem–Option 418 ([:SOURce]:RADio:WCDMa:HSDPa[:BBG])	710
File Overview	710
Managing ESG Setting Conflicts and Error Messages	712
:DLINK:APPLy	712
:DLINK:AWGN:CN	713
:DLINK:AWGN[:STATe]	713
:DLINK:BBCLock[:SOURce]	713
:DLINK:CPICH:CCODE	714
:DLINK:CPICH:POWer	714
:DLINK:CPICH[:STATe]	714
:DLINK:DPCH:CCODE	714
:DLINK:DPCH:DATA	715

:DLINK:DPCH:DATA:FIX4	715
:DLINK:DPCH:DCH[1] 2 3 4 5 6:BSIZE	716
:DLINK:DPCH:DCH[1] 2 3 4 5 6:CTYPe	716
:DLINK:DPCH:DCH[1] 2 3 4 5 6:CRC	717
:DLINK:DPCH:DCH[1] 2 3 4 5 6:DATA	717
:DLINK:DPCH:DCH[1] 2 3 4 5 6:DATA:FIX4	717
:DLINK:DPCH:DCH[1] 2 3 4 5 6:NBLocks	718
:DLINK:DPCH:DCH[1] 2 3 4 5 6:RMATtribute	718
:DLINK:DPCH:DCH[1] 2 3 4 5 6:TTI	719
:DLINK:DPCH:DCH2 3 4 5 6[:STATe]	719
:DLINK:DPCH:POWer	719
:DLINK:DPCH:SFORmat	720
:DLINK:DPCH:SSCOffset	720
:DLINK:DPCH:TFCI	721
:DLINK:DPCH:TOFFset	721
:DLINK:DPCH:TPC:NSTeps	722
:DLINK:DPCH:TPC:PATtern	722
:DLINK:DPCH:TRPosition	723
:DLINK:DPCH[:STATe]	723
:DLINK:FILTer	723
:DLINK:FILTer:ALPHa	724
:DLINK:FILTer:BBT	724
:DLINK:FILTer:CHANnel	725
:DLINK:HSBurst	725
:DLINK:HSDPa:AMC:CQIMapping:UECategory	726
:DLINK:HSDPa:AMC:CPATtern	726
:DLINK:HSDPa:FCONtrol	727
:DLINK:HSDPa:HARQ:APATtern	728
:DLINK:HSDPa:HARQ:MNHTrans	728
:DLINK:HSDPa:HARQ:RVSequence[1] 2 3 4 5 6 7 8	729
:DLINK:HSDPa[1] 2 3 4:BSINfo	730
:DLINK:HSDPa[1] 2 3 4:HSPDSch:COFFset	730
:DLINK:HSDPa[1] 2 3 4:HSPDSch:DATA	730
:DLINK:HSDPa[1] 2 3 4:HSPDSch:DATA:FIX4	731
:DLINK:HSDPa:HSPDSch:DSCH:DATA	731
:DLINK:HSDPa:HSPDSch:DSCH:DATA:FIX4	732
:DLINK:HSDPa:HSPDSch:DSCH:IRBSize	732
:DLINK:HSDPa:HSPDSch:NCODe	733

Contents

:DLINK:HSDPa[1] 2 3 4:HSPDsch:POWer	733
:DLINK:HSDPa[1] 2 3 4:HSPDsch:SFORmat	734
:DLINK:HSDPa[1] 2 3 4:HSPDsch[:STATe]	734
:DLINK:HSDPa[1] 2 3 4:HSSCch:CCODE	735
:DLINK:HSDPa[1] 2 3 4:HSSCch:DATA	735
:DLINK:HSDPa[1] 2 3 4:HSSCch:DATA:FIX4	736
:DLINK:HSDPa[1] 2 3 4:HSSCch:POWer	736
:DLINK:HSDPa[1] 2 3 4:ITTI	737
:DLINK:HSDPa[1] 2 3 4:ITTI:PATtern	737
:DLINK:HSDPa:NHPRocess	738
:DLINK:HSDPa[1] 2 3 4:RVParameter	738
:DLINK:HSDPa[1] 2 3 4:UEID	739
:DLINK:HSDPa[1] 2 3 4[:STATe]	739
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:CCODE	740
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:DATA	740
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:POWer	741
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:SSCOffset	741
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:TOFFset	742
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16[:STATe]	742
:DLINK:PCCPch:BCH:DATA	742
:DLINK:PCCPch:BCH:DATA:FIX4	743
:DLINK:PCCPch:CCODE	743
:DLINK:PCCPch:POWer	744
:DLINK:PCCPch[:STATe]	744
:DLINK:PICH:CCODE	744
:DLINK:PICH:DATA	745
:DLINK:PICH:DATA:FIX4	745
:DLINK:PICH:POWer	746
:DLINK:PICH[:STATe]	746
:DLINK:POLarity	746
:DLINK:PSCH:POWer	747
:DLINK:PSCH[:STATe]	747
:DLINK:SCRamblecode	747
:DLINK:SSCH:POWer	748
:DLINK:SSCH[:STATe]	748
:DLINK:TXDiversity	748
:LINK	749
:ULINK:APPLy	749

:ULINK:AWGN:CN	749
:ULINK:AWGN[:STATe]	750
:ULINK:BBReference:EXternal:MRATe	750
:ULINK:BBReference[:SOURce]	750
:ULINK:DPCCh:CCODE	751
:ULINK:DPCCh:DATA	751
:ULINK:DPCCh:DATA:FIX4	752
:ULINK:DPCCh:FBI:PATtern	752
:ULINK:DPCCh:FBI:PATtern:FIX	753
:ULINK:DPCCh:POWer	753
:ULINK:DPCCh:SFORmat	754
:ULINK:DPCCh[:STATe]	754
:ULINK:DPCCh:TFCI	754
:ULINK:DPCCh:TPC:NSTeps	755
:ULINK:DPCCh:TPC:PATtern	755
:ULINK:DPDCh:CCODE	756
:ULINK:DPDCh:DATA	756
:ULINK:DPDCh:DATA:FIX4	756
:ULINK:DPDCh:DCH[1] 2 3 4 5 6:BSIZE	757
:ULINK:DPDCh:DCH[1] 2 3 4 5 6:CRC	757
:ULINK:DPDCh:DCH[1] 2 3 4 5 6:CTYPE	757
:ULINK:DPDCh:DCH[1] 2 3 4 5 6:DATA	758
:ULINK:DPDCh:DCH[1] 2 3 4 5 6:DATA:FIX4	758
:ULINK:DPDCh:DCH[1] 2 3 4 5 6:NBLocks	759
:ULINK:DPDCh:DCH[1] 2 3 4 5 6:RMATtribute	759
:ULINK:DPDCh:DCH[1] 2 3 4 5 6:TTI	760
:ULINK:DPDCh:DCH2 3 4 5 6[:STATe]	760
:ULINK:DPDCh:POWer	761
:ULINK:DPDCh:SFORmat	761
:ULINK:DPDCh[:STATe]	761
:ULINK:FCLock:INTerval	762
:ULINK:FCLock:POLarity	762
:ULINK:FILTer	763
ULINK:FILTer:ALPHA	763
:ULINK:FILTer:BBT	764
:ULINK:FILTer:CHANnel	764
:ULINK:FOFFset	765
:ULINK:HSDPcch:APATtern	765

Contents

:ULINK:HSDPcch:APOWer	766
:ULINK:HSDPcch:CCODE	766
:ULINK:HSDPcch:CPATtern	766
:ULINK:HSDPcch:CPOWer	767
:ULINK:HSDPcch:NPOWer	767
:ULINK:HSDPcch:SFDelay	767
:ULINK:HSDPcch[:STATe]	768
:ULINK:POLarity	768
:ULINK:SCRamblecode	768
:ULINK:SDELAy	769
:ULINK:SFNRst:POLarity	769
:ULINK:SYNC:MODE	770
:ULINK:SYNC[:SOURce]	770
:ULINK:TOFFset	770
[:STATe]	771
NADC Subsystem–Option 402 ([:SOURce]:RADio[:NADC])	772
:ALPha	772
:BBCLock	772
:BBT	773
:BRATe	773
:BURSt:PN9	774
:BURSt:SHAPE[:TYPE]	775
:BURSt:SHAPE:FALL:DELAy	775
:BURSt:SHAPE:FALL:TIME	776
:BURSt:SHAPE:FDELAy	776
:BURSt:SHAPE:FTIME	777
:BURSt:SHAPE:RDELAy	778
:BURSt:SHAPE:RISE:DELAy	778
:BURSt:SHAPE:RISE:TIME	779
:BURSt:SHAPE:RTIME	780
:BURSt[:STATe]	780
:BURSt:SHAPE[:TYPE]	781
:CHANnel	781
:DATA	782
:DATA:PRAM	782
:DATA:FIX4	783
:DEFault	783
:EDATa:DELAy	783

:EDCLock	784
:EREFerence	784
:EREFerence:VALue	785
:FILTer	785
:FRATe	786
:IQ:SCALE	786
:MODulation:FSK[:DEViation]	787
:MODulation:MSK[:PHASe]	787
:MODulation:UFSK	787
:MODulation:UIQ	788
:MODulation[:TYPE]	788
:REPeat	789
:POLarity[:ALL]	789
:SECOndary:RECall	789
:SECOndary:SAVE	790
:SECOndary:TRIGger[:SOURce]	790
:SECOndary[:STATe]	790
:SLOT[1] 2 3 4 5 6:DCUStom	791
:SLOT[1] 2 3 4 5 6:DCUStom:FIX4	791
:SLOT[1] 2 3 4 5 6:DTCHannel:CDLocator	792
:SLOT[1] 2 3 4 5 6:DTCHannel:CDVCcode	792
:SLOT[1] 2 3 4 5 6:DTCHannel:SACChannel	792
:SLOT[1] 2 3 4 5 6:DTCHannel:SWORd	793
:SLOT[1] 2 3 4 5 6:DTCHannel[:DATA]	793
:SLOT[1] 2 3 4 5 6:DTCHannel[:DATA]FIX4	794
:SLOT[1] 2 3 4 5 6:POWer	794
:SLOT[1] 2 3 4 5 6:STATe	794
:SLOT[1] 2 3 4 5 6:UCUStom	795
:SLOT[1] 2 3 4 5 6:UCUStom:FIX4	795
:SLOT[1] 2 3 4 5 6:UTCHannel:CDVCcode	795
:SLOT[1] 2 3 4 5 6:UTCHannel:SACChannel	796
:SLOT[1] 2 3 4 5 6:UTCHannel:SWORd	796
:SLOT[1] 2 3 4 5 6:UTCHannel[:DATA]	796
:SLOT[1] 2 3 4 5 6:UTCHannel[:DATA]:FIX4	797
:SLOT[1] 2 3 4 5 6[:TYPE]	797
:SOUT	798
:SOUT:OFFSet	798
:SOUT:SLOT	799

Contents

:SRATe	799
:TRIGger:TYPE	800
:TRIGger:TYPE:CONTInuous[:TYPE]	801
:TRIGger:TYPE:GATE:ACTive.	802
:TRIGger[:SOURce]	802
:TRIGger[:SOURce]:EXTernal:DELay	803
:TRIGger[:SOURce]:EXTernal:DELay:STATe	804
:TRIGger[:SOURce]:EXTernal:SLOPe	804
:TRIGger[:SOURce]:EXTernal[:SOURce]	804
	805
PDC Subsystem–Option 402 ([:SOURce]:RADio:PDC).	806
:ALPha	806
:BBCLock	806
:BBT	807
:BRATe	807
:BURSt:PN9	808
:BURSt:SHAPe:FALL:DELay	809
:BURSt:SHAPe:FALL:TIME	809
:BURSt:SHAPe:FDELay	810
:BURSt:SHAPe:FTIME	811
:BURSt:SHAPe:RDELay	811
:BURSt:SHAPe:RISE:DELay	812
:BURSt:SHAPe:RISE:TIME	813
:BURSt:SHAPe:RTIME	813
:BURSt:SHAPe[:TYPE]	814
:BURSt[:STATe]	814
:CHANnel	815
:DATA	815
:DATA:PRAM.	816
:DATA:FIX4	816
:DEFault	816
:EDATa:DELay	817
:EDCLock	817
:EREFerence	817
:EREFerence:VALue.	818
:FILTer	818
:FRATe	819
:IQ:SCALE	819

:MODulation:FSK[:DEVIation]	820
:MODulation:MSK[:PHASe]	820
:MODulation:UFSK	821
:MODulation:UIQ	821
:MODulation[:TYPE]	821
:POLarity[:ALL]	822
:SECondary:RECall	822
:SECondary:SAVE	822
:SECondary:TRIGger[:SOURce]	823
:SECondary[:STATe]	823
:SLOT0[1]2 3 4 5:DCUStom	824
:SLOT0[1]2 3 4 5:DCUSTom:FIX4	824
:SLOT0[1]2 3 4 5:DTCHannel:CCODE	824
:SLOT0[1]2 3 4 5:DTCHannel:SACChannel	825
:SLOT0[1]2 3 4 5:DTCHannel:SWORd	825
:SLOT0[1]2 3 4 5:DTCHannel[:TCHannel]	825
:SLOT0[1]2 3 4 5:DTCHannel[:TCHannel]:FIX4	826
:SLOT0[1]2 3 4:POWer	826
:SLOT0[1]2 3 4 5:STATe	827
:SLOT0[1]2 3 4 5:UCUStom	827
:SLOT0[1]2 3 4 5:UCUStom:FIX4	827
:SLOT0[1]2 3 4 5:UTCHannel:CCODE	828
:SLOT0[1]2 3 4 5:UTCHannel:SACChannel	828
:SLOT0[1]2 3 4 5:UTCHannel:SWORd	828
:SLOT0[1]2 3 4 5:UTCHannel[:TCHannel]	829
:SLOT0[1]2 3 4 5:UTCHannel[:TCHannel]:FIX4	829
:SLOT0[1]2 3 4 5:UVOX:CCODE	830
:SLOT0[1]2 3 4 5:UVOX:SACChannel	830
:SLOT0[1]2 3 4 5:UVOX:SWORd	830
:SLOT0[1]2 3 4 5[:TYPE]	831
:SOUT	831
:SOUT:OFFSet	831
:SOUT:SLOT	832
:SRATe	832
:TRIGger:TYPE	834
:TRIGger:TYPE:CONTinuous[:TYPE]	834
:TRIGger:TYPE:GATE:ACTive	835
:TRIGger[:SOURce]	835

Contents

:TRIGger[:SOURce]:EXTernal:DELay	836
:TRIGger[:SOURce]:EXTernal:DELay:STATe	837
:TRIGger[:SOURce]:EXTernal:SLOPe	837
:TRIGger[:SOURce]:EXTernal[:SOURce]	838
[:STATe]	838
PHS Subsystem–Option 402 ([:SOURce]:RADio:PHS)	839
:ALPha	839
:BBCLock	839
:BBT	840
:BRATe	840
:BURSt:PN9	841
:BURSt:SCRamble:SEED	842
:BURSt:SCRamble[:STATe]	842
:BURSt:SHAPE:FALL:DELay	843
:BURSt:SHAPE:FALL:TIME	843
:BURSt:SHAPE:FDELay	844
:BURSt:SHAPE:FTIME	845
:BURSt:SHAPE:RDELay	845
:BURSt:SHAPE:RISE:DELay	846
:BURSt:SHAPE:RISE:TIME	847
:BURSt:SHAPE:RTIME	847
:BURSt:SHAPE[:TYPE]	848
:BURSt[:STATe]	848
:CHANnel	849
:DATA	849
:DATA:PRAM	850
:DATA:FIX4	850
:DEFault	850
:DLINK:SLOT[1] 2 3 4:CUSTom	851
:DLINK:SLOT[1] 2 3 4:CUSTom:FIX4	851
:DLINK:SLOT[1] 2 3 4:POWer	851
:DLINK:SLOT[1] 2 3 4:SCHannel:CSID	852
:DLINK:SLOT[1] 2 3 4:SCHannel:IDLE	852
:DLINK:SLOT[1] 2 3 4:SCHannel:PSID	852
:DLINK:SLOT[1] 2 3 4:SCHannel:UWORD	853
:DLINK:SLOT[1] 2 3 4:STATe	853
:DLINK:SLOT[1] 2 3 4:TCHannel:SACChannel	853
:DLINK:SLOT[1] 2 3 4:TCHannel:UWORD	854

:DLINK:SLOT[1]2 3 4:TCHannel[:TCHannel]	854
:DLINK:SLOT[1]2 3 4:TCHannel[:TCHannel]:FIX4	854
:DLINK:SLOT[1]2 3 4[:TYPE]	855
:EDATa:DELay	855
:EDCLock	855
:EREFerence	856
:EREFerence:VALue	856
:FILTer	857
:IQ:SCALE	858
:MODulation:FSK[:DEViation]	858
:MODulation:MSK[:PHASe]	859
:MODulation:UFSK	859
:MODulation:UIQ	859
:MODulation[:TYPE]	860
:POLarity[:ALL]	860
:SECondary:RECall	860
:SECondary:SAVE	861
:SECondary:TRIGger[:SOURce]	861
:SECondary[:STATE]	861
:SOUT	862
:SOUT:OFFSet	862
:SOUT:SLOT	863
:SRATe	863
:TRIGger:TYPE	864
:TRIGger:TYPE:CONTinuous[:TYPE]	865
:TRIGger:TYPE:GATE:ACTive	866
:TRIGger[:SOURce]:EXTernal:DELay	866
:TRIGger[:SOURce]:EXTernal:DELay:STATe	867
:TRIGger[:SOURce]:EXTernal:SLOPe	867
:TRIGger[:SOURce]:EXTernal[:SOURce]	867
:TRIGger[:SOURce]	868
:ULINK:SLOT[1]2 3 4:CUSTom	869
:ULINK:SLOT[1]2 3 4:CUSTom:FIX4	870
:ULINK:SLOT[1]2 3 4:POWer	870
:ULINK:SLOT[1]2 3 4:SCHannel:CSID	870
:ULINK:SLOT[1]2 3 4:SCHannel:IDLE	871
:ULINK:SLOT[1]2 3 4:SCHannel:PSID	871
:ULINK:SLOT[1]2 3 4:SCHannel:UWORD	871

Contents

:ULINK:SLOT[1]2 3 4:STATe	872
:ULINK:SLOT[1]2 3 4:TCHannel:SACChannel	872
:ULINK:SLOT[1]2 3 4:TCHannel:UWORD	872
:ULINK:SLOT[1]2 3 4:TCHannel[:TCHannel]	873
:ULINK:SLOT[1]2 3 4:TCHannel[:TCHannel:FIX4	873
:ULINK:SLOT[1]2 3 4[:TYPE]	873
[:STATe]	874
TETRA Subsystem–Option 402 ([:SOURce]:RADio:TETRa)	875
:ALPha	875
:BBCLock	875
:BBT	876
:BRATe	876
:BURSt:PN9	877
:BURSt:SCRamble:SEED	878
:BURSt:SCRamble[:STATe]	878
:BURSt:SHAPe:FALL:DELay	878
:BURSt:SHAPe:FALL:TIME	879
:BURSt:SHAPe:FDELay	880
:BURSt:SHAPe:FTIME	880
:BURSt:SHAPe:RDELay	881
:BURSt:SHAPe:RISE:DELay	882
:BURSt:SHAPe:RISE:TIME	882
:BURSt:SHAPe:RTIME	883
:BURSt:SHAPe[:TYPE]	884
:BURSt[:STATe]	884
:CHANnel	885
:DATA	885
:DATA:PRAM	886
:DATA:FIX4	886
:DEFault	887
:EDATa:DELay	887
:EDCLock	887
:EREFerence	888
:EREFerence:VALue	888
:FILTer	889
:IQ:SCALE	890
:MODulation:FSK[:DEViation]	890
:MODulation:MSK[:PHASe]	891

:MODulation:UFSK	.891
:MODulation:UIQ	.891
:MODulation[:TYPE]	.892
:POLarity[:ALL]	.892
:SECondary:RECall	.893
:SECondary:SAVE	.893
:SECondary:TRIGger[:SOURce]	.893
:SECondary[:STATe]	.894
:SLOT[1] 2 3 4:DCCustom	.894
:SLOT[1] 2 3 4:DCCustom:FIX4	.894
:DCNormal:B1	.895
:DCNormal:B2	.895
:SLOT[1] 2 3 4:DCNormal:TSEQuence	.895
:SLOT[1] 2 3 4:DCNormal[:DATA]	.896
:SLOT[1] 2 3 4:DCNormal[:DATA]:FIX4	.896
:SLOT[1] 2 3 4:DcSync:B	.897
:SLOT[1] 2 3 4:DcSync:FCOR	.897
:SLOT[1] 2 3 4:DcSync:SSB	.897
:SLOT[1] 2 3 4:DcSync:STS	.898
:SLOT[1] 2 3 4:DcSync[:DATA]	.898
:SLOT[1] 2 3 4:DcSync[:DATA]:FIX4	.898
:SLOT[1] 2 3 4:DDCustom	.899
:SLOT[1] 2 3 4:DDCustom:FIX4	.899
:SLOT[1] 2 3 4:DDNormal:B1	.900
:SLOT[1] 2 3 4:DDNormal:B2	.900
:SLOT[1] 2 3 4:DDNormal:TSEQuence	.900
:SLOT[1] 2 3 4:DDNormal[:DATA]	.901
:SLOT[1] 2 3 4:DDNormal[:DATA]:FIX4	.901
:SLOT[1] 2 3 4:DDSync:B	.902
:SLOT[1] 2 3 4:DDSync:FCOR	.902
:SLOT[1] 2 3 4:DDSync:SSB	.902
:SLOT[1] 2 3 4:DDSync:STS	.903
:SLOT[1] 2 3 4:DDSync[:DATA]	.903
:SLOT[1] 2 3 4:DDSync[:DATA]:FIX4	.903
:SLOT[1] 2 3 4:POWer	.904
:SLOT[1] 2 3 4:STATe	.904
:SLOT[1] 2 3 4:UC1:TSEQuence	.904
:SLOT[1] 2 3 4:UC1[:DATA]	.905

Contents

:SLOT[1] 2 3 4:UC1[:DATA]:FIX4	905
:SLOT[1] 2 3 4:UC2:TSEquence	905
:SLOT[1] 2 3 4:UC2[:DATA]	906
:SLOT[1] 2 3 4:UC2[:DATA]:FIX4	906
:SLOT[1] 2 3 4:UCUStom	906
:SLOT[1] 2 3 4:UCUStom:FIX4	907
:SLOT[1] 2 3 4:UNORmal:TSEquence	907
:SLOT[1] 2 3 4:UNORmal[:DATA]	907
:SLOT[1] 2 3 4:UNORmal[:DATA]:FIX4	908
:SLOT[1] 2 3 4[:TYPE]	908
:SOUT	909
:SOUT:OFFSet	909
:SOUT:SLOT	910
:SRATe	910
:TRIGger:TYPE	912
:TRIGger:TYPE:CONTinuous[:TYPE]	912
:TRIGger:TYPE:GATE:ACTive	913
:TRIGger[:SOURce]	914
:TRIGger[:SOURce]:EXTernal:DELay	915
:TRIGger[:SOURce]:EXTernal:DELay:STATe	915
:TRIGger[:SOURce]:EXTernal:SLOPe	916
:TRIGger[:SOURce]:EXTernal[:SOURce]	916
[:STATe]	917
Wideband CDMA Base Band Generator Subsystem–Option 400 ([:SOURce]:RADio:WCDMa:TGPP[:BBG])	918
:BBCLock	918
:BBCLock:EXT:RATE	918
:DLINK:APPLy	919
:DLINK:AWGN:CN	919
:DLINK:AWGN:CPOWer	919
:DLINK:AWGN:ECNO	920
:DLINK:AWGN:ECRPower	920
:DLINK:AWGN:ECRef	920
:DLINK:AWGN:FNBW	921
:DLINK:AWGN:NPOWer	921
:DLINK:AWGN:TICPower	921
:DLINK:AWGN[:STATe]	922
:DLINK:BBCLock	922
:DLINK:CARB:CMODE:CCODE	922

:DLINK:CARB:CMODE:DATA	923
:DLINK:CARB:CMODE:FOFFset	923
:DLINK:CARB:CMODE:FSTRuct	923
:DLINK:CARB:CMODE:POWer	924
:DLINK:CARB:CMODE:PRATio	924
:DLINK:CARB:CMODE:SCTYpe	924
:DLINK:CARB:CMODE:SFORmat	925
:DLINK:CARB:CMODE:SSCodeos	925
:DLINK:CARB:CMODE:TFIRst	926
:DLINK:CARB:CMODE:TGL	926
:DLINK:CARB:CMODE[:STATe]	926
:DLINK:CPICH:CCODE	927
:DLINK:CPICH:POWer	927
:DLINK:CPICH[:STATe]	927
:DLINK:CRATe	928
:DLINK:DPCH[1]:BALance	928
:DLINK:DPCH[1]:BINitalize	928
:DLINK:DPCH[1]2:ALL[:STATe]	929
:DLINK:DPCH[1]2:CCODE	929
:DLINK:DPCH[1]2:DATA	929
:DLINK:DPCH[1]2:DATA:FIX4	930
:DLINK:DPCH[1]2:POWer	930
:DLINK:DPCH[1]2:RCSetup	931
:DLINK:DPCH[1]2:SLOTformat	932
:DLINK:DPCH[1]2:SRATe	932
:DLINK:DPCH[1]2:SSCodeos	932
:DLINK:DPCH[1]2:TFCI:PATtern	933
:DLINK:DPCH[1]2:TOFFset	933
:DLINK:DPCH[1]2:TPC:NUMSteps	934
:DLINK:DPCH[1]2:TPC:PATtern	934
:DLINK:DPCH[1]2[:STATe]	935
:DLINK:FILTer	935
:DLINK:FILTer:ALPHa	936
:DLINK:FILTer:BBT	936
:DLINK:FILTer:CHANnel	937
:DLINK:MSYNc	937
:DLINK:OCNS[1]2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:ALL[:STATe]	937
:DLINK:OCNS[1]2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:CCODE	938

Contents

:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:DATA	938
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:POWer	938
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:SRATe	939
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:SSCodeos	939
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16:TOFFset	940
:DLINK:OCNS[1] 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16[:STATe]	940
:DLINK:OOSTest[:STATe]	940
:DLINK:OOSTest:DTXGate:POLarity	941
:DLINK:PADJust	941
:DLINK:PCCPch:BCHData	941
:DLINK:PCCPch:BCHData:FIX4	942
:DLINK:PCCPch:CCODE	942
:DLINK:PCCPch:POWer	942
:DLINK:PCCPch[:STATe]	943
:DLINK:PICH:CCODE	943
:DLINK:PICH:DATA	943
:DLINK:PICH:DATA:FIX4	944
:DLINK:PICH:PIBits	944
:DLINK:PICH:PINDicator	944
:DLINK:PICH:POWer	945
:DLINK:PICH[:STATe]	945
:DLINK:POLarity	945
:DLINK:PSCH:POWer	946
:DLINK:PSCH[:STATe]	946
:DLINK:RPANel:INPut:ALTPower	946
:DLINK:RPANel:INPut:BBGRef	947
:DLINK:RPANel:INPut:BGATe	947
:DLINK:RPANel:INPut:PTRigger1	947
:DLINK:RPANel:INPut:PTRigger2	948
:DLINK:RPANel:OUTPut:DCLock	948
:DLINK:RPANel:OUTPut:DOUT	950
:DLINK:RPANel:OUTPut:EVENT1	951
:DLINK:RPANel:OUTPut:EVENT2	951
:DLINK:RPANel:OUTPut:EVENT3	952
:DLINK:RPANel:OUTPut:EVENT4	952
:DLINK:RPANel:OUTPut:SSYNc	953
:DLINK:SCH[:STATe]	953
:DLINK:SCRamblecode	953

:DLINK:SDElay	954
:DLINK:SSCH:POWer	954
:DLINK:SSCH:SSGRoup	954
:DLINK:SSCH[::STATe].	955
:DLINK:TGAP:FSTRuct.	955
:DLINK:TGAP:POFFset	955
:DLINK:TGAP:PSI[1]:CFN	956
:DLINK:TGAP:PSI[1]:CMMethod	956
:DLINK:TGAP:PSI[1]:D	957
:DLINK:TGAP:PSI[1]:L1	957
:DLINK:TGAP:PSI[1]:L2	957
:DLINK:TGAP:PSI[1]:PL1	958
:DLINK:TGAP:PSI[1]:PL2	958
:DLINK:TGAP:PSI[1]:PRC	958
:DLINK:TGAP:PSI[1]:PS	959
:DLINK:TGAP:PSI[1]:SN.	959
:DLINK:TGAP:RPARameter.	959
:DLINK:TGAP:SCFN	960
:DLINK:TGAP:STARt:TRIGger.	960
:DLINK:TGAP:STARt:TRIGger:POLarity	960
:DLINK:TGAP:STOP:TRIGger	961
:DLINK:TGAP:STOP:TRIGger:POLarity	961
:DLINK:TGAP[::STATe]	961
:DLINK:TSETup	962
:DLINK:TXDV	963
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:BLKSize	964
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:BPFRame.	965
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:BRATe	965
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:BSSize	965
DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:CODE	966
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:CRC.	967
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:DATA	967
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:DATA:EINSert.	968
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:DATA:FIX4.	968
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:NBLocks	969
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:POSition	970
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:PPERcentage	970
:DLINK[:TGRoup [A]B]:DCH[1]2 3 4 5 6:RMATch	971

Contents

:DLINK[:TGRoup [A]B]:DCH[1] 2 3 4 5 6:TTI	971
:DLINK[:TGRoup [A]B]:DCH[1] 2 3 4 5 6[:STATe]	972
:LINK	972
:POLarity[:ALL]	972
:ULINK:APPLy	973
:ULINK:AWGN:CN	973
:ULINK:AWGN:CPOWer	974
:ULINK:AWGN:DRATe	974
:ULINK:AWGN:EBNO	974
:ULINK:AWGN:EBRef	975
:ULINK:AWGN:FNBW	975
:ULINK:AWGN:NPOWer	976
:ULINK:AWGN:TICPower	976
:ULINK:AWGN[:STATe]	976
:ULINK:CRATe	977
:ULINK:DPCCh:BETA	977
:ULINK:DPCCh:CCODe	978
:ULINK:DPCCh:DATA	978
:ULINK:DPCCh:DATA:FIX4	979
:ULINK:DPCCh:FBI:PATTem	979
:ULINK:DPCCh:FBI:PATTem:FIX	980
:ULINK:DPCCh:FBI[:STATe]	980
:ULINK:DPCCh:POWer	981
:ULINK:DPCCh:RATE	981
:ULINK:DPCCh:SLOTformat	981
:ULINK:DPCCh:TFCI:PATTem	982
:ULINK:DPCCh:TFCI:PATTem:FIX	982
:ULINK:DPCCh:TFCI[:STATe]	983
:ULINK:DPCCh:TPC:NSTeps	983
:ULINK:DPCCh:TPC:PATTem	984
:ULINK:DPCCh:TPC:PATTem:FIX4	985
:ULINK:DPCCh:TPC:PATTem:TRIGger:POLarity	985
:ULINK:DPCCh:TPC:PATTem:TRIGger[:STATe]	986
:ULINK:DPCCh:TPOWer	986
:ULINK:DPCCh[:STATe]	987
:ULINK:DPDCh:BETA	987
:ULINK:DPDCh:CCODe	988
:ULINK:DPDCh:DATA	989

:ULINK:DPDCh:DATA:FIX4	989
:ULINK:DPDCh:POWer	990
:ULINK:DPDCh:RATE	990
:ULINK:DPDCh:RBER	991
:ULINK:DPDCh:SLOTformat	992
:ULINK:DPDCh:TBER[:CLENgth]	993
:ULINK:DPDCh:TBER:ELENgth.	993
:ULINK:DPDCh:TPOWer	994
:ULINK:DPDCh[:STATe]	994
:ULINK:FClock:INTerval	994
:ULINK:FClock:POLarity	995
:ULINK:FILTer	995
:ULINK:FILTer:ALPHA.	996
:ULINK:FILTer:BBT	997
:ULINK:FILTer:CHANnel.	997
:ULINK:FOFFset.	998
:ULINK:PADJust	998
:ULINK:PHYSical[1]:TYPE	998
:ULINK:PMODE:TPControl:HOLD	999
:ULINK:PMODE:TPControl:POWer:INITial	999
:ULINK:PMODE:TPControl:POWer:MAXimum	1000
:ULINK:PMODE:TPControl:POWer:MINimum.	1000
:ULINK:PMODE:TPControl:POWer:RESet	1001
:ULINK:PMODE:TPControl:POWer:STEP.	1001
:ULINK:PMODE:TPControl:TRIGger:POLarity	1002
:ULINK:PMODE[:SElect]	1002
:ULINK:PRACH:AICH:NUMBer	1002
:ULINK:PRACH:AICH:POLarity	1003
:ULINK:PRACH:AWGN:CN.	1003
:ULINK:PRACH:AWGN:CPOWer	1004
:ULINK:PRACH:AWGN:DRATe	1004
:ULINK:PRACH:AWGN:EBNO	1004
:ULINK:PRACH:AWGN:ECNO	1005
:ULINK:PRACH:AWGN:EREF.	1005
:ULINK:PRACH:AWGN:NPOWer	1006
:ULINK:PRACH:AWGN:TICPower	1006
:ULINK:PRACH:AWGN[:STATe].	1006
:ULINK:PRACH:MESSAge:CPART:BETA	1007

Contents

:ULINK:PRACH:MESSAge:CPART:DATA	1007
:ULINK:PRACH:MESSAge:CPART:DATA:FIX4	1008
:ULINK:PRACH:MESSAge:CPART:POWer	1008
:ULINK:PRACH:MESSAge:CPART:RATE	1009
:ULINK:PRACH:MESSAge:CPART:SLOTformat	1009
:ULINK:PRACH:MESSAge:CPART:TFCI:PATtern	1010
:ULINK:PRACH:MESSAge:CPART:TFCI:PATtern:FIX	1010
:ULINK:PRACH:MESSAge:CPART:TFCI[:STATe]	1011
:ULINK:PRACH:MESSAge:DPART:BETA	1011
:ULINK:PRACH:MESSAge:DPART:DATA	1012
:ULINK:PRACH:MESSAge:DPART:DATA:FIX4	1012
:ULINK:PRACH:MESSAge:DPART:POWer	1013
:ULINK:PRACH:MESSAge:DPART:RATE	1014
:ULINK:PRACH:MESSAge:DPART:SLOTformat	1015
:ULINK:PRACH:MODE[:SElect]	1016
:ULINK:PRACH:MULTi:MESSAge:TPOWer	1016
:ULINK:PRACH:MULTi:MESSAge[:STATe]	1017
:ULINK:PRACH:MULTi:NUMBER	1017
:ULINK:PRACH:MULTi:PREAmble:NUMBER	1017
:ULINK:PRACH:MULTi:PREAmble:POWer:INITIAL	1018
:ULINK:PRACH:MULTi:PREAmble:POWer:MAX	1018
:ULINK:PRACH:MULTi:PREAmble:POWer:RSTep	1019
:ULINK:PRACH:MULTi:PREAmble:PPM	1019
:ULINK:PRACH:MULTi:UE[1] 2 3 4 5 6 7 8:MESSAge:CPART:CCODE	1019
:ULINK:PRACH:MULTi:UE[1] 2 3 4 5 6 7 8:MESSAge:DPART:CCODE	1020
:ULINK:PRACH:MULTi:UE[1] 2 3 4 5 6 7 8:PREAmble:SIGNature	1020
:ULINK:PRACH:MULTi:UE[1] 2 3 4 5 6 7 8:SPOsition[1] 2 3 4 5 6 7 8[:ASLot]	1021
:ULINK:PRACH:MULTi:UE[1] 2 3 4 5 6 7 8[:STATe]	1022
:ULINK:PRACH:PREAmble:POWer:AVERAge	1022
:ULINK:PRACH:PREAmble:POWer:MODE	1023
:ULINK:PRACH:RPARameter	1024
:ULINK:PRACH:SCRamblecode	1024
:ULINK:PRACH:SDElay	1025
:ULINK:PRACH:SUBChannel	1025
:ULINK:PRACH:TOFFset	1026
:ULINK:PRACH:TPA	1026
:ULINK:PRACH:TPM	1027
:ULINK:PRACH:TPOWer	1027

:ULINK:PRACH:TPP	1028
:ULINK:PRACH:TRIGGER	1028
:ULINK:PRACH:TRIGGER:POLARITY	1029
:ULINK:PRACH:TRIGGER:SOURCE	1029
:ULINK:PRACH:TTI	1030
:ULINK:PRACH[:SINGLE]:MESSAGE[:STATE]	1030
:ULINK:PRACH[:SINGLE]:NUMBER	1031
:ULINK:PRACH[:SINGLE]:MESSAGE:CPART:CCODE	1031
:ULINK:PRACH[:SINGLE]:MESSAGE:DPART:CCODE	1032
:ULINK:PRACH[:SINGLE]:MESSAGE:TPOWER	1033
:ULINK:PRACH[:SINGLE]:NUMBER	1033
:ULINK:PRACH[:SINGLE]:PREAMBLE:NUMBER	1034
:ULINK:PRACH[:SINGLE]:PREAMBLE:POWER:INITIAL	1034
:ULINK:PRACH[:SINGLE]:PREAMBLE:POWER:MAX	1034
:ULINK:PRACH[:SINGLE]:PREAMBLE:POWER:RSTEP	1035
:ULINK:PRACH[:SINGLE]:PREAMBLE:PPM	1036
:ULINK:PRACH[:SINGLE]:PREAMBLE:SIGNATURE	1036
:ULINK:RMCHANNEL	1037
:ULINK:RPANEL:DPCH:INPUT:ALTPower	1038
:ULINK:RPANEL:DPCH:INPUT:BBGRef	1038
:ULINK:RPANEL:DPCH:INPUT:BGATE	1038
:ULINK:RPANEL:DPCH:INPUT:PTRigger1	1039
:ULINK:RPANEL:DPCH:INPUT:PTRigger2	1039
:ULINK:RPANEL:DPCH:OUTPUT:DCLock	1039
:ULINK:RPANEL:DPCH:OUTPUT:DOUT	1041
:ULINK:RPANEL:DPCH:OUTPUT:EVENT1	1041
:ULINK:RPANEL:DPCH:OUTPUT:EVENT2	1042
:ULINK:RPANEL:DPCH:OUTPUT:EVENT3	1042
:ULINK:RPANEL:DPCH:OUTPUT:EVENT4	1043
:ULINK:RPANEL:DPCH:OUTPUT:SSYNc	1043
:ULINK:RPANEL:PRACH:INPUT:ALTPower	1044
:ULINK:RPANEL:PRACH:INPUT:BBGRef	1044
:ULINK:RPANEL:PRACH:INPUT:BGATE	1044
:ULINK:RPANEL:PRACH:INPUT:PTRigger1	1045
:ULINK:RPANEL:PRACH:INPUT:PTRigger2	1045
:ULINK:RPANEL:PRACH:OUTPUT:DCLock	1045
:ULINK:RPANEL:PRACH:OUTPUT:DOUT	1047
:ULINK:RPANEL:PRACH:OUTPUT:EVENT1	1048

Contents

:ULINK:RPANel:PRACH:OUTPut:EVENT2	1049
:ULINK:RPANel:PRACH:OUTPut:EVENT3	1049
:ULINK:RPANel:PRACH:OUTPut:EVENT4	1050
:ULINK:RPANel:PRACH:OUTPut:SSYNc	1051
:ULINK:SCRamblecode	1051
:ULINK:SDElay	1052
:ULINK:SFNRst:POLarity	1052
:ULINK:SYNC:MODE	1053
:ULINK:SYNC[:SOURce]	1053
:ULINK:TGAP:POFFset	1054
:ULINK:TGAP:PSI[1] 2 3 4 5 6:CFN	1054
:ULINK:TGAP:PSI[1]:CMMethod	1055
:ULINK:TGAP:PSI[1] 2 3 4 5 6:D	1055
:ULINK:TGAP:PSI[1] 2 3 4 5 6:L1	1056
:ULINK:TGAP:PSI[1] 2 3 4 5 6:L2	1056
:ULINK:TGAP:PSI[1] 2 3 4 5 6:PL1	1056
:ULINK:TGAP:PSI[1] 2 3 4 5 6:PL2	1057
:ULINK:TGAP:PSI[1] 2 3 4 5 6:POWer	1057
:ULINK:TGAP:PSI[1] 2 3 4 5 6:PRC	1057
:ULINK:TGAP:PSI[1] 2 3 4 5 6:PS	1058
:ULINK:TGAP:PSI[1] 2 3 4 5 6:SN	1058
:ULINK:TGAP:RPARameter	1058
:ULINK:TGAP:SCFN	1059
:ULINK:TGAP[:STATe]	1059
:ULINK:TGAP:STARt:TRIGger	1060
:ULINK:TGAP:STARt:TRIGger:POLarity	1060
:ULINK:TGAP:STOP:TRIGger	1060
:ULINK:TGAP:STOP:TRIGger:POLarity	1060
:ULINK:TOFFset	1061
:ULINK:TSTatus:COMPressed	1061
:ULINK:TSTatus:RACH	1061
:ULINK:TSTatus:RECeive	1062
:ULINK:TSTatus:SYNC	1062
:ULINK:[TGRoup[1]]:DCH[1] 2 3 3 5 6:BLKSize	1062
:ULINK[:TGRoup[1]]:DCH[1] 2 3 4 5 6:BPFRame	1063
:ULINK[:TGRoup[1]]:DCH[1] 2 3 4 5 6:BRATe	1063
:ULINK:[TGRoup[1]]:DCH[1] 2 3 3 5 6:CODE	1063
:ULINK:[TGRoup[1]]:DCH[1] 2 3 3 5 6:CRc	1064

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA1064

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BER:ACTual1065

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BER:ERRor:BIT1065

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BER:TOTal:BIT1065

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BER[:VALue]1066

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BLER:ACTual1066

:ULINK[:TGRoup[1]]|2:DCH[1]|2|3|4|5|6:DATA:BLER:ERRor:BLOCK1066

:ULINK[:TGRoup[1]]|2:DCH[1]|2|3|4|5|6:DATA:BLER:TOTal:BLOCK1067

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BLER[:VALue]1067

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:EINsert1068

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:FIX41068

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:NBLock1069

:ULINK[:TGRoup [1]]:DCH[1]|2|3|4|5|6:PPERcentage1069

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:RMATch1069

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:TTI1070

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6[:STATe]1070

:ULINK[:TGRoup[1]]:RACH[1]:BLKSize1071

:ULINK[:TGRoup [1]]:RACH[1]:BPF rame1071

:ULINK[:TGRoup [1]]:RACH[1]:BRATe1071

:ULINK[:TGRoup[1]]:RACH[1]:CODE1071

:ULINK[:TGRoup[1]]:RACH[1]:CRC1072

:ULINK[:TGRoup[1]]:RACH[1]:DATA1072

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER:ACTual1072

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER:ERRor:BIT1073

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER:TOTal:BIT1073

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER[:VALue]1074

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:ACTual1074

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:ERRor:BLOCK1074

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:TOTal:BLOCK1075

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER[:VALue]1075

:ULINK[:TGRoup[1]]:RACH[1]:DATA:EINsert1076

:ULINK[:TGRoup[1]]:RACH[1]:DATA:FIX41076

:ULINK[:TGRoup[1]]:RACH[1]:NBLock1077

:ULINK[:TGRoup [1]]:RACH[1]:PPERcentage1077

:ULINK[:TGRoup[1]]:RACH[1]:RMATch1077

:ULINK[:TGRoup[1]]:RACH[1]:TTI1078

:ULINK[:TGRoup[1]]:RACH[1][:STATe]1078

[:STATe]1078

9 Receiver Test Digital Commands (continued)

This chapter provides a continuation of SCPI descriptions for commands dedicated to digital real-time testing using the E4438C ESG Vector Signal Generator. This chapter contains the following sections:

- “GPS Subsystem–Option 409 ([:SOURce]:RADio[1]|2|3|4:GPS)” on page 664
- “GSM Subsystem–Option 402 ([:SOURce]:RADio:GSM)” on page 671
- “HSDPA over W-CDMA Subsystem–Option 418 ([:SOURce]:RADio:WCDMa:HSDPa[:BBG])” on page 710
- “NADC Subsystem–Option 402 ([:SOURce]:RADio[:NADC])” on page 772
- “PDC Subsystem–Option 402 ([:SOURce]:RADio:PDC)” on page 806
- “PHS Subsystem–Option 402 ([:SOURce]:RADio:PHS)” on page 839
- “TETRA Subsystem–Option 402 ([:SOURce]:RADio:TETRa)” on page 875
- “Wideband CDMA Base Band Generator Subsystem–Option 400 ([:SOURce]:RADio:WCDMa:TGPP[:BBG])” on page 918

GPS Subsystem–Option 409

([:SOURce]:RADio[1]|2|3|4:GPS)

:DATA

Supported E4438C with Option 409

```
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :DATA PN9 | PN15 | FIX4 | "<user file>"
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :DATA?
```

This command sets the data type for the selected data mode.

***RST** PN9

Key Entry **PN9** **PN15** **FIX4** **User file**

Remarks This command is only effective when the data mode is RAW or ENCOded. To set the data mode, refer to **”:DMODE”**.

:DMODE

Supported E4438C with Option 409

```
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :DMODE RAW | ENCOded | TLM
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :DMODE?
```

This command sets the data mode.

RAW This choice modulates data onto the C/A (coarse acquisition) code at 50-bits per second. No parity bits are computed by the signal generator. Every 6 seconds, 300-bits from the source data are transmitted.

ENCOded This choice modulates data onto the C/A (coarse acquisition) code at 50-bits per second. The signal generator computes 6 parity bits for every 24 data bits from the selected data source. Every six seconds, 240-bits of the source data are transmitted along with 60-bits of computed parity.

TLM This choice transmits a standard default navigation data transmission which includes a telemetry word (TLM), a handover word (HOW), and default navigation data. The signal generator transmits an incrementing time-of-week (TOW) as part of the HOW.

***RST** RAW

Key Entry **Data Mode Raw Enc TLM**

Remarks Since the TLM mode transmits default navigation data, there is no data selection for this mode.

For selecting the data type when RAW or ENCOded is the selection, refer to “:DATA” on page 664.

:DSHift

Supported E4438C with Option 409

`[:SOURce]:RADio[1]|2|3|4:GPS:DSHift <val>`
`[:SOURce]:RADio[1]|2|3|4:GPS:DSHift?`

This command sets the frequency and chip rate offsets to simulate a doppler shift.

The variable <val> is expressed in units of hertz (Hz to kHz).

***RST** +0.00000000E+000

Range –125 to 125

Key Entry **Doppler Shift**

Remarks The lower bound of the doppler shift is limited by the frequency set on the signal generator. For example, if the signal generator frequency is set to 100 kHz, then the lower limit of the doppler shift would be 0.00 Hz. The doppler shift can not extend lower than the limitations of the signal generator

:FILTer

Supported E4438C with Option 409

`[:SOURce]:RADio[1]|2|3|4:GPS:FILTer RNYQuist|NYQuist|GAUSSian|RECTangle|IS95|IS95_EQ|IS95_MOD|IS95_MOD_EQ|AC4Fm|UGGaussian|"<user FIR">`
`[:SOURce]:RADio[1]|2|3|4:GPS:FILTer?`

This command sets the pre-modulation filter type.

IS95 This choice selects a filter that meets the criteria of the IS-95 standard.

IS95_EQ This choice selects a filter which is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard. This filter is only used for IS-95 baseband filtering.

GPS Subsystem—Option 409 ([:SOURce]:RADio[1]|2|3|4:GPS)

IS95_MOD	This choice selects a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard.
IS95_MOD_EQ	This choice selects a filter which is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection.
AC4Fm	This choice selects a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter.
UGGaussian	This choice selects a backwards compatible GSM Gaussian filter (Gaussian filter with a fixed BbT value of 0.300) for the ESG E44xxB Option UN3 or UN4.
"<user FIR>"	This variable is any filter file that you have stored into memory.
*RST	RECT
Key Entry	Root Nyquist Nyquist Gaussian Rectangle IS-95 IS-95 w/EQ IS-95 Mod IS-95 Mod w/EQ APC025 C4FM UN3/4 GSM Gaussian User FIR

:FILTer:ALPHa

Supported E4438C with Option 409

```
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :FILTer :ALPHa <val>
```

```
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :FILTer :ALPHa?
```

This command sets the Nyquist or root Nyquist filter's alpha value.

The filter alpha value can be set to the minimum value (0), maximum value (1), or in between by using fractional numeric values (0.001–0.999).

***RST** +2.20000000E-001

Range 0.000–1.000

Key Entry **Filter Alpha**

Remarks To change the current filter type, refer to “:FILTer” on page 665.

:FILTer:BBT

Supported E4438C with Option 409

```
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :FILTer :BBT <val>  
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :FILTer :BBT ?
```

This command changes the bandwidth-multiplied-by-bit-time (BbT) filter parameters.

The filter BbT value can be set to the minimum value (0), the maximum value (1), or in between by using fractional numeric values (0.001–0.999)

***RST** +5.00000000E-001

Range 0.000–1.000

Key Entry **Filter BbT**

Remarks This command is effective only after choosing a Gaussian filter. It does not have an effect on other types of filters.

To change the current filter type, refer to “:FILTer” on page 665.

:FILTer:CHANnel

Supported E4438C with Option 409

```
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :FILTer :CHANnel  
[ :SOURce ] :RADio[1] | 2 | 3 | 4 :GPS :FILTer :CHANnel ?
```

This command optimizes the Nyquist and root Nyquist filters to minimize error vector magnitude (EVM) or to minimize adjacent channel power (ACP).

EVM This choice provides the most ideal passband.

ACP This choice improves stopband rejection.

***RST** EVM

Key Entry **Optimize FIR For EVM ACP**

Remarks To change the current filter type, refer to “:FILTer” on page 665.

GPS Subsystem—Option 409 ([:SOURce]:RADio[1]|2|3|4:GPS)**:IQPhase****Supported** E4438C with Option 409[:SOURce]:RADio[1]|2|3|4:GPS:IQPhase NORMal|INVerted
[:SOURce]:RADio[1]|2|3|4:GPS:IQPhase?

This command sets the I/Q phase for the GPS signal.

NORMal This choice selects normal phase polarity.

INVerted This choice inverts the internal Q signal.

RST** NORM**Key Entry** **IQ Phase Normal Invert*:PCODE****Supported** E4438C with Option 409[:SOURce]:RADio[1]|2|3|4:GPS:PCODE <val>
[:SOURce]:RADio[1]|2|3|4:GPS:PCODE?

This command sets the P code power relative to the C/A code power.

RST** -3**Range** -40 to 0**Key Entry** **P Code Pwr*Remarks** This command is normally used when the CAP (C/A+P) ranging mode choice is selected. Refer to **":RCODE"** for selecting the ranging mode.**:RCODE****Supported** E4438C with Option 409[:SOURce]:RADio[1]|2|3|4:GPS:RCODE CA|P|CAP
[:SOURce]:RADio[1]|2|3|4:GPS:RCODE?

This command selects the ranging code for the GPS transmission.

CA This choice selects a 1023-bit pseudorandom C/A (coarse acquisition) code that is BPSK modulated onto the L1 (1575.42 MHz) carrier. The C/A code factory set chip rate is 1.023 Mcps using a 10.23 Mcps reference clock.

P	This choice selects the precise (P) code which is a very long pseudorandom sequence that is BPSK modulated onto the L2 (1227.6 MHz) carrier. The P code factory set chip rate is 10.23 Mcps using a 10.23 Mcps reference clock.
CAP	This choice permits both the C/A (coarse acquisition) and P (precise) codes to modulate the L1 (1575.42 MHz) carrier simultaneously by providing the P code on the Q component and the C/A code in quadrature on the I component.
*RST	CA
Key Entry	Ranging Code C/A P C/A+P

:REFClk

Supported E4438C with Option 409

```
[:SOURce]:RADio[1]|2|3|4:GPS:REFClk [INT]|Ext
[:SOURce]:RADio[1]|2|3|4:GPS:REFClk?
```

This command sets the GPS reference clock to either internal or external.

INT	This selection sets the signal generator to use the internal chip clock.
EXT	This selection sets the signal generator to use an external chip clock which is supplied to the DATA CLOCK INPUT connector.
*RST	INT
Key Entry	GPS Ref Clk

:REFFreq

Supported E4438C with Option 409

```
[:SOURce]:RADio[1]|2|3|4:GPS:REFFreq <val><unit>
[:SOURce]:RADio[1]|2|3|4:GPS:REFFreq?
```

This command sets the GPS reference clock frequency. If an external source is being used, its frequency must match the value set with this command

*RST	+1.02300000E+007
Range	1kCPS–12.5MCPS
Key Entry	GPS Ref (f0)
Remarks	Changing the GPS reference frequency will change the P and C/A code chip rates.

GPS Subsystem—Option 409 ([:SOURCE]:RADio[1]|2|3|4:GPS)

:SATid

Supported E4438C with Option 409

[:SOURCE] :RADio[1] | 2 | 3 | 4 :GPS :SATid <val>

[:SOURCE] :RADio[1] | 2 | 3 | 4 :GPS :SATid?

This command selects the pseudorandom number (PRN) code used for transmission.

Satellite identification numbers 1–32 are used for GPS satellites. Satellite identification numbers 33–37 are reserved for ground transmitter use in the real-world system.

***RST** +1

Range 1–37

Key Entry **Satellite ID**

[:STATE]

Supported E4438C with Option 409

[:SOURCE] :RADio[1] | 2 | 3 | 4 :GPS [:STATE] ON | OFF | 1 | 0

[:SOURCE] :RADio[1] | 2 | 3 | 4 :GPS [:STATE]?

This command enables or disables the real-time GPS signal.

***RST** 0

Key Entry **Real-time GPS Off On**

GSM Subsystem–Option 402 ([:SOURce]:RADio:GSM)

:ALPha

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :GSM :ALPha <val>  
[ :SOURce ] :RADio :GSM :ALPha ?
```

This command changes the Nyquist or root Nyquist filter’s alpha value.

The filter alpha value can be set to the minimum level (0), the maximum level (1), or in between by using fractional numeric values (0.001–0.999).

***RST** +5.00000000E–001

Range 0.000–1.000

Key Entry **Filter Alpha**

Remarks To change the current filter type, refer to “:FILTer” on page 684.

:BBCLock

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :GSM :BBCLock INT[1] | EXT[1]  
[ :SOURce ] :RADio :GSM :BBCLock ?
```

This command toggles the data (bit) clock input to the baseband generator board to either internal or external. This command is independent in each mode and works for both non-burst (continuous) and burst modes. This allows for a matrix of selections between burst/non-burst, internal/external data generation, internal/external data clock, and external bit/symbol data clock.

INT[1] This choice selects the signal generator internal data clock.

EXT[1] This choice selects an external data clock input.

***RST** INT

Key Entry **BBG Data Clock Ext Int**

Remarks A data clock or continuous symbol sync input must be supplied when external mode is used.

This will be ignored if the external reference is set to EXTERNAL. To change the external reference type, refer to “:EREFerence” on page 683.

:BBT

Supported E4438C with Option 402

[:SOURCE] :RADIO:GSM:BBT <val>

[:SOURCE] :RADIO:GSM:BBT?

This command changes the bandwidth-multiplied-by-bit-time (BbT) filter parameter.

The filter BbT value can be set to the maximum level (1) or in between the minimum level (0.100) and maximum level by using fractional numeric values (0.101–0.999).

***RST** +3.00000000E-001

Range 0.100–1.000

Key Entry **Filter BbT**

Remarks This command is effective only after choosing a Gaussian filter. It does not have an effect on other types of filters.

To change the current filter type, refer to “:FILTer” on page 684.

:BRATe

Supported E4438C with Option 402

[:SOURCE] :RADIO:GSM:BRATe <val>

[:SOURCE] :RADIO:GSM:BRATe?

This command sets the bit rate in bits per second (bps–Mbps). The maximum bit rate is dependent on the modulation type and filter as shown in the following tables.

NOTE When using multiframe, limit the symbol rate to no more than 271 ksps. Although higher rates may work, they are not supported. See “:SRATe” on page 702 for data stated as symbol rates.

The IQ digital data stream is shaped by a FIR filter. The filter length and associated latency and frequency response are dependent on the bit rate as shown in the following tables. The signal generator selects a filter length.

For higher bit rates, the FIR filter length may be truncated (if the minimum filter size allows it) which will impact the relative timing of the modulated data, as well as the actual filter response (see the symbol rate command “:SRATe” on page 863). Refer to “:FILTer” on page 684 for information on filter symbol widths.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 687.

When the bit rate is changed, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the bit rate: lower bit rates require more time.

***RST** +2.70833333E+005

Range	Modulation Type	Bit Rate Range		
		<i>16 Symbol Wide Filter</i>	<i>32 Symbol Wide Filter</i>	<i>64 Symbol Wide Filter</i>
	BPSK, FSK2, MSK	1bps–50Mbps	1bps–25Mbps	1bps–12.5Mbps
	C4FM, OQPSK, FSK4	2bps–50Mbps	2bps–25Mbps	2bps–12.5Mbps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3bps–50Mbps	3bps–25Mbps	3bps–12.5Mbps
	FSK16, PSK16, QAM16	4bps–50Mbps	4bps–25Mbps	4bps–12.5Mbps
	QAM32	5bps–50Mbps	5bps–25Mbps	5bps–12.5Mbps
	QAM64	6bps–50Mbps	6bps–25Mbps	6bps–12.5Mbps
	QAM128	7bps–50Mbps	7bps–25Mbps	7bps–12.5Mbps
	QAM256	8bps–50Mbps	8bps–25Mbps	8bps–12.5Mbps

Key Entry **Symbol Rate**

:BURSt:PN9

Supported E4438C with Option 402

[:SOURce] :RADio:GSM: BURSt: PN9 NORMal | QUICk

[:SOURce] :RADio:GSM: BURSt: PN9?

This command controls the software PN9 generation.

NORMal This choice produces a maximum length PN9 sequence.

QUICk This choice produces a truncated PN9 sequence.

***RST** NORM

Key Entry PN9 Mode Normal Quick

GSM Subsystem—Option 402 (:SOURCE:RADIO:GSM)

Remarks Use Normal mode for bit-error-rate tests where a maximum length PN9 sequence is required.

:BURSt:SHAPe:FALL:DELay

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIo:GSM:BURSt:SHAPe:FALL:DELay <val>
```

```
[ :SOURCE ] :RADIo:GSM:BURSt:SHAPe:FALL:DELay?
```

This command sets the burst shape fall delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range -11.0625 to 99

Key Entry **Fall Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 687. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FDELay” on page 675 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FALL:TIME

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIo:GSM:BURSt:SHAPe:FALL:TIME <val>
```

```
[ :SOURCE ] :RADIo:GSM:BURSt:SHAPe:FALL:TIME?
```

This command sets the burst shape fall time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +1.00000000E+001

Range 0.0625–127.9375

Key Entry	Fall Time
Remarks	<p>The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.</p> <p>To change the modulation type, refer to “:MODulation[:TYPE]” on page 687. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.</p> <p>“:BURSt:SHAPe:FTIME” on page 676 performs the same function; in compliance with the SCPI standard, both commands are listed.</p> <p>For concept information on burst shaping, refer to the <i>E4428C/38C ESG Signal Generators User’s Guide</i>.</p>

:BURSt:SHAPe:FDElay

Supported	E4438C with Option 402
	<pre>[:SOURCE] :RADIO:GSM:BURSt:SHAPe:FDElay <val> [:SOURCE] :RADIO:GSM:BURSt:SHAPe:FDElay?</pre>
	<p>This command sets the burst shape fall delay.</p> <p>The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.</p>
*RST	+0.00000000E+000
Range	–11.0625 to 99
Key Entry	Fall Delay
Remarks	<p>The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.</p> <p>To change the modulation type, refer to “:MODulation[:TYPE]” on page 687. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.</p> <p>“:BURSt:SHAPe:FALL:DElay” on page 674 performs the same function; in compliance with the SCPI standard, both commands are listed.</p> <p>For concept information on burst shaping, refer to the <i>E4428C/38C ESG Signal Generators User’s Guide</i>.</p>

:BURSt:SHAPe:FTIME

Supported E4438C with Option 402

[:SOURCE] :RADIO:GSM:BURSt:SHAPe:FTIME <val>

[:SOURCE] :RADIO:GSM:BURSt:SHAPe:FTIME?

This command sets the burst shape fall time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +3.00000000E+000

Range 0.0625–127.9375

Key Entry Fall Time

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 687. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FALL:TIME” on page 674 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:RDElay

Supported E4438C with Option 402

[:SOURCE] :RADIO:GSM:BURSt:SHAPe:RDElay <val>

[:SOURCE] :RADIO:GSM:BURSt:SHAPe:RDElay?

This command sets the burst shape rise delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate. For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

***RST** +0.00000000E+000

Range –8.0625 to 99

Key Entry Rise Delay

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 687. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:DELay” on page 677 performs the same function; in compliance with the SCPI standard, both commands are listed.

:BURSt:SHAPe:RISE:DELay

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:GSM:BURSt:SHAPe:RISE:DELay <val>  
[ :SOURce ] :RADio:GSM:BURSt:SHAPe:RISE:DELay?
```

This command sets the burst shape rise delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate. For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User's Guide*.

***RST** +0.00000000E+000

Range -8.0625 to 99

Key Entry Rise Delay

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 687. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:DELay” on page 676 performs the same function; in compliance with the SCPI standard, both commands are listed.

:BURSt:SHAPe:RISE:TIME

Supported E4438C with Option 402

[:SOURCE] :RADIo:GSM:BURSt:SHAPe:RISE:TIME <val>

[:SOURCE] :RADIo:GSM:BURSt:SHAPe:RISE:TIME?

This command sets the burst shape rise time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate. For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User's Guide*.

***RST** +3.00000000E+000

Range 0.0625–11.1875

Key Entry Rise Time

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 687. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RTIME” on page 678 performs the same function; in compliance with the SCPI standard, both commands are listed.

:BURSt:SHAPe:RTIME

Supported E4438C with Option 402

[:SOURCE] :RADIo:GSM:BURSt:SHAPe:RTIME <val>

[:SOURCE] :RADIo:GSM:BURSt:SHAPe:RTIME?

This command sets the burst shape rise time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate. For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User's Guide*.

***RST** +3.00000000E+000

Range 0.0625–11.1875

Key Entry Rise Time

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 687. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:TIME” on page 678 performs the same function; in compliance with the SCPI standard, both commands are listed.

:BURSt:SHAPe[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :GSM :BURSt :SHAPe [ :TYPE ] SINE | "<file name>"
[ :SOURce ] :RADio :GSM :BURSt :SHAPe [ :TYPE ] ?
```

This command specifies the burst shape as either SINE or a user-defined file ("<file name>").

SINE This choice selects a state that is defined by the burst rise and fall *RST values, as the default burst shape type.

"<file name>" This choice selects a user designated file from signal generator memory (non-volatile).

***RST** SINE

Key Entry **Sine User File**

:BURSt[:STATe]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :GSM :BURSt [ :STATe ] ON | OFF | 1 | 0
[ :SOURce ] :RADio :GSM :BURSt [ :STATe ] ?
```

This command enables or disables the burst function.

ON (1) This choice enables the transmission of framed data. If all timeslots which are switched on are up traffic channels or custom, you will be bursting the timeslots that are on; there will be no RF carrier during the off timeslots.

If you have switched on any timeslot that you have configured as a down traffic channel, the RF carrier is not switched off between any of the timeslots. The off timeslots are transmitted as a continuous series of ones for the time period of the off timeslots.

OFF (0) This choice enables the transmission of unframed data.

GSM Subsystem—Option 402 ([:SOURCE]:RADio:GSM)

***RST** 0
Key Entry Data Format Pattern Framed

:CHANnel

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:GSM:CHANnel EVM|ACP
[ :SOURCE ] :RADio:GSM:CHANnel?
```

This command optimizes the Nyquist and root Nyquist filters to minimize error vector magnitude (EVM) or to minimize adjacent channel power (ACP).

EVM This choice provides the most ideal passband.

ACP This choice improves stopband rejection.

***RST** ACP

Key Entry **Optimize FIR For Evm ACP**

Remarks To change the current filter type, refer to “:FILTer” on page 684.

:DATA

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:GSM:DATA PN9|PN11|PN15|PN20|PN23|FIX4|"<file name>"|
EXT|P4|P8|P16|P32|P64|PRAM
[ :SOURCE ] :RADio:GSM:DATA?
```

This command sets the data pattern type (pseudo-random number sequence, 4-bit pattern, sequence of 1’s and 0’s, data from an external source, or a user file) for unframed data transmission.

***RST** PN23

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	Ext
	4 1’s & 4 0’s		8 1’s & 8 0’s		16 1’s & 16 0’s		32 1’s & 32 0’s	
	64 1’s & 64 0’s	PRAM File						

Remarks Refer to “File Name Variables” on page 13 for information on the file name syntax.

:DATA:PRAM

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:DATA:PRAM "<file_name>"
```

```
[ :SOURCE ]:RADIO:GSM:DATA:PRAM?
```

This command selects a pattern RAM (PRAM) file as the pattern data type for the GSM (Global System for Mobile communication) format.

"<file_name>" This variable designates the PRAM file in WFM1. Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

Key Entry **PRAM File**

Remarks Selecting this data source forces the burst source to INTERNAL to allow framing control.

The PRAM file must reside in the signal generator’s volatile memory (WFM1) in order to be accessed by this command. For more information on PRAM files, refer to [“:DATA:PRAM:FILE:BLOCK” on page 110](#).

:DATA:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:DATA:FIX4 <val>
```

```
[ :SOURCE ]:RADIO:GSM:DATA:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern for unframed transmission according to the modulation type, symbol rate, filter, and burst shape selected for the GSM modulation format.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:DEFault

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:DEFault
```

This command returns all of the GSM format parameters to their factory default conditions. It does not affect any other signal generator parameters.

Key Entry Restore GSM Factory Default

:DENCode

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:GSM:DENCode ON|OFF|1|0  
[ :SOURCE ] :RADIO:GSM:DENCode?
```

This command enables or disables the differential data encoding function. Once this function is enabled, data bits are encoded prior to modulation; each modulated bit is 1 if the data bit is different from the previous one, or 0 if the data bit is the same as the previous one.

***RST** 1

Key Entry **Diff Data Encode Off On**

EDATa:DELAy

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:GSM:EDATa:DELAy?
```

This query returns the amount of delay (in symbols) from the external data input to the beginning of the symbol on the I OUT and Q OUT rear panel connectors and the front panel RF OUTPUT connector.

Remarks When the format is turned off, the delay value is unchanged; the query will return the same delay value if the format is on or off.

:EDCLock

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:GSM:EDCLock SYMBOL|NORMal  
[ :SOURCE ] :RADIO:GSM:EDCLock?
```

This command sets the external data clock use.

SYMBOL This choice specifies that a continuous symbol clock signal must be provided to the SYMBOL SYNC input connector.

NORMal This choice specifies that the DATA CLOCK input connector requires a bit clock. The SYMBOL SYNC input connector requires a (one-shot or continuous) symbol sync signal.

***RST** NORM

Key Entry **Ext Data Clock Normal Symbol**

Remarks Both choices have no effect in internal clock mode. Refer to “[:BBCLock](#)” on [page 671](#) to select EXT as the data clock type.

:EREFerence

Supported E4438C with Option 402

[:SOURce] :RADio :GSM :EREFerence INT | EXT

[:SOURce] :RADio :GSM :EREFerence ?

This command selects either an internal or external bit-clock reference for the data generator.

***RST** INT

Key Entry **BBG Ref Ext Int**

Remarks If the EXT choice is selected, the external source's frequency value must be applied to the BASEBAND GEN REF IN rear panel connector. The external reference and external data clock are not applicable at the same time. If both are selected, then the external reference takes precedence.

:EREFerence:VALue

Supported E4438C with Option 402

[:SOURce] :RADio :GSM :EREFerence :VALue <val>

[:SOURce] :RADio :GSM :EREFerence :VALue ?

This command sets the expected bit-clock reference frequency value for an externally applied reference signal.

The variable <val> is expressed in units of hertz (Hz–MHz).

***RST** +1.30000000E+007

Range 2.5E5–1E8

Key Entry **Ext BBG Ref Freq**

Remarks The value specified by this command is effective only when you are using an external reference applied to the BASEBAND GEN REF IN rear panel connector.

Refer to “:EREFerence” on page 683 to select EXT (external source) as the reference for the bit-clock reference.

:FILTer

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:FILTer RNYQuist | NYQuist | GAUSSian | RECTangle |
IS95 | IS95_EQ | IS95_MOD | IS95_MOD_EQ | AC4Fm | UGGaussian | "<user FIR>"
[ :SOURCE ]:RADIO:GSM:FILTer?
```

This command selects the pre-modulation filter type.

- IS95 This choice selects a filter that meets the criteria of the IS-95 standard.
- IS95_EQ This choice selects a filter which is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard. This filter is only used for IS-95 baseband filtering.
- IS95_MOD This choice selects a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard.
- IS95_MOD_EQ This choice selects a filter which is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection.
- AC4Fm This choice selects a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter.
- UGGaussian This choice selects a backwards compatible GSM Gaussian filter (Gaussian filter with a fixed BbT value of 0.300) for the ESG E44xxB Option UN3 or UN4.
- "<user FIR>" This variable is any filter file that you have stored into memory.

***RST** GAUS

Key Entry	Root Nyquist Nyquist Gaussian Rectangle IS-95 IS-95 w/EQ IS-95 Mod IS-95 Mod w/EQ APCO 25 C4FM UN3/4 GSM Gaussian User FIR
------------------	---

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:IQ:SCALe

Supported E4438C with Option 402

[:SOURCE] :RADIo:GSM:IQ:SCALe <val>

[:SOURCE] :RADIo:GSM:IQ:SCALe?

This command sets the amplitude of the I/Q outputs for better adjacent channel power (ACP); lower scaling values equate to better ACP.

The variable <val> is expressed in units of percent.

***RST** +100

Range 1–200

Key Entry **I/Q Scaling**

Remarks This command has no effect with MSK or FSK modulation.

:MODulation:FSK[:DEViation]

Supported E4438C with Option 402

[:SOURCE] :RADIo:GSM:MODulation:FSK[:DEViation] <val>

[:SOURCE] :RADIo:GSM:MODulation:FSK[:DEViation]?

This command sets the symmetric FSK frequency deviation value.

The variable <val> is expressed in units of Hertz and the maximum range value equals the current symbol rate value multiplied by four, limited to 20 MHz.

***RST** +4.00000000E+002

Range 0–2E7

Key Entry **Freq Dev**

Remarks To change the modulation type, refer to “:MODulation[:TYPE]” on page 687.

Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

To set an asymmetric FSK deviation value, refer to the *E4428C/38C ESG Signal Generators User’s Guide* for more information.

GSM Subsystem—Option 402 ([:SOURCE]:RADIO:GSM)**:MODulation:MSK[:PHASe]**

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:MODulation:MSK[:PHASe] <val>
```

```
[ :SOURCE ]:RADIO:GSM:MODulation:MSK[:PHASe]?
```

This command sets the MSK phase deviation value. The variable <val> is in units of degrees

***RST** +9.00000000E+001

Range 0–100

Key Entry Phase Dev

:MODulation:UFSK

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:MODulation:UFSK "<file name>"
```

```
[ :SOURCE ]:RADIO:GSM:MODulation:UFSK?
```

This command selects a user-defined FSK file from the signal generator memory.

Key Entry **User FSK**

Remarks The user-defined FSK file is held in signal generator memory until the command that selects user FSK as the modulation type is sent. See “[:MODulation\[:TYPE\]](#)” [on page 687](#) to change the current modulation type.

See “[File Name Variables](#)” [on page 13](#) for information on the file name syntax.

:MODulation:UIQ

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:MODulation:UIQ "<file name>"
```

```
[ :SOURCE ]:RADIO:GSM:MODulation:UIQ?
```

This command selects a user-defined I/Q file from the signal generator memory.

Key Entry **User I/Q**

Remarks The user-defined I/Q file is held in signal generator memory until the command that selects user I/Q as the modulation type is sent. Refer to “[:MODulation\[:TYPE\]](#)” [on page 687](#) to change the current modulation type.

See “[File Name Variables](#)” [on page 13](#) for information on the file name syntax.

:MODulation[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:GSM:MODulation[:TYPE] BPSK|QPSK|IS95QPSK|
GRAYQPSK|OQPSK|IS95OQPSK|P4DQPSK|PSK8|PSK16|D8PSK|MSK|FSK2|FSK4|FSK8|
FSK16|C4FM|QAM4|QAM16|QAM32|QAM64|QAM128|QAM256|UIQ|UFSK
[:SOURce]:RADio:GSM:MODulation[:TYPE]?
```

This command sets the modulation type for the GSM personality.

***RST** MSK

Key Entry	BPSK	QPSK	IS-95 QPSK	Gray Coded QPSK	OQPSK			
	IS-95 OQPSK	$\pi/4$ DQPSK	8PSK	16PSK	D8PSK	MSK	2-Lvl FSK	
	4-Lvl FSK	8-Lvl FSK	16-Lvl FSK	C4FM	4QAM	16QAM	32QAM	
	64QAM	128QAM	256QAM	User I/Q	User FSK			

:POLarity[:ALL]

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:GSM:POLarity[:ALL] NORMal|INVerted
[:SOURce]:RADio:GSM:POLarity[:ALL]?
```

This command sets the rotation direction of the phase modulation vector.

NORMal This choice selects normal phase polarity.

INVerted This choice inverts the internal Q signal.

***RST** NORM

Key Entry **Phase Polarity Normal Invert**

Remarks This command is useful for lower sideband mixing applications.

:SECondary:RECall

Supported E4438C with Option 402

[:SOURCE] :RADio:GSM:SECondary:RECall

This command recalls the secondary frame configuration, overwriting the current state.

Key Entry **Recall Secondary Frame State**

Remarks To save a secondary frame state, refer to “:SECondary:SAVE” on page 688.

A secondary frame is not active until the secondary state is enabled. To activate a secondary frame, refer to “:SECondary[:STATE]” on page 689.

:SECondary:SAVE

Supported E4438C with Option 402

[:SOURCE] :RADio:GSM:SECondary:SAVE

This command saves the current frame configuration as the secondary frame with the filename GSM_SECONDARY_FRAME.

Key Entry **Save Secondary Frame State**

Remarks To recall the secondary frame state (saved in non-volatile signal generator memory), refer to “:SECondary:RECall” on page 688.

:SECondary:TRIGger[:SOURCE]

Supported E4438C with Option 402

[:SOURCE] :RADio:GSM:SECondary:TRIGger [:SOURCE] KEY | EXT | BUS
[:SOURCE] :RADio:GSM:SECondary:TRIGger [:SOURCE] ?

This command selects the type of triggering for the secondary frame.

KEY This choice enables triggering by pressing the front panel **Trigger** hardkey.

EXT This choice enables triggering using an externally applied signal at the PATT TRIG IN rear panel connector or the PATT TRIG IN 2 pin on the rear panel AUX I/O connector. To select the appropriate connector, refer to “:TRIGger[:SOURCE]:EXTerMal[:SOURCE]” on page 708.

BUS This choice enables GPIB triggering using the *TRG or GET command or LAN and RS-232 triggering using the *TRG command.

Key Entry **Trigger Key Ext Bus**

:SECondary[:STATe]

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIo:GSM:SECondary[ :STATe] ON|OFF|1|0
[ :SOURCE ]:RADIo:GSM:SECondary[ :STATe]?
```

This command enables or disables the ability to switch to the secondary frame.

***RST** 0

Key Entry **Secondary Frame Off On**

Remarks A frame must already be saved as the secondary frame in order to turn the secondary state function on. To save a frame as the secondary frame, refer to [“:SECondary:SAVE” on page 688](#).

:SLOT0|[1]|2|3|4|5|6|7:ACCess:ENCRyption

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIo:GSM:SLOT0|[1]|2|3|4|5|6|7:ACCess:ENCRyption
PN9|PN15|FIX4|"<file name>"|EXT|P4|P8|P16|P32|P64
[ :SOURCE ]:RADIo:GSM:SLOT0|[1]|2|3|4|5|6|7:ACCess:ENCRyption?
```

This command creates and configures an access encrypted data field.

***RST** PN9

Key Entry

PN9	PN15	FIX4	User File	Ext	4 1's & 4 0's	8 1's & 8 0's
16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's				

Remarks See [“File Name Variables” on page 13](#) for information on the file name syntax.

:SLOT0|[1]|2|3|4|5|6|7:ACCess:ENCRyption:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIo:GSM:SLOT0|[1]|2|3|4|5|6|7:ACCess:ENCRyption:FIX4 <val>
[ :SOURCE ]:RADIo:GSM:SLOT0|[1]|2|3|4|5|6|7:ACCess:ENCRyption:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected access timeslot encryption field.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT0|[1]|2|3|4|5|6|7:ACCess:ETAIL

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:GSM:SLOT0 |[1]|2|3|4|5|6|7:ACCess:ETAIL <bit_pattern>
[ :SOURCE ]:RADio:GSM:SLOT0 |[1]|2|3|4|5|6|7:ACCess:ETAIL?
```

This command specifies the extended tail bits (8 bits) field for the selected access timeslot.

***RST** #H3A

Range #H00–#HFF

Key Entry ET

:SLOT0|[1]|2|3|4|5|6|7:ACCess:SSEquence

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:GSM:SLOT0 |[1]|2|3|4|5|6|7:ACCess:SSEquence <bit_pattern>
[ :SOURCE ]:RADio:GSM:SLOT0 |[1]|2|3|4|5|6|7:ACCess:SSEquence?
```

This command specifies the synchronization sequence bits (41 bits) for the selected access timeslot.

***RST** #H096FF335478

Range #H0–#H1FFFFFFFF

Key Entry SS

:SLOT0|[1]|2|3|4|5|6|7:ACCess:CUSTom

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:GSM:SLOT0 |[1]|2|3|4|5|6|7:CUSTom PN9|PN15|FIX4|
"<file name>"|EXT|P4|P8|P16|P32|P64
[ :SOURCE ]:RADio:GSM:SLOT0 |[1]|2|3|4|5|6|7:CUSTom?
```

This command configures the data field for the selected custom timeslot.

***RST** PN9

Key Entry **PN9** **PN15** **FIX4** **User File** **Ext** **4 1's & 4 0's** **8 1's & 8 0's**
16 1's & 16 0's **32 1's & 32 0's** **64 1's & 64 0's**

Remarks See “File Name Variables” on page 13 for information on the file name syntax.

:SLOT0|[1]|2|3|4|5|6|7:CUSTom:FIX4

Supported E4438C with Option 402

```
[:SOURCE]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:CUSTom:FIX4 <val>
[:SOURCE]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:CUSTom:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT0|[1]|2|3|4|5|6|7:DUMMy:TSEQuence

Supported E4438C with Option 402

```
[:SOURCE]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:DUMMy:TSEQuence TSC0|
TSC1|TSC2|TSC3|TSC4|TSC5|TSC6|TSC7|<bit_pattern>
[:SOURCE]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:DUMMy:TSEQuence?
```

This command changes the 26-bit dummy training sequence (TS) for the selected dummy timeslot.

***RST** #H0000000

Range <bit_pattern>: #H0–#H3FFFFFFF

Key Entry **TSC0 TSC1 TSC2 TSC3 TSC4 TSC5 TSC6 TSC7**
Custom TS

Remarks When normal preset is selected, the preset hexadecimal value for TS reflects the GSM protocol, however you may use this command to enter a new value.

:SLOT0|[1]|2|3|4|5|6|7:MULTIslot

Supported E4438C with Option 402

```
[:SOURCE]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:MULTIslot ON|OFF|1|0
[:SOURCE]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:MULTIslot?
```

This command turns bursting (ramping) on or off between the selected timeslot and the next higher numbered adjacent timeslot.

ON (1) This choice turns ramping off between timeslots.

OFF (0) This choice turns ramping on between timeslots.

***RST** 0

Key Entry **Multislot Off On**

SLOT0|[1]|2|3|4|5|6|7:NORMaL:ENCRyption

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:GSM:SLOT0|[1]|2|3|4|5|6|7:NORMaL:ENCRyption
PN9|PN15|FIX4|"<filename>"|EXT|P4|P8|P16|P32|P64|TCHFS|TCHHS|CS1|CS4|
DMCS1|UMCS1|BCH1|BCH2
[:SOURCE]:RADio:GSM:SLOT0|[1]|2|3|4|5|6|7:NORMaL:ENCRyption?
```

This command creates and configures an encrypted data field for a normal timeslot.

- PN9 This choice uses a standard PN9 bit pattern. In the case of TDMA bursted data, a PN9 repeats continuously, running from one timeslot to the matching timeslot in the next frame.
- PN15 This choice uses a standard PN15 bit pattern. In the case of TDMA bursted data, a PN15 repeats continuously, running from one timeslot to the matching timeslot in the next frame.
- FIX4 This choice uses a fixed 4-bit pattern. The selected 4-bit pattern will be repeated as necessary to fill the selected data to set the desired pattern.
- User File This choice selects a user-supplied file to be used as the bit pattern. In the case of TDMA bursted data, enough bits must be supplied to fill the desired number of timeslots (left over bit are ignored). User files contain 8 data bits per byte.
- EXT This choice uses an external user signal as the modulating data stream. Serial data is supplied via the front panel DATA BNC connector.
- P4 This choice selects a data pattern with 4 1's followed by 4 0's. The selected pattern will be repeated as necessary to fill the selected data area.
- P8 This choice selects a data pattern with 8 1's followed by 8 0's. The selected pattern will be repeated as necessary to fill the selected data area.
- P16 This choice selects a data pattern with 16 1's followed by 16 0's. The selected pattern will be repeated as necessary to fill the selected data area.
- P32 This choice selects a data pattern with 32 1's followed by 32 0's. The selected pattern will be repeated as necessary to fill the selected data area.
- P64 This choice selects a data pattern with 64 1's followed by 64 0's. The selected pattern will be repeated as necessary to fill the selected data area.
- TCHFS This choice selects traffic channel with full rate speech (TCH/FS). This channel would be represented by a 26 frame multiframe with an SACCH and IDLE frame.

TCHHS	This choice selects traffic channel with half rate speech (TCH/HS). This is when a complex coding scheme is used that can allow two mobile stations to share the same timeslot. On an ESG this is represented by having one timeslot with a normal burst and user definable training sequence and the same timeslot on an alternate frame using a dummy burst. This represents the situation where TCH/HS is being used in one timeslot and the other timeslot is not being used.
CS-1	This choice selects the CS-1 channel, a packet data traffic channel with block type 1 as per 3GPP standard GSM 05.03.
CS4	This choice selects the CS-4 channel, a packet data traffic channel with block type 4 as per 3GPP standard GSM 05.03.
DMCS1	This choice selects the downlink MCS-1 channel, a packet data traffic channel with block type 5 as per 3GPP standard GSM 05.03.
UMCS1	This choice selects the uplink MCS-1 channel, a packet data traffic channel with block type 5 as per 3GPP standard GSM 05.03.
BCH1	This choice selects a non-combined broadcast channel. BCH1 can only be set in timeslot zero and can be the only multiframe type in a frame. This means that BCH1 will conflict with the following parameters: TCH/FS, TCH/HS, CS-1, CS-4, DMCS-1 and UMCS-1.
BCH2	This choice selects a combined broadcast channel. BCH2 can only be set in timeslot zero and can be the only multiframe type in a frame. This means that BCH2 will conflict with the following parameters: TCH/FS, TCH/HS, CS-1, CS-4, DMCS-1, and UMCS-1.
*RST	PN9
Range	BCH1: 0–65535 BCH2: 0–65535
Key Entry	PN9 PN15 FIX4 User File Ext 4 1's & 4 0's 8 1's & 8 0's 16 1's & 16 0's 32 1's & 32 0's 64 1's & 64 0's TCH/FS TCH/HS CS-1 CS-4 Downlink MCS-1 Uplink MCS-1
Remarks	See “File Name Variables” on page 13 for information on the file name syntax.

GSM Subsystem—Option 402 ([:SOURCE]:RADIO:GSM)**:SLOT0:NORMAL:ENCRyption:BCH1:BCC****Supported** E4438C with Option 416

[:SOURCE]:RADIO:GSM:SLOT0:NORMAL:ENCRyption:BCH1:BCC <val>

[:SOURCE]:RADIO:GSM:SLOT0:NORMAL:ENCRyption:BCH1:BCC?

This command sets the broadcast control code (BCC) which is used to indicate what training sequence is being used by the basestation in the forward channels. This code will allow the mobile station to decode the other channels in the broadcast channel.

RST** 0**Range** 0–7**:SLOT0:NORMAL:ENCRyption:BCH1:CELLid*Supported** E4438C with Option 416

[:SOURCE]:RADIO:GSM:SLOT0:NORMAL:ENCRyption:BCH1:CELLid <val>

[:SOURCE]:RADIO:GSM:SLOT0:NORMAL:ENCRyption:BCH1:CELLid?

This command sets the cell identification. This will identify a cell within a location area.

RST** 0**Range** 0–65535**:SLOT0:NORMAL:ENCRyption:BCH1:LAC*Supported** E4438C with Option 416

[:SOURCE]:RADIO:GSM:SLOT0:NORMAL:ENCRyption:BCH1:LAC <val>

[:SOURCE]:RADIO:GSM:SLOT0:NORMAL:ENCRyption:BCH1:LAC?

This command sets the location area code (LAC). The location area code provides 16 bits to allow the administrator to define a location.

***RST** 0**Range** 0–65535

:SLOT0:NORMAL:ENCRyption:BCH1:MCC

Supported E4438C with Option 416

[:SOURCE] :RADIo:GSM:SLOT0:NORMAl:ENCRyption:BCH1:MCC <val>

[:SOURCE] :RADIo:GSM:SLOT0:NORMAl:ENCRyption:BCH1:MCC?

This command sets the mobile country code (MCC). The mobile country code is a 12 bit number used to represent the country where the basestation is located.

***RST** 0

Range 0–4095

:SLOT0:NORMAL:ENCRyption:BCH1:MNC

Supported E4438C with Option 416

[:SOURCE] :RADIo:GSM:SLOT0:NORMAl:ENCRyption:BCH1:MNC <val>

[:SOURCE] :RADIo:GSM:SLOT0:NORMAl:ENCRyption:BCH1:MNC?

This command sets the mobile network code (MNC). The mobile network code is the individual number a network will be assigned.

***RST** 0

Range 0–255

Remarks Federal regulation mandates that a 3-digit MNC will be used. For the ESG implementation the upper four bits are set to 1111.

:SLOT0:NORMAL:ENCRyption:BCH1:PLMN

Supported E4438C with Option 416

[:SOURCE] :RADIo:GSM:SLOT0:NORMAl:ENCRyption:BCH1:PLMN <val>

[:SOURCE] :RADIo:GSM:SLOT0:NORMAl:ENCRyption:BCH1:PLMN?

This command is used to set the Public Land Mobile Network (PLMN) which is used to indicate the country the phone is in. PLMN is also referred to as the National Country Code (NCC).

***RST** 0

Range 0–7

:SLOT0|[1]|2|3|4|5|6|7:NORMAL:ENCRyption:CS1:DATA

Supported E4438C with Option 402

[:SOURCE] :RADIo:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAl:ENCRyption:CS1:DATA
PN9 |PN15

[:SOURCE] :RADIo:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAl:ENCRyption:CS1:DATA?

This command sets the bit pattern for the CS1 packet data traffic channel.

***RST** PN9

Key Entry **PN9 PN15**

:SLOT0|[1]|2|3|4|5|6|7:NORMAL:ENCRyption:CS4:DATA

Supported E4438C with Option 402

[:SOURCE] :RADIo[1]|2|3|4:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAl:ENCRyption:CS4
:DATA PN9 |PN15

[:SOURCE] :RADIo[1]|2|3|4:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAl:ENCRyption:CS4
:DATA?

This command selects the encryption field data, if the selected timeslot uses the packet data block type 4 coding scheme.

***RST** PN9

Key Entry **PN9 PN15**

Remarks Refer to “[SLOT0|\[1\]|2|3|4|5|6|7:NORMAL:ENCRyption](#)” on page 692 for selecting the coding scheme.

:SLOT0|[1]|2|3|4|5|6|7:NORMAL:ENCRyption:DLINK:MCS1:DATA

Supported E4438C with Option 402

[:SOURCE] :RADIo:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAl:ENCRyption:DLINK:MCS1:
DATA PN9 |PN15

[:SOURCE] :RADIo:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAl:ENCRyption:DLINK:MCS1:
DATA?

This command sets the bit pattern for the downlink MCS1 packet data traffic channel.

***RST** PN9

Key Entry **PN9 PN15**

:SLOT0|[1]|2|3|4|5|6|7:NORMAL:ENCRyption:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:ENCRyption:FIX4 <val>  
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:ENCRyption:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected normal timeslot encryption field.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT0|[1]|2|3|4|5|6|7:NORMAL:ENCRyption:TCH:FS:DATA

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:ENCRyption:TCH:FS:DATA  
PN9|PN15  
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:ENCRyption:TCH:FS:DATA?
```

This command sets the bit pattern for the TCH/FS channel.

***RST** PN9

Key Entry **PN9 PN15**

:SLOT0|[1]|2|3|4|5|6|7:NORMAL:ENCRyption:ULINK:MCS1:DATA

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:ENCRyption:ULINK:MCS1:  
DATA PN9|PN15  
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:ENCRyption:ULINK:MCS1:  
DATA?
```

This command sets the bit pattern for the uplink MCS1 packet data traffic channel.

***RST** PN9

Key Entry **PN9 PN15**

:SLOT0|[1]|2|3|4|5|6|7:NORMAL:STeal

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:STeal <val>
[ :SOURCE ] :RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:STeal?
```

This command specifies the normal stealing bits for the selected timeslot. The single bit defines the value for both 1-bit fields.

***RST** #H0

Range #H0–#H1

Key Entry **S**

:SLOT0|[1]|2|3|4|5|6|7:NORMAL:TSEQUence

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:TSEQUence
TSC0|TSC1|TSC2|TSC3|TSC4|TSC5|TSC6|TSC7|<bit_pattern>
[ :SOURCE ] :RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:NORMAL:TSEQUence?
```

This command changes the 26-bit training sequence (TS) for a normal timeslot. The preset hexadecimal value (when normal preset is selected) for TS reflects the GSM protocol, however you can enter a new value by using this command. The hexadecimal values for the 8 training sequence codes are listed below:

***RST** #H0000000

Range <bit_pattern>: #H0–#H3FFFFFF

Key Entry **TSC0 TSC1 TSC2 TSC3 TSC4 TSC5 TSC6 TSC7**
Custom TS

Remarks The preset hexadecimal value (when normal preset is selected) for TS reflects the GSM protocol, however you can enter a new value by using this command.

:SLOT0|[1]|2|3|4|5|6|7:POWer

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:POWer MAIN|DELTA
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:POWer?
```

This command defines the RF output power level for the selected timeslot.

MAIN This choice specifies RF output as the main power level.

DELTA This choice specifies RF output as the alternative power level.

***RST** MAIN

Key Entry **Timeslot Ampl Main Delta**

:SLOT0|[1]|2|3|4|5|6|7:STATe

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:STATe ON|OFF|1|0
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:STATe?
```

This command enables or disables the operating state of the selected timeslot.

***RST** Timeslot 0: 1 Timeslot 1–7: 0

Key Entry **Timeslot Off On**

:SLOT0|[1]|2|3|4|5|6|7:SYNC:ENCRyption

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:SYNC:ENCRyption PN9|PN11|PN15|
PN20|PN23|FIX4|"<file name>"|EXT|P4|P8|P16|P32|P64
[ :SOURCE ]:RADIO:GSM:SLOT0 |[1]|2|3|4|5|6|7:SYNC:ENCRyption?
```

This command creates and configures an encrypted data field for a synchronization timeslot.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's				
	64 1's & 64 0's							

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

GSM Subsystem—Option 402 ([:SOURCE]:RADIO:GSM)**:SLOT0|[1]|2|3|4|5|6|7:SYNC:ENCRyption:FIX4****Supported** E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:SYNC:ENCRyption:FIX4 <val>
[ :SOURCE ]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:SYNC:ENCRyption:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected synchronization timeslot encryption field.

RST** #B0000**Range** #B0000–#B1111 or 0–15**Key Entry** **FIX4*Remarks** FIX4 must already be defined as the data type.**:SLOT0|[1]|2|3|4|5|6|7:SYNC:TSEQUence****Supported** E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:SYNC:TSEQUence <bit_pattern>
[ :SOURCE ]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7:SYNC:TSEQUence?
```

This command customizes the training sequence (TS) for the selected synchronization timeslot. The preset hexadecimal value (when normal preset is selected) for TS reflects the GSM protocol, however you can enter a new value by using this command.

RST** #HB962040F2D45761B**Range** #H0–#HFFFFFFFFFFFFFFFF**Key Entry** **TS*:SLOT0|[1]|2|3|4|5|6|7[:TYPE]****Supported** E4438C with Option 402

```
[ :SOURCE ]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7[:TYPE] CUSTom|NORMAl|
FCORrection|SYNC|DUMMy|ACCess|NORMAL_ALL
[ :SOURCE ]:RADIO:GSM:SLOT0|[1]|2|3|4|5|6|7[:TYPE]?
```

This command sets the timeslot type for the selected timeslot.

***RST** NORMAL**Key Entry** **Custom Normal FCOR Sync Dummy Access Normal All**

:SOUT

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:GSM:SOUT FRAME | SLOT | ALL
[ :SOURCE ] :RADIO:GSM:SOUT?
```

This command sets the synchronization location (within the pattern of data) and the type of output at the EVENT 1 rear panel connector.

FRAME This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a framed data pattern.

SLOT This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a selected timeslot.

ALL This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for all active timeslots.

***RST** FRAME

Key Entry	Begin Frame	Begin Timeslot #	All Timeslots
------------------	--------------------	-------------------------	----------------------

:SOUT:OFFSet

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:GSM:SOUT:OFFSet <val>
[ :SOURCE ] :RADIO:GSM:SOUT:OFFSet?
```

This command sets the offset value for the location of the output synchronization signal on the EVENT1 rear panel connector relative to the beginning of the framed data pattern or timeslot.

The variable <val> is expressed as a number of bits.

***RST** +0

Range -155 to 155

Key Entry **Sync Out Offset**

Remarks Negative values move the synchronization output signal earlier; positive values move it later.

To change the output of the EVENT1 rear panel connector to SLOT, refer to [“:SOUT” on page 701](#).

:SOUT:SLOT

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:GSM:SOUT:SLOT <val>  
[ :SOURCE ]:RADio:GSM:SOUT:SLOT?
```

This command selects the timeslot that will trigger a 1-bit output signal at the EVENT 1 rear panel connector.

***RST** +0

Range 0–7

Key Entry **Begin Timeslot #**

Remarks To change the output of the EVENT1 rear panel connector to SLOT, refer to “:SOUT” on page 701.

:SRATe

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:GSM:SRATe <val>  
[ :SOURCE ]:RADio:GSM:SRATe?
```

This command sets the transmission symbol rate. Symbol rate is the bit rate divided by the bits per symbol. A change in the symbol rate affects the bit rate. Refer to “:BRATe” on page 672 for information on bit rate.

The variable <val> is expressed in units of symbols per second (sps–MSPS) and the maximum symbol rate depends on the filter. Refer to “:FILTer” on page 684 for minimum filter symbol width.

NOTE When using multiframe, limit the symbol rate to no more than 271 kSPS. Although higher rates may work, they are not supported.

The filter may have to be truncated down to 32 or 16 symbols wide to achieve the highest symbol rate. The signal generator’s internal filters are not truncated below their minimum filter length and user-defined FIR filters are not truncated. If the filter cannot be truncated then the symbol rate is limited to the maximum rate of the narrowest filter size possible.

The relative timing of the modulated data, as well as the actual filter response is affected when the filter is truncated.

When the symbol rate changes, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the symbol rate: lower symbol rates require more time.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 687.

***RST** +2.70833333E+006

Range	Modulation Type	Symbol Rate Range		
		16 Symbol Wide Filter	32 Symbol Wide Filter	64 Symbol Wide Filter
	BPSK, FSK2, MSK	1sps–50Mspss	1sps–25Mspss	1sps–12.5Mspss
	C4FM, OQPSK, FSK4	2sps–25Mspss	2sps–12.5Mspss	2sps–6.25Mspss
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3sps–16.666666666 Mspss	3sps–8.333333333 Mspss	3sps–4.166666666Mspss
	FSK16, PSK16, QAM16	4sps–12.5Mspss	4sps–6.25Mspss	4sps–3.125Mspss
	QAM32	5sps–10Mspss	5sps–5Mspss	5sps–2.5Mspss
	QAM64	6sps–8.333333333 Mspss	6sps–4.166666666 Mspss	6sps–2.083333333 Mspss
	QAM128	7sps–7.142857142 Mspss	7sps–3.571428572 Mspss	7sps–1.785714285 Mspss
	QAM256	8sps–6.25Mspss	8sps–3.125 Mspss	8sps–1.5625 Mspss

NOTE Using I/Q skew will half the minimum number of symbols for the selected filter.

Key Entry **Symbol Rate**

:TRIGger:EXtErnal:DELay

Supported E4438C with Option 416

[:SOURce]:RADio:GSM:TRIGger:EXtErnal:DELay <val>

[:SOURce]:RADio:GSM:TRIGger:EXtErnal:DELay?

This command sets the trigger delay for synchronizing the ESG. The variable <val> is expressed in number of symbols.

***RST** +0

Range 0–1048575

:TRIGger:TYPE

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIo:GSM:TRIGger:TYPE CONTInuous | SINGle | GATE
[ :SOURCE ] :RADIo:GSM:TRIGger:TYPE?
```

This command sets the trigger type.

CONTInuous The framed data sequence repeats continuously; the sequence restarts every time the previous playback is completed. To customize continuous triggering, refer to “**:TRIGger:TYPE:CONTInuous[:TYPE]**” on page 704.

SINGle The framed data sequence plays once for every trigger received.

GATE An external trigger signal interrupts the playback while the gating signal is in the inactive state. Playback resumes when the external control signal returns to the active state. The active state can be set to high or low.

***RST** CONT

Key Entry **Continuous** **Single** **Gated**

:TRIGger:TYPE:CONTInuous[:TYPE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIo:GSM:TRIGger:TYPE:CONTInuous[ :TYPE ] FREE | TRIGger | RESet
[ :SOURCE ] :RADIo:GSM:TRIGger:TYPE:CONTInuous[ :TYPE ]?
```

This commands selects the waveform’s response to a trigger signal while using the continuous trigger mode. See “**:TRIGger:TYPE**” on page 704 for more information on triggering modes.

The following list describes the waveform’s response to each of the command choices:

FREE Turning the ARB format on immediately triggers the waveform. The waveform repeats until the format is turned off or another trigger or waveform is selected.

TRIGger The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously until you turn the format off, select another trigger, or choose another waveform file.

RESet The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously. Subsequent triggers reset the waveform to the beginning. For a waveform sequence, this means to the beginning of the first segment in the sequence.

***RST** FREE

Key Entry **Free Run** **Trigger & Run** **Reset & Run**

:TRIGger:TYPE:GATE:ACTive

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:GSM:TRIGger:TYPE:GATE:ACTive LOW|HIGH
[ :SOURCE ] :RADio:GSM:TRIGger:TYPE:GATE:ACTive?
```

This command selects the active state (gate polarity) of the gate while using the gating trigger mode.

The LOW and HIGH selections correspond to the low and high states of an external trigger signal. For example, when you select HIGH, the active state occurs during the high of the trigger signal. When the active state occurs, the ESG stops the waveform playback at the last played sample point, then restarts the playback at the next sample point when the inactive state occurs. For more information on triggering and to select gating as the trigger mode, see “:TRIGger:TYPE” on page 704.

The following list describes the signal generator’s gating behavior for the external trigger signal polarity selections:

LOW	The waveform playback stops when the trigger signal goes low (active state) and restarts when the trigger signal goes high (inactive state).
HIGH	The waveform playback stops when the trigger signal goes high (active state) and restarts when the trigger signal goes low (inactive state).
*RST	HIGH

Key Entry Gate Active Low High

:TRIGger[:SOURCE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:GSM:TRIGger [ :SOURCE ] KEY|EXT|BUS
[ :SOURCE ] :RADio:GSM:TRIGger [ :SOURCE ] ?
```

This command sets the trigger source.

For more information on triggering, see “:TRIGger:TYPE” on page 704. The following list describes the command choices:

KEY	This choice enables manual triggering by pressing the front-panel Trigger hardkey.
EXT	An externally applied signal triggers the waveform. This is the only choice that works with gating. The following conditions affect an external trigger: <ul style="list-style-type: none"> The input connector selected for the trigger signal. You have a choice between the rear-panel PATTERN TRIG IN connector or the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector. To make the connector selection, see “:TRIGger[:SOURCE]:EXTernal[:SOURCE]” on page 708.

GSM Subsystem—Option 402 ([:SOURCE]:RADio:GSM)

For more information on the connectors and on connecting the cables, see the *E4428C/38C ESG Signal Generators User's Guide*.

- The trigger signal polarity:
 - gating mode, see “:TRIGger:TYPE:GATE:ACTive” on page 705
 - continuous and single modes, see “:TRIGger[:SOURCE]:EXTernal:SLOPe” on page 707
- The time delay between when the ESG receives a trigger and when the waveform responds to the trigger. There are two parts to setting the delay:
 - setting the amount of delay, see “:TRIGger[:SOURCE]:EXTernal:DELay” on page 706
 - turning the delay on, see “:TRIGger[:SOURCE]:EXTernal:DELay:STATe” on page 707

BUS This choice enables triggering over the GPIB or LAN using the *TRG or GET commands or the AUXILIARY INTERFACE (RS-232) using the *TRG command.

***RST** KEY

Key Entry **Trigger Key** **Ext** **Bus**

:TRIGger[:SOURCE]:EXTernal:DELay

Supported E4438C with Option 402

This command sets the number of bits to delay the signal generator's response to an external trigger.

The bit delay is a delay between when the ESG receives the trigger and when it responds to the trigger. The delay uses the clocks of the bit-clock to time the delay. After the ESG receives the trigger and the set number of delay bits (clocks) occurs, the ESG transmits the data pattern.

The delay occurs after you enable the state. See “:TRIGger[:SOURCE]:EXTernal:DELay:STATe” on page 707. You can set the number of bits either before or after enabling the state.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURCE]” on page 705.

***RST** +0

Range 0–1048575

Key Entry **Ext Delay Bits**

:TRIGger[:SOURCE]:EXTeRnal:DELay:FINE

Supported E4438C with Option 416

```
[ :SOURCE ] :RADio:GSM:TRIGger [ :SOURCE ] :EXTeRnal:DELay:FINE <val>  
[ :SOURCE ] :RADio:GSM:TRIGger [ :SOURCE ] :EXTeRnal:DELay:FINE?
```

This command sets the fine trigger delay for synchronizing the ESG.

The fine delay value is added to the coarse delay setting (see “:TRIGger[:SOURCE]:EXTeRnal:DELay” on page 706).

The variable <val> is expressed as a fraction of one symbol.

***RST** +0.00000000E+000

Range 0–1

:TRIGger[:SOURCE]:EXTeRnal:DELay:STATe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:GSM:TRIGger [ :SOURCE ] :EXTeRnal:DELay:STATe ON|OFF|1|0  
[ :SOURCE ] :RADio:GSM:TRIGger [ :SOURCE ] :EXTeRnal:DELay:STATe?
```

This command enables or disables the operating state of the external trigger delay function.

For setting the delay time, see “:TRIGger[:SOURCE]:EXTeRnal:DELay” on page 706, and for more information on configuring an external source, see “:TRIGger[:SOURCE]” on page 705.

***RST** 0

Key Entry Ext Delay Off On

:TRIGger[:SOURCE]:EXTeRnal:SLOPe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:GSM:TRIGger [ :SOURCE ] :EXTeRnal:SLOPe POSitive|NEGative  
[ :SOURCE ] :RADio:GSM:TRIGger [ :SOURCE ] :EXTeRnal:SLOPe?
```

This command sets the polarity for an external trigger signal while using the continuous, single triggering mode. To set the polarity for gating, see “:TRIGger:TYPE:GATE:ACTive” on page 705.

The POSitive and NEGative selections correspond to the high (positive) and low (negative) states of the external trigger signal. For example, when you select POSitive, the waveform responds (plays) during the high state of the trigger signal. When the ESG receives multiple trigger occurrences when only one is required, the signal generator uses the first trigger and ignores the rest.

Receiver Test Digital Commands (continued)
GSM Subsystem—Option 402 ([:SOURCE]:RADIO:GSM)

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURCE]” on page 705.

***RST** NEG
Key Entry **Ext Polarity Neg Pos**

:TRIGger[:SOURCE]:EXTernal[:SOURCE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:GSM:TRIGger [ :SOURCE ] :EXTernal [ :SOURCE ] EPT1 |  
EPT2 | EPTRIGGER1 | EPTRIGGER2  
[ :SOURCE ] :RADIO:GSM:TRIGger [ :SOURCE ] :EXTernal [ :SOURCE ] ?
```

This command selects which PATTERN TRIG IN connection the ESG uses to accept an externally applied trigger signal when external is the trigger source selection.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURCE]” on page 705. For more information on the rear-panel connectors, see the *E4428C/38C ESG Signal Generators User’s Guide*.

The following list describes the command choices:

EPT1	This choice is synonymous with EPTRIGGER1 and selects the PATTERN TRIG IN rear-panel connector.
EPT2	This choice is synonymous with EPTRIGGER2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector.
EPTRIGGER1	This choice is synonymous with EPT1 and selects the PATTERN TRIG IN rear-panel connector.
EPTRIGGER2	This choice is synonymous with EPT2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector.
*RST	EPT1
Key Entry	Patt Trig In 1 Patt Trig In 2

[:STATE]

Supported E4438C with Option 402

[:SOURCE] :RADIO:GSM [:STATE] ON | OFF | 1 | 0

[:SOURCE] :RADIO:GSM [:STATE] ?

This command enables or disables the GSM modulation format.

***RST** 0

Key Entry **GSM Off On**

Remarks Although the GSM modulation is enabled with this command, the RF carrier is not modulated unless you also activate the front panel **Mod On/Off** hardkey.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])

The commands in this subsystem support the remote functionality of the Signal Studio for HSDPA over W-CDMA software. For a complete description of terms and HSDPA functionality, refer to the software online help. Commands used for configuring the carrier signal and performing general signal generator functions are located in different SCPI command subsystems found within the SCPI Command Reference volumes.

There are two methods to determine the SCPI commands for a setup. One method is to locate each individual command listed in this subsystem and others within the *SCPI Command Reference* volumes. The other method is to use the HSDPA software UI. After downloading a UI setup to the ESG, the software lets you export a SCPI file that contains the commands used in the UI setup. Refer to the HSDPA software online help for information on this feature.

File Overview

The ESG's memory catalog (signal generator memory) uses several file types, each assigned with a unique syntax to recall the file. This section provides information on using files with SCPI commands.

This subsystem uses the following two command variables to represent two different file types stored in signal generator memory:

"<file name>" Bit file

"<user FIR>" FIR file

For more information on managing and using files, refer to the resources in the following list:

- [“File Name Variables” on page 13](#) for information on the file name syntax
- [Table 1-4 on page 14](#) for a listing of the different file types
- *E4428C/38C ESG Signal Generators Programming Guide* for information on downloading bit files
- *E4428C/38C ESG Signal Generators User's Guide* for information on creating and editing bit and FIR files using the signal generator

NOTE To create or edit HSDPA files with the ESG, use the table editors located in the Real Time W-CDMA modulation format. Access the bit table editor through the Data field and then select **User File** as the data source. Access the FIR filter table editor through the Filter field and then select **Define User FIR** as the filter type.

HSDPA over W-CDMA Subsystem—Option 418 [:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]

The HSDPA software interface downloads user files (bit and FIR file types) to the ESG when **USER** is the software data or filter type selection. You can see these files on the ESG by pressing **Utility > Memory Catalog > Catalog Type** and then selecting the file type, or by using the SCPI commands located in the Memory subsystem. User files are located on the ESG in the following directory path: /USER/<file type directory>/<file name>. **Table 9-1** shows the software naming convention for the different files created by the HSDPA software.

Table 9-1 HSDPA Software Downloaded File Names

Link Direction	Data Source	File Name	ESG File Type
Downlink and Uplink	Filter	<project name>–FIR	FIR
Downlink	BCH	<project name>–BCH	Bit
	PICH	<project name>–PICH	
	DPCH	<project name>–DPCH	
	DCH _x ^a	<project name>–DCH _x ^a	
	Inter-TTI	<project name>–ITTI _x ^b	
	HARQ ACK/NACK Pattern	<project name>–DLCPT	
	AMC CQI Pattern	<project name>–DLAPT	
	HS-DSCH	<project name>–DSCH1	
	HS-PDSCH	<project name>–HSPD _x ^b	
	HS-SCCH	<project name>–HSSCC _x ^b	
Uplink	DPCCH	<project name>–DPCCH	
	FBI	<project name>–FBI	
	TPC	<project name>–TPC	
	DPDCH	<project name>–DPDCH	
	DCH _x ^a	<project name>–DCH _x ^a	
	ACK Pattern	<project name>–APAT	
	CQI Pattern	<project name>–CPAT	

a. x is the DCH number (1–6).

b. x is the channel number (1–4) for the HSDPA, the HS-PDSCH and the HS-SCCH.

Managing ESG Setting Conflicts and Error Messages

The ESG reports setting conflicts as error messages. When a setting conflict occurs, an error number and a brief message appear at the bottom of the ESG display. You can view the full text of the error message in either of two ways: by using the front panel of the ESG, or by executing SCPI commands.

Front Panel Press **Utility > Error Info**.

SCPI Execute the SCPI error commands described in the “[System Subsystem \(:SYSTem\)](#)” on page 152.

For more information on Error messages, refer to the *E4428C/38C ESG Signal Generators Programming Guide* for remote viewing or the *E4428C/38C ESG Signal Generators User’s Guide* for front panel viewing.

:DLINK:APPLY

Supported E4438C with Option 418418

```
[ :SOURCE ] : RADio : WCDMa : HSDPa [ :BBG ] : DLINK : APPLY
[ :SOURCE ] : RADio : WCDMa : HSDPa [ :BBG ] : DLINK : APPLY?
```

This command applies changes to the channel setup and data for active downlink physical and transport channels, immediately starting the channel coding generation process. A progress bar may appear on the ESG display indicating that the new signal parameters are being applied. Signal parameters are also applied when the HSDPA modulation format is turned on.

Use the query to determine whether or not execution of this command is required. It returns the following responses:

```
0                        Command execution is not required.
1                        Command execution is required.
```

NOTE The apply query response is valid only when downlink HSDPA format is active.

The apply function will not work if there is a conflict with range values and coupled parameters. For example, if all the physical channel codes are not orthogonal to each other, the new settings are not applied to the signal when this command is executed. Resolve any conflicts before reapplying the changes. The ESG reports an error when conflicts occur.

:DLINK:AWGN:CN

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[:BBG]:DLINK:AWGN:CN <val>  
[ :SOURce ] :RADio:WCDMa:HSDPa[:BBG]:DLINK:AWGN:CN?
```

This command sets the downlink in-band carrier to noise ratio (C/N) value using AWGN.

***RST** 0

Range -30 to 30

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:AWGN[:STATe]

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[:BBG]:DLINK:AWGN[:STATe] ON|OFF|0|1  
[ :SOURce ] :RADio:WCDMa:HSDPa[:BBG]:DLINK:AWGN[:STATe]?
```

This command turns the downlink AWGN on or off.

***RST** 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:BBClock[:SOURce]

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[:BBG]:DLINK:BBClock[:SOURce] INT|EXT  
[ :SOURce ] :RADio:WCDMa:HSDPa[:BBG]:DLINK:BBClock[:SOURce]?
```

This command selects the downlink baseband generator chip clock source, which is either internal to the signal generator or applied externally.

***RST** INT

Remarks When using an external chip clock source, connect the signal to the DATA CLOCK connector on the front panel of the ESG.

:DLINK:CPICH:CCODE**Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:CPICH:CCODE?

This query returns the CPICH channelization code, which is always set to zero.

:DLINK:CPICH:POWER**Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:CPICH:POWER <val>

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:CPICH:POWER?

This command sets the CPICH power level. The variable <val> is expressed in decibels (dB).

RST** 3.30000000E+000**Range** -40 to 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:CPICH[:STATE]*Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:CPICH[:STATE] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:CPICH[:STATE]?

This command turns the CPICH on or off.

RST** 1**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:DPCH:CCODE*Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:DPCH:CCODE <val>

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:DPCH:CCODE?

This command sets the downlink DPCH channel code number.

***RST** 10**Range** 0–511

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

The channel code is coupled with the slot format and all other physical channel codes. Set the channel code to not exceed limits of the slot format and ensure that all physical channel codes are orthogonal to each other. If any channel codes fail to meet this criteria, the apply function (downlink apply command) will not work.

:DLINK:DPCH:DATA

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIo : WCDMA : HSDPa [ : BBG ] : DLINk : DPCH : DATA PN9 | PN15 | FIX4 | DCH |
"<file name>"
[ :SOURCE ] : RADIo : WCDMA : HSDPa [ : BBG ] : DLINk : DPCH : DATA?
```

This command configures the downlink DPCH data pattern.

DCH This selects the transport channel as the data source. The DCH selection is not available for a DPCH slot format of 16.

"<file name>" This represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to “File Overview” on page 710 for more information on files.

***RST** PN9

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:DPCH:DATA:FIX4

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIo : WCDMA : HSDPa [ : BBG ] : DLINk : DPCH : DATA : FIX4 <val>
[ :SOURCE ] : RADIo : WCDMA : HSDPa [ : BBG ] : DLINk : DPCH : DATA : FIX4?
```

This command sets the downlink DPCH repeating 4-bit binary data pattern.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

***RST** 0

Range 0–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])**:DLINK:DPCH:DCH[1]|2|3|4|5|6:BSIZE****Supported** E4438C with Option 418

```
[ :SOURCE ] :RADio:WCDMa:HSDPa [ :BBG ] :DLINK:DPCH:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6
:BSIZE <val>
[ :SOURCE ] :RADio:WCDMa:HSDPa [ :BBG ] :DLINK:DPCH:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :BSIZE?
```

This command sets the block size for the selected downlink DCH.

***RST** 20**Range** 0–5000**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

The number of data bits per DCH cannot exceed 200,000. To maintain this data bit limit, the ESG calculates the product of the block size and the number of blocks. If the product of these two parameters exceeds 200,000, the apply function (downlink apply command) will not work.

:DLINK:DPCH:DCH[1]|2|3|4|5|6:CTYPE**Supported** E4438C with Option 418

```
[ :SOURCE ] :RADio:WCDMa:HSDPa [ :BBG ] :DLINK:DPCH:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6
:CTYPE HCONv | TCONv | TURBo | NONE
[ :SOURCE ] :RADio:WCDMa:HSDPa [ :BBG ] :DLINK:DPCH:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :CTYPE?
```

This command sets the coder type for the selected downlink DCH.

HCONv This choice selects the 1/2 rate convolutional encoder.**TCONv** This choice selects the 1/3 rate convolutional encoder.**TURBo** This choice selects the turbo coder.**NONE** This choice selects no coding.***RST** HCON**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:DLINK:DPCH:DCH[1]|2|3|4|5|6:CRC****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1]|2|3|4|5|6:CRC 0|8|12|16|24

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1]|2|3|4|5|6:CRC?

This command sets the number of CRC bits for the selected downlink DCH.

RST** 8**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[DLINK:APPLY](#)” on page 712.**:DLINK:DPCH:DCH[1]|2|3|4|5|6:DATA*Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1]|2|3|4|5|6:DATA PN9|PN15|FIX4|"<file name>"

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1]|2|3|4|5|6:DATA?

This command configures the data for the selected downlink DCH.

"<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to “[File Overview](#)” on page 710 for more information on files.***RST** PN9**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[DLINK:APPLY](#)” on page 712.**:DLINK:DPCH:DCH[1]|2|3|4|5|6:DATA:FIX4****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1]|2|3|4|5|6:DATA:FIX4 <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1]|2|3|4|5|6:DATA:FIX4?

This command sets the repeating 4-bit binary data pattern for the selected downlink DCH.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

*RST	0
Range	0–15
Remarks	Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:DPCH:DCH[1] | 2 | 3 | 4 | 5 | 6:NBLocks

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1] | 2 | 3 | 4 | 5 | 6 :
NBLocks <val>
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1] | 2 | 3 | 4 | 5 | 6 :NBLocks?
```

This command sets the number of data blocks for the selected downlink DCH.

*RST	1
Range	0–512
Remarks	Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712. The number of data bits per DCH cannot exceed 200,000. To maintain this data bit limit, the ESG calculates the product of the block size and the number of blocks. If the product of these two parameters exceeds 200,000, the apply function (downlink apply command) will not work.

:DLINK:DPCH:DCH[1] | 2 | 3 | 4 | 5 | 6:RMATtribute

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1] | 2 | 3 | 4 | 5 | 6 :
RMATtribute <val>
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1] | 2 | 3 | 4 | 5 | 6 :
RMATtribute?
```

This command sets the rate matching attribute for the selected downlink DCH.

*RST	1
Range	1–256
Remarks	Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:DPCH:DCH[1]|2|3|4|5|6:TTI

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1]|2|3|4|5|6:TTI 10|20|40|80
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH[1]|2|3|4|5|6:TTI?
```

This command sets the TTI for the selected downlink DCH.

The choices are expressed in millisecond (ms).

***RST** 10

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:DPCH:DCH2|3|4|5|6[:STATE]

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH2|3|4|5|6[:STATE] ON|OFF|1|0
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:DCH2|3|4|5|6[:STATE]?
```

This command turns the selected downlink DCH on or off; DCH1 is always on.

***RST** DCH 1: 1 DCH 2–6: 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

The apply command will not work and the ESG will report an error if you turn on a DCH where lower numbered DCHs are off. For example, turning on DCH5 requires turning on DCH2–4. The reverse is true when turning off the DCHs.

:DLINK:DPCH:POWER

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:POWER <val>
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:POWER?
```

This command sets the downlink DPCH power level.

***RST** -1.02000000E+001

Range -40 to 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:DPCH:SFORmat

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : DLINK : DPCH : SFORmat <val>
```

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : DLINK : DPCH : SFORmat ?
```

This command configures the downlink DPCH slot format.

***RST** 0

Range 0–16

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

The slot format is coupled with the channel code, so a change in one value may require a change in the other. If the channel code exceeds the limits of the slot format or if it is not orthogonal with all other physical channel codes, the apply function (downlink apply command) will not work.

:DLINK:DPCH:SSCOffset

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : DLINK : DPCH : SSCOffset <val>
```

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : DLINK : DPCH : SSCOffset ?
```

This command sets the downlink DPCH secondary scrambling code offset.

***RST** +0

Range 0–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

:DLINK:DPCH:TFCI

Supported E4438C with Option 418

```
[ :SOURce ] :RADio :WCDMa :HSDPa [ :BBG ] :DLINK :DPCH :TFCI <val>  
[ :SOURce ] :RADio :WCDMa :HSDPa [ :BBG ] :DLINK :DPCH :TFCI ?
```

This command sets the TFCI 10-bit pattern for the downlink DPCH.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

***RST** +0

Range 0–1023

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to [“:DLINK:APPLY” on page 712](#).

Setting the TFCI bits is optional; they describe the type of service in use, for example voice or data.

:DLINK:DPCH:TOFFset

Supported E4438C with Option 418

```
[ :SOURce ] :RADio :WCDMa :HSDPa [ :BBG ] :DLINK :DPCH :TOFFset <val>  
[ :SOURce ] :RADio :WCDMa :HSDPa [ :BBG ] :DLINK :DPCH :TOFFset ?
```

This command adjusts the downlink DPCH timing offset.

The variable <val> is expressed in chips.

***RST** +0

Range 0–149

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to [“:DLINK:APPLY” on page 712](#).

:DLINK:DPCH:TPC:NSTeps

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:TPC:NSTeps <val>
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:TPC:NSTeps?
```

This command sets the number of steps for the down and up (DUP) or up and down (UDOWN) TPC pattern selections.

***RST** +1

Range 1–80

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:DPCH:TPC:PATTERN

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:TPC:PATTERN UDOWN|DUP|UALL|DALL| "<file name>"
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:DPCH:TPC:PATTERN?
```

This command configures the downlink DPCH TPC pattern for increasing or decreasing, or increasing and decreasing the UE power level.

UDOWN The TPC pattern repetitively steps up and down.

DUP The TPC pattern repetitively steps down and up.

UALL The TPC pattern consecutively steps up.

DALL The TPC pattern consecutively steps down.

"<file name>" This variable represents a TPC pattern file stored in signal generator memory. The pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to “File Overview” on page 710 for more information on files.

***RST** UDOW

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

Each step in a TPC pattern signals an increase or decrease of 1 dB in the UE output power level.

:DLINK:DPCH:TRPosition

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :DLINK:DPCH:TRPosition?
```

This query returns the downlink DPCH transport channel position that is always set to FIX.

:DLINK:DPCH[:STATe]

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :DLINK:DPCH[ :STATe ] ON|OFF|1|0  

[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :DLINK:DPCH[ :STATe ]?
```

This command turns the downlink DPCH on or off.

***RST** 1

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:FILTer

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :DLINK:FILTer RNYQuist|NYQuist|  

GAUSSian|RECTangle|IS95|IS95_EQ|IS95_MOD|IS95_MOD_EQ|AC4Fm|UGGaussian|  

"<user FIR>"  

[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :DLINK:FILTer?
```

This command selects the downlink filter type.

- | | |
|-------------|---|
| IS95 | This filter meets the criteria of the IS-95 standard. |
| IS95_EQ | This filter is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard and is best suited for IS-95 baseband filtering. |
| IS95_MOD | This filter meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard. |
| IS95_MOD_EQ | This filter is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection. |
| UGGaussian | This is a GSM Gaussian filter with a fixed BbT value of 0.300. |
| AC4Fm | This is a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter. |

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])

"<user FIR>" This variable represents any FIR filter file stored in signal generator memory. Refer to [“File Overview” on page 710](#) for more information on files.

***RST** RNYQ

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to [“:DLINK:APPLY” on page 712](#).

:DLINK:FILTer:ALPHa

Supported E4438C with Option 418

[:SOURCE] :RADio:WCDMa:HSDPa [:BBG] :DLINK:FILTer:ALPHa <val>

[:SOURCE] :RADio:WCDMa:HSDPa [:BBG] :DLINK:FILTer:ALPHa?

This command sets the downlink Nyquist or root Nyquist filter alpha value.

***RST** +2.20000000E-001

Range 0–1

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to [“:DLINK:APPLY” on page 712](#).

Executing this command while a filter other than Nyquist or root Nyquist is selected changes the parameter value, but it is not used by the signal generator until one of the Nyquist filters is selected.

:DLINK:FILTer:BBT

Supported E4438C with Option 418

[:SOURCE] :RADio:WCDMa:HSDPa [:BBG] :DLINK:FILTer:BBT <val>

[:SOURCE] :RADio:WCDMa:HSDPa [:BBG] :DLINK:FILTer:BBT?

This command sets the downlink Gaussian filter BbT value.

***RST** +5.00000000E-001

Range 0–1

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to [“:DLINK:APPLY” on page 712](#).

Executing this command while a filter other than the Gaussian filter is selected changes the parameter value, but it is not used by the signal generator until the Gaussian filter is selected.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:DLINK:FILTer:CHANnel**

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMa:HSDPa[ :BBG ] :DLINK:FILTer:CHANnel EVM|ACP
[ :SOURCE ] :RADIo:WCDMa:HSDPa[ :BBG ] :DLINK:FILTer:CHANnel?
```

Execute this command to optimize a downlink filter for minimized EVM or for minimized ACP.

EVM This choice provides the most ideal passband

ACP This choice improves stopband rejection for the root Nyquist and Nyquist filters.

***RST** EVM

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

To change the filter selection, refer to “[:DLINK:FILTer](#)” on page 723.

:DLINK:HSBurst

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMa:HSDPa[ :BBG ] :DLINK:HSBurst ON|OFF|1|0
[ :SOURCE ] :RADIo:WCDMa:HSDPa[ :BBG ] :DLINK:HSBurst?
```

This command sets the handling of the off slot periods for the downlink HSDPA channels.

ON|1 This choice turns off the ESG ALC feature and uses DTX during the off slots.

OFF|0 This choice continuously transmits the HSDPA channels filling the off slots with dummy bits.

***RST** 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])**:DLINK:HSDPa:AMC:CQIMapping:UECategory****Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa:AMC:CQIMapping:UECategory <val>

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa:AMC:CQIMapping:UECategory?

This command sets the UE category that determines the CQI mapping table per the 3GPP standards.

***RST** 5**Range** 1–12

Remarks To use this command's parameter in a setup, you must also set AMC as the feedback selection. Refer to the “:DLINK:HSDPa:FCONtrol” on page 727 for selecting the feedback type.

Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:HSDPa:AMC:CPATtern**Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa:AMC:CPATtern ALL_1|ALL_2|ALL_3|ALL_4|ALL_5|ALL_6|ALL_7|ALL_8|ALL_9|ALL_10|ALL_11|ALL_12|ALL_13|ALL_14|ALL_15|ALL_16|ALL_17|ALL_18|ALL_19|ALL_20|ALL_21|ALL_22|ALL_23|ALL_24|ALL_25|ALL_26|ALL_27|ALL_28|ALL_29|ALL_30|"<file_name>"

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa:AMC:CPATtern?

This command sets a simulated UE CQI pattern that determines HSDPA1's response including the modulation type (QPSK or 16QAM) and the constellation version for 16QAM per the set UE category.

ALL_<val> These choices configure a simulated UE ACK response with a single CQI value for 1,280 subframes.

"<file name>" This variable represents a CQI pattern file stored in signal generator memory. Create this file either by using the AMC CQI pattern Data Type Entry window and downloading the file to the ESG, or by using the ESG Real Time W-CDMA table editor to create a bit file with the following bit patterns:

- CQI value of 1–30 using an 8-bit pattern, 00000001 to 00011110
- DTX is represented by 11111111

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])

In the file, do not use delimiters between subframes; enter subframe bits as a binary string.

When creating a pattern, you can determine the number of active subframes from 1 to 1,280. The subframes are numbered 0 to 1,279. A subframe is active when it contains 8-bits. If a subframe contains at least 1-bit but less than 8-bits, the apply function (downlink apply command) will not work.

***RST**

ALL_21

Remarks

To use this command's parameter in a setup, you must also set AMC as the feedback selection. Refer to the **”:DLINK:HSDPA:FCONTROL”** for selecting the feedback type.

Setting the command parameter while the signal is active also requires executing the apply command. Refer to **“:DLINK:APPLY”** on page 712.

:DLINK:HSDPA:FCONTROL

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA [ :BBG ] :DLINK:HSDPA:FCONTROL NONE | HARQ | AMC
[ :SOURCE ] :RADIO:WCDMA:HSDPA [ :BBG ] :DLINK:HSDPA:FCONTROL ?
```

This command sets the HSDPA1 feedback control type.

NONE This choice turns off the feedback control.

HARQ This choice provides UE feedback using the HARQ process. This selection provides the capability of configuring a simulated UE ACK/NACK response, setting the maximum number of HARQ transmissions, and providing up to eight different RV parameters.

AMC This choice provides UE feedback using adaptive modulation coding. This selection provides the capability of configuring a simulated UE CQI response aligned with a UE category input.

***RST**

NONE

Remarks

Setting the command parameter while the signal is active also requires executing the apply command. Refer to **“:DLINK:APPLY”** on page 712

:DLINK:HSDPA:HARQ:APATtern**Supported** E4438C with Option 418

```
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HARQ:APATtern ACK_ALL |
"<file name>"
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HARQ:APATtern?
```

This command sets a simulated UE ACK/NACK pattern that determines HSDPA1's HARQ response.

ACK_ALL This choice configures 1,280 subframes for a simulated ACK only response.

"<file name>" This variable represents an ACK pattern file stored in signal generator memory. Create this file either by using the HARQ ACK/NACK pattern Data Type Entry window and download the file to the ESG, or by using the ESG Real Time W-CDMA table editor to create a bit file with the following bit patterns:

- An ACK response is represented by 00.
- A NACK response is represented by 01.
- DTX is represented by 10.

In the file, do not use delimiters between subframes; enter subframe bits as a binary string.

When creating a pattern, you can determine the number of active subframes from 1 to 1,280. The subframes are numbered 0 to 1,279. A subframe is active when it contains 2-bits. If a subframe contains only 1-bit, the apply function (downlink apply command) will not work.

***RST** ACK_ALL

Remarks To use this command's parameter in a setup, you must also set HARQ as the feedback selection. Refer to the **":DLINK:HSDPA:FCONtrol"** for selecting the feedback type.

Setting the command parameter while the signal is active also requires executing the apply command. Refer to **":DLINK:APPLY"** on page 712.

:DLINK:HSDPA:HARQ:MNHTrans**Supported** E4438C with Option 418

```
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HARQ:MNHTrans <val>
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HARQ:MNHTrans?
```

This command configures the HSDPA1 maximum number of HARQ transmissions for the HARQ function.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURce]:RADio:WCDMa:HSDPa[:BBG])

Use the command for UE performance testing or for specifying an arbitrary number of HARQ transmissions. When the software encounters a UE NACK response that is set by the HARQ ACK pattern command (see “:DLINK:HSDPa:HARQ:APATtern”), the software re-sends the same packet payload until either the maximum number of HARQ transmissions is reached or a simulated ACK response is encountered. Whenever the software re-sends the same packet payload, it also transmits another RV parameter that is configured by the RV sequence command.

***RST** 1

Range 1–8

Remarks To use this command's parameter in a setup, you must also set HARQ as the feedback selection. Refer to the “:DLINK:HSDPa:FCONtrol” on page 727 for selecting the feedback type.

Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:HSDPa:HARQ:RVSequence[1]|2|3|4|5|6|7|8

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa:HARQ:RVSequence[1]|2|3|4|5|6|7|8 <val>
```

```
[ :SOURce ] :RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa:HARQ:RVSequence[1]|2|3|4|5|6|7|8?
```

This command sets the HSDPA1 RV parameter sequence used with the maximum number of HARQ transmission setting. You can set eight different RV parameters for the RV sequence.

During simulated ACK responses, the software uses the first RV parameter. When the software encounters a simulated NACK response, it sends data using the next RV parameter. The software keeps incrementing to the next RV parameter in the sequence until it receives a simulated ACK response. When the software encounters an ACK response, the RV sequence resets to the first RV parameter.

***RST** 0

Range 0–7

Remarks To use this command's parameter in a setup, you must also set HARQ as the feedback selection. Refer to the “:DLINK:HSDPa:FCONtrol” on page 727 for selecting the feedback type.

Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])**:DLINK:HSDPa[1]|2|3|4:BSInfo****Supported** E4438C with Option 418

```
[ :SOURCE ]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:BSInfo <val>
[ :SOURCE ]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:BSInfo?
```

This command sets the HS-DSCH block size. HSDPA1 is the only HSDPA channel configuration that supports the HS-DSCH, however the block size information parameter is also available for HSDPA2–4 for HS-SCCH coding purposes.

RST** 36**Range** 0–63**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:HSDPa[1]|2|3|4:HSPDSch:COFFset*Supported** E4438C with Option 418

```
[ :SOURCE ]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:HSPDSch:
COFFset <val>
[ :SOURCE ]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:HSPDSch:COFFset?
```

This command sets the HS-PDSCH code offset. The code offset is used in determining the HS-PDSCH channel code.

***RST** HSDPA1: 4 HSDPA2: 8 HSDPA3: 9 HSDPA4: 10**Range** 1–15**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

Set all physical channel codes orthogonal to each other. For any channel codes that fail this criteria, the apply function (downlink apply command) will not work.

:DLINK:HSDPa[1]|2|3|4:HSPDSch:DATA**Supported** E4438C with Option 418

```
[ :SOURCE ]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:HSPDSch:DATA PN9 |
FIX4| "<file name>" |DSCH
[ :SOURCE ]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:HSPDSch:DATA?
```

This command configures the HS-PDSCH data type.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])

DSCH	This choice is the HS-DSCH selection that is supported on only HSDPA1. Selecting the DSCH choice for HSDPA2–4 will generate an error.
"<file name>"	This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to “ File Overview ” on page 710 for more information on files.
*RST	PN9
Remarks	Setting the command parameter while the signal is active also requires executing the apply command. Refer to “ DLINK:APPLY ” on page 712.

:DLINK:HSDPA[1] | 2 | 3 | 4:HSPDSch:DATA:FIX4

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1] | 2 | 3 | 4:HSPDSch:DATA:FIX4 <val>
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1] | 2 | 3 | 4:HSPDSch:DATA:FIX4?
```

This command sets the HS-PDSCH repeating 4-bit binary data pattern.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

***RST** 0

Range 0–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[DLINK:APPLY](#)” on page 712.

:DLINK:HSDPA:HSPDSch:DSCH:DATA

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HSPDSch:DSCH:DATA PN9 |FIX4 | "<file name>"
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HSPDSch:DSCH:DATA?
```

This command defines the HS-DSCH data type for HSDPA1. The HS-DSCH is not supported on HSDPA2–4.

"<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to “[File Overview](#)” on page 710 for more information on files.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])***RST** PN9**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:HSDPA:HSPDSCH:DSCH:DATA:FIX4****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HSPDSCH:DSCH:DATA:

FIX4 <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HSPDSCH:DSCH:DATA:FIX4?

This command defines the HS-DSCH repeating 4-bit binary data pattern for HSDPA1. The HS-DSCH is not supported on HSDPA2–4.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

RST** 0**Range** 0–15**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:HSDPA:HSPDSCH:DSCH:IRBSize*Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HSPDSCH:DSCH:IRBSize <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:HSPDSCH:DSCH:IRBSize?

This command sets the HS-DSCH IR buffer size per the HARQ process for HSDPA1. The HS-DSCH is not supported on HSDPA2–4.

***RST** 9600**Range** 960–28800**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:HSDPa:HSPDsch:NCODE

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :DLINK:HSDPA:HSPDsch:NCODE <val>
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :DLINK:HSDPA:HSPDsch:NCODE?
```

This command sets number of codes for the HS-PDSCH on HSDPA1. HSDPA2–4 do not support multicodes.

***RST** 1

Range 1–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

Set all physical channel codes so they are orthogonal to each other. If any of the channel codes fail to meet this criteria, the apply function (downlink apply command) will not work.

:DLINK:HSDPa[1] | 2 | 3 | 4:HSPDsch:POWER

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :DLINK:HSDPA[ 1 ] | 2 | 3 | 4 :HSPDsch:
POWER <val>
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :DLINK:HSDPA[ 1 ] | 2 | 3 | 4 :HSPDsch:POWER?
```

This command sets the HS-PDSCH power level.

The variable <val> is expressed in decibels (dB).

***RST** –1.02000000E+001

Range –40 to 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])**:DLINK:HSDPa[1]|2|3|4:HSPDsch:SFORmat****Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:HSPDsch:SFORmat 0|1

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:HSPDsch:SFORmat?

This command sets the HS-PDSCH slot format.

0 This sets the modulation type to QPSK.

1 This sets the modulation type to 16QAM.

RST** 1**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:HSDPa[1]|2|3|4:HSPDsch[:STATe]*Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:HSPDsch[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:HSDPa[1]|2|3|4:HSPDsch[:STATe]?

This command turns the selected HS-PDSCH on or off.

***RST** HSDPA1: 1 HSDPA2–4: 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

The HS-SCCH must be on for the HS-PDSCH to turn on. Turning off the HS-SCCH also turns off the active HS-PDSCH. See “:DLINK:HSDPa[1]|2|3|4[:STATe]” on page 739 for turning the HS-SCCH on or off.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:DLINK:HSDPA[1]|2|3|4:HSSCch:CCODE****Supported** E4438C with Option 418[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:HSSCch:
CCODE <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:HSSCch:CCODE?

This command sets the HS-SCCH channel code.

***RST** HSDPA1: 4 HSDPA2: 5 HSDPA3: 6 HSDPA4: 7**Range** 1–127**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

Set all physical channel codes so they are orthogonal to each other. If any of the channel codes fail to meet this criteria, the apply function (downlink apply command) will not work.

:DLINK:HSDPA[1]|2|3|4:HSSCch:DATA**Supported** E4438C with Option 418[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:HSSCch:DATA PN9 |
FIX4| "<file name>" |STD

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:HSSCch:DATA?

This command sets the data type for the selected downlink HS-SCCH.

STD This choice configures the bit field as defined by the 3GPP standards."<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to “[File Overview](#)” on page 710 for more information on files.***RST** STD**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:DLINK:HSDPA[1]|2|3|4:HSSCch:DATA:FIX4****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:HSSCch:DATA:FIX4 <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:HSSCch:DATA:FIX4?

This command sets the HS-SCCH repeating 4-bit binary data pattern.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

RST** 0**Range** 0–15**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:HSDPA[1]|2|3|4:HSSCch:POWER*Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:HSSCch:POWER <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:HSSCch:POWER?

This command sets the HS-SCCH power level.

The variable <val> is expressed in decibels (dB).

***RST** -1.02000000E+001**Range** -40 to 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:DLINK:HSDPA[1]|2|3|4:ITTI**

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:ITTI <val>
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:ITTI?
```

This command sets the static inter-TTI pattern value for the selected HSDPA.

The variable <val> is expressed in subframes (one subframe = 2 ms).

***RST** 8

Range 1–16

Remarks To use a static pattern, select FIX as the choice for the [:DLINK:HSDPA\[1\]|2|3|4:ITTI:PATTERN](#) command.

Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:DLINK:APPLY](#)” on page 712.

:DLINK:HSDPA[1]|2|3|4:ITTI:PATTERN

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:ITTI:
PATTERN FIX| "<file name>"
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:ITTI:PATTERN?
```

This command selects which method sets the inter-TTI pattern for the selected HSDPA.

FIX This choice enables a static pattern. To configure the pattern, see “[:DLINK:HSDPA\[1\]|2|3|4:ITTI](#)”.

"<file name>" This variable represents an inter-TTI pattern file stored in signal generator memory. Creating and using a file provides the option of having a flexible inter-TTI pattern where you can vary the distance between HS-PDSCH transmissions. To create a file, use one or a combination of the following methods:

- To create a file internal to the software, use the inter-TTI user pattern editor.
- To create a file external to the software, use a text editor.

For more information, see the Signal Studio for HSDPA over W-CDMA software online help.

The file name follows the form <project name>–ITTIx, where 'x' is the HSDPA number from one to four. The inter-TTI pattern must contain at least one bit, or the apply function (downlink apply command) will not work.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])***RST** FIX**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:HSDPA:NHPRocess****Supported** E4438C with Option 418[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:NHPRocess <val>
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA:NHPRocess?

This command sets the HS-DSCH number of HARQ processes for HSDPA1. For HSDPA2–4, this parameter is fixed at one and is used only for HS-SCCH coding purposes.

RST** 4**Range** 1–8**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:HSDPA[1] | 2 | 3 | 4:RVParameter*Supported** E4438C with Option 418[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1] | 2 | 3 | 4:RVParameter <val>
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1] | 2 | 3 | 4:RVParameter?

This command sets the HS-DSCH RV parameter. For HSDPA2–4, which do not support an HS-DSCH, this parameter is used only for HS-SCCH coding purposes.

***RST** 0**Range** 0–7**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:HSDPA[1]|2|3|4:UEID

Supported E4438C with Option 418

```
[ :SOURCE ] :RADiO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:UEID <val>
[ :SOURCE ] :RADiO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4:UEID?
```

This command sets the UEID.

***RST** HSDPA1: 0 HSDPA2: 1 HSDPA3: 2 HSDPA4: 3

Range 0–65535

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:HSDPA[1]|2|3|4[:STATe]

Supported E4438C with Option 418

```
[ :SOURCE ] :RADiO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4[:STATe] ON|OFF|
1|0
[ :SOURCE ] :RADiO:WCDMA:HSDPA[:BBG]:DLINK:HSDPA[1]|2|3|4[:STATe]?
```

This command turns the selected downlink HSDPA channel on or off.

ON (1)	<ul style="list-style-type: none"> • Turns on the HS-SCCH for the selected HSDPA. • Enables turning on the HS-PDSCH for the selected HSDPA.
--------	---

OFF (0)	<ul style="list-style-type: none"> • Turns off the HS-SCCH for the selected HSDPA. • Turns off the active HS-PDSCH for the selected HSDPA.
---------	--

***RST** HSDPA1: 1 HSDPA2–4: 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

Refer to “:DLINK:HSDPA[1]|2|3|4:HSPDSch[:STATe]” on page 734 for turning the HS-PDSCH on or off.

An HSDPA consists of a HS-SCCH and a HS-PDSCH, however the HS-DSCH is supported on only HSDPA1.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:CCODE****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:CCODE <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:CCODE?

This command sets the channel code for the selected downlink OCNS.

*RST	OCNS1: 2	OCNS2: 3	OCNS3: 4	OCNS4: 5
	OCNS5: 6	OCNS6: 7	OCNS7: 8	OCNS8: 9
	OCNS9: 10	OCNS10: 11	OCNS11: 12	OCNS12: 13
	OCNS13: 14	OCNS14: 15	OCNS15: 16	OCNS16: 17

Range 1–127**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:DATA****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:DATA PN9|PN15

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:DATA?

This command configures the data pattern for the selected downlink OCNS.

***RST** PN9**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:POWer

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|
12|13|14|15|16:POWer <val>
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|
12|13|14|15|16:POWer?
```

This command sets the power level for the selected downlink OCNS.

The variable <val> is expressed in units of dB.

***RST** OCNS1: -6 OCNS2: -8 OCNS3: -8 OCNS4: -10
OCNS5: -7 OCNS6: -9 OCNS7-16: -10

Range -40 to 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:SSCOffset

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|
12|13|14|15|16:SSCOffset <val>
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|
12|13|14|15|16:SSCOffset?
```

This command sets the secondary scrambling code offset for the selected downlink OCNS.

***RST** 0

Range 0-15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:TOFFset****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:TOFFset <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:TOFFset?

This command adjusts the timing offset for the OCNS.

*RST	OCNS1: 1	OCNS2: 2	OCNS3: 3	OCNS4: 4
	OCNS5: 5	OCNS6: 6	OCNS7: 7	OCNS8: 8
	OCNS9: 9	OCNS10: 10	OCNS11: 11	OCNS12: 12
	OCNS13: 13	OCNS14: 14	OCNS15: 15	OCNS16: 16

Range 0–149**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16[:STATE]****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16[:STATE] ON|OFF|1|0

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16[:STATE]?

This command turns the selected OCNS on or off.

RST** 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:PCCPch:BCH:DATA*Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:PCCPch:BCH:DATA PN9|PN15|FIX4|<file name>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:DLINK:PCCPch:BCH:DATA?

This command sets the BCH data format that is transmitted on the P-CCPCH.

HSDPA over W-CDMA Subsystem—Option 418 [:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]

"<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to “File Overview” on page 710 for more information on files.

***RST** FIX4

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:PCCPch:BCH:DATA:FIX4

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : DLINK : PCCPch : BCH : DATA : FIX4 <val>
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : DLINK : PCCPch : BCH : DATA : FIX4 ?
```

This command sets the BCH repeating 4-bit binary data pattern.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

***RST** 0

Range 0–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:PCCPch:CCODE

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : DLINK : PCCPch : CCODE <val>
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : DLINK : PCCPch : CCODE ?
```

This command sets the P-CCPCH channel code.

***RST** +1

Range 0–255

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

Set all physical channel codes so they are orthogonal to each other. If any of the channel codes fail to meet this criteria, the apply function (downlink apply command) will not work.

:DLINK:PCCPch:POWer**Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PCCPch:POWer <val>

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PCCPch:POWer?

This command sets the P-CCPCH power level.

The variable <val> is expressed in decibels (dB).

RST** -5.30000000E+000**Range** -40 to 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:PCCPch[:STATe]*Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PCCPch[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PCCPch[:STATe]?

This command turns the P-CCPCH on or off.

RST** 1**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:PICH:CCODE*Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PICH:CCODE <val>

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PICH:CCODE?

This command sets the PICH channelization code.

***RST** +3**Range** 0–255**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

Set all physical channel codes so they are orthogonal to each other. If any of the channel codes fail to meet this criteria, the apply function (downlink apply command) will not work.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:DLINK:PICH:DATA**

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :DLINK:PICH:DATA PN9 | PN15 | FIX4 |
"<file name>"
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :DLINK:PICH:DATA?
```

This command sets the PICH data type.

"<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to [“File Overview” on page 710](#) for more information on files.

***RST** PN9

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to [“:DLINK:APPLY” on page 712](#).

:DLINK:PICH:DATA:FIX4

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :DLINK:PICH:DATA:FIX4 <val>
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :DLINK:PICH:DATA:FIX4?
```

This command sets the PICH repeating 4-bit binary data pattern.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

***RST** 0

Range 0–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to [“:DLINK:APPLY” on page 712](#).

:DLINK:PICH:POWer**Supported** E4438C with Option 418

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PICH:POWer <val>

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PICH:POWer?

This command sets the PICH power level.

The variable <val> is expressed in decibels (dB).

RST** -8.300000000E+000**Range** -40 to 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:PICH[:STATe]*Supported** E4438C with Option 418

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PICH[:STATe] ON|OFF|1|0

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:PICH[:STATe]?

This command turns the PICH on or off.

RST** 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:POLarity*Supported** E4438C with Option 418

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:POLarity NORMal|INVerted|INVert

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:POLarity?

This command selects the phase polarity of the downlink signal.

NORMal This choice selects normal polarity.**INVerted, INVert** These choices perform the same function, inverting the internal Q signal.***RST** NORM**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. For more information, refer to “:DLINK:APPLY” on page 712.

:DLINK:PSCH:POWer

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa [ :BBG ] :DLINK:PSCH:POWer <val>  
[ :SOURCE ] :RADIo:WCDMA:HSDPa [ :BBG ] :DLINK:PSCH:POWer?
```

This command sets the PSCH power level.

The variable <val> is expressed in decibels (dB).

***RST** -8.30000000E+000

Range -40 to 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:PSCH[:STATe]

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa [ :BBG ] :DLINK:PSCH [ :STATe ] ON | OFF | 1 | 0  
[ :SOURCE ] :RADIo:WCDMA:HSDPa [ :BBG ] :DLINK:PSCH [ :STATe ] ?
```

This command turns the PSCH on or off.

***RST** 1

Remarks Setting the command parameter while the signal is active also requires executing the apply command. For more information, refer to “:DLINK:APPLY” on page 712.

:DLINK:SCRamblecode

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa [ :BBG ] :DLINK:SCRamblecode <val>  
[ :SOURCE ] :RADIo:WCDMA:HSDPa [ :BBG ] :DLINK:SCRamblecode?
```

This command sets the downlink scramble code number.

***RST** +0

Range 0–511

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

:DLINK:SSCH:POWer**Supported** E4438C with Option 418

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:SSCH:POWer <val>

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:SSCH:POWer?

This command sets the SSCH power level. The variable <val> is expressed in decibels (dB)

RST** -8.3000000E+000**Range** -40 to 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:SSCH[:STATe]*Supported** E4438C with Option 418

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:SSCH[:STATe] ON|OFF|1|0

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:SSCH[:STATe]?

This command turns the SSCH on or off.

RST** 1**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.**:DLINK:TXDiversity*Supported** E4438C with Option 418

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:TXDiversity NONE|OANT1|OANT2

[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:DLINK:TXDiversity?

This command selects the downlink signal transmit diversity mode.

NONE This choice disables the transmit diversity mode.

OANT1 This choice selects the transmit diversity openloop antenna 1 mode.

OANT2 This choice selects the transmit diversity openloop antenna 2 mode.

***RST** NONE**Remarks** To configure both antennas (one and two) requires two ESGs.

Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:DLINK:APPLY” on page 712.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])**:LINK****Supported** E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:LINK DOWN|UP
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:LINK?
```

This command sets the uplink or downlink mode.

RST** DOWN**:ULINK:APPLY*Supported** E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:ULINK:APPLY
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:ULINK:APPLY?
```

This command applies changes to the channel setup and data for active physical and transport channels, immediately starting the channel coding generation process. A progress bar may appear on the ESG display indicating that the new signal parameters are being applied. Turning on the HSDPA modulation format also applies the signal parameters.

The query response determines whether or not there is a need to execute the command. It returns the following responses:

0 Command execution is not required.

1 Command execution is required.

NOTE The query response is only valid while the HSDPA format is active.

When there is a setting conflict (ESG reports an error) with the range values or coupled parameters, or both, executing the uplink apply command does not apply the new changes until the conflicts are resolved. After resolving the setting conflicts, execute the command to apply the new settings.

:ULINK:AWGN:CN**Supported** E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:ULINK:AWGN:CN <val>
[ :SOURCE ] :RADIO:WCDMA:HSDPA[:BBG]:ULINK:AWGN:CN?
```

This command sets the uplink in-band carrier to noise ratio (C/N) value using AWGN.

***RST** 0**Range** -30 to 30

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to **:ULINK:APPLY**.

:ULINK:AWGN[:STATE]

Supported E4438C with Option 418

```
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:AWGN[:STATE] ON|OFF|0|1
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:AWGN[:STATE]?
```

This command turns the uplink AWGN on or off.

***RST** 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to **“:ULINK:APPLY” on page 749**.

:ULINK:BBReference:EXternal:MRATE

Supported E4438C with Option 418

```
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:BBReference:EXternal:MRATE X1|
X2|X4
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:BBReference:EXternal:MRATE?
```

This command configures the ESG, so it can accept an external baseband generator clock that is a multiple of the internal 3.84 MHz chip clock.

X1 This sets the ESG to accept an external clock rate identical to the chip clock.

X2 This sets the ESG to accept an external clock rate that is two times the rate of the chip clock.

X4 This sets the ESG to accept an external clock rate that is four times the rate of the chip clock.

***RST** X1

:ULINK:BBReference[:SOURCE]

Supported E4438C with Option 418

```
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:BBReference[:SOURCE] INT[1]|
EXT[1]
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:BBReference[:SOURCE]?
```

This command selects the baseband generator reference source for the radio uplink channel.

***RST** INT

:ULINK:DPCCh:CCODE

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPCCh : CCODE ?
```

This query returns the channelization code for the uplink DPCCH.

The slot format determines the channelization code in accordance with the 3GPP standards. See “:ULINK:DPCCh:SFORmat” on page 754 for setting the slot format.

:ULINK:DPCCh:DATA

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPCCh : DATA PN9 | PN15 | FIX4 |  
" <file name> " | STD  
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPCCh : DATA ?
```

This command configures the uplink DPCCH data pattern.

STD This sets the DPCCH bit fields according to the 3GPP standards.

"<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (uplink apply command) will not work. Refer to “File Overview” on page 710 for more information on files.

***RST** STD

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPCCh:DATA:FIX4

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ :BBG ] : ULINK : DPCCh : DATA : FIX4 <val>
```

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ :BBG ] : ULINK : DPCCh : DATA : FIX4?
```

This command sets the uplink DPCCH repeating 4-bit binary data pattern.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

***RST** 0

Range 0–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:ULINK:APPLY](#)” on page 749.

:ULINK:DPCCh:FBI:PATtern

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ :BBG ] : ULINK : DPCCh : FBI : PATtern PN9 | PN15 | FIX |
"<file name>"
```

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ :BBG ] : ULINK : DPCCh : FBI : PATtern?
```

This command configures the uplink DPCCH FBI pattern.

"<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (uplink apply command) will not work. Refer to “[File Overview](#)” on page 710 for more information on files.

***RST** FIX

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “[:ULINK:APPLY](#)” on page 749.

HSDPA over W-CDMA Subsystem—Option 418 [:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]**:ULINK:DPCCh:FBI:PATtern:FIX****Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:DPCCh:FBI:PATtern:FIX <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:DPCCh:FBI:PATtern:FIX?

This command sets the 30-bit FBI pattern for the uplink DPCCH.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

RST** +0**Range** 0–10737418235**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.**:ULINK:DPCCh:POWer*Supported** E4438C with Option 418

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:DPCCh:POWer <val>

[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:DPCCh:POWer?

This command sets the uplink DPCCH power level.

The variable <val> is expressed in decibels (dB)

***RST** –2.69000000E+000**Range** –40 to 0**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPCCh:SFORmat**Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:ULINK:DPCCh:SFORmat <val>

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:ULINK:DPCCh:SFORmat?

This command sets the uplink DPCCH slot format.

***RST** +0**Range** 0–5**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

The slot format determines the settings for other parameters in accordance with 3GPP standards.

:ULINK:DPCCh[:STATe]**Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:ULINK:DPCCh[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:ULINK:DPCCh[:STATe]?

This command turns the uplink DPCCH on or off.

RST** 1**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.**:ULINK:DPCCh:TFCI*Supported** E4438C with Option 418

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:ULINK:DPCCh:TFCI <val>

[:SOURCE]:RADio:WCDMa:HSDPa[:BBG]:ULINK:DPCCh:TFCI?

This command sets the uplink DPCCH TFCI 10-bit data pattern.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only decimal values.

***RST** +0**Range** 0–1023**Remarks** Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURce]:RADio:WCDMa:HSDPa[:BBG])**:ULINK:DPCCh:TPC:NSTeps****Supported** E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :ULINK:DPCCh:TPC:NSTeps <val>
[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :ULINK:DPCCh:TPC:NSTeps?
```

This command sets the number of steps for the down and up (DUP) or up and down (UDOWn) TPC pattern selections.

The variable <val> is expressed in decibels (dB).

***RST** +1**Range** 1–80

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPCCh:TPC:PATtern**Supported** E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :ULINK:DPCCh:TPC:PATtern
UDOWn|DUP|UALL|DALL| "<file name>"
[ :SOURce ] :RADio:WCDMa:HSDPa[ :BBG ] :ULINK:DPCCh:TPC:PATtern?
```

This command configures the uplink DPCCH TPC pattern for increasing or decreasing, or increasing and decreasing the BTS power level.

UDOWn The TPC pattern repetitively steps up and down.

DUP The TPC pattern repetitively steps down and up.

UALL The TPC pattern consecutively steps up.

DALL The TPC pattern consecutively steps down.

"<file name>" This variable represents a power pattern file stored in signal generator memory. The pattern must contain at least one bit or the apply function (downlink apply command) will not work. Refer to “File Overview” on page 710 for more information on files.

***RST** UDOW

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

Each step in a TPC pattern signals an increase or decrease of 1 dB in the BTS output power level.

:ULINK:DPDCh:CCODE

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : CCODE ?
```

This query returns the uplink DPDCH channelization code.

The slot format determines the channelization code in accordance with the 3GPP standards. See “:ULINK:DPDCh:SFORmat” on page 761 for setting the slot format.

:ULINK:DPDCh:DATA

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : DATA PN9 | PN15 | FIX4 | DCH |
"<file name>"
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : DATA ?
```

This command configures the uplink DPDCH data pattern.

DCH This choice selects the transport channel as the data source.

"<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (uplink apply command) will not work. Refer to “File Overview” on page 710 for more information on files.

***RST** PN9

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPDCh:DATA:FIX4

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : DATA : FIX4 <val>
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : DATA : FIX4 ?
```

This command sets the uplink DPDCH repeating 4-bit binary data pattern.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

***RST** 0

Range 0–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPDCh:DCH[1]|2|3|4|5|6:BSIZE

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:DPDCh:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :  
BSIZE <val>
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:DPDCh:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :BSIZE?
```

This command sets the block size for the selected uplink DCH.

***RST** 20

Range 0–5000

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

The number of data bits per DCH cannot exceed 200,000. To maintain this data bit limit, the ESG calculates the product of the block size and the number of blocks. If the product of these two parameters exceeds 200,000, the apply function (uplink apply command) will not work.

:ULINK:DPDCh:DCH[1]|2|3|4|5|6:CRC

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:DPDCh:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :  
CRC 0 | 8 | 12 | 16 | 24
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:DPDCh:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :CRC?
```

This command sets the number of CRC bits for the selected uplink DCH.

***RST** 8

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPDCh:DCH[1]|2|3|4|5|6:CTYPE

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:DPDCh:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :  
CTYPE HCONv | TCONv | TURBo | NONE
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:DPDCh:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :CTYPE?
```

This command selects the encoder type for the selected uplink DCH.

HCONv This choice selects the 1/2 rate convolutional encoder.

TCONv This choice selects the 1/3 rate convolutional encoder.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURce]:RADio:WCDMa:HSDPa[:BBG])

TURBo	This choice selects the turbo coder.
NONE	This choice selects no coding.
*RST	HCON
Remarks	Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPDCh:DCH[1]|2|3|4|5|6:DATA

Supported E4438C with Option 418

```
[ :SOURce ] :RADio :WCDMa :HSDPa [ :BBG ] :ULINK :DPDCh :DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :DATA PN9 |
PN15 | FIX4 | "<file name>"
[ :SOURce ] :RADio :WCDMa :HSDPa [ :BBG ] :ULINK :DPDCh :DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :DATA?
```

This command configures the data for the selected uplink DCH.

"<file name>" This variable represents a data pattern file stored in signal generator memory. The data pattern must contain at least one bit or the apply function (uplink apply command) will not work. Refer to “File Overview” on page 710 for more information on files.

***RST** PN9

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPDCh:DCH[1]|2|3|4|5|6:DATA:FIX4

Supported E4438C with Option 418

```
[ :SOURce ] :RADio :WCDMa :HSDPa [ :BBG ] :ULINK :DPDCh :DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :DATA :
FIX4 <val>
[ :SOURce ] :RADio :WCDMa :HSDPa [ :BBG ] :ULINK :DPDCh :DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :DATA :
FIX4?
```

This command sets the repeating 4-bit binary data pattern for the selected uplink DCH.

The variable <val> accepts values in binary, hexadecimal, or decimal format, however the query returns only binary values.

***RST** 0

Range 0–15

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPDCh:DCH[1]|2|3|4|5|6:NBLocks

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :  
NBLocks <val>
```

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 : NBLocks?
```

This command sets the number of blocks for the selected uplink DCH.

***RST** 1

Range 0–512

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

The number of data bits per DCH cannot exceed 200,000. To maintain this data bit limit, the block size is multiplied by the number of blocks. If the product of these two parameters exceeds 200,000, the apply function (uplink apply command) will not work.

:ULINK:DPDCh:DCH[1]|2|3|4|5|6:RMATtribute

Supported E4438C with Option 418

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :  
RMATtribute <val>
```

```
[ :SOURCE ] : RADIO : WCDMA : HSDPA [ : BBG ] : ULINK : DPDCh : DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :  
RMATtribute?
```

This command sets the rate matching attribute for the selected uplink DCH.

***RST** 1

Range 1–256

Remarks Setting the command parameter while the signal is active also requires executing the apply command. For more information, refer to “:ULINK:APPLY” on page 749.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURce]:RADio:WCDMa:HSDPa[:BBG])**:ULINK:DPDCh:DCH[1]|2|3|4|5|6:TTI****Supported** E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa [ :BBG ] :ULINK:DPDCh:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :
TTI 10 | 20 | 40 | 80
[ :SOURce ] :RADio:WCDMa:HSDPa [ :BBG ] :ULINK:DPDCh:DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :TTI?
```

This command sets the TTI for the selected uplink DCH.

The choices are expressed in millisecond (ms).

***RST** 10

Remarks Setting the command parameter while the signal is active also requires executing the apply command. For more information, refer to “:ULINK:APPLY” on page 749.

:ULINK:DPDCh:DCH2|3|4|5|6[:STATe]**Supported** E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa [ :BBG ] :ULINK:DPDCh:
DCH2 | 3 | 4 | 5 | 6 [ :STATe ] ON | OFF | 1 | 0
[ :SOURce ] :RADio:WCDMa:HSDPa [ :BBG ] :ULINK:DPDCh:DCH2 | 3 | 4 | 5 | 6 [ :STATe ] ?
```

This command turns the selected uplink DCH on or off; DCH1 is always on.

***RST** *DCH 1: 1 DCH 2–6: 0*

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

The apply command will not work and the ESG will report an error if you turn on a DCH where lower numbered DCHs are off. For example, turning on DCH5 requires turning on DCH2–4. The reverse is true when turning off the DCHs.

:ULINK:DPDCh:POWer

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:DPDCh:POWer <val>  
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:DPDCh:POWer?
```

This command sets the uplink DPDCH power level.

The variable <val> is expressed in decibels (dB).

***RST** +0.00000000E+000

Range -40 to 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:DPDCh:SFORmat

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:DPDCh:SFORmat <val>  
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:DPDCh:SFORmat?
```

This command sets the uplink DPDCH slot format.

***RST** +2

Range 0– 6

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

The slot format determines the settings for other parameters in accordance with the 3GPP standards.

:ULINK:DPDCh[:STATe]

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:DPDCh[ :STATe ] ON | OFF | 1 | 0  
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:DPDCh[ :STATe ]?
```

This command turns the uplink DPDCH on or off.

***RST** 1

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURce]:RADio:WCDMa:HSDPa[:BBG])**:ULINK:FCLock:INTerval**

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa [ :BBG ] :ULINK:FCLock:INTerval 10 | 20 | 40 | 80 | 2560
[ :SOURce ] :RADio:WCDMa:HSDPa [ :BBG ] :ULINK:FCLock:INTerval?
```

This command selects the frame clock interval for the synchronization signal.

The frame clock interval is set in milliseconds (ms).

***RST** 80

Remarks Ensure that the selected interval is equal to or longer than the longest transport channel TTI period.

This command is applicable only when FCLock is the sync source selection. See “:ULINK:SYNC[:SOURce]” on page 770 for selecting the sync source.

:ULINK:FCLock:POLarity

Supported E4438C with Option 418

```
[ :SOURce ] :RADio:WCDMa:HSDPa [ :BBG ] :ULINK:FCLock:POLarity POSitive |
NEGative
[ :SOURce ] :RADio:WCDMa:HSDPa [ :BBG ] :ULINK:FCLock:POLarity?
```

This command sets the frame clock polarity.

POSitive This choice sets the clock gate to trigger when the signal is high.

NEGative This choice sets the clock gate to trigger when the signal is low.

***RST** POS

Remarks This command is applicable only when FCLock is the sync source selection. See “:ULINK:SYNC[:SOURce]” on page 770 for selecting the sync source.

:ULINK:FILTer

Supported E4438C with Option 418

```
[ :SOURCE ]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:FILTer RNYQuist|NYQuist|
GAUSSian|RECTangle|IS95|IS95_EQ|IS95_MOD|IS95_MOD_EQ|AC4Fm|UGGaussian|
"<user FIR>"
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:FILTer?
```

This command selects the uplink filter type.

IS95	This filter meets the criteria of the IS-95 standard.
IS95_EQ	This filter is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard and is best suited for IS-95 baseband filtering.
IS95_MOD	This filter meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard.
IS95_MOD_EQ	This filter is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection.
UGGaussian	This is a GSM Gaussian filter with a fixed BbT value of 0.300.
AC4Fm	This is a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter.
"<user FIR>"	This variable represents any FIR filter file stored in signal generator memory. Refer to “File Overview” on page 710 for more information on files.
*RST	RNYQ
Remarks	Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749 .

ULINK:FILTer:ALPHa

Supported E4438C with Option 418

```
[ :SOURCE ]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:FILTer:ALPHa <val>
[:SOURCE]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:FILTer:ALPHa?
```

This command sets the uplink Nyquist or root Nyquist filter alpha value.

***RST** +2.20000000E-001

Range 0–1

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Executing this command while a filter other than Nyquist or root Nyquist is selected changes the parameter value, but it is not used by the signal generator until one of the Nyquist filters is selected. Refer to “:ULINK:APPLY” on page 749.

:ULINK:FILTer:BBT

Supported E4438C with Option 418

```
[ :SOURCE ] : RADio : WCDMa : HSDPa [ :BBG ] : ULINK : FILTer : BBT <val>
[ :SOURCE ] : RADio : WCDMa : HSDPa [ :BBG ] : ULINK : FILTer : BBT?
```

This command sets the uplink Gaussian filter BbT value.

***RST** +5.00000000E-001

Range 0–1

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

Executing this command while a filter other than the Gaussian filter is selected changes the parameter value, but it is not used by the signal generator until the Gaussian filter is selected.

:ULINK:FILTer:CHANnel

Supported E4438C with Option 418

```
[ :SOURCE ] : RADio : WCDMa : HSDPa [ :BBG ] : ULINK : FILTer : CHANnel EVM|ACP
[ :SOURCE ] : RADio : WCDMa : HSDPa [ :BBG ] : ULINK : FILTer : CHANnel?
```

This command optimizes an uplink filter for minimized EVM or for minimized ACP.

EVM This choice provides the most ideal passband.

ACP This choice improves stopband rejection for the root Nyquist and Nyquist filters.

***RST** EVM

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

To change the filter selection, refer to “:ULINK:FILTer” on page 763.

:ULINK:FOFFset

Supported E4438C with Option 418

```
[ :SOURCE ]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:FOFFset <val>
[ :SOURCE ]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:FOFFset?
```

This command sets the CFN starting frame within the SFN by setting a frame offset relative to SFN zero.

***RST** 0

Range 0–255

Remarks The command adds delays to the internal frame counter by specifying the starting frame number count. When the frame offset (FOFFset) is set to 0, the frame number starts at the system sync trigger. When the FOFFset is set to 2, the signal generator triggers two frames after the SFN RST. For additional information, refer to 3GPP TS25.402 for SFN and CFN relationship.

:ULINK:HSDPcch:APATtern

Supported E4438C with Option 418

```
[ :SOURCE ]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:HSDPcch:APATtern NONE|ACK_ALL|
"<file name>"
[ :SOURCE ]:RADIO:WCDMA:HSDPA[:BBG]:ULINK:HSDPcch:APATtern?
```

This command sets the HS-DPCCH ACK/NACK transmission pattern for each of the 1280 sub-frames that make up the pattern.

NONE This choice sets all subframes to DTX.

"<file name>" This variable represents an ACK pattern file stored in signal generator memory. The file must contain 2,560-bits of data (2-bits per subframe) or the apply function (uplink apply command) will not work.

- An ACK response is represented by 00.
- A NACK response is represented by 01.
- DTX is represented by 10.

Enter the 2,560-bits into the file as a binary string.

Refer to [“File Overview” on page 710](#) for more information on files.

***RST** NONE

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to [“:ULINK:APPLY” on page 749](#).

:ULINK:HSDPcch:APOWer

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:HSDPcch:APOWer <val>
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:HSDPcch:APOWer?
```

This command sets the HS-DPCCH ACK part power level.

The variable <val> is expressed in decibels (dB).

***RST** -2.69000000E+000

Range -40 to 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:HSDPcch:CCODE

Supported E4438C with Option 418

```
[ :SOURCE ]RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:HSDPcch:CCODE?
```

This query returns the HS-DPCCH channelization code.

:ULINK:HSDPcch:CPATtern

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:HSDPcch:CPATtern NONE |
```

```
"<file name>"
```

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] :ULINK:HSDPcch:CPATtern?
```

This command sets the HS-DPCCH CQI transmission pattern for each of the 1280 sub-frames that make up the pattern.

NONE This choice sets all subframes to DTX.

"<file name>" This variable represents a bit file stored in signal generator memory. The file must contain 10,240-bits of data (8-bits per subframe) or the apply function (uplink apply command) will not work.

- A CQI response range is one to thirty using 8-bits, 00000001 to 00011110.
- DTX is represented by 11111111.

Enter the 10,240-bits into the file as a binary string.

Refer to “File Overview” on page 710 for more information on files.

***RST** NONE

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:HSDPcch:CPOwer

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:HSDPcch:CPOwer <val>
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:HSDPcch:CPOwer?
```

This command sets the HS-DPCCH CQI part power level.

The variable <val> is expressed in decibels (dB).

***RST** -2.69000000E+000

Range -40 to 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:HSDPcch:NPOwer

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:HSDPcch:NPOwer <val>
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:HSDPcch:NPOwer?
```

This command sets the HS-DPCCH NACK part power level. The variable <val> is expressed in decibels (dB).

***RST** -2.69000000E+000

Range -40 to 0

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:HSDPcch:SFDelay

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:HSDPcch:SFDelay <val>
[ :SOURCE ] :RADIo:WCDMA:HSDPa[ :BBG ] :ULINK:HSDPcch:SFDelay?
```

This command sets the HS-DPCCH subframe delay. The variable <val> is expressed in units of 256 chips.

***RST** 0

Range 0–150

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADio:WCDMa:HSDPa[:BBG])

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:HSDPcch[:STAtE]

Supported E4438C with Option 418

```
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:HSDPcch[:STAtE] ON|OFF|1|0
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:HSDPcch[:STAtE]?
```

This command turns the HS-DPCCH on or off.

***RST** 1

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:POLarity

Supported E4438C with Option 418

```
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:POLarity NORMal|INVerted|INVert
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:POLarity?
```

This command selects the phase polarity of the uplink signal.

NORMal This choice selects normal polarity.

INVerted, INVert These choices perform the same function, inverting the internal Q signal.

***RST** NORM

Remarks Setting the command parameter while the signal is active also requires executing the apply command. Refer to “:ULINK:APPLY” on page 749.

:ULINK:SCRamblecode

Supported E4438C with Option 418

```
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:SCRamblecode <val>
[ :SOURCE ] :RADio:WCDMa:HSDPa[:BBG]:ULINK:SCRamblecode?
```

This command sets the scramble code.

***RST** +0

Range 0–16777215

:ULINK:SDElay

Supported E4438C with Option 418

[:SOURce] :RADio:WCDMa:HSDPa [:BBG] :ULINK:SDElay <val>

[:SOURce] :RADio:WCDMa:HSDPa [:BBG] :ULINK:SDElay?

This command sets the uplink DPCH delay, measured in slots.

***RST** +0

Range 0–119

Remarks Calculate the delay between downlink and uplink DPCH, in slots, using the following formulas. Total Delay = (T0) + (TOFFset) + ((SDElay) * 2560 chips)

- T0 = 1024 chips
- TOFFset is set by “:ULINK:TOFFset” on page 770

Slot Delay = (Total Delay – T0) / 2560

:ULINK:SFNRst:POLarity

Supported E4438C with Option 418

[:SOURce] :RADio:WCDMa:HSDPa [:BBG] :ULINK:SFNRst:POLarity POSitive|
 NEGative

[:SOURce] :RADio:WCDMa:HSDPa [:BBG] :ULINK:SFNRst:POLarity?

This command sets the polarity of the system frame number reset signal for the uplink synchronization source.

POSitive This choice sets the signal to trigger when the trigger signal is high.

NEGative This choice sets the signal to trigger when the trigger signal is low.

***RST** POS

Remarks This command is applicable only when SFN_RST is the sync source selection. See “:ULINK:SYNC[:SOURce]” on page 770 for selecting the sync source.

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURce]:RADio:WCDMa:HSDPa[:BBG])**:ULINK:SYNC:MODE****Supported** E4438C with Option 418[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:ULINK:SYNC:MODE SINGLE|CONTInuous
[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:ULINK:SYNC:MODE?

This command selects the uplink frame synchronization triggering mode.

SINGLE The signal generator, once triggered, generates frames based on the reference clock.**CONTInuous** The signal generator continuously aligns the frame timing with the frame sync trigger signal.***RST** SING**:ULINK:SYNC[:SOURce]****Supported** E4438C with Option 418[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:ULINK:SYNC[:SOURce] SFN_RST|FCLock
[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:ULINK:SYNC[:SOURce]?

This command selects the uplink frame synchronization source type.

SFN_RST The uplink signal triggers on the system frame number reset signal.**FCLock** The uplink signal triggers on the frame clock.***RST** FCL**:ULINK:TOFFset****Supported** E4438C with Option 418[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:ULINK:TOFFset <val>
[:SOURce]:RADio:WCDMa:HSDPa[:BBG]:ULINK:TOFFset?

This command sets the uplink DPCH timing offset (delay), measured in chips.

***RST** +0**Range** -512 to 2560

HSDPA over W-CDMA Subsystem—Option 418 ([:SOURCE]:RADIO:WCDMA:HSDPA[:BBG])

- Remarks** The downlink signal timing is provided by the synchronization signal.
- Calculate the delay between downlink and uplink DPCH, in chips, using the following formulas:
- Total Delay = (T0) + (TOFFset) + ((SDElay) * 2560 chips)
- T0 = 1024 chips
 - SDElay is set by “:ULINK:SDElay” on page 769
- Chip Delay = (Total Delay - T0) mod 2560

[:STATe]

Supported E4438C with Option 418

```
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] [ :STATe ] ON | OFF | 1 | 0
[ :SOURCE ] :RADIO:WCDMA:HSDPA[ :BBG ] [ :STATe ] ?
```

This command turns the HSDPA functionality on or off.

***RST** 0

Remarks This command only works when there is at least one active physical channel within the selected link.

NADC Subsystem—Option 402 ([:SOURCE]:RADio[:NADC])

:ALPha

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :ALPha <val>  
[ :SOURCE ] :RADio [ :NADC ] :ALPha?
```

This command changes the Nyquist or root Nyquist filter's alpha value.

The filter alpha value can be set to a minimum level (0), a maximum level (1), or in between by using fractional numeric values (0.001–0.999).

***RST** +3.50000000E–001

Range 0.000–1.000

Key Entry **Filter Alpha**

Remarks This command is effective only after choosing a root Nyquist or Nyquist filter; it does not effect other types of filters. To change the current filter type, refer to [“:FILTer” on page 785](#).

:BBCLock

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :BBCLock INT[1] | EXT[1]  
[ :SOURCE ] :RADio [ :NADC ] :BBCLock?
```

This command toggles the data (bit) clock input to the baseband generator board to either internal or external. This command is independent in each mode and works for both non-burst (continuous) and burst modes. This allows for a matrix of selections between burst/non-burst, internal/external data generation, internal/external data clock, and external bit/symbol data clock.

INT[1] This choice selects the signal generator internal data clock.

EXT[1] This choice selects an external data clock input.

***RST** INT

Key Entry **BBG Data Clock Ext Int**

Remarks A data clock or continuous symbol sync input must be supplied when external mode is used.

:BBT

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :BBT <val>  
[ :SOURCE ] :RADIO [ :NADC ] :BBT?
```

This command changes the bandwidth-multiplied-by-bit-time (BbT) filter parameter.

The filter BbT value can be set to the maximum level (1) or in between the minimum level (0.100) and maximum level by using fractional numeric values (0.101–0.999).

***RST** +5.00000000E–001

Range 0.100–1.000

Key Entry Filter BbT

Remarks This command is effective only after choosing a Gaussian filter. It does not have an effect on other types of filters. To change the current filter type, refer to [“:FILTer” on page 785](#).

:BRATe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :BRATe <val>  
[ :SOURCE ] :RADIO [ :NADC ] :BRATe?
```

This command sets the bit rate in bits per second (bps–Mbps). The maximum bit rate is dependent on the modulation type and filter as shown in the following tables

The IQ digital data stream is shaped by a FIR filter. The filter length and associated latency and frequency response are dependent on the bit rate as shown in the following tables. The signal generator selects a filter length.

For higher bit rates, the FIR filter length may be truncated (if the minimum filter size allows it) which will impact the relative timing of the modulated data, as well as the actual filter response (see the symbol rate command [“:SRATe” on page 863](#)). Refer to [“:FILTer” on page 785](#) for information on filter symbol widths.

To change the modulation type, refer to [“:MODulation\[:TYPE\]” on page 788](#).

When the bit rate is changed, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the bit rate: lower bit rates require more time.

Receiver Test Digital Commands (continued)
NADC Subsystem—Option 402 ([:SOURCE]:RADIO[:NADC])

***RST** +4.86000000E+004

Range	Modulation Type	Bit Rate Range		
		16 Symbol Wide Filter	32 Symbol Wide Filter	64 Symbol Wide Filter
	BPSK, FSK2, MSK	1bps–50Mbps	1bps–25Mbps	1bps–12.5Mbps
	C4FM, OQPSK, FSK4	2bps–50Mbps	2bps–25Mbps	2bps–12.5Mbps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3bps–50Mbps	3bps–25Mbps	3bps–12.5Mbps
	FSK16, PSK16, QAM16	4bps–50Mbps	4bps–25Mbps	4bps–12.5Mbps
	QAM32	5bps–50Mbps	5bps–25Mbps	5bps–12.5Mbps
	QAM64	6bps–50Mbps	6bps–25Mbps	6bps–12.5Mbps
	QAM128	7bps–50Mbps	7bps–25Mbps	7bps–12.5Mbps
	QAM256	8bps–50Mbps	8bps–25Mbps	8bps–12.5Mbps

Key Entry **Symbol Rate**

:BURSt:PN9

Supported E4438C with Option 402

[:SOURCE] :RADIO [:NADC] :BURSt :PN9 NORMal | QUICk
 [:SOURCE] :RADIO [:NADC] :BURSt :PN9?

This command controls the software PN9 generation.

NORMal This choice produces a maximum length PN9 sequence.

QUICk This choice produces a truncated PN9 sequence.

***RST** NORM

Key Entry **PN9 Mode Normal Quick**

Remarks Use Normal mode for bit-error-rate tests where a maximum length PN9 sequence is required.

:BURSt:SHAPe[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe [ :TYPE ] SINE | "<file name>"  
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe [ :TYPE ] ?
```

This command specifies the burst shape as either SINE or a user-defined file ("`<file name>`").

SINE This choice selects a state that is defined by the burst rise and fall *RST values, as the default burst shape type.

"`<file name>`" This choice selects a user designated file from signal generator memory (non-volatile).

***RST** SINE

Key Entry **Sine** **User File**

:BURSt:SHAPe:FALL:DELay

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe :FALL :DELay <val>  
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe :FALL :DELay ?
```

This command sets the burst shape fall delay.

The variable `<val>` is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range -22.3750 to 99

Key Entry **Fall Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to [“:MODulation\[:TYPE\]” on page 788](#). Refer to [“:SRATE” on page 863](#) for a list of the minimum and maximum symbol rate values.

[“:BURSt:SHAPe:FDELay” on page 776](#) performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FALL:TIME

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe :FALL :TIME <val>  
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe :FALL :TIME?
```

This command sets the burst shape fall time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +5.00000000E+000

Range 0.1250–255.8750

Key Entry **Fall Time**

Remarks The setting enabled by this command is not affected by signal

generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 788.

Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FTIME” on page 777 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FDElay

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe :FDElay <val>  
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe :FDElay?
```

This command sets the burst shape fall delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range –22.3750 to 99

Key Entry **Fall Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 788. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FALL:DELay” on page 775 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FTIME

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe :FTIME <val>  
[ :SOURce ] :RADio [ :NADC ] :BURSt :SHAPe :FTIME?
```

This command sets the burst shape fall time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range 0.1250–255.8750

Key Entry **Fall Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 788. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FALL:TIME” on page 776 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:RDELaY

Supported E4438C with Option 402

[:SOURce] :RADio [:NADC] :BURSt :SHAPe :RDELaY <val>

[:SOURce] :RADio [:NADC] :BURSt :SHAPe :RDELaY?

This command sets the burst shape rise delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range -17.3750 to 99

Key Entry **Rise Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 788.
Refer to “:SRATe” on page 863 for minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:DELAY” on page 778 performs the same function; in compliance with the SCPI standard, both commands are listed.

Refer to the *E4428C/38C ESG Signal Generators User’s Guide* for more information.

:BURSt:SHAPe:RISE:DELAY

Supported E4438C with Option 402

[:SOURce] :RADio [:NADC] :BURSt :SHAPe :RISE :DELAY <val>

[:SOURce] :RADio [:NADC] :BURSt :SHAPe :RISE :DELAY?

This command sets the burst shape rise delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range -17.3750 to 99

Key Entry **Rise Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 788. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RDElay” on page 778 performs the same function; in compliance with the SCPI standard, both commands are listed.

Refer to the *E4428C/38C ESG Signal Generators User’s Guide* for more information.

:BURSt:SHAPe:RISE:TIME

Supported E4438C with Option 402

[:SOURce] :RADio [:NADC] :BURSt :SHAPe :RISE :TIME <val>
[:SOURce] :RADio [:NADC] :BURSt :SHAPe :RISE :TIME?

This command sets the burst shape rise time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +5.00000000E+000

Range 0.1250–22.5000

Key Entry Rise Time

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 788. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RTIME” on page 780 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPE:RTIME

Supported E4438C with Option 402

[:SOURce] :RADio [:NADC] :BURSt :SHAPE :RTIME <val>

[:SOURce] :RADio [:NADC] :BURSt :SHAPE :RTIME?

This command sets the burst shape rise time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +5.00000000E+000

Range 0.1250–22.5000

Key Entry **Rise Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 788. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPE:RISE:TIME” on page 779 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt[:STATe]

Supported E4438C with Option 402

[:SOURce] :RADio [:NADC] :BURSt [:STATe] ON | OFF | 1 | 0

[:SOURce] :RADio [:NADC] :BURSt [:STATe]?

This command enables or disables the burst function.

ON (1) This choice enables the transmission of framed data. If all timeslots which are switched on are up traffic channels or custom, you will be bursting the timeslots that are on; there will be no RF carrier during the off timeslots.

If you have switched on any timeslot that you have configured as a down traffic channel, the RF carrier is not switched off between any of the timeslots. The off timeslots are transmitted as a continuous series of ones for the time period of the off timeslots.

OFF (0) This choice enables the transmission of unframed data.

***RST** 0
Key Entry **Data Format Pattern Framed**

:BURSt:SHAPE[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADIo [ :NADC ] :BURSt :SHAPE [ :TYPE ] SINE | "<file name>"
[ :SOURce ] :RADIo [ :NADC ] :BURSt :SHAPE [ :TYPE ] ?
```

This command specifies the burst shape as either SINE or a user-defined file ("<file name>").

SINE This choice selects a state that is defined by the burst rise and fall *RST values, as the default burst shape type.

"<file name>" This choice selects a user designated file from signal generator memory (non-volatile).

***RST** SINE

Key Entry **Sine User File**

:CHANnel

Supported E4438C with Option 402

```
[ :SOURce ] :RADIo [ :NADC ] :CHANnel EVM | ACP
[ :SOURce ] :RADIo [ :NADC ] :CHANnel ?
```

This command optimizes the Nyquist and root Nyquist filters to minimize error vector magnitude (EVM) or to minimize adjacent channel power (ACP).

EVM This choice provides the most ideal passband.

ACP This choice improves stopband rejection.

***RST** ACP

Key Entry **Optimize FIR For EVM ACP**

Remarks To change the current filter type, refer to [“:FILTer” on page 785](#).

:DATA

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :DATA PN9 | PN11 | PN15 | PN20 | PN23 | FIX4 | "<file name>" |
EXT | P4 | P8 | P16 | P32 | P64 | PRAM
[ :SOURCE ] :RADio [ :NADC ] :DATA?
```

This command sets a pseudo-random number sequence, 4-bit pattern, sequence of 1's and 0's, data from an external source, or a user file as the data pattern for unframed transmission.

***RST** PN23

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	Ext
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	16 1's & 16 0's	32 1's & 32 0's		32 1's & 32 0's	
	64 1's & 64 0's	PRAM File						

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:DATA:PRAM

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio : [ NADC ] :DATA :PRAM "<file_name>"
[ :SOURCE ] :RADio : [ NADC ] :DATA :PRAM?
```

This command selects a pattern RAM (PRAM) file as the pattern data type for the NADC (North American Digital Cellular) format.

"<file_name>" This variable designates the PRAM file in WFM1. Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

Key Entry **PRAM File**

Remarks Selecting this data source forces the burst source to INTERNAL to allow framing control. The PRAM file must reside in the signal generator's volatile memory (WFM1) in order to be accessed by this command. For more information refer to [“:DATA:PRAM:FILE:BLOCK” on page 110](#)

:DATA:FIX4

Supported E4438C with Option 402

[:SOURCE] :RADIO [:NADC] :DATA :FIX4 <val>

[:SOURCE] :RADIO [:NADC] :DATA :FIX4?

This command sets the binary, 4-bit repeating sequence data pattern for unframed transmission according to the modulation type, symbol rate, filter, and burst shape selected for the NADC (North American Digital Cellular) modulation format.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:DEFAULT

Supported E4438C with Option 402

[:SOURCE] :RADIO [:NADC] :DEFAULT

This command returns all of the NADC (North American Digital Cellular) modulation format parameters to factory settings. It does not affect any other signal generator parameters.

Key Entry **Restore NADC Factory Default**

:EDATa:DELaY

Supported E4438C with Option 402

[:SOURCE] :RADIO [:NADC] :EDATa :DELaY?

This query returns the amount of delay (in symbols) from the external data input to the beginning of the symbol on the I OUT and Q OUT rear panel connectors and the front panel RF OUTPUT connector.

Remarks When the format is turned off, the delay value is unchanged; the query will return the same delay value if the format is on or off.

:EDCLock

Supported E4438C with Option 402

[:SOURce] :RADio [:NADC] :EDCLock SYMBOL | NORMAl

[:SOURce] :RADio [:NADC] :EDCLock?

This command sets the external data clock use.

SYMBOL This choice specifies that a continuous symbol clock signal must be provided to the SYMBOL SYNC input connector.

NORMAl This choice specifies that the DATA CLOCK input connector requires a bit clock. The SYMBOL SYNC input connector requires a (one-shot or continuous) symbol sync signal.

***RST** NORM

Key Entry Ext Data Clock Normal Symbol

Remarks Both choices have no effect in internal clock mode. Refer to “:BBCLock” on page 772 to select EXT as the data clock type.

:EREFerence

Supported E4438C with Option 402

[:SOURce] :RADio [:NADC] :EREFerence INT | EXT

[:SOURce] :RADio [:NADC] :EREFerence?

This command selects either an internal or external bit-clock reference for the data generator.

***RST** INT

Key Entry BBG Ref Ext Int

Remarks If the EXT choice is selected, the external source’s frequency value must be applied to the BASEBAND GEN REF IN rear panel connector. The external reference and external data clock are not applicable at the same time. If both are selected, then the external reference takes precedence.

Refer to, “:EREFerence:VALue” on page 785 to enter the external reference frequency setting.

:EREFerence:VALue

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :EREFerence:VALue <val>
[ :SOURCE ] :RADIO [ :NADC ] :EREFerence:VALue?
```

This command sets the expected bit-clock reference frequency value for an externally applied reference signal.

The variable <val> is expressed in units of hertz (Hz–MHz).

***RST** +1.30000000E+007

Range 2.5E5–1E8

Key Entry **Ext BBG Ref Freq**

Remarks The value specified by this command is effective only when you are using an external reference applied to the BASEBAND GEN REF IN rear panel connector.

Refer to “:EREFerence” on page 784 to select EXT (external source) as the reference for the bit-clock.

:FILTer

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :FILTer RNYQuist|NYQuist|GAUSSian|RECTangle|IS95|
IS95_EQ|IS95_MOD|IS95_MOD_EQ|AC4Fm|UGGaussian| "<user FIR>"
[ :SOURCE ] :RADIO [ :NADC ] :FILTer?
```

This command selects the pre-modulation filter type.

IS95 This choice selects a filter that meets the criteria of the IS-95 standard.

IS95_EQ This choice selects a filter which is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard. This filter is only used for IS-95 baseband filtering.

IS95_MOD This choice selects a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard.

IS95_MOD_EQ This choice selects a filter which is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection.

AC4Fm This choice selects a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter.

NADC Subsystem—Option 402 ([:SOURce]:RADio[:NADC])

UGGaussian	This choice selects a backwards compatible GSM Gaussian filter (Gaussian filter with a fixed BbT value of 0.300) for the ESG E44xxB Option UN3 or UN4.
"<user FIR>"	This variable is any filter file that you have stored into memory.
*RST	RNYQ
Key Entry	Root Nyquist Nyquist Gaussian Rectangle IS-95 IS-95 w/EQ IS-95 Mod IS-95 Mod w/EQ APCO 25 C4FM UN3/4 GSM Gaussian User FIR
Remarks	Refer to “File Name Variables” on page 13 for information on the file name syntax.

:FRATe

Supported	E4438C with Option 402
	[:SOURce] :RADio [:NADC] :FRATe FULL HALF
	[:SOURce] :RADio [:NADC] :FRATe?

This command toggles between a full- or half-rate traffic channel.

FULL	Selects two equally spaced timeslots of the frame. Since there are six timeslots per frame, timeslots 1, 2, and 3 are paired with timeslots 4, 5, and 6, respectively.
HALF	Selects one timeslot of the frame (6 individual timeslots per frame).
*RST	FULL
Key Entry	Rate Full Half

:IQ:SCALE

Supported	E4438C with Option 402
	[:SOURce] :RADio [:NADC] :IQ:SCALE <val>
	[:SOURce] :RADio [:NADC] :IQ:SCALE?

This command sets the amplitude of the I/Q outputs for better adjacent channel power (ACP); lower scaling values equate to better ACP.

The variable <val> is expressed in units of percent.

*RST	+100
Range	1–200
Key Entry	I/Q Scaling
Remarks	This command has no effect with MSK or FSK modulation.

:MODulation:FSK[:DEViation]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :MODulation :FSK [ :DEViation ] <val>  
[ :SOURCE ] :RADio [ :NADC ] :MODulation :FSK [ :DEViation ] ?
```

This command sets the symmetric FSK frequency deviation value. The variable <val> is expressed in units of Hertz and the maximum range value equals the current symbol rate value multiplied by four, limited to 20 MHz

***RST** +4.00000000E+002

Range 0–2E7

Key Entry **Freq Dev**

Remarks To change the modulation type, refer to “:MODulation[:TYPE]” on page 788.

Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

To set an asymmetric FSK deviation value, refer to the *E4428C/38C ESG Signal Generators User’s Guide for more information*.

:MODulation:MSK[:PHASe]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :MODulation :MSK [ :PHASe ] <val>  
[ :SOURCE ] :RADio [ :NADC ] :MODulation :MSK [ :PHASe ] ?
```

This command sets the MSK phase deviation value. The variable <val> is expressed in units of degrees.

***RST** +9.00000000E+001

Range 0–100

Key Entry **Phase Dev**

:MODulation:UFSK

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :MODulation :UFSK "<file name>"  
[ :SOURCE ] :RADio [ :NADC ] :MODulation :UFSK ?
```

This command selects a user-defined FSK file from the signal generator memory.

Receiver Test Digital Commands (continued)
NADC Subsystem—Option 402 (:SOURce):RADio[:NADC])

Key Entry **User FSK**

Remarks The user-defined FSK file is held in signal generator memory until the command that selects user FSK as the modulation type is sent. Refer to “:MODulation[:TYPE]” on page 788 to change the current modulation type.

Refer to “File Name Variables” on page 13 for information on the file name syntax.

:MODulation:UIQ

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :MODulation :UIQ "<file name>"
[ :SOURce ] :RADio [ :NADC ] :MODulation :UIQ?
```

This command selects a user-defined I/Q file from the signal generator memory.

Key Entry **User I/Q**

Remarks The user-defined I/Q file is held in signal generator memory until the command that selects user I/Q as the modulation type is sent. Refer to “:MODulation[:TYPE]” on page 788 to change the current modulation type.

Refer to “File Name Variables” on page 13 for information on the file name syntax.

:MODulation[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :MODulation [ :TYPE ] BPSK | QPSK | IS95QPSK | GRAYQPSK |
OQPSK | IS95OQPSK | P4DQPSK | PSK8 | PSK16 | D8PSK | MSK | FSK2 | FSK4 | FSK8 | FSK16 | C4FM |
QAM4 | QAM16 | QAM32 | QAM64 | QAM128 | QAM256 | UIQ | UFSK
[ :SOURce ] :RADio [ :NADC ] :MODulation [ :TYPE ]?
```

This command sets the modulation type for the NADC personality.

***RST** P4DQPSK

Key Entry	BPSK	QPSK	IS-95 QPSK	Gray Coded QPSK	OQPSK			
	IS-95 OQPSK	$\pi/4$ DQPSK	8PSK	16PSK	D8PSK	MSK	2-Lvl FSK	
	4-Lvl FSK	8-Lvl FSK	16-Lvl FSK	C4FM	4QAM	16QAM	32QAM	
	64QAM	128QAM	256QAM	User I/Q	User FSK			

:REPeat

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :REPeat SINGLE | CONTInuous  
[ :SOURCE ] :RADIO [ :NADC ] :REPeat?
```

This command sets the rotation direction of the phase modulation vector.

SINGLE This choice outputs one occurrence of the selected frame.

CONTInuous This choice outputs a continuous stream of the selected frame.

***RST** SING

Key Entry **Frame Repeat Single Cont**

:POLarity[:ALL]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :POLarity [ :ALL ] NORMal | INVerted  
[ :SOURCE ] :RADIO [ :NADC ] :POLarity [ :ALL ]?
```

This command sets the rotation direction of the phase modulation vector.

NORMal This choice selects normal phase polarity.

INVerted This choice inverts the internal Q signal.

***RST** NORM

Key Entry **Polarity Normal Invert**

:SECOndary:RECall

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SECOndary:RECall
```

This command recalls the secondary frame configuration, overwriting the current state.

Key Entry **Recall Secondary Frame State**

Remarks To save a secondary frame state, refer to “[:SECOndary:SAVE]” on page 790.

A secondary frame is not active until the secondary state is enabled. To activate a secondary frame, refer to “[:SECOndary[:STATE]]” on page 790.

:SECondary:SAVE

Supported E4438C with Option 402

[:SOURCE] :RADio [:NADC] :SECondary :SAVE

This command saves the current frame configuration as the secondary frame with the filename NADC_SECONDARY_FRAME.

Key Entry **Save Secondary Frame State**

Remarks To recall the secondary frame (saved in non-volatile signal generator memory), refer to “:SECondary:RECall” on page 789.

:SECondary:TRIGger[:SOURCE]

Supported E4438C with Option 402

[:SOURCE] :RADio [:NADC] :SECondary :TRIGger [:SOURCE] KEY | EXT | BUS
[:SOURCE] :RADio [:NADC] :SECondary :TRIGger [:SOURCE] ?

This command selects the type of triggering for the secondary frame.

KEY This choice enables triggering by pressing the front panel **Trigger** hardkey.

EXT This choice enables triggering using an externally applied signal at the PATT TRIG IN rear panel connector or the PATT TRIG IN 2 pin on the rear panel AUX I/O connector. To select the appropriate connector, refer to “:TRIGger[:SOURCE]:EXTernal[:SOURCE]” on page 804.

BUS This choice enables GPIB triggering using the *TRG or GET command or LAN and RS-232 triggering using the *TRG command.

Key Entry **Trigger Key Ext Bus**

:SECondary[:STATE]

Supported E4438C with Option 402

[:SOURCE] :RADio [:NADC] :SECondary [:STATE] ON | OFF | 1 | 0
[:SOURCE] :RADio [:NADC] :SECondary [:STATE] ?

This command enables or disables the ability to switch to the secondary frame.

***RST** 0

Key Entry **Secondary Frame Off On**

Remarks A frame must already be saved as the secondary frame in order to turn the secondary state function on.

 To save a frame as the secondary frame, refer to “:SECOndary:SAVE” on page 790.

:SLOT[1]|2|3|4|5|6:DCUStom

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :DCUStom
PN9 | PN11 | PN15 | PN20 | PN23 | FIX4 | " <file name> " | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURce ] :RADio [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :DCUStom?
```

This command configures the data field for the selected downlink custom timeslot.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to “File Name Variables” on page 13 for information on the file name syntax.

:SLOT[1]|2|3|4|5|6:DCUStom:FIX4

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :DCUStom:FIX4 <val>
[ :SOURce ] :RADio [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :DCUStom:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT[1]|2|3|4|5|6:DTCHannel:CDLocator

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio[ :NADC ]:SLOT[ 1 ] | 2 | 3 | 4 | 5 | 6 :DTCHannel :  
CDLocator <bit_pattern>  
[ :SOURCE ]:RADio[ :NADC ]:SLOT[ 1 ] | 2 | 3 | 4 | 5 | 6 :DTCHannel :CDLocator?
```

This command changes the 11-bit coded digital control channel locator (CDL) field.

***RST** #H000

Range #H0–#H7FF

Key Entry **CDL**

Remarks The preset hexadecimal value (when normal preset is selected) for CDL reflects the NADC protocol, however you can enter a new value by using this command.

:SLOT[1]|2|3|4|5|6:DTCHannel:CDVCCode

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio[ :NADC ]:SLOT[ 1 ] | 2 | 3 | 4 | 5 | 6 :DTCHannel :  
CDVCCode <bit_pattern>  
[ :SOURCE ]:RADio[ :NADC ]:SLOT[ 1 ] | 2 | 3 | 4 | 5 | 6 :DTCHannel :CDVCCode?
```

This command changes the 12-bit coded digital verification color code (CDVCC).

***RST** #H000

Range #H0–#HFFF

Key Entry **CDVCC**

Remarks The preset hexadecimal value (when normal preset is selected) for CDVCC reflects the NADC protocol, however you can enter a new value by using this command.

:SLOT[1]|2|3|4|5|6:DTCHannel:SACChannel

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio[ :NADC ]:SLOT[ 1 ] | 2 | 3 | 4 | 5 | 6 :DTCHannel :  
SACChannel <bit_pattern>  
[ :SOURCE ]:RADio[ :NADC ]:SLOT[ 1 ] | 2 | 3 | 4 | 5 | 6 :DTCHannel :SACChannel?
```

This command changes the 15-bit slow associated control channel.

***RST** #H000

Range	#H0–#HFFF
Key Entry	SACCH
Remarks	The preset hexadecimal value (when normal preset is selected) for SACCH reflects the value specified by the standard.

:SLOT[1]|2|3|4|5|6:DTCHannel:SWORd

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : DTCHannel : SWORd <bit_pattern>
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : DTCHannel : SWORd?
```

This command sets the 28-bit synchronization word as the active function. This is used for slot synchronization, equalizer training, and timeslot identification.

*RST	#HA91DE4A
Range	#H0–#HFFFFFFF
Key Entry	SYNC

:SLOT[1]|2|3|4|5|6:DTCHannel[:DATA]

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : DTCHannel [ :DATA ] PN9 |
PN11 | PN15 | PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : DTCHannel [ :DATA ] ?
```

This command sets a pseudo-random number sequence, 4-bit pattern, sequence of 1's and 0's, data from an external source, or a user file as the data pattern for the selected downlink traffic channel timeslot during framed transmission.

*RST	PN9
Key Entry	PN9 PN11 PN15 PN20 PN23 FIX4 User File EXT
	4 1's & 4 0's 8 1's & 8 0's 16 1's & 16 0's 32 1's & 32 0's
	64 1's & 64 0's

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:SLOT[1]|2|3|4|5|6:DTCHannel[:DATA]FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :DTCHannel [ :DATA ] :FIX4 <val>  
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :DTCHannel [ :DATA ] :FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink traffic channel timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT[1]|2|3|4|5|6:POWER

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :POWER MAIN|DELTA  
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :POWER?
```

This command toggles the RF output power level function for the selected timeslot.

MAIN This choice specifies RF output as the main power level.

DELTA This choice specifies RF output as the alternative power level.

***RST** MAIN

Key Entry **Timeslot Ampl Main Delta**

:SLOT[1]|2|3|4|5|6:STATE

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :STATE ON|OFF|1|0  
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :STATE?
```

This command enables or disables the operating state of the selected timeslot.

***RST** Timeslot 1: 1 Timeslots 2–6: 0

Key Entry **Timeslot Off On**

:SLOT[1]|2|3|4|5|6:UCUStom

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UCUS tom PN9 | PN11 | PN15 |
PN20 | PN23 | FIX4 | " <file name> " | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UCUS tom?
```

This command configures the data field for the selected uplink custom timeslot.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to “[File Name Variables](#)” on page 13 for information on the file name syntax.

:SLOT[1]|2|3|4|5|6:UCUStom:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UCUS tom : FIX4 <val>
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UCUS tom : FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected uplink custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT[1]|2|3|4|5|6:UTCHannel:CDVCcode

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UTCH an n e l :
CDVCcode <bit_pattern>
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UTCH an n e l : CDVCcode?
```

This command changes the 12-bit coded digital verification color code (CDVCC).

***RST** #H000

Range #H0–#HFFF

NADC Subsystem—Option 402 ([:SOURCE]:RADIO[:NADC])**Key Entry** **CDVCC**

Remarks The preset hexadecimal value (when normal preset is selected) for CDVCC reflects the NADC protocol, however you can enter a new value by using this command.

:SLOT[1]|2|3|4|5|6:UTChannel:SACChannel**Supported** E4438C with Option 402

```
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UTChannel : SACChannel
<bit_pattern>
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UTChannel : SACChannel?
```

This command changes the 15-bit slow associated control channel.

***RST** #H000**Range** #H0–#HFFF**Key Entry** **SACCH**

Remarks The preset hexadecimal value (when normal preset is selected) for SACCH reflects the value specified by the standard.

:SLOT[1]|2|3|4|5|6:UTChannel:SWORd**Supported** E4438C with Option 402

```
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UTChannel : SWORd <bit_pattern>
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UTChannel : SWORd?
```

This command sets the 28-bit synchronization word as the active function. This is used for slot synchronization, equalizer training, and timeslot identification.

RST** #HA91DE4A**Range** #H0–#HFFFFFFF**Key Entry** **SYNC*:SLOT[1]|2|3|4|5|6:UTChannel[:DATA]****Supported** E4438C with Option 402

```
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UTChannel [ : DATA ] PN9 | PN15 |
FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] : RADIo [ :NADC ] : SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 : UTChannel [ : DATA ]?
```

This command sets a pseudo-random number sequence, 4-bit pattern, sequence of 1's and 0's, data from an external source, or a user file as the data pattern for the selected uplink traffic channel timeslot during framed transmission.

*RST	PN9							
Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's		8 1's & 8 0's		16 1's & 16 0's		32 1's & 32 0's	
	64 1's & 64 0's							
Remarks	Refer to “File Name Variables” on page 13 for information on the file name syntax.							

:SLOT[1] | 2 | 3 | 4 | 5 | 6:UTCHannel[:DATA]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :UTCHannel [ :DATA ] :FIX4 <val>
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 :UTCHannel [ :DATA ] :FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected uplink traffic channel timeslot.

*RST	#B0000
Range	#B0000–#B1111 or 0–15
Key Entry	FIX4
Remarks	FIX4 must already be defined as the data type.

:SLOT[1] | 2 | 3 | 4 | 5 | 6[:TYPE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 [ :TYPE ] UCUSom | DCUSom | UTCH |
UTCH_ALL | DTCH | DTCH_ALL
[ :SOURCE ] :RADIO [ :NADC ] :SLOT [ 1 ] | 2 | 3 | 4 | 5 | 6 [ :TYPE ]?
```

This command sets the timeslot type for the selected timeslot.

*RST	Timeslot 1: UTCH Timeslots 2–6: UCUS				
Key Entry	Up Custom	Down Custom	Up TCH	Up TCH All	Down TCH
	Down TCH All				

:SOUT

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SOUT FRAME | SLOT | ALL
[ :SOURCE ] :RADIO [ :NADC ] :SOUT?
```

This command sets the synchronization location (within the pattern of data) and the type of output at the EVENT 1 rear panel connector.

FRAME This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a framed data pattern.

SLOT This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a selected timeslot.

ALL This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for all active timeslots.

***RST** FRAME

Key Entry	Begin Frame	Begin Timeslot #	All Timeslots
------------------	--------------------	-------------------------	----------------------

:SOUT:OFFSet

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SOUT:OFFSet <val>
[ :SOURCE ] :RADIO [ :NADC ] :SOUT:OFFSet?
```

This command sets the offset value for the location of the output synchronization signal on the EVENT1 rear panel connector relative to the beginning of the framed data pattern or timeslot.

The variable <val> is expressed as a number of bits.

***RST** +0

Range -323 to 323

Key Entry **Sync Out Offset**

Remarks Negative values move the synchronization output signal earlier; positive values move it later.

To change the output of the EVENT1 rear panel connector to SLOT, refer to [“:SOUT” on page 798](#).

:SOUT:SLOT

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SOUT :SLOT <val>
```

```
[ :SOURCE ] :RADIO [ :NADC ] :SOUT :SLOT?
```

This command selects the timeslot that will trigger a 1-bit output signal at the EVENT 1 rear panel connector.

***RST** +1

Range 1–3

Key Entry **Begin Timeslot #**

Remarks To change the output of the EVENT1 rear panel connector to SLOT, refer to “:SOUT” on page 798.

:SRATe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO [ :NADC ] :SRATe <val>
```

```
[ :SOURCE ] :RADIO [ :NADC ] :SRATe?
```

This command sets the transmission symbol rate. Symbol rate is the bit rate divided by the bits per symbol. A change in the symbol rate affects the bit rate. Refer to “:BRATe” on page 672 for information on bit rate.

The variable <val> is expressed in units of symbols per second (sps–Mps) and the maximum symbol rate depends on the filter. Refer to “:FILTer” on page 785 for minimum filter symbol width.

The filter may have to be truncated down to 32 or 16 symbols wide to achieve the highest symbol rate. The signal generator’s internal filters are not truncated below their minimum filter length and user-defined FIR filters are not truncated. If the filter cannot be truncated then the symbol rate is limited to the maximum rate of the narrowest filter size possible.

The relative timing of the modulated data, as well as the actual filter response is affected when the filter is truncated.

When the symbol rate changes, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the symbol rate: lower symbol rates require more time.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 788.

***RST** +2.4300000E+004

Receiver Test Digital Commands (continued)
NADC Subsystem—Option 402 ([:SOURce]:RADio[:NADC])

Range	Modulation Type	Symbol Rate Range		
		<i>16 Symbol Wide Filter</i>	<i>32 Symbol Wide Filter</i>	<i>64 Symbol Wide Filter</i>
	BPSK, FSK2, MSK	1sps–50Msps	1sps–25Msps	1sps–12.5Msps
	C4FM, OQPSK, FSK4	2sps–25Msps	2sps–12.5Msps	2sps–6.25Msps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3sps–16.666666666 Msps	3sps–8.333333333 Msps	3sps–4.166666666Msps
	FSK16, PSK16, QAM16	4sps–12.5Msps	4sps–6.25Msps	4sps–3.125Msps
	QAM32	5sps–10Msps	5sps–5Msps	5sps–2.5Msps
	QAM64	6sps–8.333333333 Msps	6sps–4.166666666 Msps	6sps–2.083333333 Msps
	QAM128	7sps–7.142857142 Msps	7sps–3.571428572 Msps	7sps–1.785714285 Msps
	QAM256	8sps–6.25Msps	8sps–3.125 Msps	8sps–1.5625 Msps

NOTE Using I/Q skew will half the minimum number of symbols for the selected filter.

Key Entry **Symbol Rate**

:TRIGger:TYPE

Supported E4438C with Option 402

[:SOURce] :RADio [:NADC] :TRIGger :TYPE CONTInuous | SINGle | GATE
 [:SOURce] :RADio [:NADC] :TRIGger :TYPE?

This command sets the trigger type.

CONTInuous	The framed data sequence repeats continuously; the sequence restarts every time the previous playback is completed. To customize continuous triggering, refer to “:TRIGger:TYPE:CONTInuous[:TYPE]” on page 801.		
SINGle	The framed data sequence plays once for every trigger received.		
GATE	An external trigger signal interrupts the playback while the gating signal is in the inactive state. Playback resumes when the external control signal returns to the active state. The active state can be set to high or low.		
*RST	CONT		
Key Entry	Continuous	Single	Gated

:TRIGger:TYPE:CONTInuous[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio [ :NADC ] :TRIGger :TYPE :CONTInuous [ :TYPE ] FREE | TRIGger | RESet
[ :SOURce ] :RADio [ :NADC ] :TRIGger :TYPE :CONTInuous [ :TYPE ] ?
```

This commands selects the waveform’s response to a trigger signal while using the continuous trigger mode.

For more information on triggering and to select the continuous trigger mode, see “:TRIGger:TYPE” on page 800.

The following list describes the waveform’s response to each of the command choices:

FREE	Turning the ARB format on immediately triggers the waveform. The waveform repeats until you turn the format off, select another trigger, or choose another waveform file.		
TRIGger	The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously until you turn the format off, select another trigger, or choose another waveform file.		
RESet	The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously. Subsequent triggers reset the waveform to the beginning. For a waveform sequence, this means to the beginning of the first segment in the sequence.		
*RST	FREE		
Key Entry	Free Run	Trigger & Run	Reset & Run

:TRIGger:TYPE:GATE:ACTive

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :TRIGger :TYPE :GATE :ACTive LOW | HIGH  
[ :SOURCE ] :RADio [ :NADC ] :TRIGger :TYPE :GATE :ACTive ?
```

This command selects the active state (gate polarity) of the gate while using the gating trigger mode.

The LOW and HIGH selections correspond to the low and high states of an external trigger signal. For example, when you select HIGH, the active state occurs during the high of the trigger signal. When the active state occurs, the ESG stops the waveform playback at the last played sample point, then restarts the playback at the next sample point when the inactive state occurs. For more information on triggering and to select gating as the trigger mode, see “:TRIGger:TYPE” on page 800.

The following list describes the signal generator’s external trigger signal gating behavior for the polarity selections:

LOW	The waveform playback stops when the trigger signal goes low (active state) and restarts when the trigger signal goes high (inactive state).
HIGH	The waveform playback stops when the trigger signal goes high (active state) and restarts when the trigger signal goes low (inactive state).
*RST	HIGH
Key Entry	Gate Active Low High

:TRIGger[:SOURCE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :TRIGger [ :SOURCE ] KEY | EXT | BUS  
[ :SOURCE ] :RADio [ :NADC ] :TRIGger [ :SOURCE ] ?
```

This command sets the trigger source.

For more information on triggering, see “:TRIGger:TYPE” on page 800. The following list describes the command choices:

KEY	This choice enables manual triggering by pressing the front-panel Trigger hardkey.
EXT	An externally applied signal triggers the waveform. This is the only choice that works with gating. The following conditions affect an external trigger: <ul style="list-style-type: none">• The input connector selected for the trigger signal. You have a choice between the rear-panel PATTERN TRIG IN connector or the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector. To make the connector selection, see “:TRIGger[:SOURCE]:EXTernal[:SOURCE]” on page 804.

For more information on the connectors and on connecting the cables, see the *E4428C/38C ESG Signal Generators User's Guide*.

- The trigger signal polarity:
 - gating mode, see “[:TRIGger:TYPE:GATE:ACTive]” on page 802
 - continuous and single modes, see “[:TRIGger[:SOURce]:EXTernal:SLOPe]” on page 804
- The time delay between when the ESG receives a trigger and when the waveform responds to the trigger. There are two parts to setting the delay:
 - setting the amount of delay, see “[:TRIGger[:SOURce]:EXTernal:DELay]” on page 803
 - turning the delay on, see “[:TRIGger[:SOURce]:EXTernal:DELay:STATe]” on page 804

BUS This choice enables triggering over the GPIB or LAN using the *TRG or GET commands or the AUXILIARY INTERFACE (RS-232) using the *TRG command.

***RST** KEY

Key Entry **Trigger Key** **Ext** **Bus**

[:TRIGger[:SOURce]:EXTernal:DELay

Supported E4438C with Option 402

```
[ :SOURce ] :RADio[ :NADC ] :TRIGger[ :SOURce ] :EXTernal :DELay <val>
[ :SOURce ] :RADio[ :NADC ] :TRIGger[ :SOURce ] :EXTernal :DELay?
```

This command sets the number of bits to delay the ESG’s response to an external trigger.

The bit delay is a delay between when the ESG receives the trigger and when it responds to the trigger. The delay uses the clocks of the bit-clock to time the delay. After the ESG receives the trigger and the set number of delay bits (clocks) occurs, the ESG transmits the data pattern.

The delay occurs after you enable the state. See “[:TRIGger[:SOURce]:EXTernal:DELay:STATe]” on page 804. You can set the number of bits either before or after enabling the state.

For more information on configuring an external trigger source and to select external as the trigger source, see “[:TRIGger[:SOURce]]” on page 802.

***RST** +0

Range 0–1048575

Key Entry **Ext Delay Bits**

:TRIGger[:SOURCE]:EXTErnal:DELAy:STATe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :TRIGger [ :SOURCE ] :EXTErnal :DELAy :STATe ON | OFF | 1 | 0  
[ :SOURCE ] :RADio [ :NADC ] :TRIGger [ :SOURCE ] :EXTErnal :DELAy :STATe?
```

This command enables or disables the operating state of the external trigger delay function.

For setting the delay time, see “:TRIGger[:SOURCE]:EXTErnal:DELAy” on page 803, and for more information on configuring an external source, see “:TRIGger[:SOURCE]” on page 802.

***RST** 0

Key Entry Ext Delay Off On

:TRIGger[:SOURCE]:EXTErnal:SLOPe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :TRIGger [ :SOURCE ] :EXTErnal :SLOPe POSitive | NEGative  
[ :SOURCE ] :RADio [ :NADC ] :TRIGger [ :SOURCE ] :EXTErnal :SLOPe?
```

This command sets the polarity for an external trigger signal while using the continuous, single triggering mode. To set the polarity for gating, see “:TRIGger:TYPE:GATE:ACTive” on page 802.

The POSitive and NEGative selections correspond to the high (positive) and low (negative) states of the external trigger signal. For example, when you select POSitive, the waveform responds (plays) during the high state of the trigger signal. When the ESGESG receives multiple trigger occurrences when only one is required, the signal generator uses the first trigger and ignores the rest.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURCE]” on page 802.

***RST** POS

Key Entry Ext Polarity Neg Pos

:TRIGger[:SOURCE]:EXTErnal[:SOURCE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio [ :NADC ] :TRIGger [ :SOURCE ] :EXTErnal [ :SOURCE ] EPT1 | EJPT2 |  
EPTRIGGER1 | EPTRIGGER2  
[ :SOURCE ] :RADio [ :NADC ] :TRIGger [ :SOURCE ] :EXTErnal [ :SOURCE ]?
```

This command selects which PATTERN TRIG IN connection the ESG uses to accept an externally applied trigger signal when external is the trigger source selection.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURCE]” on page 802. For more information on the rear-panel connectors, see the *E4428C/38C ESG Signal Generators User’s Guide*.

The following list describes the command choices:

EPT1	This choice is synonymous with EPTRIGGER1 and selects the PATTERN TRIG IN rear-panel connector.
EPT2	This choice is synonymous with EPTRIGGER2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector.
EPTRIGGER1	This choice is synonymous with EPT1 and selects the PATTERN TRIG IN rear-panel connector.
EPTRIGGER2	This choice is synonymous with EPT2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector.
*RST	EPT1
Key Entry	Patt Trig In 1 Patt Trig In 2

[:STATe]

Supported E4438C with Option 402

[:SOURCE] :RADio [:NADC] [:STATe] ON | OFF | 1 | 0
 [:SOURCE] :RADio [:NADC] [:STATe] ?

This command enables or disables the NADC modulation format.

***RST** OFF

Key Entry **NADC Off On**

Remarks Although the NADC modulation is enabled with this command, the RF carrier is not modulated unless you also activate the front panel **Mod On/Off** hardkey.

PDC Subsystem–Option 402 ([:SOURce]:RADio:PDC)

:ALPha

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PDC :ALPha <val>  
[ :SOURce ] :RADio :PDC :ALPha ?
```

This command changes the Nyquist or root Nyquist filter’s alpha value.

The filter alpha value can be set to a minimum level (0), a maximum level (1), or in between by using fractional numeric values (0.001–0.999).

***RST** +5.00000000E–001

Range 0.000–1.000

Key Entry **Filter Alpha**

Remarks To change the current filter type, refer to “:FILTer” on page 818.

:BBCLock

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PDC :BBCLock INT[1] | EXT[1]  
[ :SOURce ] :RADio :PDC :BBCLock ?
```

This command toggles the data (bit) clock input to the baseband generator board to either internal or external. This command is independent in each mode and works for both non-burst (continuous) and burst modes. This allows for a matrix of selections between burst/non-burst, internal/external data generation, internal/external data clock, and external bit/symbol data clock.

INT[1] This choice selects the signal generator internal data clock.

EXT[1] This choice selects an external data clock input.

***RST** INT

Key Entry **Ext Data Clock Ext Int**

Remarks A data clock or continuous symbol sync input must be supplied when external mode is used.

:BBT

Supported E4438C with Option 402

[:SOURCE]:RADio:PDC:BBT <val>

[:SOURCE]:RADio:PDC:BBT?

This command changes the bandwidth-multiplied-by-bit-time (BbT) filter parameter.

The filter BbT value can be set to the maximum level (1) or in between the minimum level (0.100) and maximum level by using fractional numeric values (0.101–0.999).

***RST** +5.00000000E–001

Range 0.100–1.000

Key Entry **Filter BbT**

Remarks This command is effective only after choosing a Gaussian filter. It does not have an effect on other types of filters.

To change the current filter type, refer to “:FILTer” on page 818.

:BRATe

Supported E4438C with Option 402

[:SOURCE]:RADio:PDC:BRATe <val>

[:SOURCE]:RADio:PDC:BRATe?

This command sets the bit rate in bits per second (bps–Mbps). The maximum bit rate is dependent on the modulation type and filter as shown in the following tables

The IQ digital data stream is shaped by a FIR filter. The filter length and associated latency and frequency response are dependent on the bit rate as shown in the following tables. The signal generator selects a filter length.

For higher bit rates, the FIR filter length may be truncated (if the minimum filter size allows it) which will impact the relative timing of the modulated data, as well as the actual filter response (see the symbol rate command “:SRATe” on page 863). Refer to “:FILTer” on page 818 for information on filter symbol widths.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 821.

When the bit rate is changed, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the bit rate: lower bit rates require more time.

Receiver Test Digital Commands (continued)
PDC Subsystem—Option 402 ([:SOURce]:RADio:PDC)

***RST** +4.20000000E+004

Range	Modulation Type	Bit Rate Range		
		16 Symbol Wide Filter	32 Symbol Wide Filter	64 Symbol Wide Filter
	BPSK, FSK2, MSK	1bps–50Mbps	1bps–25Mbps	1bps–12.5Mbps
	C4FM, OQPSK, FSK4	2bps–50Mbps	2bps–25Mbps	2bps–12.5Mbps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3bps–50Mbps	3bps–25Mbps	3bps–12.5Mbps
	FSK16, PSK16, QAM16	4bps–50Mbps	4bps–25Mbps	4bps–12.5Mbps
	QAM32	5bps–50Mbps	5bps–25Mbps	5bps–12.5Mbps
	QAM64	6bps–50Mbps	6bps–25Mbps	6bps–12.5Mbps
	QAM128	7bps–50Mbps	7bps–25Mbps	7bps–12.5Mbps
	QAM256	8bps–50Mbps	8bps–25Mbps	8bps–12.5Mbps

Key Entry **Symbol Rate**

:BURSt:PN9

Supported E4438C with Option 402

[:SOURce] :RADio :PDC :BURSt :PN9 NORMAl | QUICk

[:SOURce] :RADio :PDC :BURSt :PN9?

This command controls the software PN9 generation.

NORMAl This choice produces a maximum length PN9 sequence.

QUICk This choice produces a truncated PN9 sequence.

***RST** NORM

Key Entry **PN9 Mode Normal Quick**

Remarks Use Normal mode for bit-error-rate tests where a maximum length PN9 sequence is required.

:BURSt:SHAPe:FALL:DELay

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:BURSt:SHAPe:FALL:DELay <val>

[:SOURce] :RADio:PDC:BURSt:SHAPe:FALL:DELay?

This command sets the period of time that the start of the burst fall is delayed.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range -22.3750 to 99

Key Entry **Fall Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 821. Refer to “:SRATe” on page 863 for a list of minimum and maximum symbol rate values.

“:BURSt:SHAPe:FDELay” on page 810 performs the same function. In compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FALL:TIME

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:BURSt:SHAPe:FALL:TIME <val>

[:SOURce] :RADio:PDC:BURSt:SHAPe:FALL:TIME?

This command sets the period of time where the burst decreases from full power to minimum power.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +1.00000000E+001

Range 0.1250–255.8750

Key Entry Fall Time

Receiver Test Digital Commands (continued)
PDC Subsystem—Option 402 ([:SOURce]:RADio:PDC)

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 821. Refer to “:SRATE” on page 863 for a list of minimum and maximum symbol rate values.

“:BURSt:SHAPe:FTIME” on page 811 performs the same function. In compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FDElay

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:BURSt:SHAPe:FDElay <val>
[:SOURce] :RADio:PDC:BURSt:SHAPe:FDElay?

This command sets the period of time that the start of the burst fall is delayed.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range –22.3750 to 99

Key Entry **Fall Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 821. Refer to “:SRATE” on page 863 for a list of minimum and maximum symbol rate values.

“:BURSt:SHAPe:FALL:DElay” on page 809 performs the same function. In compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FTIME

Supported E4438C with Option 402

[:SOURce] :RADio:PDC: BURSt: SHAPe: FTIME <val>

[:SOURce] :RADio:PDC: BURSt: SHAPe: FTIME?

This command sets the period of time where the burst decreases from full power to minimum power.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range 0.1250–255.8750

Key Entry **Fall Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 821. Refer to “:SRATE” on page 863 for a list of minimum and maximum symbol rate values.

“:BURSt:SHAPe:FALL:TIME” on page 809 performs the same function. In compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:RDELay

Supported E4438C with Option 402

[:SOURce] :RADio:PDC: BURSt: SHAPe: RDELay <val>

[:SOURce] :RADio:PDC: BURSt: SHAPe: RDELay?

This command sets the period of time that the start of the burst rise is delayed.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range –18.3750 to 99

Key Entry **Rise Delay**

PDC Subsystem—Option 402 ([:SOURce]:RADio:PDC)

Remarks	<p>The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.</p> <p>To change the modulation type, refer to “:MODulation[:TYPE]” on page 821. Refer to “:SRATe” on page 863 for a list of minimum and maximum symbol rate values.</p> <p>“:BURSt:SHAPe:RISE:DELay” on page 812 performs the same function. In compliance with the SCPI standard, both commands are listed.</p> <p>For concept information on burst shaping, refer to the <i>E4428C/38C ESG Signal Generators User’s Guide</i>.</p>
----------------	---

:BURSt:SHAPe:RISE:DELay

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:BURSt:SHAPe:RISE:DELay <val>

[:SOURce] :RADio:PDC:BURSt:SHAPe:RISE:DELay?

This command sets the period of time that the start of the burst rise is delayed.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range –18.3750 to 99

Key Entry **Rise Delay**

Remarks	<p>The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.</p> <p>To change the modulation type, refer to “:MODulation[:TYPE]” on page 821. Refer to “:SRATe” on page 863 for a list of minimum and maximum symbol rate values.</p> <p>“:BURSt:SHAPe:RDELay” on page 811 performs the same function. In compliance with the SCPI standard, both commands are listed.</p> <p>For concept information on burst shaping, refer to the <i>E4428C/38C ESG Signal Generators User’s Guide</i>.</p>
----------------	---

:BURSt:SHAPe:RISE:TIME

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:BURSt:SHAPe:RISE:TIME <val>

[:SOURce] :RADio:PDC:BURSt:SHAPe:RISE:TIME?

This command sets the period of time where the burst increases from a minimum power to full power.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +1.00000000E+001

Range 0.1250–22.5000

Key Entry **Rise Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 821. Refer to “:SRATE” on page 863 for a list of minimum and maximum symbol rate values.

“:BURSt:SHAPe:RTIME” on page 813 performs the same function. In compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:RTIME

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:BURSt:SHAPe:RTIME <val>

[:SOURce] :RADio:PDC:BURSt:SHAPe:RTIME?

This command sets the period of time where the burst increases from a minimum power to full power.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +1.00000000E+001

Range 0.1250–22.5000

Key Entry **Rise Time**

PDC Subsystem—Option 402 ([:SOURce]:RADio:PDC)

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 821. Refer to “:SRATE” on page 863 for a list of minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:TIME” on page 813 performs the same function. In compliance with the SCPI standard, both commands are listed.

Refer to the *E4428C/38C ESG Signal Generators User’s Guide* for concept information.

:BURSt:SHAPe[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PDC :BURSt :SHAPe [ :TYPE ] SINE | "<file name>"
[ :SOURce ] :RADio :PDC :BURSt :SHAPe [ :TYPE ] ?
```

This command specifies the burst shape as either SINE or a user-defined file ("<file name>").

SINE This choice selects a state that is defined by the burst rise and fall *RST values, as the default burst shape type.

"<file name>" This choice selects a user designated file from signal generator memory.

***RST** SINE

Key Entry **Sine** **User File**

:BURSt[:STATe]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PDC :BURSt [ :STATe ] ON | OFF | 1 | 0
[ :SOURce ] :RADio :PDC :BURSt [ :STATe ] ?
```

This command enables or disables the burst function.

ON (1) This choice enables the transmission of framed data. If all timeslots which are switched on are up traffic channels or custom, you will be bursting the timeslots that are on; there will be no RF carrier during the off timeslots.

If you have switched on any timeslot that you have configured as a down traffic channel, the RF carrier is not switched off between any of the timeslots. The off timeslots are transmitted as a continuous series of ones for the time period of the off timeslots.

OFF (0) This choice enables the transmission of unframed data.

*RST 0

Key Entry Data Format Pattern Framed

:CHANnel

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIo : PDC : CHANnel EVM | ACP
[ :SOURCE ] : RADIo : PDC : CHANnel ?
```

This command optimizes the Nyquist and root Nyquist filters to minimize error vector magnitude (EVM) or to minimize adjacent channel power (ACP).

EVM This choice provides the most ideal passband.

ACP This choice improves stopband rejection.

*RST EVM

Key Entry Optimize FIR For EVM ACP

Remarks To change the current filter type, refer to “:FILTer” on page 818.

:DATA

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIo : PDC : DATA PN9 | PN11 | PN15 | PN20 | PN23 | FIX4 | "<file name>" |
EXT | P4 | P8 | P16 | P32 | P64 | PRAM
[ :SOURCE ] : RADIo : PDC : DATA ?
```

This command sets the data pattern type (pseudo-random number sequence, 4-bit pattern, sequence of 1’s and 0’s, data from an external source, or a user file) for unframed data transmission.

*RST PN23

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	Ext
	4 1’s & 4 0’s	8 1’s & 8 0’s	16 1’s & 16 0’s	16 1’s & 16 0’s	32 1’s & 32 0’s			
	64 1’s & 64 0’s	PRAM File						

Remarks Refer to “File Name Variables” on page 13 for information on the file name syntax.

:DATA:PRAM

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :PDC :DATA :PRAM "<file_name>"
```

```
[ :SOURCE ] :RADIO :PDC :DATA :PRAM?
```

This command selects a pattern RAM (PRAM) file as the pattern data type for the PDC (Personal Digital Cellular) format.

"<file_name>" This variable designates the PRAM file in WFM1. Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

Key Entry **PRAM File**

Remarks Selecting this data source forces the burst source to INTERNAL to allow framing control.

The PRAM file must reside in the ESG’s volatile memory (WFM1) in order to be accessed by this command. See [“:DATA:PRAM:FILE:BLOCK” on page 110](#).

:DATA:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :PDC :DATA :FIX4 <val>
```

```
[ :SOURCE ] :RADIO :PDC :DATA :FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern for unframed transmission according to the protocols (modulation type, symbol rate, filter, and burst shape) selected for the PDC format.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:DEFault

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :PDC :DEFault
```

This command returns all of the PDC modulation format parameters to factory settings. It does not affect any other signal generator parameters.

Key Entry **Restore PDC Factory Default**

:EDATa:DELay

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:EDATa:DELay?

This query returns the amount of delay (in symbols) from the external data input to the beginning of the symbol on the I OUT and Q OUT rear panel connectors and the front panel RF OUTPUT connector.

Remarks When the format is turned off, the delay value is unchanged; the query will return the same delay value if the format is on or off.

:EDCLock

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:EDCLock SYMBol | NORMal

[:SOURce] :RADio:PDC:EDCLock?

This command sets the external data clock use.

SYMBol This choice specifies that a continuous symbol clock signal must be provided to the SYMBOL SYNC input connector.

NORMal This choice specifies that the DATA CLOCK input connector requires a bit clock. The SYMBOL SYNC input connector requires a (one-shot or continuous) symbol sync signal.

***RST** NORM

Key Entry **Ext Data Clock Normal Symbol**

Remarks Both choices have no effect in internal clock mode. Refer to “:BBCLock” on [page 806](#) to select EXT as the data clock type.

:EREFerence

Supported E4438C with Option 402

[:SOURce] :RADio:PDC:EREFerence INT | EXT

[:SOURce] :RADio:PDC:EREFerence?

This command selects either an internal or external bit-clock reference for the data generator.

***RST** INT

Key Entry **BBG Ref Ext Int**

Remarks If the EXT choice is selected, the external source's frequency value must be applied to the BASEBAND GEN REF IN rear panel connector. The external reference and external data clock are not applicable at the same time. If both are selected, then the external reference takes precedence.

Refer to, “:EREFERENCE:VALue” on page 818 to enter the external reference frequency setting.

:EREFERENCE:VALue

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIO : PDC : EREFERENCE : VALue <val>  
[ :SOURCE ] : RADIO : PDC : EREFERENCE : VALue?
```

This command sets the expected bit-clock reference frequency value for an externally applied reference signal.

The variable <val> is expressed in units of hertz (Hz–MHz).

***RST** +1.30000000E+007

Range 2.5E5–1E8

Key Entry Ext BBG Ref Freq

Remarks The value specified by this command is effective only when you are using an external reference applied to the BASEBAND GEN REF IN rear panel connector.

Refer to “:EREFERENCE” on page 817 to select EXT (external source) as the reference for the bit-clock.

:FILTER

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIO : PDC : FILTER RNYQuist | NYQuist | GAUSSian | RECTangle |  
IS95 | IS95_EQ | IS95_MOD | IS95_MOD_EQ | AC4Fm | UGGaussian | "<user FIR>"  
[ :SOURCE ] : RADIO : PDC : FILTER?
```

This command selects the pre-modulation filter type.

IS95 This choice selects a filter that meets the criteria of the IS-95 standard.

IS95_EQ This choice selects a filter which is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard. This filter is only used for IS-95 baseband filtering.

IS95_MOD This choice selects a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard.

IS95_MOD_EQ	This choice selects a filter which is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection.																		
AC4Fm	Selects a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter.																		
UGGaussian	This choice selects a backwards compatible GSM Gaussian filter (Gaussian filter with a fixed BbT value of 0.300) for the ESG E44xxB Option UN3 or UN4.																		
"<user FIR>"	This variable is any filter file that you have stored into memory.																		
*RST	RYNQ																		
Key Entry	<table border="0" style="width: 100%;"> <tr> <td>Root Nyquist</td> <td>Nyquist</td> <td>Gaussian</td> <td>Rectangle</td> <td>IS-95</td> <td>IS-95 w/EQ</td> </tr> <tr> <td>IS-95 Mod</td> <td>IS-95 Mod w/EQ</td> <td>APCO 25 C4FM</td> <td>UN3/4 GSM Gaussian</td> <td></td> <td></td> </tr> <tr> <td colspan="6">User FIR</td> </tr> </table>	Root Nyquist	Nyquist	Gaussian	Rectangle	IS-95	IS-95 w/EQ	IS-95 Mod	IS-95 Mod w/EQ	APCO 25 C4FM	UN3/4 GSM Gaussian			User FIR					
Root Nyquist	Nyquist	Gaussian	Rectangle	IS-95	IS-95 w/EQ														
IS-95 Mod	IS-95 Mod w/EQ	APCO 25 C4FM	UN3/4 GSM Gaussian																
User FIR																			
Remarks	Refer to “File Name Variables” on page 13 for information on the file name syntax.																		

:FRATe

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PDC:FRATe FULL|HALF
[ :SOURCE ]:RADio:PDC:FRATe?
```

This command toggles between a full- or half-rate traffic channel.

FULL Selects two equally spaced timeslots of the frame. Since there are six timeslots per frame, timeslots 1, 2, and 3 are paired with timeslots 4, 5, and 6, respectively.

HALF Selects one timeslot of the frame (6 individual timeslots per frame).

***RST** FULL

Key Entry **Rate Full Half**

:IQ:SCALE

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PDC:IQ:SCALE <val>
[ :SOURCE ]:RADio:PDC:IQ:SCALE?
```

This command sets the amplitude of the I/Q outputs for better adjacent channel power (ACP); lower scaling values equate to better ACP.

The variable <val> is expressed in units of percent.

Receiver Test Digital Commands (continued)
PDC Subsystem—Option 402 ([:SOURCE]:RADio:PDC)

*RST	+100
Range	1–200
Key Entry	I/Q Scaling
Remarks	This command has no effect with MSK or FSK modulation.

:MODulation:FSK[:DEVIation]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:MODulation:FSK[:DEVIation] <val>  
[ :SOURCE ] :RADio:PDC:MODulation:FSK[:DEVIation] ?
```

This command sets the symmetric FSK frequency deviation value.

The variable <val> is expressed in units of Hertz and the maximum range value equals the current symbol rate value multiplied by four, limited to 20 MHz.

***RST** +4.00000000E+002

Range 0–2E7

Key Entry **Freq Dev**

Remarks To change the modulation type, refer to “:MODulation[:TYPE]” on page 821.
Refer to “:SRATe” on page 863 for minimum and maximum symbol rate values.
To set an asymmetric FSK deviation value, refer to the *E4428C/38C ESG Signal Generators User’s Guide* for more information.

:MODulation:MSK[:PHASe]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:MODulation:MSK[:PHASe] <val>  
[ :SOURCE ] :RADio:PDC:MODulation:MSK[:PHASe] ?
```

This command sets the MSK phase deviation value.

The variable <val> is expressed in units of degrees.

***RST** +9.00000000E+001

Range 0–100

Key Entry **Phase Dev**

:MODulation:UFSK

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:MODulation:UFSK "<file name>"
```

```
[ :SOURce ]:RADio:PDC:MODulation:UFSK?
```

This command selects a user-defined FSK file from the signal generator memory.

Key Entry **User FSK**

Remarks The user-defined FSK file is held in signal generator memory until the command that selects user FSK as the modulation type is sent. Refer to [“:MODulation\[:TYPE\]” on page 821](#) to change the current modulation type.

Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:MODulation:UIQ

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:MODulation:UIQ "<file name>"
```

```
[ :SOURce ]:RADio:PDC:MODulation:UIQ?
```

This command selects a user-defined I/Q file from the signal generator memory.

Key Entry **User I/Q**

Remarks The user-defined I/Q file is held in signal generator memory until the command that selects user I/Q as the modulation type is sent. Refer to [“:MODulation\[:TYPE\]” on page 821](#) to change the current modulation type.

Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:MODulation[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:MODulation[ :TYPE ] BPSK | QPSK | IS95QPSK |  
GRAYQPSK | OQPSK | IS95OQPSK | P4DQPSK | PSK8 | PSK16 | D8PSK | MSK |  
FSK2 | FSK4 | FSK8 | FSK16 | C4FM | QAM4 | QAM16 | QAM32 | QAM64 | QAM128 | QAM256 | UIQ | UFSK  
[ :SOURce ]:RADio:PDC:MODulation[ :TYPE ]?
```

This command sets the modulation type for the PDC personality.

PDC Subsystem—Option 402 ([:SOURCE]:RADIO:PDC)

*RST	P4DQPSK							
Key Entry	BPSK	QPSK	IS-95 QPSK	Gray Coded QPSK		OQPSK		
	IS-95 OQPSK	$\pi/4$ DQPSK	8PSK	16PSK	D8PSK	MSK	2-Lvl FSK	
	4-Lvl FSK	8-Lvl FSK	16-Lvl FSK	C4FM	4QAM	16QAM	32QAM	
	64QAM	128QAM	256QAM	User I/Q	User FSK			

:POLarity[:ALL]

Supported E4438C with Option 402

[:SOURCE] :RADio :PDC :POLarity [:ALL] NORMal | INVerted

[:SOURCE] :RADio :PDC :POLarity [:ALL] ?

This command sets the rotation direction for of the phase modulation vector.

NORMal This choice selects normal phase polarity.

INVerted This choice inverts the internal Q signal.

***RST** NORM

Key Entry **Phase Polarity Normal Invert**

:SECondary:RECall

Supported E4438C with Option 402

[:SOURCE] :RADio :PDC :SECondary :RECall

This command recalls the secondary frame configuration, overwriting the current state.

Key Entry **Recall Secondary Frame State**

Remarks To save a secondary frame state, refer to “:SECondary:SAVE” on page 822.

A secondary frame is not active until the secondary state is enabled. To activate a secondary frame, refer to “:SECondary[:STATE]” on page 823.

:SECondary:SAVE

Supported E4438C with Option 402

[:SOURCE] :RADio :PDC :SECondary :SAVE

This command saves the current frame configuration as the secondary frame with the filename PDC_SECONDARY_FRAME.

Key Entry **Save Secondary Frame State**

Remarks To recall the secondary frame (saved in non-volatile signal generator memory), refer to “:SECondary:SAVE” on page 822.

:SECondary:TRIGger[:SOURCE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:SECondary:TRIGger [ :SOURCE ] KEY | EXT | BUS
[ :SOURCE ] :RADio:PDC:SECondary:TRIGger [ :SOURCE ] ?
```

This command selects the type of triggering for the secondary frame.

KEY This choice enables triggering by pressing the front panel **Trigger** hardkey.

EXT This choice enables triggering using an externally applied signal at the PATT TRIG IN rear panel connector or the PATT TRIG IN 2 pin on the rear panel AUX I/O connector. To select the appropriate connector, refer to “:TRIGger[:SOURCE]:EXTErnal[:SOURCE]” on page 838.

BUS This choice enables GPIB triggering using the *TRG or GET command or LAN and RS-232 triggering using the *TRG command.

Key Entry **Trigger Key** **Ext** **Bus**

:SECondary[:STATe]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:SECondary [ :STATe ] ON | OFF | 1 | 0
[ :SOURCE ] :RADio:PDC:SECondary [ :STATe ] ?
```

This command enables or disables the ability to switch to the secondary frame.

***RST** 0

Key Entry **Secondary Frame Off On**

Remarks A frame must already be saved as the secondary frame in order to turn the secondary state function on.

To save a frame as the secondary frame, refer to “:SECondary[:STATe]” on page 823.

:SLOT0|[1]|2|3|4|5:DCUStom

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DCUStom PN9|PN11|PN15|
PN20|PN23|FIX4|" <file name>"|EXT|P4|P8|P16|P32|P64
[:SOURce]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DCUStom?
```

This command configures the data field for the selected downlink custom timeslot.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to “File Name Variables” on page 13 for information on the file name syntax.

:SLOT0|[1]|2|3|4|5:DCUSTom:FIX4

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DCUSTom:FIX4 <val>
[:SOURce]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DCUSTom:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type. To change the data type, refer to “:SLOT0|[1]|2|3|4|5:DCUStom” on page 824.

:SLOT0|[1]|2|3|4|5:DTCHannel:CCODE

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DTCHannel:CCODE <bit_pattern>
[:SOURce]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DTCHannel:CCODE?
```

This command changes the 8-bit color code (CC). The preset hexadecimal value (when normal preset is selected) for CC reflects the PDC protocol, however you can enter a new value using this command.

***RST** #H00

Range #H00–#HFF

Key Entry CC

:SLOT0|[1]|2|3|4|5:DTCHannel:SACChannel

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DTCHannel:SACChannel <bit_pattern>  
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DTCHannel:SACChannel?
```

This command changes the 15-bit slow associated control channel (SACCH). The preset hexadecimal value (when normal preset is selected) for SACCH reflects the PDC protocol, however you can enter a new value by executing this command.

***RST** #H00000

Range #H0–#HFFFFFF

Key Entry SACCH

:SLOT0|[1]|2|3|4|5:DTCHannel:SWORd

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DTCHannel:SWORd <bit_pattern>  
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DTCHannel:SWORd?
```

This command sets the 20-bit synchronization word as the active function. This is used for the control and traffic physical channels.

***RST** #H87A4B

Range #H0–#HFFFFFF

Key Entry SW

:SLOT0|[1]|2|3|4|5:DTCHannel[:TCHannel]

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DTCHannel[:TCHannel] PN9 |  
PN11|PN15|PN20|PN23|FIX4 | "<file name>" |EXT|P4|P8|P16|P32|P64  
[ :SOURce ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:DTCHannel[:TCHannel]?
```

This command configures the data field for the selected downlink traffic channel field.

PDC Subsystem—Option 402 ([:SOURCE]:RADIO:PDC)

***RST** PN9

Key Entry PN9 PN11 PN15 PN20 PN23 FIX4 User File EXT
 4 1's & 4 0's 8 1's & 8 0's 16 1's & 16 0's 32 1's & 32 0's
 64 1's & 64 0's

Remarks See “File Name Variables” on page 13 for information on the file name syntax.

:SLOT0|[1]|2|3|4|5:DTCHannel[:TCHannel]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIO : PDC : SLOT0 | [ 1 ] | 2 | 3 | 4 | 5 : DTCHannel [ : TCHannel ] : FIX4 <val>
[ :SOURCE ] : RADIO : PDC : SLOT0 | [ 1 ] | 2 | 3 | 4 | 5 : DTCHannel [ : TCHannel ] : FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink traffic channel timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry FIX4

Remarks FIX4 must already be defined as the data type.

:SLOT0|[1]|2|3|4:POWER

Supported E4438C with Option 402

```
[ :SOURCE ] : RADIO : PDC : DLINK : SLOT0 | [ 1 ] | 2 | 3 | 4 : POWER MAIN | DELTa
[ :SOURCE ] : RADIO : PDC : DLINK : SLOT0 | [ 1 ] | 2 | 3 | 4 : POWER?
```

This command toggles the RF output power level function for the selected timeslot.

MAIN This choice specifies RF output as the main power level.

DELTA This choice specifies RF output as the alternative power level.

***RST** MAIN

Key Entry Timeslot Ampl Main Delta

:SLOT0|[1]|2|3|4|5:STATE

Supported E4438C with Option 402

```
[:SOURce]:RADio:PDC:SLOT0|[1]|2|3|4|5:STATE ON|OFF|1|0
[:SOURce]:RADio:PDC:SLOT0|[1]|2|3|4|5:STATE?
```

This command enables or disables the operating state of the selected timeslot.

***RST** Timeslot 0: 1 Timeslots 1–5: 0

Key Entry Timeslot Off On

:SLOT0|[1]|2|3|4|5:UCUStom

Supported E4438C with Option 402

```
[:SOURce]:RADio:PDC:SLOT0|[1]|2|3|4|5:UCUStom PN9|PN11|PN15|
PN20|PN23|FIX4|"<file name>"|EXT|P4|P8|P16|P32|P64
[:SOURce]:RADio:PDC:SLOT0|[1]|2|3|4|5:UCUStom?
```

This command configures the data field for the selected uplink custom timeslot.

***RST** PN9

Key Entry

PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:SLOT0|[1]|2|3|4|5:UCUStom:FIX4

Supported E4438C with Option 402

```
[:SOURce]:RADio:PDC:SLOT0|[1]|2|3|4|5:UCUStom:FIX4 <val>
[:SOURce]:RADio:PDC:SLOT0|[1]|2|3|4|5:UCUStom:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected uplink custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT0|[1]|2|3|4|5:UTCHannel:CCODE

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:UTCHannel:CCODE <bit_pattern>  
[ :SOURCE ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:UTCHannel:CCODE?
```

This command changes the 8-bit color code (CC). The preset hexadecimal value (when normal preset is selected) for CC reflects the PDC protocol, however you can enter a new value using this command.

***RST** #H00

Range #H00–#HFF

Key Entry **CC**

:SLOT0|[1]|2|3|4|5:UTCHannel:SACChannel

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:UTCHannel:SACChannel <bit_pattern>  
[ :SOURCE ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:UTCHannel:SACChannel?
```

This command changes the 15-bit slow associated control channel (SACCH). The preset hexadecimal value (when normal preset is selected) for SACCH reflects the PDC protocol, however you can enter a new value by executing this command.

***RST** #H0000

Range #H0–#H7FFF

Key Entry **SACCH**

:SLOT0|[1]|2|3|4|5:UTCHannel:SWORd

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:UTCHannel:SWORd <bit_pattern>  
[ :SOURCE ]:RADio:PDC:SLOT0 |[1]|2|3|4|5:UTCHannel:SWORd?
```

This command sets the 20-bit synchronization word as the active function. This is used for the control and traffic physical channels.

***RST** #H785B4

Range #H0–#HFFFFFF

Key Entry **SW**

:SLOT0|[1]|2|3|4|5:UTCHannel[:TCHannel]

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PDC:SLOT0|[1]|2|3|4|5:UTCHannel[:TCHannel] PN9|
PN11|PN15|PN20|PN23|FIX4| "<file name>"|EXT|P4|P8|P16|P32|P64
[:SOURCE]:RADio:PDC:SLOT0|[1]|2|3|4|5:UTCHannel[:TCHannel]?
```

This command sets a pseudo-random number sequence, 4-bit pattern, sequence of 1's and 0's, data from an external source, or a user file as the data pattern type for the uplink traffic channel field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:SLOT0|[1]|2|3|4|5:UTCHannel[:TCHannel]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PDC:SLOT0|[1]|2|3|4|5:UTCHannel[:TCHannel]:FIX4 <val>
[:SOURCE]:RADio:PDC:SLOT0|[1]|2|3|4|5:UTCHannel[:TCHannel]:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected uplink traffic channel timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT0|[1]|2|3|4|5:UVOX:CCODE

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:PDC:SLOT0 |[1]|2|3|4|5:UVOX:CCODE <bit_pattern>  
[ :SOURCE ]:RADIO:PDC:SLOT0 |[1]|2|3|4|5:UVOX:CCODE?
```

This command changes the 8-bit color code (CC). The preset hexadecimal value (when normal preset is selected) for CC reflects the PDC protocol, however you can enter a new value using this command.

***RST** #H00

Range #H00–#HFF

Key Entry **CC**

:SLOT0|[1]|2|3|4|5:UVOX:SACChannel

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:PDC:SLOT0 |[1]|2|3|4|5:UVOX:SACChannel <bit_pattern>  
[ :SOURCE ]:RADIO:PDC:SLOT0 |[1]|2|3|4|5:UVOX:SACChannel?
```

This command changes the 15-bit slow associated control channel (SACCH). The preset hexadecimal value (when normal preset is selected) for SACCH reflects the PDC protocol, however you can enter a new value by executing this command.

***RST** #H0000

Range #H0–#H7FFF

Key Entry **SACCH**

:SLOT0|[1]|2|3|4|5:UVOX:SWORD

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:PDC:SLOT0 |[1]|2|3|4|5:UVOX:SWORD <bit_pattern>  
[ :SOURCE ]:RADIO:PDC:SLOT0 |[1]|2|3|4|5:UVOX:SWORD?
```

This command changes the synchronization word, which is used for slot synchronization, equalizer training, and timeslot identification.

***RST** UTCH & UVOX: 785B4 DTCH: 87A4B

Range #H0–#HFFFFFF

Key Entry **SW**

Remarks The *RST hexadecimal value reflects the value specified by the indicated standard.

:SLOT0|[1]|2|3|4|5[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SLOT0|[1]|2|3|4|5[:TYPE] UCUSom|DCUSom|
UTCH|UTCH_ALL|UVOX|DTCH|DTCH_ALL
[:SOURce]:RADio:PDC:SLOT0|[1]|2|3|4|5[:TYPE]?
```

This command sets the timeslot type for the selected timeslot.

***RST** UTCH

Key Entry	Up Custom	Down Custom	Up TCH	UP TCH All	Up VOX
	Down TCH	Down TCH All			

:SOUT

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SOUT FRAME|SLOT|ALL
[:SOURce]:RADio:PDC:SOUT?
```

This command sets the synchronization location (within the pattern of data) and the type of output at the EVENT 1 rear panel connector.

FRAME This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a framed data pattern.

SLOT This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a selected timeslot.

ALL This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for all active timeslots.

***RST** FRAME

Key Entry	Begin Frame	Begin Timeslot #	All Timeslots
------------------	--------------------	-------------------------	----------------------

:SOUT:OFFSet

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PDC:SOUT:OFFSet <val>
[:SOURce]:RADio:PDC:SOUT:OFFSet?
```

This command sets the offset value for the location of the output synchronization signal on the EVENT1 rear panel connector relative to the beginning of the framed data pattern or timeslot.

The variable <val> is expressed as a number bits.

***RST** +0

Receiver Test Digital Commands (continued)
PDC Subsystem—Option 402 ([:SOURce]:RADio:PDC)

Range	–279 to 279
Key Entry	Sync Out Offset
Remarks	Negative values move the synchronization output signal earlier; positive values move it later. To change the output of the EVENT1 rear panel connector to SLOT, refer to “:SOUT” on page 831.

:SOUT:SLOT

Supported	E4438C with Option 402
	[:SOURce] :RADio:PDC:SOUT:SLOT <val>
	[:SOURce] :RADio:PDC:SOUT:SLOT?

This command selects the timeslot that will trigger a 1-bit signal at the EVENT 1 rear panel connector.

*RST	+0
Range	0–5
Key Entry	Begin Timeslot #
Remarks	To change the output of the EVENT1 rear panel connector to SLOT, refer to “:SOUT” on page 831.

:SRATe

Supported	E4438C with Option 402
	[:SOURce] :RADio:PDC:SRATe <val>
	[:SOURce] :RADio:PDC:SRATe?

This command sets the transmission symbol rate. Symbol rate is the bit rate divided by the bits per symbol. A change in the symbol rate affects the bit rate. Refer to “:BRATe” on page 672 for information on bit rate.

The variable <val> is expressed in units of symbols per second (sps–Msp) and the maximum symbol rate depends on the filter. Refer to “:FILTer” on page 818 for minimum filter symbol width.

The filter may have to be truncated down to 32 or 16 symbols wide to achieve the highest symbol rate. The signal generator’s internal filters are not truncated below their minimum filter length and user-defined FIR filters are not truncated. If the filter cannot be truncated then the symbol rate is limited to the maximum rate of the narrowest filter size possible.

The relative timing of the modulated data, as well as the actual filter response is affected when the filter is truncated.

When the symbol rate changes, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the symbol rate: lower symbol rates require more time.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 821.

***RST** +2.10000000E+004

Range	Modulation Type	Symbol Rate Range		
		<i>16 Symbol Wide Filter</i>	<i>32 Symbol Wide Filter</i>	<i>64 Symbol Wide Filter</i>
	BPSK, FSK2, MSK	1sps–50Msps	1sps–25Msps	1sps–12.5Msps
	C4FM, OQPSK, FSK4	2sps–25Msps	2sps–12.5Msps	2sps–6.25Msps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3sps–16.666666666 Msps	3sps–8.333333333 Msps	3sps–4.166666666Msps
	FSK16, PSK16, QAM16	4sps–12.5Msps	4sps–6.25Msps	4sps–3.125Msps
	QAM32	5sps–10Msps	5sps–5Msps	5sps–2.5Msps
	QAM64	6sps–8.333333333 Msps	6sps–4.166666666 Msps	6sps–2.083333333 Msps
	QAM128	7sps–7.142857142 Msps	7sps–3.571428572 Msps	7sps–1.785714285 Msps
	QAM256	8sps–6.25Msps	8sps–3.125 Msps	8sps–1.5625 Msps

NOTE Using I/Q skew will half the minimum number of symbols for the selected filter.

Key Entry **Symbol Rate**

:TRIGger:TYPE

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:TRIGger:TYPE CONTInuous | SINGle | GATE  
[ :SOURCE ] :RADio:PDC:TRIGger:TYPE?
```

This command sets the trigger type.

CONTInuous The framed data sequence repeats continuously; the sequence restarts every time the previous playback is completed. To customize continuous triggering, refer to “:TRIGger:TYPE:CONTInuous[:TYPE]” on page 834.

SINGle The framed data sequence plays once for every trigger received.

GATE An external trigger signal interrupts the playback while the gating signal is in the inactive state. Playback resumes when the external control signal returns to the active state. The active state can be set to high or low.

***RST** CONT

Key Entry **Continuous** **Single** **Gated**

:TRIGger:TYPE:CONTInuous[:TYPE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:TRIGger:TYPE:CONTInuous[ :TYPE ] FREE | TRIGger | RESet  
[ :SOURCE ] :RADio:PDC:TRIGger:TYPE:CONTInuous[ :TYPE ]?
```

This commands selects the waveform’s response to a trigger signal while using the continuous trigger mode.

For more information on triggering and to select the continuous trigger mode, see “:TRIGger:TYPE” on page 834.

The following list describes the waveform’s response to each of the command choices:

FREE Turning the ARB format on immediately triggers the waveform. The waveform repeats until you turn the format off, select another trigger, or choose another waveform file.

TRIGger The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously until you turn the format off, select another trigger, or choose another waveform file.

RESet The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously. Subsequent triggers reset the waveform to the beginning. For a waveform sequence, this means to the beginning of the first segment in the sequence.

*RST	FREE		
Key Entry	Free Run	Trigger & Run	Reset & Run

:TRIGger:TYPE:GATE:ACTive

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:TRIGger:TYPE:GATE:ACTive LOW|HIGH
[ :SOURCE ] :RADio:PDC:TRIGger:TYPE:GATE:ACTive?
```

This command selects the active state (gate polarity) of the gate while using the gating trigger mode.

The LOW and HIGH selections correspond to the low and high states of an external trigger signal. For example, when you select HIGH, the active state occurs during the high of the trigger signal. When the active state occurs, the ESG stops the waveform playback at the last played sample point, then restarts the playback at the next sample point when the inactive state occurs. For more information on triggering and to select gating as the trigger mode, see “:TRIGger:TYPE” on page 834.

The following list describes the ESG’s gating behavior for the polarity selections:

- | | |
|------|--|
| LOW | The waveform playback stops when the trigger signal goes low (active state) and restarts when the trigger signal goes high (inactive state). |
| HIGH | The waveform playback stops when the trigger signal goes high (active state) and restarts when the trigger signal goes low (inactive state). |

***RST** HIGH

Key Entry **Gate Active Low High**

:TRIGger[:SOURCE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:TRIGger[ :SOURCE ] KEY|EXT|BUS
[ :SOURCE ] :RADio:PDC:TRIGger[ :SOURCE ]?
```

This command sets the trigger source.

For more information on triggering, see “:TRIGger:TYPE” on page 834. The following list describes the command choices:

- | | |
|-----|---|
| KEY | This choice enables manual triggering by pressing the front-panel Trigger hardkey. |
|-----|---|

Receiver Test Digital Commands (continued)
PDC Subsystem—Option 402 ([:SOURce]:RADio:PDC)

- EXT** An externally applied signal triggers the waveform. This is the only choice that works with gating. The following conditions affect an external trigger:
- The input connector selected for the trigger signal. You have a choice between the rear-panel PATTERN TRIG IN connector or the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector. To make the connector selection, see “[:TRIGger[:SOURce]:EXTErnal[:SOURce]]” on page 838.
 For more information on the connectors and on connecting the cables, see the *E4428C/38C ESG Signal Generators User’s Guide*.
 - The trigger signal polarity:
 - gating mode, see “[:TRIGger:TYPE:GATE:ACTive]” on page 835
 - continuous and single modes, see “[:TRIGger[:SOURce]:EXTErnal:SLOPe]” on page 837
 - The time delay between when the ESG receives a trigger and when the waveform responds to the trigger. There are two parts to setting the delay:
 - setting the amount of delay, see “[:TRIGger[:SOURce]:EXTErnal:DELay]” on page 836
 - turning the delay on, see “[:TRIGger[:SOURce]:EXTErnal:DELay:STATe]” on page 837
- BUS** This choice enables triggering over the GPIB or LAN using the *TRG or GET commands or the AUXILIARY INTERFACE (RS-232) using the *TRG command.

***RST** KEY

Key Entry	Trigger Key	Ext	Bus
-----------	-------------	-----	-----

:TRIGger[:SOURce]:EXTErnal:DELay

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PDC :TRIGger [ :SOURce ] :EXTErnal :DELay <val>
[ :SOURce ] :RADio :PDC :TRIGger [ :SOURce ] :EXTErnal :DELay?
```

This command sets the number of bits to delay the ESG’s response to an external trigger.

The bit delay is a delay between when the ESG receives the trigger and when it responds to the trigger. The delay uses the clocks of the bit-clock to time the delay. After the ESG receives the trigger and the set number of delay bits (clocks) occurs, the ESG transmits the data pattern.

The delay occurs after you enable the state. See “[:TRIGger[:SOURce]:EXTErnal:DELay:STATe]” on page 837. You can set the number of bits either before or after enabling the state.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURce]” on page 835.

***RST** +0
Range 0–1048575
Key Entry Ext Delay Bits

:TRIGger[:SOURce]:EXTErnal:DELAy:STATe

Supported E4438C with Option 402

[:SOURce]:RADio:PDC:TRIGger[:SOURce]:EXTErnal:DELAy:STATe ON|OFF|1|0
[:SOURce]:RADio:PDC:TRIGger[:SOURce]:EXTErnal:DELAy:STATe?

This command enables or disables the operating state of the external trigger delay function.

For setting the delay time, see “:TRIGger[:SOURce]:EXTErnal:DELAy” on page 836, and for more information on configuring an external source, see “:TRIGger[:SOURce]” on page 835.

***RST** 0
Key Entry Ext Delay Off On

:TRIGger[:SOURce]:EXTErnal:SLOPE

Supported E4438C with Option 402

[:SOURce]:RADio:PDC:TRIGger[:SOURce]:EXTErnal:SLOPE POSitive|NEGative
[:SOURce]:RADio:PDC:TRIGger[:SOURce]:EXTErnal:SLOPE?

This command sets the polarity for an external trigger signal while using the continuous, single triggering mode. To set the polarity for gating, see “:TRIGger:TYPE:GATE:ACTive” on page 835.

The POSitive and NEGative selections correspond to the high (positive) and low (negative) states of the external trigger signal. For example, when you select POSitive, the waveform responds (plays) during the high state of the trigger signal. When the ESGESG receives multiple trigger occurrences when only one is required, the signal generator uses the first trigger and ignores the rest.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURce]” on page 835.

***RST** NEG
Key Entry Ext Polarity Neg Pos

:TRIGger[:SOURCE]:EXTeRnal[:SOURCE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC:TRIGger [ :SOURCE ] :EXTeRnal [ :SOURCE ] EPT1 | EPT2 |
EPTRIGGER1 | EPTRIGGER2
[ :SOURCE ] :RADio:PDC:TRIGger [ :SOURCE ] :EXTeRnal [ :SOURCE ] ?
```

This command selects which PATTERN TRIG IN connection the ESG uses to accept an externally applied trigger signal when external is the trigger source selection.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURCE]” on page 835. For more information on the rear-panel connectors, see the *E4428C/38C ESG Signal Generators User’s Guide*.

The following list describes the command choices:

EPT1 This choice is synonymous with EPTRIGGER1 and selects the PATTERN TRIG IN rear-panel connector.

EPT2 This choice is synonymous with EPTRIGGER2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector.

EPTRIGGER1 This choice is synonymous with EPT1 and selects the PATTERN TRIG IN rear-panel connector.

EPTRIGGER2 This choice is synonymous with EPT2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector.

***RST** EPT1

Key Entry **Patt Trig In 1** **Patt Trig In 2**

[:STAtE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PDC [ :STAtE ] ON | OFF | 1 | 0 [ :SOURCE ] :RADio:PDC [ :STAtE ] ?
```

This command enables or disables the PDC modulation format.

***RST** OFF

Key Entry **PDC Off On**

Remarks Although the PDC modulation is enabled with this command, the RF carrier is not modulated unless you also activate the front panel **Mod On/Off** hardkey.

PHS Subsystem–Option 402 ([:SOURce]:RADio:PHS)

:ALPha

Supported E4438C with Option 402

[:SOURce] :RADio :PHS :ALPha <val>

[:SOURce] :RADio :PHS :ALPha?

This command changes the Nyquist or root Nyquist filter’s alpha value.

The filter alpha value can be set to the minimum level (0), the maximum level (1), or in between by using fractional numeric values (0.001–0.999).

***RST** +5.00000000E–001

Range 0.000–1.000

Key Entry **Filter Alpha**

Remarks To change the current filter type, refer to “:FILTer” on page 857.

:BBCLock

Supported E4438C with Option 402

[:SOURce] :RADio :PHS :BBCLock INT[1] | EXT[1]

[:SOURce] :RADio :PHS :BBCLock?

This command toggles the data (bit) clock input to the baseband generator board to either internal or external. This command is independent in each mode and works for both non-burst (continuous) and burst modes. This allows for a matrix of selections between burst/non-burst, internal/external data generation, internal/external data clock, and external bit/symbol data clock.

INT[1] This choice selects the signal generator internal data clock.

EXT[1] This choice selects an external data clock input.

***RST** INT

Key Entry **BBG Data Clock Ext Int**

Remarks A data clock or continuous symbol sync input must be supplied when external mode is used.

:BBT

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:BBT <val>
```

```
[ :SOURCE ]:RADio:PHS:BBT?
```

This command changes the bandwidth-multiplied-by-bit-time (BbT) filter parameter.

The filter BbT value can be set to the maximum level (1) or in between the minimum level (0.100) and maximum level by using fractional numeric values (0.101–0.999).

***RST** +5.00000000E–001

Range 0.100–1.000

Key Entry **Filter BbT**

Remarks This command is effective only after choosing a Gaussian filter. It does not have an effect on other types of filters.

To change the current filter type, refer to “:FILTer” on page 857.

:BRATe

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:BRATe <val>
```

```
[ :SOURCE ]:RADio:PHS:BRATe?
```

This command sets the bit rate in bits per second (bps–Mbps). The maximum bit rate is dependent on the modulation type and filter as shown in the following tables

The IQ digital data stream is shaped by a FIR filter. The filter length and associated latency and frequency response are dependent on the bit rate as shown in the following tables. The signal generator selects a filter length.

For higher bit rates, the FIR filter length may be truncated (if the minimum filter size allows it) which will impact the relative timing of the modulated data, as well as the actual filter response (see the symbol rate command “:SRATe” on page 863). Refer to “:FILTer” on page 857 for information on filter symbol widths.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 860.

When the bit rate is changed, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the bit rate: lower bit rates require more time.

***RST** +3.8400000E+005

Range	Modulation Type	Bit Rate Range		
		16 Symbol Wide Filter	32 Symbol Wide Filter	64 Symbol Wide Filter
	BPSK, FSK2, MSK	1bps–50Mbps	1bps–25Mbps	1bps–12.5Mbps
	C4FM, OQPSK, FSK4	2bps–50Mbps	2bps–25Mbps	2bps–12.5Mbps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3bps–50Mbps	3bps–25Mbps	3bps–12.5Mbps
	FSK16, PSK16, QAM16	4bps–50Mbps	4bps–25Mbps	4bps–12.5Mbps
	QAM32	5bps–50Mbps	5bps–25Mbps	5bps–12.5Mbps
	QAM64	6bps–50Mbps	6bps–25Mbps	6bps–12.5Mbps
	QAM128	7bps–50Mbps	7bps–25Mbps	7bps–12.5Mbps
	QAM256	8bps–50Mbps	8bps–25Mbps	8bps–12.5Mbps

Key Entry **Symbol Rate**

:BURSt:PN9

Supported E4438C with Option 402

[:SOURCE] :RADio:PHS: BURSt:PN9 NORMal | QUICk
 [:SOURCE] :RADio:PHS: BURSt:PN9?

This command controls the software PN9 generation.

NORMal This choice produces a maximum length PN9 sequence.

QUICk This choice produces a truncated PN9 sequence.

***RST** NORM

Key Entry **PN9 Mode Normal Quick**

Remarks Use Normal mode for bit-error-rate tests where a maximum length PN9 sequence is required.

:BURSt:SCRamble:SEED

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :BURSt :SCRamble :SEED <16-bit val>  
[ :SOURce ] :RADio :PHS :BURSt :SCRamble :SEED?
```

This command select a 16-bit scramble seed value for scrambling.

***RST** #H3FF

Range #H0–#H3FF

Key Entry **Scramble Seed**

Remarks Although values may be set using this command, it does not active that scramble function.

To enable the scrambling function, refer to “:BURSt:SCRamble[:STATe]” on [page 842](#).

:BURSt:SCRamble[:STATe]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :BURSt :SCRamble [ :STATe ] ON | OFF | 1 | 0  
[ :SOURce ] :RADio :PHS :BURSt :SCRamble [ :STATe ] ?
```

This command enables or disables the operating state of the scramble function.

ON (1) This choice scrambles data on the related fields, using the seed setting.

OFF (0) This choice disables the scramble function.

***RST** 0

Key Entry **Scramble Off On**

Remarks To set the seed setting, refer to “:BURSt:SCRamble:SEED” on [page 842](#).

:BURSt:SHAPe:FALL:DELay

Supported E4438C with Option 402

[:SOURce] :RADio:PHS: BURSt :SHAPe :FALL :DELay <val>

[:SOURce] :RADio:PHS: BURSt :SHAPe :FALL :DELay?

This command sets the burst shape fall delay.

The variable <val> is expressed in bits.

***RST** +0.00000000E+000

Range -22.1250 to 99

Key Entry **Fall Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 860. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FDELay” on page 844 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FALL:TIME

Supported E4438C with Option 402

[:SOURce] :RADio:PHS: BURSt :SHAPe :FALL :TIME <val>

[:SOURce] :RADio:PHS: BURSt :SHAPe :FALL :TIME?

This command sets the burst shape fall time.

The variable <val> is expressed in bits.

***RST** +4.00000000E+001

Range 0.1250–255.8750

Key Entry **Fall Time**

PHS Subsystem—Option 402 ([:SOURce]:RADio:PHS)

Remarks	<p>The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.</p> <p>To change the modulation type, refer to “:MODulation[:TYPE]” on page 860. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.</p> <p>“:BURSt:SHAPe:FTIME” on page 845 performs the same function; in compliance with the SCPI standard, both commands are listed.</p> <p>For concept information on burst shaping, refer to the <i>E4428C/38C ESG Signal Generators User’s Guide</i>.</p>
----------------	--

:BURSt:SHAPe:FDElay

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :BURSt :SHAPe :FDElay <val>
[ :SOURce ] :RADio :PHS :BURSt :SHAPe :FDElay?
```

This command sets the burst shape fall delay.

The variable <val> is expressed in bits.

***RST** +0.00000000E+000

Range –22.1250 to 99

Key Entry **Fall Delay**

Remarks	<p>The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.</p> <p>To change the modulation type, refer to “:MODulation[:TYPE]” on page 860. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.</p> <p>“:BURSt:SHAPe:FALL:DElay” on page 843 performs the same function; in compliance with the SCPI standard, both commands are listed.</p> <p>For concept information on burst shaping, refer to the <i>E4428C/38C ESG Signal Generators User’s Guide</i>.</p>
----------------	---

:BURSt:SHAPe:FTIME

Supported E4438C with Option 402

[:SOURce] :RADio:PHS: BURSt: SHAPe: FTIME <val>

[:SOURce] :RADio:PHS: BURSt: SHAPe: FTIME?

This command sets the burst shape fall time.

The variable <val> is expressed in bits.

***RST** +4.00000000E+001

Range 0.1250–255.8750

Key Entry **Fall Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 860. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FALL:TIME” on page 843 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:RDELay

Supported E4438C with Option 402

[:SOURce] :RADio:PHS: BURSt: SHAPe: RDELay <val>

[:SOURce] :RADio:PHS: BURSt: SHAPe: RDELay?

This command sets the burst shape rise delay.

The variable <val> is expressed in bits.

***RST** +0.00000000E+000

Range –18.1250 to 99

Key Entry **Rise Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 860. Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:DELay” on page 846 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:RISE:DELay

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :BURSt :SHAPe :RISE :DELay <val>  
[ :SOURce ] :RADio :PHS :BURSt :SHAPe :RISE :DELay?
```

This command sets the burst shape rise delay.

The variable <val> is expressed in bits.

***RST** +0.00000000E+000

Range –18.1250 to 99

Key Entry **Rise Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 860. Refer to “:SRATE” on page 863 for minimum and maximum symbol rate values.

“:BURSt:SHAPe:RDELay” on page 845 performs the same function; in compliance with the SCPI standard, both commands are listed.

See the *E4428C/38C ESG Signal Generators User’s Guide* for concept information.

:BURSt:SHAPe:RISE:TIME

Supported E4438C with Option 402

[:SOURce] :RADio:PHS:BURSt:SHAPe:RISE:TIME <val>

[:SOURce] :RADio:PHS:BURSt:SHAPe:RISE:TIME?

This command sets the burst shape rise time. The variable <val> is expressed in bits.

***RST** +4.00000000E+001

Range 0.1250–22.500

Key Entry **Rise Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 860. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values. The command “:BURSt:SHAPe:RTIME” on page 847 performs the same function. See the *E4428C/38C ESG Signal Generators User’s Guide* for more information.

:BURSt:SHAPe:RTIME

Supported E4438C with Option 402

[:SOURce] :RADio:PHS:BURSt:SHAPe:RTIME <val>

[:SOURce] :RADio:PHS:BURSt:SHAPe:RTIME?

This command sets the burst shape rise time. The variable <val> is expressed in bits.

***RST** +4.00000000E+001

Range 0.1250–22.500

Key Entry **Rise Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 860. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:TIME” on page 847 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :BURSt :SHAPe [ :TYPE ] SINE | "<file name> "  
[ :SOURce ] :RADio :PHS :BURSt :SHAPe [ :TYPE ] ?
```

This command specifies the burst shape as either SINE or a user-defined file ("<file name>").

SINE This choice selects a state that is defined by the burst rise and fall *RST values, as the default burst shape type.

"<file name>" This choice selects a user designated file from signal generator memory (non-volatile).

***RST** SINE

Key Entry **Sine** **User File**

:BURSt[:STATe]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :BURSt [ :STATe ] ON | OFF | 1 | 0  
[ :SOURce ] :RADio :PHS :BURSt [ :STATe ] ?
```

This command enables or disables the burst function.

ON (1) This choice enables the transmission of framed data. If all timeslots which are switched on are up traffic channels or custom, you will be bursting the timeslots that are on; there will be no RF carrier during the off timeslots.

If you have switched on any timeslot that you have configured as a down traffic channel, the RF carrier is not switched off between any of the timeslots. The off timeslots are transmitted as a continuous series of ones for the time period of the off timeslots.

OFF (0) This choice enables the transmission of unframed data.

***RST** 0

Key Entry **Data Format Pattern Framed**

:CHANnel

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:CHANnel EVM|ACP
[ :SOURCE ]:RADio:PHS:CHANnel?
```

This command optimizes the Nyquist and root Nyquist filters to minimize error vector magnitude (EVM) or to minimize adjacent channel power (ACP).

EVM This choice provides the most ideal passband.

ACP This choice improves stopband rejection.

***RST** EVM

Key Entry **Optimize FIR For EVM ACP**

Remarks To change the current filter type, refer to “[:FILTer](#)” on page 857.

:DATA

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:DATA PN9|PN11|PN15|PN20|PN23|FIX4|
"<file name>"|EXT|P4|P8|P16|P32|P64|PRAM
[ :SOURCE ]:RADio:PHS:DATA?
```

This command sets the data pattern type (pseudo-random number sequence, 4-bit pattern, sequence of 1's and 0's, data from an external source, or a user file) for unframed data transmission.

***RST** PN23

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	Ext
	4 1's & 4 0's		8 1's & 8 0's		16 1's & 16 0's		32 1's & 32 0's	
	64 1's & 64 0's	PRAM File						

Remarks Refer to “[File Name Variables](#)” on page 13 for information on the file name syntax.

:DATA:PRAM

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :PHS :DATA :PRAM "<file_name>"
```

```
[ :SOURCE ] :RADIO :PHS :DATA :PRAM?
```

This command selects a pattern RAM (PRAM) file as the pattern data type for the PHS (Personal Handy-phone System) format.

"<file_name>" This variable designates the PRAM file in WFM1. Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

Key Entry **PRAM File**

Remarks Selecting this data source forces the burst source to INTERNAL to allow framing control.

The PRAM file must reside in the signal generator’s volatile memory (WFM1) in order to be accessed by this command. For more information on PRAM files, refer to [“:DATA:PRAM:FILE:BLOCK” on page 110](#).

:DATA:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :PHS :DATA :FIX4 <val>
```

```
[ :SOURCE ] :RADIO :PHS :DATA :FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern for unframed transmission according to the protocols (modulation type, symbol rate, filter, and burst shape) selected for the PHS format.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:DEFault

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :PHS :DEFault
```

This command returns all of the PHS modulation format parameters to factory settings. It does not affect any other signal generator parameters.

Key Entry **Restore PHS Factory Default**

:DLINK:SLOT[1] | 2 | 3 | 4:CUSTom

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :CUSTom PN9 | PN11 | PN15 |
PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURce ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :CUSTom?
```

This command configures the data field for the selected downlink custom timeslot.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's				
	64 1's & 64 0's							

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:DLINK:SLOT[1] | 2 | 3 | 4:CUSTom:FIX4

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :CUSTom :FIX4 <val>
[ :SOURce ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :CUSTom :FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:DLINK:SLOT[1] | 2 | 3 | 4:POWer

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :POWer MAIN | DELTA
[ :SOURce ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :POWer?
```

This command toggles the RF output power level function for the selected timeslot.

MAIN This choice specifies RF output as the main power level.

DELTA This choice specifies RF output as the alternative power level.

Receiver Test Digital Commands (continued)
PHS Subsystem—Option 402 ([:SOURCE]:RADio:PHS)

***RST** MAIN
Key Entry **Timeslot Ampl Main Delta**

:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:CSID

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:CSID <bit_pattern>  
[ :SOURCE ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:CSID?
```

This command changes the 42-bit cell station identification code (CSID) field of the selected downlink timeslot. The preset hexadecimal value (when normal preset is selected) for CSID reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H20200020001
Range #H0–#H3FFFFFFFFF
Key Entry **CSID**

:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:IDLE

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:IDLE <bit_pattern>  
[ :SOURCE ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:IDLE?
```

This command changes the 34-bit idle (IDLE) field of the selected downlink timeslot. The preset hexadecimal value (when normal preset is selected) for IDLE reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H000000000
Range #H0–#H3FFFFFFFFF
Key Entry **IDLE**

:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:PSID

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:PSID <bit_pattern>  
[ :SOURCE ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:PSID?
```

This command changes the 28-bit personal station identification code (PSID) field in the synchronization channel of the selected downlink timeslot. The normal preset hexadecimal value for PSID reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H0000001

Range #H0–#H3FFFFFFF

Key Entry PSID

:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:UWORD

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:UWORD <bit_pattern>  
[ :SOURce ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:SCHannel:UWORD?
```

This command changes the unique word (UW) field of the selected downlink timeslot. The preset hexadecimal value (when normal preset is selected) for UW reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H50EF2993

Range #H0–#HFFFFFFF

Key Entry UW

:DLINK:SLOT[1] | 2 | 3 | 4:STATe

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:STATe ON|OFF|1|0  
[ :SOURce ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:STATe?
```

This command enables or disables the operating state of the selected downlink timeslot.

***RST** Timeslot 1: 1 *Timeslots 2–4: 0*

Key Entry Timeslot Off On

:DLINK:SLOT[1] | 2 | 3 | 4:TCHannel:SACChannel

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:TCHannel:SACChannel  
<bit_pattern>  
[ :SOURce ] :RADio:PHS:DLINK:SLOT[1] | 2 | 3 | 4:TCHannel:SACChannel?
```

This command changes the 15-bit slow associated control channel of the selected downlink timeslot. The preset hexadecimal value (when normal preset is selected) for SACCH reflects the value specified by the standard.

***RST** #H8000

Range #H0–#HFFFF

Key Entry SA

:DLINK:SLOT[1] | 2 | 3 | 4:TCHannel:UWORD

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :TCHannel :UWORD <bit_pattern>
[ :SOURCE ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :TCHannel :UWORD?
```

This command changes the unique word (UW) field of the selected downlink timeslot. The preset hexadecimal value (when normal preset is selected) for UW reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H3D4C

Range #H0–#HFFFF

Key Entry **UW**

:DLINK:SLOT[1] | 2 | 3 | 4:TCHannel[:TCHannel]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :TCHannel
[ :TCHannel ] PN9 | PN11 | PN15 | PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 |
P64
[ :SOURCE ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :TCHannel [ :TCHannel ] ?
```

This command customizes the selected downlink traffic channel timeslot.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's				
	64 1's & 64 0's							

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:DLINK:SLOT[1] | 2 | 3 | 4:TCHannel[:TCHannel]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :TCHannel [ :TCHannel ] :FIX4 <val>
[ :SOURCE ] :RADio :PHS :DLINK :SLOT [ 1 ] | 2 | 3 | 4 :TCHannel [ :TCHannel ] :FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink traffic channel timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type. To change the data type, refer to “:DLINK:SLOT[1]|2|3|4:TCHannel[:TCHannel]” on page 854.

:DLINK:SLOT[1]|2|3|4[:TYPE]

Supported E4438C with Option 402

[:SOURCE] :RADIO:PHS:DLINK:SLOT[1]|2|3|4[:TYPE] CUSTom|TCH|TCH_ALL|SYNC
 [:SOURCE] :RADIO:PHS:DLINK:SLOT[1]|2|3|4[:TYPE]?

This command sets the downlink timeslot type for the selected timeslot.

***RST** Timeslot 1: TCH Timeslots 2–4: CUST

Key Entry **Custom TCH TCH All SYNC**

:EDATa:DELaY

Supported E4438C with Option 402

[:SOURCE] :RADIO:PHS:EDATa:DELaY?

This query returns the amount of delay (in symbols) from the external data input to the beginning of the symbol on the I OUT and Q OUT rear panel connectors and the front panel RF OUTPUT connector.

Remarks When the format is turned off, the delay value is unchanged; the query will return the same delay value if the format is on or off.

:EDCLock

Supported E4438C with Option 402

[:SOURCE] :RADIO:PHS:EDCLock SYMBol|NORMal
 [:SOURCE] :RADIO:PHS:EDCLock?

This command sets the external data clock use.

SYMBol This choice specifies that a continuous symbol clock signal must be provided to the SYMBOL SYNC input connector.

NORMal This choice specifies that the DATA CLOCK input connector requires a bit clock. The SYMBOL SYNC input connector requires a (one-shot or continuous) symbol sync signal.

***RST** NORM

Key Entry **Ext Data Clock Normal Symbol**

Remarks Both choices have no effect in internal clock mode. Refer to “:BBCLock” on page 839 to select EXT as the data clock type.

:EREFerence

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio :PHS :EREFerence INT | EXT
```

```
[ :SOURCE ] :RADio :PHS :EREFerence ?
```

This command selects either an internal or external bit-clock reference for the data generator.

***RST** INT

Key Entry **BBG Ref Ext Int**

Remarks If the EXT choice is selected, the external source’s frequency value must be applied to the BASEBAND GEN REF IN rear panel connector. The external reference and external data clock are not applicable at the same time. If both are selected, then the external reference takes precedence.

Refer to, “:EREFerence:VALue” on page 856 to enter the external reference frequency setting.

:EREFerence:VALue

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio :PHS :EREFerence :VALue <val>
```

```
[ :SOURCE ] :RADio :PHS :EREFerence :VALue ?
```

This command sets the expected bit-clock reference frequency value for an externally applied reference signal.

The variable <val> is expressed in units of hertz (Hz–MHz).

***RST** +1.30000000E+007

Range 2.5E5–1E8

Key Entry **Ext BBG Ref Freq**

Remarks The value specified by this command is effective only when you are using an external reference applied to the BASEBAND GEN REF IN rear panel connector.

Refer to “:EREFerence” on page 856 to select EXT (external source) as the reference for the bit-clock.

:FILTER

Supported E4438C with Option 402

```
[ :SOURCE ]:RADIO:PHS:FILTER RNYQuist|NYQuist|GAUSSian|RECTangle|
IS95|IS95_EQ|IS95_MOD|IS95_MOD_EQ|AC4Fm|UGGaussian|"<user FIR>"
[:SOURCE]:RADIO:PHS:FILTER?
```

This command selects the pre-modulation filter type.

- IS95 This choice selects a filter that meets the criteria of the IS-95 standard.
- IS95_EQ This choice selects a filter which is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard. This filter is only used for IS-95 baseband filtering.
- IS95_MOD This choice selects a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard.
- IS95_MOD_EQ This choice selects a filter which is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection.
- AC4Fm This choice selects a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter.
- UGGaussian This choice selects a backwards compatible GSM Gaussian filter (Gaussian filter with a fixed BbT value of 0.300) for the ESG E44xxB Option UN3 or UN4.
- "<user FIR>" This variable is any filter file that you have stored into memory.

***RST** RNYQ

Key Entry	Root Nyquist	Nyquist	Gaussian	Rectangle	IS-95	IS-95 w/EQ
	IS-95 Mod	IS-95 Mod w/EQ	APCO 25 C4FM	UN3/4 GSM Gaussian		
	User FIR					

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:IQ:SCALe

Supported E4438C with Option 402

[:SOURce] :RADio:PHS:IQ:SCALe <val>

[:SOURce] :RADio:PHS:IQ:SCALe?

This command sets the amplitude of the I/Q outputs for better adjacent channel power (ACP); lower scaling values equate to better ACP.

The variable <val> is expressed in units of percent.

***RST** +100

Range 1–200

Key Entry **I/Q Scaling**

Remarks This command has no effect with MSK or FSK modulation.

:MODulation:FSK[:DEViation]

Supported E4438C with Option 402

[:SOURce] :RADio:PHS:MODulation:FSK[:DEViation] <val>

[:SOURce] :RADio:PHS:MODulation:FSK[:DEViation]?

This command sets the symmetric FSK frequency deviation value.

The variable <val> is expressed in units of Hertz and the maximum range value equals the current symbol rate value multiplied by four, limited to 20 MHz.

***RST** +4.00000000E+002

Range 0–2E7

Key Entry **Freq Dev**

Remarks To change the modulation type, refer to “:MODulation[:TYPE]” on page 860.

Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

To set an asymmetric FSK deviation value, refer to the *E4428C/38C ESG Signal Generators User’s Guide* for more information.

:MODulation:MSK[:PHASe]

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PHS:MODulation:MSK[:PHASe] <val>
```

```
[ :SOURce ]:RADio:PHS:MODulation:MSK[:PHASe]?
```

This command sets the MSK phase deviation value. The variable <val> is in units of degrees.

***RST** +9.00000000E+001

Range 0–100

Key Entry **Phase Dev**

:MODulation:UFSK

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PHS:MODulation:UFSK "<file name>"
```

```
[ :SOURce ]:RADio:PHS:MODulation:UFSK?
```

This command selects a user-defined FSK file from the signal generator memory.

Key Entry **User FSK**

Remarks The user-defined FSK file is held in signal generator memory until the command that selects user FSK as the modulation type is sent. Refer to [“:MODulation\[:TYPE\]” on page 860](#) to change the current modulation type.

Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:MODulation:UIQ

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PHS:MODulation:UIQ "<file name>"
```

```
[ :SOURce ]:RADio:PHS:MODulation:UIQ?
```

This command selects a user-defined I/Q file from the signal generator memory.

Key Entry **User I/Q**

Remarks The user-defined I/Q file is held in signal generator memory until the command that selects user I/Q as the modulation type is sent. Refer to [“:MODulation\[:TYPE\]” on page 860](#) to change the current modulation type.

Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:MODulation[:TYPE]

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:MODulation[ :TYPE] BPSK | QPSK | IS95QPSK |
GRAYQPSK | OQPSK | IS95OQPSK | P4DQPSK | PSK8 | PSK16 | D8PSK | MSK | FSK2 | FSK4 |
FSK8 | FSK16 | C4FM | QAM4 | QAM16 | QAM32 | QAM64 | QAM128 | QAM256 | UIQ | UFSK
[ :SOURCE ]:RADio:PHS:MODulation[ :TYPE]?
```

This command sets the modulation type for the PHS personality.

***RST** P4DQPSK

Key Entry	BPSK	QPSK	IS-95 QPSK	Gray Coded QPSK	OQPSK			
	IS-95 OQPSK	$\pi/4$ DQPSK	8PSK	16PSK	D8PSK	MSK	2-Lvl FSK	
	4-Lvl FSK	8-Lvl FSK	16-Lvl FSK	C4FM	4QAM	16QAM	32QAM	
	64QAM	128QAM	256QAM	User I/Q	User FSK			

:POLarity[:ALL]

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:POLarity[ :ALL] NORMal | INVerted
[ :SOURCE ]:RADio:PHS:POLarity[ :ALL]?
```

This command sets the rotation direction of the phase modulation vector.

NORMal This choice selects normal phase polarity.

INVerted This choice inverts the internal Q signal.

***RST** NORM

Key Entry **Phase Polarity Normal Invert**

:SECondary:RECall

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:SECondary:RECall
```

This command recalls the secondary frame configuration, overwriting the current state.

Key Entry **Recall Secondary Frame State**

Remarks To save a secondary frame state, refer to “:SECondary:SAVE” on page 861.

A secondary frame is not active until the secondary state is enabled. To activate a secondary frame, refer to “:SECondary[:STATE]” on page 861.

:SECondary:SAVE

Supported E4438C with Option 402

[:SOURCE] :RADio:PHS:SECondary:SAVE

This command saves the current frame configuration as the secondary frame with the filename PHS_SECONDARY_FRAME.

Key Entry **Save Secondary Frame State**

Remarks To recall the secondary frame (saved in non-volatile signal generator memory), refer to “[:SECondary:RECall](#)” on page 860.

:SECondary:TRIGger[:SOURCE]

Supported E4438C with Option 402

[:SOURCE] :RADio:PHS:SECondary:TRIGger [:SOURCE] KEY | EXT | BUS

[:SOURCE] :RADio:PHS:SECondary:TRIGger [:SOURCE] ?

This command selects the type of triggering for the secondary frame.

KEY This choice enables triggering by pressing the front panel **Trigger** hardkey.

EXT This choice enables triggering using an externally applied signal at the PATT TRIG IN rear panel connector or the PATT TRIG IN 2 pin on the rear panel AUX I/O connector. To select the appropriate connector, refer to “[:TRIGger\[:SOURCE\]:EXTernal\[:SOURCE\]](#)” on page 867.

BUS This choice enables GPIB triggering using the *TRG or GET command or LAN and RS-232 triggering using the *TRG command.

Key Entry **Trigger Key Ext Bus**

:SECondary[:STATE]

Supported E4438C with Option 402

[:SOURCE] :RADio:PHS:SECondary [:STATE] ON | OFF | 1 | 0

[:SOURCE] :RADio:PHS:SECondary [:STATE] ?

This command enables or disables the ability to switch to the secondary frame.

***RST** 0

Key Entry **Secondary Frame Off On**

Receiver Test Digital Commands (continued)
PHS Subsystem—Option 402 ([:SOURce]:RADio:PHS)

Remarks A frame must already be saved as the secondary frame in order to turn the secondary state function on.
To save a frame as the secondary frame, refer to “:SECOndary:SAVE” on page 861.

:SOUT

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:SOUT FRAME | SLOT | ALL  
[ :SOURce ] :RADio:PHS:SOUT?
```

This command sets the synchronization location (within the pattern of data) and the type of output at the EVENT 1 rear panel connector.

FRAME This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a framed data pattern.

SLOT This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a selected timeslot.

ALL This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for all active timeslots.

***RST** FRAME

Choices FRAME SLOT ALL

:SOUT:OFFSet

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:SOUT:OFFSet <val>  
[ :SOURce ] :RADio:PHS:SOUT:OFFSet?
```

This command sets the offset value for the location of the output synchronization signal on the EVENT1 rear panel connector relative to the beginning of the framed data pattern or timeslot.

The variable <val> is expressed as a number of bits.

***RST** +0

Range -239 to 239

Key Entry **Sync Out Offset**

Remarks Negative values move the synchronization output signal earlier; positive values move it later.

To change the output of the EVENT1 rear panel connector to SLOT, refer to “:SOUT” on page 862.

:SOUT:SLOT

Supported E4438C with Option 402

[:SOURce] :RADio:PHS:SOUT:SLOT <val>

[:SOURce] :RADio:PHS:SOUT:SLOT?

This command selects the timeslot that will trigger a 1-bit output signal at the EVENT 1 rear panel connector.

***RST** +0

Range 1–4

Key Entry **Begin Timeslot #**

Remarks To change the output of the EVENT1 rear panel connector to SLOT, refer to [“:SOUT” on page 862](#).

:SRATe

Supported E4438C with Option 402

[:SOURce] :RADio:PHS:SRATe <val>

[:SOURce] :RADio:PHS:SRATe?

This command sets the transmission symbol rate. Symbol rate is the bit rate divided by the bits per symbol. A change in the symbol rate affects the bit rate. Refer to [“:BRATe” on page 773](#) for information on bit rate.

The variable <val> is expressed in units of symbols per second (sps–MSPS) and the maximum symbol rate depends on the filter. Refer to [“:FILTer” on page 857](#) for minimum filter symbol width.

The filter may have to be truncated down to 32 or 16 symbols wide to achieve the highest symbol rate. The signal generator’s internal filters are not truncated below their minimum filter length and user-defined FIR filters are not truncated. If the filter cannot be truncated then the symbol rate is limited to the maximum rate of the narrowest filter size possible.

The relative timing of the modulated data, as well as the actual filter response is affected when the filter is truncated.

When the symbol rate changes, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the symbol rate: lower symbol rates require more time.

To change the modulation type, refer to [“:MODulation\[:TYPE\]” on page 860](#).

***RST** +1.92000000E+004

Receiver Test Digital Commands (continued)
PHS Subsystem—Option 402 ([:SOURce]:RADio:PHS)

Range	Modulation Type	Symbol Rate Range		
		<i>16 Symbol Wide Filter</i>	<i>32 Symbol Wide Filter</i>	<i>64 Symbol Wide Filter</i>
	BPSK, FSK2, MSK	1sps–50Msps	1sps–25Msps	1sps–12.5Msps
	C4FM, OQPSK, FSK4	2sps–25Msps	2sps–12.5Msps	2sps–6.25Msps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3sps–16.666666666 Msps	3sps–8.333333333 Msps	3sps–4.166666666Msps
	FSK16, PSK16, QAM16	4sps–12.5Msps	4sps–6.25Msps	4sps–3.125Msps
	QAM32	5sps–10Msps	5sps–5Msps	5sps–2.5Msps
	QAM64	6sps–8.333333333 Msps	6sps–4.166666666 Msps	6sps–2.083333333 Msps
	QAM128	7sps–7.142857142 Msps	7sps–3.571428572 Msps	7sps–1.785714285 Msps
	QAM256	8sps–6.25Msps	8sps–3.125 Msps	8sps–1.5625 Msps

NOTE Using I/Q skew will half the minimum number of symbols for the selected filter.

Key Entry **Symbol Rate**

:TRIGger:TYPE

Supported E4438C with Option 402

[:SOURce] :RADio :PHS :TRIGger :TYPE CONTinuous | SINGle | GATE
 [:SOURce] :RADio :PHS :TRIGger :TYPE?

This command sets the trigger type.

CONTinuous The framed data sequence repeats continuously; the sequence restarts every time the previous playback is completed. To customize continuous triggering, refer to “:TRIGger:TYPE:CONTinuous[:TYPE]” on page 865.

SINGle The framed data sequence plays once for every trigger received.

GATE An external trigger signal interrupts the playback while the gating signal is in the inactive state. Playback resumes when the external control signal returns to the active state. The active state can be set to high or low.

***RST** **CONT**

Key Entry **Continuous** **Single** **Gated**

:TRIGger:TYPE:CONTInuous[:TYPE]

Supported E4438C with Option 402

[:SOURce] :RADio:PHS:TRIGger:TYPE:CONTInuous[:TYPE] FREE | TRIGger | RESet
 [:SOURce] :RADio:PHS:TRIGger:TYPE:CONTInuous[:TYPE]?

This commands selects the waveform’s response to a trigger signal while using the continuous trigger mode.

For more information on triggering and to select the continuous trigger mode, see “:TRIGger:TYPE” on page 864.

The following list describes the waveform’s response to each of the command choices:

FREE Turning the ARB format on immediately triggers the waveform. The waveform repeats until you turn the format off, select another trigger, or choose another waveform file.

TRIGger The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously until you turn the format off, select another trigger, or choose another waveform file.

RESet The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously. Subsequent triggers reset the waveform to the beginning. For a waveform sequence, this means to the beginning of the first segment in the sequence.

***RST** **FREE**

Key Entry **Free Run** **Trigger & Run** **Reset & Run**

:TRIGger:TYPE:GATE:ACTive

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PHS:TRIGger:TYPE:GATE:ACTive LOW|HIGH  
[ :SOURCE ] :RADio:PHS:TRIGger:TYPE:GATE:ACTive?
```

This command selects the active state (gate polarity) of the gate while using the gating trigger mode.

The LOW and HIGH selections correspond to the low and high states of an external trigger signal. For example, when you select HIGH, the active state occurs during the high of the trigger signal. When the active state occurs, the ESG stops the waveform playback at the last played sample point, then restarts the playback at the next sample point when the inactive state occurs. For more information on triggering and to select gating as the trigger mode, see “:TRIGger:TYPE” on page 864.

The following list describes the ESG’s gating behavior for the polarity selections:

LOW The waveform playback stops when the trigger signal goes low (active state) and restarts when the trigger signal goes high (inactive state).

HIGH The waveform playback stops when the trigger signal goes high (active state) and restarts when the trigger signal goes low (inactive state).

*RST HIGH

Key Entry Gate Active Low High

:TRIGger[:SOURCE]:EXTErnal:DELAy

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PHS:TRIGger[:SOURCE]:EXTErnal:DELAy <val>  
[ :SOURCE ] :RADio:PHS:TRIGger[:SOURCE]:EXTErnal:DELAy?
```

This command sets the number of bits to delay the ESG’s response to an external trigger.

The bit delay is a delay between when the ESG receives the trigger and when it responds to the trigger. The delay uses the clocks of the bit-clock to time the delay. After the ESG receives the trigger and the set number of delay bits (clocks) occurs, the ESG transmits the data pattern.

The delay occurs after you enable the state. See “:TRIGger[:SOURCE]:EXTErnal:DELAy:STATE” on page 867. You can set the number of bits either before or after enabling the state.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURCE]” on page 868.

*RST +0

Range 0–1048575

Key Entry Ext Delay Bits

:TRIGger[:SOURce]:EXTErnal:DELAy:STATe

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:TRIGger [ :SOURce ] :EXTErnal:DELAy:STATe ON|OFF|1|0
[ :SOURce ] :RADio:PHS:TRIGger [ :SOURce ] :EXTErnal:DELAy:STATe?
```

This command enables or disables the operating state of the external trigger delay function.

For setting the delay time, see “:TRIGger[:SOURce]:EXTErnal:DELAy” on page 866, and for more information on configuring an external source, see “:TRIGger[:SOURce]” on page 868.

***RST** 0

Key Entry **Ext Delay Off On**

:TRIGger[:SOURce]:EXTErnal:SLOPe

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:TRIGger [ :SOURce ] :EXTErnal:SLOPe POSitive|NEGative
[ :SOURce ] :RADio:PHS:TRIGger [ :SOURce ] :EXTErnal:SLOPe?
```

This command sets the polarity for an external trigger signal while using the continuous, single triggering mode. To set the polarity for gating, see “:TRIGger:TYPE:GATE:ACTive” on page 866.

The POSitive and NEGative selections correspond to the high (positive) and low (negative) states of the external trigger signal. For example, when you select POSitive, the waveform responds (plays) during the high state of the trigger signal. When the ESGESG receives multiple trigger occurrences when only one is required, the signal generator uses the first trigger and ignores the rest.

For more information on configuring an external trigger source and to select external as the trigger source, see “:TRIGger[:SOURce]” on page 868.

***RST** NEG

Key Entry **Ext Polarity Neg Pos**

:TRIGger[:SOURce]:EXTErnal[:SOURce]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:TRIGger [ :SOURce ] :EXTErnal [ :SOURce ] EPT1|
EPT2|EPTRIGGER1|EPTRIGGER2
[ :SOURce ] :RADio:PHS:TRIGger [ :SOURce ] :EXTErnal [ :SOURce ]?
```

This command selects which PATTERN TRIG IN connection the ESG uses to accept an externally applied trigger signal when external is the trigger source selection.

For more information on configuring an external trigger source and to select external as the trigger source, see “[:TRIGger[:SOURce]]” on page 868. For more information on the rear-panel connectors, see the *E4428C/38C ESG Signal Generators User’s Guide*.

The following list describes the command choices:

EPT1	This choice is synonymous with EPTRIGGER1 and selects the PATTERN TRIG IN rear-panel connector.
EPT2	This choice is synonymous with EPTRIGGER2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector.
EPTRIGGER1	This choice is synonymous with EPT1 and selects the PATTERN TRIG IN rear-panel connector.
EPTRIGGER2	This choice is synonymous with EPT2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector.
*RST	EPT1
Key Entry	Patt Trig In 1 Patt Trig In 2

:TRIGger[:SOURce]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:TRIGger [ :SOURce ] KEY | EXT | BUS  
[ :SOURce ] :RADio:PHS:TRIGger [ :SOURce ] ?
```

This command sets the trigger source.

For more information on triggering, see “[:TRIGger:TYPE]” on page 864. The following list describes the command choices:

KEY	This choice enables manual triggering by pressing the front-panel Trigger hardkey.
EXT	An externally applied signal triggers the waveform. This is the only choice that works with gating. The following conditions affect an external trigger: <ul style="list-style-type: none">• The input connector selected for the trigger signal. You have a choice between the rear-panel PATTERN TRIG IN connector or the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector. To make the connector selection, see “[:TRIGger[:SOURce]:EXTernal[:SOURce]]” on page 867.

For more information on the connectors and on connecting the cables, see the *E4428C/38C ESG Signal Generators User’s Guide*.

- The trigger signal polarity:
 - gating mode, see “:TRIGger:TYPE:GATE:ACTive” on page 866
 - continuous and single modes, see “:TRIGger[:SOURce]:EXTernal[:SOURce]” on page 867
- The time delay between when the ESG receives a trigger and when the waveform responds to the trigger. There are two parts to setting the delay:
 - setting the amount of delay, see “:TRIGger[:SOURce]:EXTernal:DELay” on page 866
 - turning the delay on, see “:TRIGger[:SOURce]:EXTernal:DELay:STATe” on page 867

BUS This choice enables triggering over the GPIB or LAN using the *TRG or GET commands or the AUXILIARY INTERFACE (RS-232) using the *TRG command.

***RST** KEY

Key Entry	Trigger Key	Ext	Bus
------------------	--------------------	------------	------------

:ULINK:SLOT[1] | 2 | 3 | 4:CUSTom

Supported E4438C with Option 402

```
[ :SOURce ] : RADio : PHS : ULINK : SLOT [ 1 ] | 2 | 3 | 4 : CUSTom PN9 | PN11 | PN15 |
PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURce ] : RADio : PHS : ULINK : SLOT [ 1 ] | 2 | 3 | 4 : CUSTom?
```

This command configures the data field for the selected uplink custom timeslot.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to “File Name Variables” on page 13 for information on the file name syntax.

:ULINK:SLOT[1]|2|3|4:CUSTom:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PHS:ULINK:SLOT[1]|2|3|4:CUSTom:FIX4 <val>  
[ :SOURCE ] :RADio:PHS:ULINK:SLOT[1]|2|3|4:CUSTom:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected uplink custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:ULINK:SLOT[1]|2|3|4:POWer

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PHS:ULINK:SLOT[1]|2|3|4:POWer MAIN|DELTA  
[ :SOURCE ] :RADio:PHS:ULINK:SLOT[1]|2|3|4:POWer?
```

This command toggles the RF output power level function for the selected timeslot.

MAIN This choice specifies RF output as the main power level.

DELTA This choice specifies RF output as the alternative power level.

***RST** MAIN

Key Entry **Timeslot Ampl Main Delta**

:ULINK:SLOT[1]|2|3|4:SCHannel:CSID

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:PHS:ULINK:SLOT[1]|2|3|4:SCHannel:CSID <bit_pattern>  
[ :SOURCE ] :RADio:PHS:ULINK:SLOT[1]|2|3|4:SCHannel:CSID?
```

This command changes the 42-bit cell station identification code (CSID) field of the selected uplink timeslot. The preset hexadecimal value (when normal preset is selected) for CSID reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H20200020001

Range #H0–#H3FFFFFFFFF

Key Entry **CSID**

:ULINK:SLOT[1]|2|3|4:SCHannel:IDLE

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:SCHannel:IDLE <bit_pattern>  
[ :SOURce ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:SCHannel:IDLE?
```

This command changes the 34-bit idle (IDLE) field of the selected uplink timeslot. The preset hexadecimal value (when normal preset is selected) for IDLE reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H00000000

Range #H0–#H3FFFFFFFF

Key Entry **IDLE**

:ULINK:SLOT[1]|2|3|4:SCHannel:PSID

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:SCHannel:PSID <bit_pattern>  
[ :SOURce ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:SCHannel:PSID?
```

This command changes the 28-bit personal station identification code (PSID) field in the synchronization channel of the selected uplink timeslot. The preset (normal) hexadecimal value for PSID reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H0000001

Range #H0–#H3FFFFFFFF

Key Entry **PSID**

:ULINK:SLOT[1]|2|3|4:SCHannel:UWORD

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:SCHannel:UWORD <bit_pattern>  
[ :SOURce ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:SCHannel:UWORD?
```

This command changes the unique word (UW) field of the selected uplink timeslot. The preset hexadecimal value (when normal preset is selected) for UW reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H050EF2993

Range #H0–#H0FFFFFFFF

Key Entry **UW**

:ULINK:SLOT[1]|2|3|4:STATe

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:STATe ON|OFF|1|0  
[ :SOURCE ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:STATe?
```

This command enables or disables the operating state of the selected uplink timeslot.

***RST** Timeslot 1: 1 Timeslots 2–4: 0

Key Entry Timeslot Off On

:ULINK:SLOT[1]|2|3|4:TCHannel:SACChannel

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:TCHannel:SACChannel  
<bit_pattern>  
[ :SOURCE ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:TCHannel:SACChannel?
```

This command changes the 15-bit slow associated control channel of the selected uplink timeslot. The preset hexadecimal value (when normal preset is selected) for SACCH reflects the value specified by the standard.

***RST** #H8000

Range #H0–#HFFFF

Key Entry SA

:ULINK:SLOT[1]|2|3|4:TCHannel:UWORD

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:TCHannel:UWORD <bit_pattern>  
[ :SOURCE ]:RADio:PHS:ULINK:SLOT[1]|2|3|4:TCHannel:UWORD?
```

This command changes the unique word (UW) field of the selected uplink timeslot. The preset hexadecimal value (when normal preset is selected) for UW reflects the PHS protocol, however you can enter a new value with this command.

***RST** #H3D4C

Range #H0–#HFFFF

Key Entry UW

:ULINK:SLOT[1] | 2 | 3 | 4:TCHannel[:TCHannel]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:ULINK:SLOT[1] | 2 | 3 | 4:TCHannel
[ :TCHannel ] PN9 | PN11 | PN15 | PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 |
P64
[ :SOURce ] :RADio:PHS:ULINK:SLOT[1] | 2 | 3 | 4:TCHannel [ :TCHannel ] ?
```

This command selects the data pattern for the selected uplink traffic channel timeslot.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:ULINK:SLOT[1] | 2 | 3 | 4:TCHannel[:TCHannel:FIX4]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:ULINK:SLOT[1] | 2 | 3 | 4:TCHannel [ :TCHannel ] :FIX4 <val>
[ :SOURce ] :RADio:PHS:ULINK:SLOT[1] | 2 | 3 | 4:TCHannel [ :TCHannel ] :FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected uplink traffic channel timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:ULINK:SLOT[1] | 2 | 3 | 4[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio:PHS:ULINK:SLOT[1] | 2 | 3 | 4[:TYPE] CUSTom | TCH | TCH_ALL | SYNC
[ :SOURce ] :RADio:PHS:ULINK:SLOT[1] | 2 | 3 | 4[:TYPE] ?
```

This command sets the uplink timeslot type for the selected uplink timeslot.

***RST** Timeslot 1: TCH Timeslots 2–4: CUST

Key Entry **Timeslot Type**

PHS Subsystem—Option 402 ([:SOURce]:RADio:PHS)

[:STATe]

Supported E4438C with Option 402

[:SOURce] :RADio :PHS [:STATe] ON | OFF | 1 | 0

[:SOURce] :RADio :PHS [:STATe] ?

This command enables or disables the PHS modulation format.

***RST** 0

Key Entry **PHS Off On**

Remarks Although the PHS modulation is enabled with this command, the RF carrier is not modulated unless you also activate the front panel **Mod On/Off** hardkey.

TETRA Subsystem–Option 402 ([:SOURce]:RADio:TETRa)

:ALPha

Supported E4438C with Option 402

[:SOURce] :RADio:TETRa:ALPha <val>

[:SOURce] :RADio:TETRa:ALPha?

This command changes the Nyquist or root Nyquist filter’s alpha value.

The filter alpha value can be set to a minimum level (0), a maximum level (1), or in between by using fractional numeric values (0.001–0.999).

***RST** +3.50000000E–001

Range 0.000–1.000

Key Entry **Filter Alpha**

Remarks To change the current filter type, refer to “:FILTer” on page 889.

:BBCLock

Supported E4438C with Option 402

[:SOURce] :RADio:TETRa:BBCLock INT[1] | EXT[1]

[:SOURce] :RADio:TETRa:BBCLock?

This command toggles the data (bit) clock input to the baseband generator board to either internal or external. This command is independent in each mode and works for both non-burst (continuous) and burst modes. This allows for a matrix of selections between burst/non-burst, internal/external data generation, internal/external data clock, and external bit/symbol data clock.

INT[1] This choice selects the signal generator internal data clock.

EXT[1] This choice selects an external data clock input.

***RST** INT

Key Entry **BBG Data Clock Ext Int**

Remarks A data clock or continuous symbol sync input must be supplied when external mode is used.

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:BBT**

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:TETRA:BBT <val>
```

```
[ :SOURCE ] :RADIO:TETRA:BBT?
```

This command changes the bandwidth-multiplied-by-bit-time (BbT) filter parameter.

The filter BbT value can be set to the maximum level (1) or in between the minimum level (0.100) and maximum level by using fractional numeric values (0.101–0.999).

***RST** +5.00000000E–001

Range 0.100–1.000

Key Entry Filter BbT

Remarks This command is effective only after choosing a Gaussian filter. It does not have an effect on other types of filters.

To change the current filter type, refer to “:FILTER” on page 889.

:BRATe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:TETRA:BRATe <val>
```

```
[ :SOURCE ] :RADIO:TETRA:BRATe?
```

This command sets the bit rate in bits per second (bps–Mbps). The maximum bit rate is dependent on the modulation type and filter as shown in the following tables

The IQ digital data stream is shaped by a FIR filter. The filter length and associated latency and frequency response are dependent on the bit rate as shown in the following tables. The signal generator selects a filter length.

For higher bit rates, the FIR filter length may be truncated (if the minimum filter size allows it) which will impact the relative timing of the modulated data, as well as the actual filter response (see the symbol rate command “:SRATe” on page 863). Refer to “:FILTER” on page 889 for information on filter symbol widths. To change the modulation type, refer to “:MODulation[:TYPE]” on page 892.

When the bit rate is changed, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the bit rate: lower bit rates require more time.

***RST** +3.60000000E+004

Range	Modulation Type	Bit Rate Range		
		<i>16 Symbol Wide Filter</i>	<i>32 Symbol Wide Filter</i>	<i>64 Symbol Wide Filter</i>
	BPSK, FSK2, MSK	1bps–50Mbps	1bps–25Mbps	1bps–12.5Mbps
	C4FM, OQPSK, FSK4	2bps–50Mbps	2bps–25Mbps	2bps–12.5Mbps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3bps–50Mbps	3bps–25Mbps	3bps–12.5Mbps
	FSK16, PSK16, QAM16	4bps–50Mbps	4bps–25Mbps	4bps–12.5Mbps
	QAM32	5bps–50Mbps	5bps–25Mbps	5bps–12.5Mbps
	QAM64	6bps–50Mbps	6bps–25Mbps	6bps–12.5Mbps
	QAM128	7bps–50Mbps	7bps–25Mbps	7bps–12.5Mbps
	QAM256	8bps–50Mbps	8bps–25Mbps	8bps–12.5Mbps

Key Entry **Symbol Rate**

:BURSt:PN9

Supported E4438C with Option 402

[:SOURCE] :RADio:TETRa: BURSt: PN9 NORMal | QUICk
 [:SOURCE] :RADio:TETRa: BURSt: PN9?

This command controls the software PN9 generation.

NORMal This choice produces a maximum length PN9 sequence.

QUICk This choice produces a truncated PN9 sequence.

*RST NORM

Key Entry **PN9 Mode Normal Quick**

Remarks Use Normal mode for bit-error-rate tests where a maximum length PN9 sequence is required.

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:BURSt:SCRamble:SEED**

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :BURSt :SCRamble :SEED <32-bit val>
```

```
[ :SOURCE ] :RADIO :TETRA :BURSt :SCRamble :SEED?
```

This command sets the 32-bit scramble seed value.

***RST** #HFFFFFFF

Range #H0–#HFFFFFFF

Key Entry **Scramble Seed**

Remarks Although values may be set using this command, it does not active that scramble function.

Refer to “[:BURSt:SCRamble\[:STATe\]](#)” on page 878 to enable the scrambling function.

:BURSt:SCRamble[:STATe]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :BURSt :SCRamble [ :STATe ] ON | OFF | 1 | 0
```

```
[ :SOURCE ] :RADIO :TETRA :BURSt :SCRamble [ :STATe ]?
```

This command enables or disables the scramble function.

ON (1) This choice scrambles data on the related fields, using the seed setting.

OFF (0) This choice disables the scramble function.

***RST** 0

Key Entry **Scramble Off On**

Remarks To set the seed value, refer to “[:BURSt:SCRamble:SEED](#)” on page 878.

:BURSt:SHAPE:FALL:DELAy

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :BURSt :SHAPE :FALL :DELAy <val>
```

```
[ :SOURCE ] :RADIO :TETRA :BURSt :SHAPE :FALL :DELAy?
```

This command sets the burst shape fall delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

*RST	+0.00000000E+000
Range	–22.3750 to 99
Key Entry	Fall Delay
Remarks	<p>The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.</p> <p>To change the modulation type, refer to “:MODulation[:TYPE]” on page 892. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.</p> <p>“:BURSt:SHAPe:FDELay” on page 880 performs the same function; in compliance with the SCPI standard, both commands are listed.</p> <p>For concept information on burst shaping, refer to the <i>E4428C/38C ESG Signal Generators User’s Guide</i>.</p>

:BURSt:SHAPe:FALL:TIME

Supported	E4438C with Option 402
	[:SOURCE]:RADio:TETRa:BURSt:SHAPe:FALL:TIME <val> [:SOURCE]:RADio:TETRa:BURSt:SHAPe:FALL:TIME?
	This command sets the burst shape fall time.
	The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.
*RST	+8.00000000E+000
Range	0.1250–50
Key Entry	Fall Time
Remarks	<p>The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.</p> <p>To change the modulation type, refer to “:MODulation[:TYPE]” on page 892. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.</p> <p>“:BURSt:SHAPe:FTIME” on page 880 performs the same function; in compliance with the SCPI standard, both commands are listed.</p> <p>For concept information on burst shaping, refer to the <i>E4428C/38C ESG Signal Generators User’s Guide</i>.</p>

TETRA Subsystem—Option 402 ([:SOURCE]:RADio:TETRa)**:BURSt:SHAPe:FDELaY**

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:BURSt:SHAPe:FDELaY <val>
```

```
[ :SOURCE ] :RADio:TETRa:BURSt:SHAPe:FDELaY?
```

This command sets the burst shape fall delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range -22.3750 to 99

Key Entry **Fall Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 892.

Refer to “:SRATE” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FALL:DELaY” on page 878 performs the same

function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:FTIME

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:BURSt:SHAPe:FTIME <val>
```

```
[ :SOURCE ] :RADio:TETRa:BURSt:SHAPe:FTIME?
```

This command sets the burst shape fall time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +8.00000000E+000

Range 0.1250–50

Key Entry **Fall Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 892. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:FALL:TIME” on page 879 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:RDELay

Supported E4438C with Option 402

[:SOURce] :RADio:TETRa: BURSt: SHAPe: RDELay <val>

[:SOURce] :RADio:TETRa: BURSt: SHAPe: RDELay?

This command sets the burst shape rise delay. The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +0.00000000E+000

Range –14.3750 to 99

Key Entry **Rise Delay**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 892. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:DELay” on page 882 performs the same function; in compliance with the SCPI standard, both commands are listed.

See the *E4428C/38C ESG Signal Generators User’s Guide* for concept information.

TETRA Subsystem—Option 402 ([:SOURce]:RADio:TETRa)**:BURSt:SHAPe:RISE:DELay****Supported** E4438C with Option 402

[:SOURce]:RADio:TETRa:BURSt:SHAPe:RISE:DELay <val>

[:SOURce]:RADio:TETRa:BURSt:SHAPe:RISE:DELay?

This command sets the burst shape rise delay.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

RST** +0.00000000E+000**Range** -14.3750 to 99**Key Entry** **Rise Delay*Remarks** The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 892.

Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RDELay” on page 881 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.**:BURSt:SHAPe:RISE:TIME****Supported** E4438C with Option 402

[:SOURce]:RADio:TETRa:BURSt:SHAPe:RISE:TIME <val>

[:SOURce]:RADio:TETRa:BURSt:SHAPe:RISE:TIME?

This command sets the burst shape rise time.

The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +8.00000000E+000**Range** 0.1250–22.5000**Key Entry** **Rise Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 892. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RTIME” on page 883 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

:BURSt:SHAPe:RTIME

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa: BURSt: SHAPe: RTIME <val>
[ :SOURCE ] :RADio:TETRa: BURSt: SHAPe: RTIME?
```

This command sets the burst shape rise time. The variable <val> is expressed in bits. The minimum and maximum values depend upon modulation type and symbol rate.

***RST** +8.00000000E+000

Range 0.1250–22.5000

Key Entry **Rise Time**

Remarks The setting enabled by this command is not affected by signal generator power-on, preset, or *RST.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 892. Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

“:BURSt:SHAPe:RISE:TIME” on page 882 performs the same function; in compliance with the SCPI standard, both commands are listed.

For concept information on burst shaping, refer to the *E4428C/38C ESG Signal Generators User’s Guide*.

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:BURSt:SHAPE[:TYPE]**

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :BURSt :SHAPE [ :TYPE ] SINE | "<file name>"
[ :SOURCE ] :RADIO :TETRA :BURSt :SHAPE [ :TYPE ] ?
```

This command specifies the burst shape as either SINE or a user-defined file ("<file name>").

SINE This choice selects a state that is defined by the burst rise and fall *RST values as the default burst shape type.

"<file name>" This choice selects a user designated file from signal generator memory (non-volatile).

***RST** SINE

Key Entry **Sine User File**

:BURSt[:STATe]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :BURSt [ :STATe ] ON | OFF | 1 | 0
[ :SOURCE ] :RADIO :TETRA :BURSt [ :STATe ] ?
```

This command enables or disables the burst function.

ON (1) This choice enables the transmission of framed data. If all timeslots which are switched on are up traffic channels or custom, you will be bursting the timeslots that are on; there will be no RF carrier during the off timeslots.

If you have switched on any timeslot that you have configured as a down traffic channel, the RF carrier is not switched off between any of the timeslots. The off timeslots are transmitted as a continuous series of ones for the time period of the off timeslots.

OFF (0) This choice enables the transmission of unframed data.

***RST** 0

Key Entry **Data Format Pattern Framed**

:CHANnel

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:CHANnel EVM|ACP
[ :SOURCE ] :RADio:TETRa:CHANnel?
```

This command optimizes the Nyquist and root Nyquist filters to minimize error vector magnitude (EVM) or to minimize adjacent channel power (ACP).

EVM This choice provides the most ideal passband.

ACP This choice improves stopband rejection.

***RST** EVM

Key Entry **Optimize FIR For EVM ACP**

Remarks To change the current filter type, refer to “:FILTer” on page 889.

:DATA

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:DATA PN9|PN11|PN15|PN20|PN23|FIX4|
"<file name>"|EXT|P4|P8|P16|P32|P64|PRAM
[ :SOURCE ] :RADio:TETRa:DATA?
```

This command sets the data pattern for unframed transmission.

***RST** PN23

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	Ext
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's	PRAM File		

Remarks Refer to “File Name Variables” on page 13 for information on the file name syntax.

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:DATA:PRAM**

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :DATA :PRAM "<file_name>"
```

```
[ :SOURCE ] :RADIO :TETRA :DATA :PRAM?
```

This command selects a pattern RAM (PRAM) file as the pattern data type for the TETRA (Trans-European Trunked Radio) format.

"<file_name>" This variable designates the PRAM file in WFM1. Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

Key Entry **PRAM File**

Remarks Selecting this data source forces the burst source to INTERNAL to allow framing control.

The PRAM file must reside in the signal generator’s volatile memory (WFM1) in order to be accessed by this command. For more information on PRAM files, refer to [“:DATA:PRAM:FILE:BLOCK” on page 110](#).

:DATA:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :DATA :FIX4 <val>
```

```
[ :SOURCE ] :RADIO :TETRA :DATA :FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern for unframed transmission according to the modulation type, symbol rate, filter, and burst shape selected for the TETRA modulation format.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type. To change the data type, refer to [“:DATA” on page 885](#).

:DEFault

Supported E4438C with Option 402

[:SOURCE] :RADIO:TETRA:DEFault

This command returns all of the TETRA modulation format parameters to factory settings. It does not affect any other signal generator parameters.

Key Entry Restore TETRA Factory Default

:EDATa:DELay

Supported E4438C with Option 402

[:SOURCE] :RADIO:TETRA:EDATa:DELay?

This query returns the amount of delay (in symbols) from the external data input to the beginning of the symbol on the I OUT and Q OUT rear panel connectors and the front panel RF OUTPUT connector.

Remarks When the format is turned off, the delay value is unchanged; the query will return the same delay value if the format is on or off.

:EDCLock

Supported E4438C with Option 402

[:SOURCE] :RADIO:TETRA:EDCLock SYMBOL | NORMal

[:SOURCE] :RADIO:TETRA:EDCLock?

This command sets the external data clock use.

SYMBOL This choice specifies that a continuous symbol clock signal must be provided to the SYMBOL SYNC input connector.

NORMal This choice specifies that the DATA CLOCK input connector requires a bit clock. The SYMBOL SYNC input connector requires a (one-shot or continuous) symbol sync signal.

***RST** NORM

Key Entry Ext Data Clock Normal Symbol

Remarks Both choices have no effect in internal clock mode. Refer to “:BBCLock” on [page 875](#) to select EXT as the data clock type.

TETRA Subsystem—Option 402 ([:SOURCE]:RADio:TETRa)**:EREFerence**

Supported E4438C with Option 402

[:SOURCE] :RADio:TETRa:EREFerence INT | EXT

[:SOURCE] :RADio:TETRa:EREFerence?

This command selects either an internal or external bit-clock reference for the data generator.

***RST** INT

Key Entry **BBG Ref Ext Int**

Remarks If the EXT choice is selected, the external source's frequency value

must be applied to the BASEBAND GEN REF IN rear panel connector. The external reference and external data clock are not applicable at the same time. If both are selected, then the external reference takes precedence.

Refer to, “:EREFerence:VALue” on page 888 to enter the external reference frequency setting.

:EREFerence:VALue

Supported E4438C with Option 402

[:SOURCE] :RADio:TETRa:EREFerence:VALue <val>

[:SOURCE] :RADio:TETRa:EREFerence:VALue?

This command sets the expected bit-clock reference frequency value for an externally applied reference signal.

The variable <val> is expressed in units of hertz (Hz–MHz).

***RST** +1.30000000E+007

Range 2.5E5–1E8

Key Entry **Ext BBG Ref Freq**

Remarks The value specified by this command is effective only when you are using an external reference applied to the BASEBAND GEN REF IN rear panel connector.

Refer to “:EREFerence” on page 888 to select EXT (external source) as the reference for the bit-clock.

:FILTer

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:TETRa:FILTer RNYQuist|NYQuist|GAUSSian|RECTangle|
IS95|IS95_EQ|IS95_MOD|IS95_MOD_EQ|AC4Fm|UGGaussian|"<user FIR>"
[:SOURCE]:RADio:TETRa:FILTer?
```

This command selects the pre-modulation filter type.

- | | |
|--------------|--|
| IS95 | This choice selects a filter that meets the criteria of the IS-95 standard. |
| IS95_EQ | This choice selects a filter which is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard. This filter is only used for IS-95 baseband filtering. |
| IS95_MOD | This choice selects a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard. |
| IS95_MOD_EQ | This choice selects a filter which is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection. |
| AC4Fm | This choice selects a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter. |
| UGGaussian | This choice selects a backwards compatible GSM Gaussian filter (Gaussian filter with a fixed BbT value of 0.300) for the ESG E44xxB Option UN3 or UN4. |
| "<user FIR>" | This variable is any filter file that you have stored into memory. |

***RST** RNYQ

Key Entry	Root Nyquist	Nyquist	Gaussian	Rectangle	IS-95	IS-95 w/EQ
	IS-95 Mod	IS-95 Mod w/EQ	APCO 25 C4FM	UN3/4 GSM Gaussian		
	User FIR					

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

TETRA Subsystem—Option 402 ([:SOURCE]:RADio:TETRa)**:IQ:SCALe**

Supported E4438C with Option 402

[:SOURCE] :RADio :TETRa :IQ :SCALe <val>

[:SOURCE] :RADio :TETRa :IQ :SCALe?

This command sets the amplitude of the I/Q outputs for better adjacent channel power (ACP); lower scaling values equate to better ACP.

The variable <val> is expressed in units of percent.

***RST** +65

Range 1–200

Key Entry **I/Q Scaling**

Remarks This command has no effect with MSK or FSK modulation.

:MODulation:FSK[:DEVIation]

Supported E4438C with Option 402

[:SOURCE] :RADio :TETRa :MODulation :FSK [:DEVIation] <val>

[:SOURCE] :RADio :TETRa :MODulation :FSK [:DEVIation]?

This command sets the symmetric FSK frequency deviation value.

The variable <val> is expressed in units of Hertz and the maximum range value equals the current symbol rate value multiplied by four, limited to 20 MHz.

***RST** +4.00000000E+002

Range 0–2E7

Key Entry **Freq Dev**

Remarks To change the modulation type, refer to “:MODulation[:TYPE]” on page 892.

Refer to “:SRATe” on page 863 for a list of the minimum and maximum symbol rate values.

To set an asymmetric FSK deviation value, refer to the *E4428C/38C ESG Signal Generators User’s Guide* for more information.

:MODulation:MSK[:PHASe]

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:TETRa:MODulation:MSK[:PHASe] <val>  
[ :SOURce ]:RADio:TETRa:MODulation:MSK[:PHASe]?
```

This command sets the MSK phase deviation value.

The variable <val> is expressed in units of degrees.

***RST** +9.00000000E+001

Range 0–100

Key Entry **Phase Dev**

:MODulation:UFSK

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:TETRa:MODulation:UFSK "<file name>"  
[ :SOURce ]:RADio:TETRa:MODulation:UFSK?
```

This command selects a user-defined FSK file from the signal generator memory.

Key Entry **User FSK**

Remarks The user-defined FSK file is held in signal generator memory until the command that selects user FSK as the modulation type is sent. Refer to [“:MODulation\[:TYPE\]” on page 892](#) to change the current modulation type.

Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:MODulation:UIQ

Supported E4438C with Option 402

```
[ :SOURce ]:RADio:TETRa:MODulation:UIQ "<file name>"  
[ :SOURce ]:RADio:TETRa:MODulation:UIQ?
```

This command selects a user-defined I/Q file from the signal generator memory.

Key Entry **User I/Q**

TETRA Subsystem—Option 402 ([:SOURce]:RADio:TETRa)

Remarks The user-defined I/Q file is held in signal generator memory until the command that selects user I/Q as the modulation type is sent. Refer to “:MODulation[:TYPE]” on page 892 to change the current modulation type.

Refer to “File Name Variables” on page 13 for information on the file name syntax.

:MODulation[:TYPE]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :TETRa :MODulation [ :TYPE ] BPSK | QPSK | IS95QPSK |
GRAYQPSK | OQPSK | IS95OQPSK | P4DQPSK | PSK8 | PSK16 | D8PSK | MSK | FSK2 | FSK4 |
FSK8 | FSK16 | C4FM | QAM4 | QAM16 | QAM32 | QAM64 | QAM128 | QAM256 | UIQ | UFSK
[ :SOURce ] :RADio :TETRa :MODulation [ :TYPE ] ?
```

This command sets the modulation type for the TETRA personality.

***RST** P4DQPSK

Key Entry	BPSK	QPSK	IS-95 QPSK	Gray Coded QPSK	OQPSK			
	IS-95 OQPSK	$\pi/4$ DQPSK	8PSK	16PSK	D8PSK	MSK	2-Lvl FSK	
	4-Lvl FSK	8-Lvl FSK	16-Lvl FSK	C4FM	4QAM	16QAM	32QAM	
	64QAM	128QAM	256QAM	User I/Q	User FSK			

:POLarity[:ALL]

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :TETRa :POLarity [ :ALL ] NORMal | INVerted
[ :SOURce ] :RADio :TETRa :POLarity [ :ALL ] ?
```

This command sets the rotation direction of the phase modulation vector.

NORMal This choice selects normal phase polarity.

INVerted This choice inverts the internal Q signal.

***RST** NORM

Key Entry **Phase Polarity Normal Invert**

:SECondary:RECall

Supported E4438C with Option 402

[:SOURCE] :RADio:TETRa:SECondary:RECall

This command recalls the secondary frame configuration, overwriting the current state.

Key Entry **Recall Secondary Frame State**

Remarks To save a secondary frame state, refer to “:SECondary:SAVE” on page 893.

A secondary frame is not active until the secondary state is enabled. To activate a secondary frame, refer to “:SECondary[:STATe]” on page 894.

:SECondary:SAVE

Supported E4438C with Option 402

[:SOURCE] :RADio:TETRa:SECondary:SAVE

This command saves the current frame configuration as the secondary frame with the file name TETRa_SECONDARY_FRAME.

Key Entry **Save Secondary Frame State**

Remarks To recall the secondary frame (saved in non-volatile signal generator memory), refer to “:SECondary:RECall” on page 893.

:SECondary:TRIGger[:SOURCE]

Supported E4438C with Option 402

[:SOURCE] :RADio:TETRa:SECondary:TRIGger [:SOURCE] KEY | EXT | BUS
 [:SOURCE] :RADio:TETRa:SECondary:TRIGger [:SOURCE] ?

This command selects the type of triggering for the secondary frame.

KEY This choice enables triggering by pressing the front panel **Trigger** hardkey.

EXT This choice enables triggering using an externally applied signal at the PATT TRIG IN rear panel connector or the PATT TRIG IN 2 pin on the rear panel AUX I/O connector. To select the appropriate connector, refer to “:TRIGger[:SOURCE]:EXTernal[:SOURCE]” on page 916.

BUS This choice enables GPIB triggering using the *TRG or GET command or LAN and RS-232 triggering using the *TRG command.

Key Entry **Trigger Key Ext Bus**

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:SECondary[:STATe]****Supported** E4438C with Option 402

```
[ :SOURCE ] :RADIo:TETRA:SECondary[ :STATe ] ON|OFF|1|0
[ :SOURCE ] :RADIo:TETRA:SECondary[ :STATe ] ?
```

This command enables or disables the ability to switch to the secondary frame.

RST** 0**Key Entry** **Secondary Frame Off On*Remarks** A frame must already be saved as the secondary frame in order to turn the secondary state function on.

To save a frame as the secondary frame, refer to “[:SECondary:SAVE](#)” on [page 893](#).

:SLOT[1]|2|3|4:DCCustom**Supported** E4438C with Option 402

```
[ :SOURCE ] :RADIo:TETRA:SLOT[1]|2|3|4:DCCustom PN9|PN11|PN15|
PN20|PN23|FIX4| "<file name>" |EXT|P4|P8|P16|P32|P64
[ :SOURCE ] :RADIo:TETRA:SLOT[1]|2|3|4:DCCustom?
```

This command configures the downlink continuous custom timeslot data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to “[File Name Variables](#)” on [page 13](#) for information on the file name syntax.**:SLOT[1]|2|3|4:DCCustom:FIX4****Supported** E4438C with Option 402

```
[ :SOURCE ] :RADIo:TETRA:SLOT[1]|2|3|4:DCCustom:FIX4 <val>
[ :SOURCE ] :RADIo:TETRA:SLOT[1]|2|3|4:DCCustom:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink continuous custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15
Key Entry **FIX4**
Remarks FIX4 must already be defined as the data type.

:DCNormal:B1

Supported E4438C with Option 402
[:SOURCE]:RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal:B1 <val>
[:SOURCE]:RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal:B1?

This command sets the first 14 broadcast bits for the selected downlink continuous normal timeslot.

***RST** #H0000
Range #H0–#H3FFF
Key Entry **B1**

:DCNormal:B2

Supported E4438C with Option 402
[:SOURCE]:RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal:B2 <val>
[:SOURCE]:RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal:B2?

This command sets the last 16 broadcast bits for the selected downlink continuous normal timeslot.

***RST** #H0000
Range #H0–#HFFFF
Key Entry **B2**

:SLOT[1] | 2 | 3 | 4:DCNormal:TSEquence

Supported E4438C with Option 402
[:SOURCE]:RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal:
TSEquence <val>
[:SOURCE]:RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal:TSEquence?

This command sets the normal training sequence bits (30-bit mid-amble) for the selected downlink continuous normal timeslot.

***RST** #H343A74
Range #H0–#H3FFFFFF
Key Entry **TS**

TETRA Subsystem—Option 402 ([:SOURCE]:RADio:TETRa)

Remarks When 1E90DE is selected, the data fields are scrambled as separate logical channels.

:SLOT[1] | 2 | 3 | 4:DCNormal[:DATA]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal[:DATA] PN9 | PN11 |
PN15 | PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] :RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal[:DATA]?
```

This command configures the selected downlink continuous normal timeslot data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:SLOT[1] | 2 | 3 | 4:DCNormal[:DATA]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal[:DATA]:FIX4 <val>
[ :SOURCE ] :RADio:TETRa:SLOT[1] | 2 | 3 | 4:DCNormal[:DATA]:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink continuous normal timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT[1]|2|3|4:DCSync:B

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DCSync:B <val>  
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DCSync:B?
```

This command sets the broadcast bits for the selected downlink continuous synchronization timeslot.

***RST** #H00000000

Range #H0–#H3FFFFFFF

Key Entry **B**

:SLOT[1]|2|3|4:DCSync:FCOR

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DCSync:FCOR <val>  
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DCSync:FCOR?
```

This command sets the frequency correction bits for the selected downlink continuous synchronization timeslot.

***RST** #HFF0000000000000000FF

Range #H0–#HFFFFFFFFFFFFFFFFFFFF

Key Entry **FCOR**

:SLOT[1]|2|3|4:DCSync:SSB

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DCSync:SSB <val>  
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DCSync:SSB?
```

This command sets the synchronization block bits for the selected downlink synchronization continuous timeslot.

***RST** #H00000000000000000000000000000000

Range #H0–#HFFFFFFFFFFFFFFFFFFFFFFFF

Key Entry **SSB**

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:SLOT[1]|2|3|4:DCSync:STS****Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DCSync:STS <val>

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DCSync:STS?

This command sets the synchronization training sequence for the selected downlink continuous synchronization timeslot.

RST** #H30673A7067**Range** #H0–#H3FFFFFFFF**Key Entry** **STS*:SLOT[1]|2|3|4:DCSync[:DATA]****Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DCSync[:DATA] PN9|PN11|

PN15|PN20|PN23FIX4|"<file name>"|EXT|P4|P8|P16|P32|P64

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DCSync[:DATA]?

This command configures the selected downlink continuous synchronization timeslot data field.

RST** PN9**Key Entry** **PN9 PN11 PN15 PN20 PN23 FIX4 User File EXT*4 1's & 4 0's 8 1's & 8 0's 16 1's & 16 0's 32 1's & 32 0's****64 1's & 64 0's**

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:SLOT[1]|2|3|4:DCSync[:DATA]:FIX4**Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DCSync[:DATA]:FIX4 <val>

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DCSync[:DATA]:FIX4?

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink continuous synchronization timeslot.

***RST** #B0000**Range** #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

:SLOT[1]|2|3|4:DDCustom

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[1]|2|3|4:DDCustom PN9|PN11|PN15|
PN20|PN23|FIX4|"<file name>"|EXT|P4|P8|P16|P32|P64
[:SOURCE]:RADio:TETRa:SLOT[1]|2|3|4:DDCustom?
```

This command configures the downlink discontinuous custom timeslot data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's		8 1's & 8 0's		16 1's & 16 0's		32 1's & 32 0's	
	64 1's & 64 0's							

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:SLOT[1]|2|3|4:DDCustom:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[1]|2|3|4:DDCustom:FIX4 <val>
[:SOURCE]:RADio:TETRa:SLOT[1]|2|3|4:DDCustom:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink discontinuous custom timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:SLOT[1]|2|3|4:DDNormal:B1****Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDNormal:B1 <val>

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDNormal:B1?

This command sets the first 14 broadcast bits for the selected downlink discontinuous normal timeslot.

RST** #H0000**Range** #H0–#H3FFF**Key Entry** **B1*:SLOT[1]|2|3|4:DDNormal:B2****Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDNormal:B2 <val>

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDNormal:B2?

This command sets the last 16 broadcast bits for the selected downlink continuous normal timeslot.

RST** #H0000**Range** #H0–#HFFFF**Key Entry** **B2*:SLOT[1]|2|3|4:DDNormal:TSEquence****Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDNormal:TSEquence <val>

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDNormal:TSEquence?

This command specifies the normal training sequence bits (30-bit mid-amble) for the selected downlink discontinuous normal timeslot.

RST** #H343A74**Range** #H0–#H3FFFFFFF**Key Entry** **TS*Remarks** When 1E90DE is selected, the data fields are scrambled as separate logical channels.

:SLOT[1] | 2 | 3 | 4:DDNormal[:DATA]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4 :DDNormal [ :DATA ] PN9 | PN11 |
PN15 | PN20 | PN23FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4 :DDNormal [ :DATA ] ?
```

This command configures the selected downlink discontinuous normal timeslot data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to “[File Name Variables](#)” on page 13 for information on the file name syntax.

:SLOT[1] | 2 | 3 | 4:DDNormal[:DATA]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4 :DDNormal [ :DATA ] :FIX4 <val>
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4 :DDNormal [ :DATA ] :FIX4 ?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink discontinuous normal timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

Remarks FIX4 must already be defined as the data type.

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:SLOT[1]|2|3|4:DDSync:B****Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDSync:B <val>

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDSync:B?

This command sets the broadcast bits for the selected downlink discontinuous synchronization timeslot.

RST** #H00000000**Range** #H0–#H3FFFFFFF**Key Entry** **B*:SLOT[1]|2|3|4:DDSync:FCOR****Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDSync:FCOR <val>

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDSync:FCOR?

This command sets the frequency correction bits for the selected downlink discontinuous synchronization timeslot.

RST** #HFF0000000000000000FF**Range** #H0–#HFFFFFFFFFFFFFFFFFFFF**Key Entry** **FCOR*:SLOT[1]|2|3|4:DDSync:SSB****Supported** E4438C with Option 402

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDSync:SSB <val>

[:SOURCE]:RADIO:TETRA:SLOT[1]|2|3|4:DDSync:SSB?

This command sets the synchronization block bits for the selected downlink synchronization discontinuous timeslot.

***RST** #H000000000000000000000000**Range** #H0–#HFFFFFFFFFFFFFFFFFFFFFFFF**Key Entry** **SSB**

:SLOT[1]|2|3|4:DDSync:STS

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DDSync:STS <val>
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DDSync:STS?
```

This command sets the synchronization training sequence for the selected downlink discontinuous synchronization timeslot.

***RST** #H30673A7067

Range #H0–#H3FFFFFFFF

Key Entry STS

:SLOT[1]|2|3|4:DDSync[:DATA]

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DDSync[:DATA] PN9|PN11|
PN15|PN20|PN23|FIX4|"<file name>"|EXT|P4|P8|P16|P32|P64
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DDSync[:DATA]?
```

This command configures the selected downlink discontinuous synchronization timeslot data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's		8 1's & 8 0's		16 1's & 16 0's		32 1's & 32 0's	
	64 1's & 64 0's							

Remarks Refer to [“File Name Variables” on page 13](#) for information on the file name syntax.

:SLOT[1]|2|3|4:DDSync[:DATA]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DDSync[:DATA]:FIX4 <val>
[ :SOURCE ]:RADio:TETRa:SLOT[1]|2|3|4:DDSync[:DATA]:FIX4?
```

This command sets the binary, 4-bit repeating sequence data pattern that is used in the selected downlink discontinuous synchronization timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry FIX4

TETRA Subsystem—Option 402 ([:SOURce]:RADio:TETRa)

Remarks FIX4 must already be defined as the data type. To change the data type, refer to “:SLOT[1]2|3|4:DCNormal[:DATA]” on page 896.

:SLOT[1]|2|3|4:POWer

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 : POWer MAIN | DELTa
[ :SOURce ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 : POWer ?
```

This command toggles the RF output power level function for the selected timeslot.

MAIN This choice specifies RF output as the main power level.

DELTA This choice specifies RF output as the alternative power level.

***RST** MAIN

Key Entry Timeslot Ampl Main Delta

:SLOT[1]|2|3|4:STATe

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 : STATe ON | OFF | 1 | 0
[ :SOURce ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 : STATe ?
```

This command enables or disables the selected timeslot.

***RST** Timeslot 1: 1 Timeslot 2-4:

Key Entry Timeslot Off On

Remarks Continuous timeslots cannot be disabled.

:SLOT[1]|2|3|4:UC1:TSEQuence

Supported E4438C with Option 402

```
[ :SOURce ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 : UC1 : TSEQuence <val>
[ :SOURce ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 : UC1 : TSEQuence ?
```

This command specifies the extended training sequence bits (30-bit mid-amble) for the selected uplink control 1 timeslot.

***RST** #H2743A743

Range #H0–#H3FFFFFFF

Key Entry TS

:SLOT[1]|2|3|4:UC1[:DATA]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 :UC1 [ :DATA ] PN9 | PN11 | PN15 |
PN20 | PN23 | FIX4 " <file name> " | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 :UC1 [ :DATA ] ?
```

This command configures the selected uplink control 1 data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's	8 1's & 8 0's	16 1's & 16 0's	32 1's & 32 0's	64 1's & 64 0's			

Remarks Refer to “[File Name Variables](#)” on page 13 for information on the file name syntax.

:SLOT[1]|2|3|4:UC1[:DATA]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 :UC1 [ :DATA ] :FIX4 <val>
[ :SOURCE ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 :UC1 [ :DATA ] :FIX4 ?
```

This command configures the uplink control 1 data field FIX4 value for the selected timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

:SLOT[1]|2|3|4:UC2:TSEquence

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 :UC2 :TSEquence <val>
[ :SOURCE ] :RADio :TETRa :SLOT [ 1 ] | 2 | 3 | 4 :UC2 :TSEquence ?
```

This command specifies the extended training sequence bits (30-bit mid-amble) for the selected uplink control 2 timeslot.

***RST** #H2743A743

Range #H0–#H3FFFFFF

Key Entry **TS**

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)**:SLOT[1]|2|3|4:UC2[:DATA]****Supported** E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :SLOT [ 1 ] | 2 | 3 | 4 :UC2 [ :DATA ] PN9 | PN11 | PN15 |
PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] :RADIO :TETRA :SLOT [ 1 ] | 2 | 3 | 4 :UC2 [ :DATA ] ?
```

This command configures the selected uplink control 2 data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's		8 1's & 8 0's		16 1's & 16 0's		32 1's & 32 0's	
	64 1's & 64 0's							

Remarks Refer to “[File Name Variables](#)” on page 13 for information on the file name syntax.

:SLOT[1]|2|3|4:UC2[:DATA]:FIX4**Supported** E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :SLOT [ 1 ] | 2 | 3 | 4 :UC2 [ :DATA ] :FIX4 <val>
[ :SOURCE ] :RADIO :TETRA :SLOT [ 1 ] | 2 | 3 | 4 :UC2 [ :DATA ] :FIX4 ?
```

This command configures the uplink control 2 data field FIX4 value for the selected timeslot.

RST** #B0000**Range** #B0000–#B1111 or 0–15**Key Entry** **FIX4*:SLOT[1]|2|3|4:UCStom****Supported** E4438C with Option 402

```
[ :SOURCE ] :RADIO :TETRA :SLOT [ 1 ] | 2 | 3 | 4 :UCStom PN9 | PN11 | PN15 |
PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] :RADIO :TETRA :SLOT [ 1 ] | 2 | 3 | 4 :UCStom ?
```

This command configures the uplink custom data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's		8 1's & 8 0's		16 1's & 16 0's		32 1's & 32 0's	
	64 1's & 64 0's							

Remarks See “File Name Variables” on page 13 for information on the file name syntax.

:SLOT[1] | 2 | 3 | 4:UCUStom:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4:UCUStom:FIX4 <val>
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4:UCUStom:FIX4?
```

This command configures the uplink custom data field to FIX4 (4-bit repeating sequence data pattern).

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

:SLOT[1] | 2 | 3 | 4:UNORmal:TSEquence

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4:UNORmal:TSEquence <val>
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4:UNORmal:TSEquence?
```

This command specifies the extended training sequence bits (22-bit mid-amble) for the selected uplink normal timeslot.

***RST** #H343A74

Range #H0–#H3FFFFFF

Key Entry **TS**

Remarks When 1E90DE is selected, data fields are scrambled as separate logical channels.

:SLOT[1] | 2 | 3 | 4:UNORmal[:DATA]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4:UNORmal[ :DATA ] PN9 | PN11 |
PN15 | PN20 | PN23 | FIX4 | "<file name>" | EXT | P4 | P8 | P16 | P32 | P64
[ :SOURCE ] :RADio:TETRa:SLOT[ 1 ] | 2 | 3 | 4:UNORmal[ :DATA ]?
```

This command configures the selected uplink normal data field.

***RST** PN9

Key Entry	PN9	PN11	PN15	PN20	PN23	FIX4	User File	EXT
	4 1's & 4 0's		8 1's & 8 0's		16 1's & 16 0's		32 1's & 32 0's	
			64 1's & 64 0's					

TETRA Subsystem—Option 402 ([:SOURCE]:RADIO:TETRA)

Remarks Refer to “File Name Variables” on page 13 for information on the file name syntax.

:SLOT[1]|2|3|4:UNORmal[:DATA]:FIX4

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:TETRA:SLOT[ 1 ] | 2 | 3 | 4 :UNORmal [ :DATA ] :FIX4 <val>
[ :SOURCE ] :RADIO:TETRA:SLOT[ 1 ] | 2 | 3 | 4 :UNORmal [ :DATA ] :FIX4?
```

This command configures the uplink normal data field FIX4 value for the selected timeslot.

***RST** #B0000

Range #B0000–#B1111 or 0–15

Key Entry **FIX4**

:SLOT[1]|2|3|4[:TYPE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADIO:TETRA:SLOT[ 1 ] | 2 | 3 | 4 [ :TYPE ] UCUSTom|UC1|UC2|
UNORmal|DDNormal|DDSync|DCNormal|DCSync|DCCustom|DDCustom
[ :SOURCE ] :RADIO:TETRA:SLOT[ 1 ] | 2 | 3 | 4 [ :TYPE ]?
```

This command sets the timeslot type for the selected timeslot.

***RST** *Timeslot 1:* UCUS *Timeslot 2-4:* UNOR

Key Entry **Up Custom Up Control 1 Up Control 2 Up Normal Dn Normal Disc**
Dn Sync Disc Dn Normal Cont Dn Sync Cont Dn Custom Cont
Dn Custom Disc

Remarks When downlink is selected and the frame is uplink, the following mapping is made to convert the uplink protocols to downlink; an error will be generated.

From	To (Continuous Downlink)	To (Discontinuous Downlink)
UC1	DCCustom	DDCustom
UC2	DCCustom	DDCustom
UCUSTom	DCCustom	DDCustom
UNORmal	DCNormal	DDNormal

When uplink is selected and the frame is downlink, the following mapping is made to convert the downlink protocols to uplink; an error will be generated.

From	To
DCCustom/ DDCustom	UCUSTom
DCNormal/ DDNormal	UNORmal
DCSync/ DDSync	UCUSTom

When continuous downlink protocols are selected, all timeslots must be on, and they cannot be turned off. Any attempts to do so will generate an error.

:SOUT

Supported E4438C with Option 402

```
[:SOURCE]:RADio:TETRa:SOUT FRAME | SLOT | ALL
[:SOURCE]:RADio:TETRa:SOUT?
```

This command sets the synchronization location (within the pattern of data) and the type of output at the EVENT 1 rear panel connector.

FRAME This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a framed data pattern.

SLOT This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for a selected timeslot.

ALL This choice outputs a 1-bit signal, synchronized to the bit selected by the synchronization output offset command, for all active timeslots.

***RST** FRAME

Key Entry **Begin Frame** **Begin Timeslot #** **All Timeslots**

Remarks See “:SOUT:OFFSet” on page 909 to change the synchronization output offset.

:SOUT:OFFSet

Supported E4438C with Option 402

```
[:SOURCE]:RADio:TETRa:SOUT:OFFSet <val>
[:SOURCE]:RADio:TETRa:SOUT:OFFSet?
```

This command sets the offset value for the location of the output synchronization signal on the EVENT1 rear panel connector relative to the beginning of the framed data pattern or timeslot.

The variable <val> is expressed as a number of bits.

TETRA Subsystem—Option 402 ([:SOURCE]:RADio:TETRa)

*RST	+0
Range	–509 to 509
Key Entry	Sync Out Offset
Remarks	Negative values move the synchronization output signal earlier; positive values move it later. To change the output of the EVENT1 rear panel connector to SLOT, refer to “:SOUT” on page 909.

:SOUT:SLOT

Supported	E4438C with Option 402
	[:SOURCE] :RADio:TETRa:SOUT:SLOT <val> [:SOURCE] :RADio:TETRa:SOUT:SLOT?
	This command selects the timeslot that will trigger a 1-bit output signal at the EVENT 1 rear panel connector.
*RST	+1
Range	1–4
Key Entry	Begin Timeslot #
Remarks	SLOT must be selected as the output signal type for the EVENT 1 rear panel connector. To change the output of the EVENT1 rear panel connector to SLOT, refer to “:SOUT” on page 909.

:SRATe

Supported	E4438C with Option 001/601 or 002/602
	[:SOURCE] :RADio:TETRa:SRATe <val> [:SOURCE] :RADio:TETRa:SRATe?
	This command sets the transmission symbol rate. Symbol rate is the bit rate divided by the bits per symbol. A change in the symbol rate affects the bit rate. Refer to “:BRATe” on page 876 for information on bit rate.
	The variable <val> is expressed in units of symbols per second (sps–MSPs) and the maximum symbol rate depends on the filter. Refer to “:FILTer” on page 889 for minimum filter symbol width.
	The filter may have to be truncated down to 32 or 16 symbols wide to achieve the highest symbol rate. The signal generator’s internal filters are not truncated below their minimum filter length and user-defined FIR filters are not truncated. If the filter cannot be truncated then the symbol rate is limited to the maximum rate of the narrowest filter size possible.

The relative timing of the modulated data, as well as the actual filter response is affected when the filter is truncated.

When the symbol rate changes, the ESG reconfigures the baseband generator. The time required to reconfigure the baseband generator is inversely proportional to the symbol rate: lower symbol rates require more time.

To change the modulation type, refer to “:MODulation[:TYPE]” on page 892.

***RST** +1.80000000E+004

Range	Modulation Type	Symbol Rate Range		
		<i>16 Symbol Wide Filter</i>	<i>32 Symbol Wide Filter</i>	<i>64 Symbol Wide Filter</i>
	BPSK, FSK2, MSK	1sps–50Msps	1sps–25Msps	1sps–12.5Msps
	C4FM, OQPSK, FSK4	2sps–25Msps	2sps–12.5Msps	2sps–6.25Msps
	OQPSKI95, QPSK			
	P4QPPSK, QPSKIS95			
	GRAYQPSK, QAM4			
	D8PSK, EDGE, FSK8, PSK8	3sps–16.666666666 Msps	3sps–8.333333333 Msps	3sps–4.166666666Msps
	FSK16, PSK16, QAM16	4sps–12.5Msps	4sps–6.25Msps	4sps–3.125Msps
	QAM32	5sps–10Msps	5sps–5Msps	5sps–2.5Msps
	QAM64	6sps–8.333333333 Msps	6sps–4.166666666 Msps	6sps–2.083333333 Msps
	QAM128	7sps–7.142857142 Msps	7sps–3.571428572 Msps	7sps–1.785714285 Msps
	QAM256	8sps–6.25Msps	8sps–3.125 Msps	8sps–1.5625 Msps

NOTE Using I/Q skew will half the minimum number of symbols for the selected filter.

Key Entry **Symbol Rate**

TETRA Subsystem—Option 402 ([:SOURCE]:RADio:TETRa)**:TRIGger:TYPE**

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:TRIGger:TYPE CONTInuous | SINGle | GATE
[ :SOURCE ] :RADio:TETRa:TRIGger:TYPE?
```

This command sets the trigger type.

CONTInuous The framed data sequence repeats continuously; the sequence restarts every time the previous playback is completed. To customize continuous triggering, refer to [“:TRIGger:TYPE:CONTInuous\[:TYPE\]” on page 912](#).

SINGle The framed data sequence plays once for every trigger received.

GATE An external trigger signal interrupts the playback while the gating signal is in the inactive state. Playback resumes when the external control signal returns to the active state. The active state can be set to high or low.

***RST** CONT

Key Entry **Continuous** **Single** **Gated**

:TRIGger:TYPE:CONTInuous[:TYPE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:TRIGger:TYPE:CONTInuous[ :TYPE ] FREE |
TRIGger | RESet
[ :SOURCE ] :RADio:TETRa:TRIGger:TYPE:CONTInuous[ :TYPE ]?
```

This commands selects the waveform’s response to a trigger signal while using the continuous trigger mode.

For more information on triggering and to select the continuous trigger mode, see [“:TRIGger:TYPE” on page 912](#).

The following list describes the waveform’s response to each of the command choices:

FREE Turning the ARB format on immediately triggers the waveform. The waveform repeats until you turn the format off, select another trigger, or choose another waveform file.

TRIGger The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously until you turn the format off, select another trigger, or choose another waveform file.

RESet The waveform waits for a trigger before play begins. When the waveform receives the trigger, it plays continuously. Subsequent triggers reset the waveform to the beginning. For a waveform sequence, this means to the beginning of the first segment in the sequence.

***RST** FREE

Key Entry **Free Run Trigger & Run Reset & Run**

:TRIGger:TYPE:GATE:ACTive

Supported E4438C with Option 402

[:SOURCE] :RADio:TETRa:TRIGger:TYPE:GATE:ACTive LOW|HIGH
 [:SOURCE] :RADio:TETRa:TRIGger:TYPE:GATE:ACTive?

This command selects the active state (gate polarity) of the gate while using the gating trigger mode.

The LOW and HIGH selections correspond to the low and high states of an external trigger signal. For example, when you select HIGH, the active state occurs during the high of the trigger signal. When the active state occurs, the ESG stops the waveform playback at the last played sample point, then restarts the playback at the next sample point when the inactive state occurs. For more information on triggering and to select gating as the trigger mode, see “:TRIGger:TYPE” on page 912.

The following list describes the ESG’s gating behavior for the polarity selections:

LOW The waveform playback stops when the trigger signal goes low (active state) and restarts when the trigger signal goes high (inactive state).

HIGH The waveform playback stops when the trigger signal goes high (active state) and restarts when the trigger signal goes low (inactive state).

***RST** HIGH

Key Entry **Gate Active Low High**

TETRA Subsystem—Option 402 (:SOURce):RADio:TETRa)**:TRIGger[:SOURce]**

Supported E4438C with Option 402

[:SOURce] :RADio:TETRa:TRIGger [:SOURce] KEY | EXT | BUS

[:SOURce] :RADio:TETRa:TRIGger [:SOURce] ?

This command sets the trigger source.

For more information on triggering, see “:TRIGger:TYPE” on page 912. The following list describes the command choices:

KEY This choice enables manual triggering by pressing the front-panel **Trigger** hardkey.

EXT An externally applied signal triggers the waveform. This is the only choice that works with gating. The following conditions affect an external trigger:

- The input connector selected for the trigger signal. You have a choice between the rear-panel PATTERN TRIG IN connector or the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector. To make the connector selection, see “:TRIGger[:SOURce]:EXTErnal[:SOURce]” on page 916.

For more information on the connectors and on connecting the cables, see the *E4428C/38C ESG Signal Generators User’s Guide*.

- The trigger signal polarity:
 - gating mode, see “:TRIGger:TYPE:GATE:ACTive” on page 913
 - continuous and single modes, see “:TRIGger[:SOURce]:EXTErnal:SLOPe” on page 916
- The time delay between when the ESG receives a trigger and when the waveform responds to the trigger. There are two parts to setting the delay:
 - setting the amount of delay, see “:TRIGger[:SOURce]:EXTErnal:DELAy” on page 915
 - turning the delay on, see “:TRIGger[:SOURce]:EXTErnal:DELAy:STATe” on page 915

BUS This choice enables triggering over the GPIB or LAN using the *TRG or GET commands or the AUXILIARY INTERFACE (RS-232) using the *TRG command.

***RST** KEY

Key Entry **Trigger Key** **Ext** **Bus**

:TRIGger[:SOURCE]:EXtErnal:DELay

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:TRIGger [ :SOURCE ] :EXtErnal:DELay <val>  
[ :SOURCE ] :RADio:TETRa:TRIGger [ :SOURCE ] :EXtErnal:DELay?
```

This command sets the number of bits to delay the ESG's response to an external trigger.

The bit delay is a delay between when the ESG receives the trigger and when it responds to the trigger. The delay uses the clocks of the bit-clock to time the delay. After the ESG receives the trigger and the set number of delay bits (clocks) occurs, the ESG transmits the data pattern.

The delay occurs after you enable the state. See “[:TRIGger\[:SOURCE\]:EXtErnal:DELay:STATe](#)” on [page 915](#). You can set the number of bits either before or after enabling the state.

For more information on configuring an external trigger source and to select external as the trigger source, see “[:TRIGger\[:SOURCE\]](#)” on [page 914](#).

***RST** +0
Range 0–1048575
Key Entry **Ext Delay Bits**

:TRIGger[:SOURCE]:EXtErnal:DELay:STATe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:TRIGger [ :SOURCE ] :EXtErnal:DELay:STATe  
ON|OFF|1|0  
[ :SOURCE ] :RADio:TETRa:TRIGger [ :SOURCE ] :EXtErnal:DELay:STATe?
```

This command enables or disables the operating state of the external trigger delay function.

For setting the delay time, see “[:TRIGger\[:SOURCE\]:EXtErnal:DELay](#)” on [page 915](#), and for more information on configuring an external source, see “[:TRIGger\[:SOURCE\]](#)” on [page 914](#).

***RST** 0
Key Entry **Ext Delay Off On**

:TRIGger[:SOURCE]:EXternal:SLOPe

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:TRIGger[ :SOURCE ] :EXternal:SLOPe POSitive|NEGative
[ :SOURCE ] :RADio:TETRa:TRIGger[ :SOURCE ] :EXternal:SLOPe?
```

This command sets the polarity for an external trigger signal while using the continuous, single triggering mode. To set the polarity for gating, see “**:TRIGger:TYPE:GATE:ACTive**” on page 913.

The POSitive and NEGative selections correspond to the high (positive) and low (negative) states of the external trigger signal. For example, when you select POSitive, the waveform responds (plays) during the high state of the trigger signal. When the ESG receives multiple trigger occurrences when only one is required, the signal generator uses the first trigger and ignores the rest.

For more information on configuring an external trigger source and to select external as the trigger source, see “**:TRIGger[:SOURCE]**” on page 914.

***RST** NEG

Key Entry Ext Polarity Neg Pos

:TRIGger[:SOURCE]:EXternal[:SOURCE]

Supported E4438C with Option 402

```
[ :SOURCE ] :RADio:TETRa:TRIGger[ :SOURCE ] :EXternal[ :SOURCE ] EPT1 |
EPT2 | EPTRIGGER1 | EPTRIGGER2
[ :SOURCE ] :RADio:TETRa:TRIGger[ :SOURCE ] :EXternal[ :SOURCE ]?
```

This command selects which PATTERN TRIG IN connection the ESG uses to accept an externally applied trigger signal when external is the trigger source selection.

For more information on configuring an external trigger source and to select external as the trigger source, see “**:TRIGger[:SOURCE]**” on page 914. For more information on the rear-panel connectors, see the *E4428C/38C ESG Signal Generators User’s Guide*.

The following list describes the command choices:

- | | |
|------------|---|
| EPT1 | This choice is synonymous with EPTRIGGER1 and selects the PATTERN TRIG IN rear-panel connector. |
| EPT2 | This choice is synonymous with EPTRIGGER2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector. |
| EPTRIGGER1 | This choice is synonymous with EPT1 and selects the PATTERN TRIG IN rear-panel connector. |
| EPTRIGGER2 | This choice is synonymous with EPT2 and selects the PATT TRIG IN 2 pin on the rear-panel AUXILIARY I/O connector. |

***RST** EPT1
Key Entry **Patt Trig In 1** **Patt Trig In 2**

[:STATe]

Supported E4438C with Option 402

[:SOURce] :RADio :TETRa [:STATe] ON | OFF | 1 | 0
[:SOURce] :RADio :TETRa [:STATe] ?

This command enables or disables the TETRA modulation format.

***RST** OFF
Key Entry TETRA Off On

Remarks Although the TETRA modulation is enabled with this command, the
RF carrier is not modulated unless you also activate the front panel
Mod On/Off hardkey.

Wideband CDMA Base Band Generator Subsystem—Option 400 [:SOURce]:RADio:WCDMa:TGPP[:BBG])

:BBCLock

Supported E4438C with Option 400

```
[:SOURce]:RADio:WCDMa:TGPP[:BBG]:BBCLock INT[1]|EXT[1]
```

```
[:SOURce]:RADio:WCDMa:TGPP[:BBG]:BBCLock?
```

This command selects the baseband generator chip clock source for the radio uplink channel.

***RST** INT

Key Entry **BBG Chip Clock Ext Int**

Remarks Refer to “:BBCLock:EXT:RATE” on page 918 for the EXT clock rate selections.

:BBCLock:EXT:RATE

Supported E4438C with Option 400

```
[:SOURce]:RADio:WCDMa:TGPP[:BBG]:BBCLock:EXT:RATE X1|X2|X4
```

```
[:SOURce]:RADio:WCDMa:TGPP[:BBG]:BBCLock:EXT:RATE?
```

This command sets the external clock rate for the baseband generator.

X1 This choice sets an external clock rate that is identical to the chip clock (3.84 MHz).

X2 This choice sets an external clock rate that is two times the rate of the chip clock.

X4 This choice sets an external clock rate that is four times the rate of the chip clock.

***RST** X1

Key Entry **Ext Clock Rate x1 x2 x4**

Remarks This command only applies to uplink.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK:APPLY****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:APPLY

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:APPLY?

This command immediately starts the channel coding generation process according to the channel setup and data entered for the downlink physical and transport channels.

Key Entry **Apply Channel Setup****Remarks** If pre-computing is required, then a progress bar will appear on the signal generator's display.**:DLINK:AWGN:CN****Supported** E4438C with Option 400 and 403

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:AWGN:CN <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:AWGN:CN?

This command sets the in band carrier to noise ratio (C/N) value in the AWGN carrier to noise.

RST** -10.2**Range** -20 to 20**Field Entry** C/N value**:DLINK:AWGN:CPOWer*Supported** E4438C with Option 400 and 403

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:AWGN:CPOWer?

This query returns the carrier power of the RF signal.

***RST** 0**Field Entry** C Power

:DLINK:AWGN:ECNO

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:AWGN:ECNO <val>

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:AWGN:ECNO?

This command sets the Ec/No value of the Ec Ref channel.

The variable <val> is expressed in decibels (dB).

***RST** 0

Range -30 to 30

Field Entry Ec/No value

:DLINK:AWGN:ECRPower

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:AWGN:ECRPower?

This query returns the carrier noise power in the Ec Ref channel.

***RST** 0

Field Entry Ec Ref Power

:DLINK:AWGN:ECRef

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:AWGN:ECRef DPCH1 | DPCH2 | PCCPCH | PICH | CPICH

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:AWGN:ECRef?

This command selects the reference used for the Ec/No value.

DPCH1 This choice selects 1 dedicated physical channel.

DPCH2 This choice selects 2 dedicated physical channel.

PCCPCH This choice selects a primary command control physical channel.

PICH This choice selects a paging indicator channel.

CPICH This choice selects a common pilot channel.

***RST** DPCH1

Key Entry DPCH + 1 DPCH + 2 PCCPCH PICH CPICH

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

Remarks White noise is a frequency spectrum that is uniform over a specific frequency band. White noise has equal power per hertz over the specific frequency band.

:DLINK:AWGN:FNBW

Supported E4438C with Option 400 and 403

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : AWGN : FNBW ?

This query returns the flat noise bandwidth value.

***RST** +6.1440000E+006

:DLINK:AWGN:NPOWER

Supported E4438C with Option 400 and 403

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : AWGN : NPOWER ?

This query returns the in-band noise power portion of the total RF power.

***RST** +0

:DLINK:AWGN:TICPower

Supported E4438C with Option 400 and 403

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : AWGN : TICPower ?

This query returns the total in-channel power (carrier with noise) as defined by the 3GPP standard.

***RST** +0

Field Entry Total Pwr

Remarks The total in-channel power is a sum of carrier power and in-channel noise power. Changing the noise related parameters such as C/N, Eb/No, and Eb Ref will cause a recalculation of the total in-channel power.

The maximum value returned by this query depends on the power option that is installed in the signal generator.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK:AWGN[:STATe]****Supported** E4438C with Option 400 and 403

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:AWGN:STATe ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:AWGN:STATe?

This command enables or disables the additive white gaussian noise (AWGN) physical channel.

RST** 0**Key Entry** Channel State Off On**:DLINK:BBClock*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:BBClock INT[1]|EXT[1]

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:BBClock?

This command selects the baseband generator chip clock source for the channel.

RST** INT**Key Entry** BBG Data Clock Ext Int**:DLINK:CARB:CMODE:CCODE*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:CARB:CMODE:CCODE <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:CARB:CMODE:CCODE?

This command sets the channel code for the chip ARB based dedicated physical channel (DPCH) in compressed mode.

***RST** 6**Range** 0–511**Field Entry** Channel Code

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:DLINK:CARB:CMODE:DATA**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:DATA PN9 | PN15

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:DATA?

This command sets the dedicated physical channel (DPCH) data pattern in compressed mode (CM).

***RST** PN9**Key Entry** **PN9 PN15**

Remarks The data pattern contains one frame of each normal DPCH frame with a chosen slot structure. CM is enabled via spread factor reduction using a single frame method.

:DLINK:CARB:CMODE:FOFFset**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:FOFFset <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:FOFFset?

This command sets the frame offset for the dedicated physical channel (DPCH) in compressed mode.

RST** 0**Range** 0–149**Field Entry** Frame Offset**:DLINK:CARB:CMODE:FSTRuct*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:FSTRuct A | B

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:FSTRuct?

This command selects the frame structure for the downlink compressed mode.

A This choice maximizes the transmission gap length in a compressed frame.

B This choice optimized for power control during a compressed frame.

***RST** A**Key Entry** **A B**

:DLINK:CARB:CMODE:POWER**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:CARB:CMODE:POWER <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:CARB:CMODE:POWER?

This command sets the power for the downlink compressed mode.

The variable <val> is expressed in units of decibels (dB).

RST** +0.00000000E+000**Range** -40 to 0**Field Entry** Power**:DLINK:CARB:CMODE:PRATio*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:CARB:CMODE:PRATio <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:CARB:CMODE:PRATio?

This command sets the playback ratio for the downlink compressed mode.

***RST** 2**Range** 0–4096**Field Entry** Playback Ratio**Remarks** The value that is set represents the number of normal frames played between each compressed frame.

For example: 1:30

30 represents the un-compressed (normal) DPCH frames. The 30 frames will be played and then 1 compressed DPCH frame. The sequence then repeats.

:DLINK:CARB:CMODE:SCTYpe**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:CARB:CMODE:SCTYpe NORMal | RIGHT | LEFT

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:CARB:CMODE:SCTYpe?

This command sets the scramble type for the downlink compressed mode.

NORMal This choice selects scramble codes 0–8191 (16 x 511 + 15 = 8191).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

RIGHT	This choice selects scramble codes 8192–16383 (Normal + 8192).		
LEFT	This choice selects scramble codes 16384–24575 (Normal + 16384).		
*RST	NORM		
Key Entry	Normal	Right	Left

:DLINK:CARB:CMODE:SFORmat

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : CARB : CMODE : SFORmat <val>
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : CARB : CMODE : SFORmat ?
```

This command sets the slot format value for the dedicated physical channel (DPCH) in compressed mode. This value is used for both compressed and uncompressed frames.

*RST	+11
Range	1–15
Field Entry	Slot Format

:DLINK:CARB:CMODE:SSCodeos

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : CARB : CMODE : SSCodeos <val>
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : CARB : CMODE : SSCodeos ?
```

This command sets the secondary scramble code offset for the dedicated physical channel (DPCH) in compressed mode.

*RST	+0
Range	0–15
Field Entry	SecScr Code OS

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:DLINK:CARB:CMODE:TFIRST****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:TFIRST <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:TFIRST?

This command sets the first slot at which a gap appears.

RST** 7**Range** 0–7**Field Entry** Tfirst**:DLINK:CARB:CMODE:TGL*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:TGL <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE:TGL?

This command sets the number of slots in the gap.

RST** 7**Range** 1–7**Field Entry** Tgl**:DLINK:CARB:CMODE[:STATE]*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE[:STATE] ON|OFF|1|0

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CARB:CMODE[:STATE]?

This command enables or disables the downlink dedicated physical channel (DPCH) in compressed mode.

***RST** 0**Key Entry** Channel State Off On

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:DLINK:CPICH:CCODE**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CPICH:CCODE?

This query returns the common paging indicator channel (CPICH) channel code value.

RST** +0**Remarks** The channelization code is always expected to be 0.**:DLINK:CPICH:POWER*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CPICH:POWER <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CPICH:POWER?

This command sets the power level for the common paging indicator channel (CPICH). The variable <val> is expressed in units of decibels (dB).

RST** -3.30000000E+000**Range** -40 to 0**Field Entry** Power**:DLINK:CPICH[:STATE]*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CPICH[:STATE]

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:CPICH[:STATE]?

This command enables or disables the common paging indicator channel (CPICH).

***RST** 1**Key Entry** Channel State Off On

:DLINK:CRATe

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :DLINK:CRATe <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :DLINK:CRATe?
```

This command adjusts the chip rate.

The variable <val> is expressed in units of cycle per second (cps).

***RST** +3.84000000E+006

Range 1000∠4250000

Field Entry Chip Rate

Remarks The chip rate is equivalent to the spreading rate.

:DLINK:DPCH[1]:BALance

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :DLINK:DPCH[ 1 ] :BALance <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :DLINK:DPCH[ 1 ] :BALance?
```

This command sets DPCH1 power while scaling the power of all available OCNS channels in order to maintain a total power of 0 dB.

The variable <val> is expressed in units of decibels (dB).

Key Entry **DPCH Channel Balance**

Remarks At least one DPCH and one OCNS channel must be on prior to channel balancing. Refer to “[:DLINK:DPCH\[1\]2\[:STATE\]](#)” on page 935 and “[:DLINK:OCNS\[1\]2|3|4|5|6|7|8|9|10|11|12|13|14|15|16\[:STATE\]](#)” on page 940.

The command [:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1]:BINitalize must be initiated prior to channel balancing.

:DLINK:DPCH[1]:BINitalize

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :DLINK:DPCH[ 1 ] :BINitalize
```

This command initializes the DPCH1 or DPCH2 power of the OCNS channel balancing.

Remarks To insure proper balancing, this command must be called before the channel balancing.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:DLINK:DPCH[1] | 2:ALL[:STATE]**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:DPCH[1] | 2:ALL[:STATE] ON|OFF | 1 | 0

This command enables or disables both of the downlink dedicated physical channels.

Key Entry Channel State Off On**Remarks** If the parameter is changed, the apply command must be executed after the change. Refer to “:DLINK:APPLY” on page 919.

To query the state of the individual channel, refer to “:DLINK:DPCH[1]|2[:STATE]” on page 935

:DLINK:DPCH[1] | 2:CCODE**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:DPCH[1] | 2:CCODE <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:DPCH[1] | 2:CCODE?

This command sets the downlink dedicated physical channel (DPCH) code number.

***RST** DPCH 1: 10 DPCH 2: 11**Range** 0–511**Field Entry** Chan Code**Remarks** The channel code is coupled with the slot format and symbol rate. Refer to “:DLINK:DPCH[1]|2:SLOTformat” on page 932 and “:DLINK:DPCH[1]|2:SRATE” on page 932.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK:DPCH[1] | 2:DATA**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:DPCH[1] | 2:DATA PN9 | PN15 | FIX4 |

"<file name>" | TGRA | TGRB

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:DPCH[1] | 2:DATA?

This command configures the data pattern for the downlink dedicated physical channel (DPCH).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

TGRA	This choice selects transport channel A.
TGRB	This choice selects transport channel B.
"<file name>"	This variable specifies a data pattern that has been stored in memory.
*RST	PN9
Key Entry	PN9 PN15 FIX4 "User File" Transp Chan A Transp Chan B
Remarks	The data is now independent, on each of the DPCH channels. The data is limited to PN9 and PN15 when the DPCH is in slot format 16. If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to " :DLINK:APPLY " on page 919.

:DLINK:DPCH[1] | 2:DATA:FIX4

Supported E4438C with Option 400

```
[ :SOURCE ]:RADio:WCDMa:TGPP[ :BBG ]:DLINK:DPCH[ 1 ] | 2:DATA:FIX4 <val>
[ :SOURCE ]:RADio:WCDMa:TGPP[ :BBG ]:DLINK:DPCH[ 1 ] | 2:DATA:FIX4?
```

This command sets the data type to a FIX4 pattern for the downlink dedicated physical channel (DPCH). While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

***RST** #B0000

Range: 0–15

Key Entry **FIX4**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to "[:DLINK:APPLY](#)" on page 919.

:DLINK:DPCH[1] | 2:POWER

Supported E4438C with Option 400

```
[ :SOURCE ]:RADio:WCDMa:TGPP[ :BBG ]:DLINK:DPCH[ 1 ] | 2:DATA:POWER <val>
[ :SOURCE ]:RADio:WCDMa:TGPP[ :BBG ]:DLINK:DPCH[ 1 ] | 2:DATA:POWER?
```

This command sets the power level for the downlink dedicated physical channel (DPCH). The variable <val> is expressed in units of decibels (dB).

***RST** -1.02000000E+001

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

Range: –40 to 0

Field Entry Power

:DLINK:DPCH[1] | 2:RCSetup

Supported E4438C with Option 400

[:SOURCE] :RADIO:WCDMA:TGPP [:BBG] :DLINK:DPCH [1] | 2:RCSetup REF122 | REF64 |
REF144 | REF384 | AMR122 | ISDN

[:SOURCE] :RADIO:WCDMA:TGPP [:BBG] :DLINK:DPCH [1] | 2:RCSetup?

This command selects the downlink DCPH reference measurement setup for the transport channel.

REF122	This choice configures the transport channel per the 3GPP TS 34.121 specification for a downlink reference measurement channel with a 12.2 kbps rate.	
REF64	This choice configures the transport channel per the 3GPP TS 34.121 specification for a downlink reference measurement channel with a 64 kbps rate.	
REF144	This choice configures the transport channel per the 3GPP TS 34.121 specification for a downlink reference measurement channel with a 144 kbps rate.	
REF384	This choice configures the transport channel per the 3GPP TS 34.121 specification for a downlink reference measurement channel with a 384 kbps rate.	
AMR122	This choice configures the transport channel per the 3GPP TS 25.944 specification for a downlink reference measurement channel AMR with 12.2 kbps rate.	
ISDN	This choice configures the transport channel as follows: 64 kbps rate, channel 1 with 4 blocks of 640 and channel 2 with 1 block of 148 as per the 3GPP TS 25.944 specification.	

Key Entry	12.2 kbps (34.121)	64 kbps (34.121)
	144 kbps (34.121)	384 kbps (34.121)
	AMR 12.2 (25.944)	UDI ISDN (25.944)

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK:DPCH[1] | 2:SLOTformat**Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:DATA:SLOTformat <val>
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:DATA:SLOTformat?
```

This command configures the slot format for the dedicated physical channel (DPCH).

***RST** 0**Range:** 0–16**Field Entry** Slot Format

Remarks The slot format is coupled with the channel code and symbol rate. The transmit power control (TPC), the transport format combination indicator (TFCI), and the Pilot bits are also set as per specification and not displayed.

For a description of slot formats, see the 3GPP Technical Specifications (TS 25.211 v3.10).

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK:DPCH[1] | 2:SRATE**Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:SRATE?
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:SRATE?
```

This query returns the symbol rate for the downlink dedicated physical channel.

RST** +7.50000000E+003**:DLINK:DPCH[1] | 2:SSCodeos*Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:SSCodeos <val>
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:SSCodeos?
```

This command sets the secondary scrambling code offset for the downlink dedicated physical channel (DPCH).

***RST** +0**Range:** 0–15

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

Field Entry 2nd Scr Offset

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK:DPCH[1] | 2:TFCI:PATtern

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ :BBG ] : DLINK : DPCH [ 1 ] | 2 : TFCI : PATtern <val>
[ :SOURCE ] : RADIO : WCDMA : TGPP [ :BBG ] : DLINK : DPCH [ 1 ] | 2 : TFCI : PATtern?
```

This command sets a 10-bit pattern for the transport format combination indicator (TFCI) for the dedicated physical channel (DPCH).

While the variable <val> is expressed in binary or decimal formats, the query returns only decimal values.

***RST** +0

Range: 0–1023

Field Entry TFCI Pat

Remarks The TFCI is optional and describes the services in use (for example, voice or data). If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK:DPCH[1] | 2:TOFFset

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ :BBG ] : DLINK : DPCH [ 1 ] | 2 : TOFFset <val>
[ :SOURCE ] : RADIO : WCDMA : TGPP [ :BBG ] : DLINK : DPCH [ 1 ] | 2 : TOFFset?
```

This command adjusts the timing offset for the dedicated physical channel (DPCH). The variable <val> is expressed in chips.

***RST** +0

Range: 0–149

Field Entry tDPCH Offset

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK:DPCH[1] | 2:TPC:NUMSteps**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:TPC:NUMSteps <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:TPC:NUMSteps?

This command sets the number of steps for increasing/decreasing the user's equipment (UE) power.

RST** +1**Range:** 1–80**Field Entry** TPC Steps**Remarks** The command is used with the transmit power control (TPC) patterns up/down (UDOWN), down/up (DUP), all down(DALL), all up (UALL), external (EXT), or user file ("<file name>"). Refer to **“:DLINK:DPCH[1] | 2:TPC:PATtern”**If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to **“:DLINK:APPLY”** on page 919.**:DLINK:DPCH[1] | 2:TPC:PATtern*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:TPC:PATtern UDOWN | DUP |

UALL | DALL | EXT | "<file name>"

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:DPCH[1] | 2:TPC:PATtern?

This command controls the power of the user's equipment (UE). The increase/decrease direction for UE power level changes is determined by the transmit power control (TPC) pattern.

UDOWN This choice repetitively steps up and down the TPC pattern.

DUP This choice repetitively steps down and up the TPC pattern.

UALL This choice consecutively steps up the TPC pattern.

DALL This choice consecutively steps down the TPC pattern.

EXT This choice specifies an external TPC pattern.

"<file name>" This choice specifies a user file.

***RST** UDOW**Key Entry** All Down All Up Down/Up Up/Down Ext User File

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURce]:RADio:WCDMa:TGPP[:BBG])

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK:DPCH[1]|2[:STATe]

Supported E4438C with Option 400

```
[ :SOURce ] :RADio :WCDMa :TGPP [ :BBG ] :DLINK :DPCH [ 1 ] | 2 :ALL [ :STATe ] ON | OFF | 1 | 0
[ :SOURce ] :RADio :WCDMa :TGPP [ :BBG ] :DLINK :DPCH [ 1 ] | 2 :ALL [ :STATe ] ?
```

This command enables or disables the dedicated physical channels (DPCH1 or DPCH2).

***RST** DPCH1: 1 DPCH2: 0

Key Entry Channel State Off On

Remarks If the parameter is changed, the apply command must be executed after the change. Refer to “:DLINK:APPLY” on page 919.

:DLINK:FILTer

Supported E4438C with Option 400

```
[ :SOURce ] :RADio :WCDMa :TGPP [ :BBG ] :DLINK :FILTer RNYQuist | NYQuist | GAUSSian |
RECTangle | IS95 | IS95_EQ | IS95_MOD | IS95_MOD_EQ | AC4Fm | UGGaussian |
" <user FIR > "
[ :SOURce ] :RADio :WCDMa :TGPP [ :BBG ] :DLINK :FILTer ?
```

This command selects the filter type for the downlink configuration.

IS95 This choice selects a filter that meets the criteria of the IS-95 standard.

IS95_EQ This choice selects a filter which is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard. This filter is only used for IS-95 baseband filtering.

IS95_MOD This choice selects a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard.

IS95_MOD_EQ This choice selects a filter which is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection.

UGGaussian This choice selects a backwards compatible GSM Gaussian filter (Gaussian filter with a fixed BbT value of 0.300) for the ESG E44xxB Option UN3 or UN4.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

AC4Fm	This choice selects a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter.
"<user FIR>"	This variable is any filter file that you have stored into memory.
*RST	RNYQ
Key Entry	Root Nyquist Nyquist Gaussian Rectangle IS-95 IS-95 w/EQ IS-95 Mod IS-95 Mod w/EQ APCO 25 C4FM UN3/4 GSM Gaussian User FIR
Remarks	See “File Name Variables” on page 13 for information on the file name syntax.

:DLINK:FILTer:ALPHa

Supported	E4438C with Option 400
	[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:FILTer:ALPHa <val> [:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:FILTer:ALPHa?
	Execute this command to change the alpha value for a Nyquist or root Nyquist filter.
*RST	+2.20000000E-001
Range	0-1
Key Entry	Filter Alpha
Remarks	This command is effective only after selection of a root Nyquist or Nyquist filter; it does not affect other types of filters. To change the current filter type, refer to “:DLINK:FILTer” on page 935 .

:DLINK:FILTer:BBT

Supported	E4438C with Option 400
	[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:FILTer:BBT <val> [:SOURCE] :RADio:WCDMa:TGPP [:BBG] :DLINK:FILTer:BBT?
	Execute this command to change the bandwidth-multiplied-by-bit-time filter parameter value.
*RST	+5.00000000E-001
Range	0.0000-1.0
Key Entry	Filter BbT
Remarks	This command is effective only after selecting a Gaussian filter; it does not affect other types of filters. See “:DLINK:FILTer” on page 935 to change the filter type.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:DLINK:FILTer:CHANnel****Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:FILTer:CHANnel EVM|ACP
[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:FILTer:CHANnel?

Execute this command to optimize a filter for minimized error vector magnitude (EVM) or for minimized adjacent channel power (ACP).

EVM This choice provides the most ideal passband.**ACP** This choice improves stopband rejection. This feature only applies to root Nyquist and Nyquist filters.***RST** EVM**Key Entry** **Optimize FIR For EVM ACP****Remarks** To change the current filter type, refer to “:DLINK:FILTer” on page 935.**:DLINK:MSYNc****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:MSYNc

This command generates a one shot trigger pulse to synchronize multiple ESGs. This is a command only; there is no query.

Key Entry **Multi ESG Sync Trigger****Remarks** The trigger pulse will be generated when the user assigns the DRPS42 signal to any output port.**:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:ALL[:STATe]****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:ALL[:STATe] ON|OFF|1|0

This command enables or disables all of the orthogonal channel noise simulator (OCNS) channels.

RST** +0**Key Entry** **Channel State Off On*Remarks** To query the state of the individual channel, refer to “:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:STATe]” on page 940.

:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:CCODE**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:CCODE <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:CCODE?

This command sets the channel code number for the downlink orthogonal channel noise simulator (OCNS).

***RST** +24**Range** 0–255**Field Entry** Chan Code

Remarks The channel code is coupled with the symbol rate. Refer to “:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:SRATe” on page 939.

:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:DATA**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:DATA PN9|PN15

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:DATA?

This command configures the data pattern for the downlink orthogonal channel noise simulator (OCNS).

RST** PN9**Key Entry** **PN9** **PN15*:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:POWer****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:POWer <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:POWer?

This command sets the power level for the orthogonal channel noise simulator (OCNS).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

The variable <val> is expressed in units of decibels (dB).

***RST** -1.200000000E+001

Range -40 to 0

Field Entry Power

:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:SRATE

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:OCNS[ 1 ] | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
13 | 14 | 15 | 16 :SRATE <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:OCNS[ 1 ] | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
13 | 14 | 15 | 16 :SRATE?
```

This command selects the symbol rate for the orthogonal channel noise simulator (OCNS).

The choices are expressed in units of kilo symbols per second (ksps).

***RST** +1.50000000E+004

Key Entry **7.5 ksps 15 ksps 30 ksps 60 ksps 120 ksps 240 ksps**
480 ksps 960 ksps

Remarks The symbol rate is coupled with the channel code. Refer to
“:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:CCODE” on page 938.

:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:SSCodeos

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:OCNS[ 1 ] | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
13 | 14 | 15 | 16 :SSCodeos <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:OCNS[ 1 ] | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
13 | 14 | 15 | 16 :SSCodeos?
```

This command sets the secondary scrambling code offset for the orthogonal channel noise simulator (OCNS).

***RST** +0

Range 0–15

Field Entry 2nd Scr Offset

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:TOffset****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:TOffset <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16:TOffset?

This command adjusts the timing offset for the orthogonal channel noise simulator (OCNS) channel.

RST** +0**Range:** 0–149**Field Entry** tOCNS Offset**:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16[:STATe]*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OCNS[1]|2|3|4|5|6|7|8|9|10|11|12|13|14|15|16[:STATe]?

This command enables or disables the orthogonal channel noise simulator (OCNS) channel.

RST** +0**Field Entry** On/Off**:DLINK:OOSTest[:STATe]*Supported** E4438C with Option 400 and 403

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OOSTest[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OOSTest[:STATe]?

This command enables or disables the Out-of-Sync-Test mode.

RST** 0**Key Entry** **Out-of-Sync Test Off On*Remarks** When **Compressed Mode Off On** is set to On, Out-of-Sync Test mode cannot be enabled.When **Out-of-Sync Test Off On** is set to On, ALC is automatically disabled; when **Out-of-Sync Test Off On** is set to Off, **ALC Off On** is automatically enabled.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK:OOSTest:DTXGate:POLarity****Supported** E4438C with Option 400 and 403

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OOSTest:DTXGate:
POLarity POSitive|NEGative
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:OOSTest:DTXGate:POLarity?
```

This command sets the multiple ESG synchronization trigger signal polarity.

RST** POS**Key Entry** **DPCH1 DTX-Gate Trigger Polarity Neg Pos*:DLINK:PADJust****Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PADJust EQUal|SCALE
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PADJust?
```

This command adjusts the code domain power levels of all downlink channels.

EQUal This choice will adjust all channel powers to equal power settings.

SCALE This choice will scale the channel power levels so that the sum of the powers are equal to 0 dB.

RST** EQU**Key Entry** **Equal Powers Scale To 0dB*:DLINK:PCCPch:BCHData****Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PCCPch:BCHData PN9|PN15|FIX4|
"<file name>"|TRANspch
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PCCPch:BCHData?
```

This command sets the broadcast channel (BCH) data format that will be transmitted on the physical common control physical channel (PCCPCH).

TRANspch This choice selects a dedicated transport channel data pattern.

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** FIX4**Key Entry** **PN9 PN15 FIX4 User File Transport CH**

:DLINK:PCCPch:BCHData:FIX4**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PCCPch:BCHData:FIX4 <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PCCPch:BCHData:FIX4?

This command sets a fixed 4-bit binary data pattern for the primary common control physical channel (PCCPCH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

RST** #B0000**Range** 0–15**Key Entry** **FIX4*:DLINK:PCCPch:CCODE****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PCCPch:CCODE <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PCCPch:CCODE?

This command sets the primary common control physical channel (PCCPCH) code to the desired code number.

RST** +1**Range** 0–255**Field Entry** Channel Code**:DLINK:PCCPch:POWER*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PCCPch:POWER <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PCCPch:POWER?

This command sets the power level for the primary common control physical channel (PCCPCH). The variable <val> is expressed in units of decibels (dB).

***RST** -5.30000000E+000**Range** -40 to 0**Field Entry** Power

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:DLINK:PCCPch[:STATE]****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:PCCPch[:STATE] ON|OFF|1|0

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:PCCPch[:STATE]?

This command enables or disables the primary common control physical channel (PCCPCH).

RST** 1**Key Entry** Channel State Off On**:DLINK:PICH:CCODE*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:PICH:CCODE <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:PICH:CCODE?

This command sets the paging indicator channel (PICH) code to the desired code number.

RST** +3**Range** 0–255**Field Entry** Channel Code**:DLINK:PICH:DATA*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:PICH:DATA PN9|PN15|FIX4|

<file name>"

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:PICH:DATA?

This command configures the data pattern for the downlink paging indicator channel (PICH).

<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** PN9**Key Entry** **PN9** **PN15** **FIX4** **User File**

:DLINK:PICH:DATA:FIX4

Supported E4438C with Option 400

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : PICH : DATA : FIX4 <val>

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : PICH : DATA : FIX4?

This command sets a fixed 4-bit data pattern to be transmitted on a paging indicator channel (PICH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

***RST** #B0000

Range 0–15

Key Entry **FIX4**

:DLINK:PICH:PIBits

Supported E4438C with Option 400

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : PICH : PIBits?

This query returns the number of bits in the paging indicator field.

***RST** +288

Field Entry PI Bits

:DLINK:PICH:PINDicator

Supported E4438C with Option 400

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : PICH : PINDicator?

This query returns the number of paging indicator fields per frame.

***RST** +144

Field Entry Paging Indicator

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK:PICH:POWer****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PICH:POWer <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PICH:POWer?

This command sets the power level of the paging indicator channel (PICH). The variable <val> is expressed in units of decibels (dB)

RST** -8.300000000E+000**Range** -40 to 0**Field Entry** Power**:DLINK:PICH[:STATe]*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PICH[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PICH[:STATe]?

This command enables or disables the paging indicator channel (PICH).

RST** 0**Key Entry** Channel State Off On**:DLINK:POLarity*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:POLarity NORMAL|INVverted

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:POLarity?

This command selects the phase polarity of the downlink signal.

NORMAL This choice selects normal polarity.

INVverted This choice inverts the internal Q signal.

***RST** NORM**Key Entry** Phase Polarity Normal Invert

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK:PSCH:POWer****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PSCH:POWer <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PSCH:POWer?

This command sets the power level for the primary synchronization physical channel (PSCH).

The variable <val> is expressed in units of decibels (dB).

RST** -8.30000000E+000**Range** -40 to 0**Field Entry** Power**:DLINK:PSCH[:STATe]*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PSCH[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:PSCH[:STATe]?

This command enables or disables the primary synchronization physical channel (PSCH).

RST** 1**Field Entry** PSCH State**:DLINK:RPANel:INPut:ALTPower*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:RPANel:INPut:ALTPower?

This query returns the type of signal at the alternate power input (Alt power in AUX I/O connector pin#16) for the dedicated physical channel (DPCH) mode.

***RST** NONE

Remarks When **Compressed Mode Off On** is set to On, Compressed-mode stop-trigger Compressed-mode stop-trigger signal is assigned to pin 16 of the rear panel AUX I/O connector. For more information about the rear panel AUX I/O connector configuration, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:DLINK:RPANel:INPut:BBGRef**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:RPANel:INPut:BBGRef?

This query returns the type of signal at the baseband generator reference input (BASEBAND GEN REF IN, rear panel connector) for the dedicated physical channel (DPCH) mode.

***RST** CCL

Remarks The signal name is baseband generator chip clock (CCL). For more information about the rear panel connector configuration, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:DLINK:RPANel:INPut:BGATe**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:RPANel:INPut:BGATe?

This query returns the type of signal at the gate burst (BURST GATE IN, rear panel connector) for the dedicated physical channel (DPCH) mode.

***RST** SFNR

Remarks System Frame Number Reset (SFNR) is used for synchronization in a two ESG setup. This signal is used to tell where the frame starts.

:DLINK:RPANel:INPut:PTRigger1**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:RPANel:INPut:PTRigger1?

This query returns the type of signal at the pattern trigger input 1 (PATT TRIG IN, rear panel connector) for the dedicated physical channel (DPCH) mode.

***RST** MSTI

Remarks When **Compressed Mode Off On** is set to On, Compressed-mode start-trigger (CSTT) signal is assigned to the rear panel PATT TRIG IN connector; when **Out-of-Sync Test Off On** is set to On, DPCH1 DTX-Gate (DDTX) signal is assigned to the rear panel PATT TRIG IN connector.

Multiple ESG Synchronization Trigger In (MSTI) signal is used to synchronize signals from two ESGs that have different coding to simulate transmit diversity.

:DLINK:RPANel:INPut:PTRigger2**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:RPANel:INPut:PTRigger2?

This query returns the type of signal at the pattern trigger input 2 (PATT TRIG IN 2, AUX I/O connector pin#17) for the dedicated physical channel (DPCH) mode.

RST** TPCB**Remarks** Transmit Power Control Bit (TPCB) signal is used to control the DPCH TPC bit.**:DLINK:RPANel:OUTPut:DCLock*Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:RPANel:OUTPut:DCLock
DRPS0|DRPS4|DRPS5|DRPS6|DRPS10|DRPS11|DRPS13|DRPS20|DRPS21|DRPS22|
DRPS23|DRPS24|DRPS25|DRPS26|DRPS28|DRPS30|DRPS32|DRPS33|DRPS34|DRPS35|
DRPS36|DRPS37|DRPS38|DRPS39|DRPS40|DRPS41|DRPS42
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:RPANel:OUTPut:DCLock?
```

This command assigns a signal to the data clock output at the selected rear panel AUX I/O connector pin#6. Refer to [Table 9-2 on page 948](#) for command parameters for the variable and output signal names.

Table 9-2 Downlink Rear Panel Signal (DRPS) Output Type

Command Parameter	Signal Out
DRPS0	NONE
DRPS4	3.84 MHz chip clock
DRPS5	SFN reset signal
DRPS6	SFN sync pulse
DRPS10	SCH slot pulse
DRPS11	10ms Frame pulse
DRPS13	80ms Frame pulse
DRPS20	DPCH data clock with DTX
DRPS21	DPCCH TPC data clock

Table 9-2 Downlink Rear Panel Signal (DRPS) Output Type

Command Parameter	Signal Out
DRPS22	DPCCH TFCI data clock
DRPS23	DPCCH Pilot data clock
DRPS24	DPCH data stream
DRPS25	DPCH TimeSlot pulse
DRPS26	DPCH 10ms Frame Pulse
DRPS28	DPCH data clock
DRPS30	DPDCH data clock w/oDTX
DRPS32	DPCH comp Frm Indicator
DRPS33	DPCH Gap Indicator
DRPS34	PICH data clock
DRPS35	PICH data
DRPS36	PICH TimeSlot pulse
DRPS37	PICH 10ms FramePulse
DRPS38	P-CCPCH data clock
DRPS39	P-CCPCH data
DRPS40	DPCH Chip-ARB-frame-pulse
DRPS41	DPCH TPC-bits-out
DRPS42	Multi-ESG Sync Trigger Out

*RST

RPS0

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Key Entry	NONE 3.84MHz chip-clk (DRPS4) SFN reset-signal (DRPS5) SFN sync-pulse (DRPS6) SCH slot-pulse (DRPS10) 10ms Frame Pulse (DRPS11) 80ms Frame Pulse (DRPS13) DPDCH data-clk with DTX (DRPS20) DPCCH TPC data-clk (DRPS21) DPCCH TFC I data-clk (DRPS22) DPCCH Pilot data-clk (DRPS23) DPCH data stream (DRPS24) DPCH TimeSlot pulse (DRPS25) DPCH 10ms Frame-Pulse (DRPS26) DPCH data-clk (0) (DRPS28) DPDCH data-clk withoutDTX (DRPS30) DPCH Compressed Frame Indicator (DRPS32) DPCH Gap Indicator (DRPS33) PICH data-clk (DRPS34) PICH data (DRPS35) PICH TimeSlot Pulse (DRPS36) PICH 10ms FramePulse (DRPS37) P-CCPCH data-clk (DRPS38) P-CCPCH data (DRPS39) DPCH ChipARB FramePulse (DRPS40) DPCH TPC-Bit Out (DRPS41) Mlt-ESG-Sync Trigger-Out (DRPS42)
Remarks	For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the <i>E4428C/38C ESG Signal Generators User's Guide</i> .

:DLINK:RPANel:OUTPut:DOUT

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:DOUT
DRPS0 | DRPS4 | DRPS5 | DRPS6 | DRPS10 | DRPS11 | DRPS13 | DRPS20 | DRPS21 | DRPS22 |
DRPS23 | DRPS24 | DRPS25 | DRPS26 | DRPS28 | DRPS30 | DRPS32 | DRPS33 | DRPS34 | DRPS35 |
DRPS36 | DRPS37 | DRPS38 | DRPS39 | DRPS40 | DRPS41 | DRPS42
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:DOUT?
```

This command assigns a signal to the data output at the selected rear panel AUX I/O connector pin#7. Refer to [Table 9-2 on page 948](#) for command parameters and output signal names.

***RST** RPS0

Key Entry Refer to **Key Entry** on [page 950](#).

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:DLINK:RPANel:OUTPut:EVENT1**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADIo:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:EVENT1
DRPS0 | DRPS4 | DRPS5 | DRPS6 | DRPS10 | DRPS11 | DRPS13 | DRPS20 | DRPS21 | DRPS22 |
DRPS23 | DRPS24 | DRPS25 | DRPS26 | DRPS28 | DRPS30 | DRPS32 | DRPS33 | DRPS34 | DRPS35 |
DRPS36 | DRPS37 | DRPS38 | DRPS39 | DRPS40 | DRPS41 | DRPS42
```

```
[ :SOURCE ] :RADIo:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:EVENT1?
```

This command assigns a signal to the EVENT 1 rear panel output connector. Refer to [Table 9-2 on page 948](#) for command parameters and output signal names.

***RST** RPS0**Key Entry** Refer to **Key Entry** on [page 950](#).

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:DLINK:RPANel:OUTPut:EVENT2**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADIo:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:EVENT2
DRPS0 | DRPS4 | DRPS5 | DRPS6 | DRPS10 | DRPS11 | DRPS13 | DRPS20 | DRPS21 | DRPS22 |
DRPS23 | DRPS24 | DRPS25 | DRPS26 | DRPS28 | DRPS30 | DRPS32 | DRPS33 | DRPS34 | DRPS35 |
DRPS36 | DRPS37 | DRPS38 | DRPS39 | DRPS40 | DRPS41 | DRPS42
```

```
[ :SOURCE ] :RADIo:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:EVENT2?
```

This command assigns a signal to the EVENT 2 rear panel output connector. Refer to [Table 9-2 on page 948](#) for command parameters and output signal names.

***RST** RPS0**Key Entry** Refer to **Key Entry** on [page 950](#).

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK:RPANel:OUTPut:EVENT3****Supported** E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:EVENT3
DRPS0 | DRPS4DRPS5 | DRPS6 | DRPS10 | DRPS11 | DRPS13 | DRPS20 | DRPS21 | DRPS22 |
DRPS23 | DRPS24 | DRPS25 | DRPS26 | DRPS28 | DRPS30 | DRPS32 | DRPS33 | DRPS34 | DRPS35 |
DRPS36 | DRPS37 | DRPS38 | DRPS39 | DRPS40 | DRPS41 | DRPS42
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:EVENT3?
```

This command assigns a signal to the EVENT 3 at the selected rear panel AUX I/O connector pin#19. Refer to [Table 9-2 on page 948](#) for command parameters and output signal names.

***RST** RPS0**Key Entry** Refer to **Key Entry** on [page 950](#).

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:DLINK:RPANel:OUTPut:EVENT4**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:EVENT4
DRPS0 | DRPS4 | DRPS5 | DRPS6 | DRPS10 | DRPS11 | DRPS13 | DRPS20 | DRPS21 | DRPS22 |
DRPS23 | DRPS24 | DRPS25 | DRPS26 | DRPS28 | DRPS30 | DRPS32 | DRPS33 | DRPS34 | DRPS35
DRPS36 | DRPS37 | DRPS38 | DRPS39 | DRPS40 | DRPS41 | DRPS42
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK:RPANel:OUTPut:EVENT4?
```

This command assigns a signal to the EVENT 4 at the selected rear panel AUX I/O connector pin#18. Refer to [Table 9-2 on page 948](#) for command parameters and output signal names.

***RST** RPS0**Key Entry** Refer to **Key Entry** on [page 950](#).

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:DLINK:RPANel:OUTPut:SSYNc**Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:RPANel:OUTPut:SSYNc
DRPS0|DRPS4|DRPS5|DRPS6|DRPS10|DRPS11|DRPS13|DRPS20|DRPS21|DRPS22|
DRPS23|DRPS24|DRPS25|DRPS26|DRPS28|DRPS30|DRPS32|DRPS33|DRPS34|DRPS35|
DRPS36|DRPS37|DRPS38|DRPS39|DRPS40|DRPS41|DRPS42
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:RPANel:OUTPut:SSYNc?
```

This command assigns a signal to the SYM SYNC OUT at the selected rear panel AUX I/O connector pin#5. Refer to [Table 9-2 on page 948](#) for command parameters and output signal names.

***RST** RPS0**Key Entry** Refer to **Key Entry** on [page 950](#).

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:DLINK:SCH[:STATe]**Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:SCH[:STATe] ON|OFF|1|0
```

This command enables or disables the primary and secondary synchronization channel (SSCH).

***RST** 1**Key Entry** **Channel State Off On**

Remarks To query the state of the individual channel, refer to “:DLINK:PSCH[:STATe]” on [page 946](#) and “:DLINK:SSCH[:STATe]” on [page 955](#).

:DLINK:SCRamblecode**Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:SCRamblecode <val>
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:SCRamblecode?
```

This command selects the scramble code number.

***RST** +0**Range** 0–511**Field Entry** Scrambling Code

:DLINK:SDElay**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:SDElay <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:SDElay?

This command sets the delay of the system frame number (SFN) synchronization when a Multi-ESG-Sync Trigger-In signal is received. The variable <val> is expressed in unit of chips.

***RST** +0.00000000E+000**Range** 0–38399**Field Entry** Sync Delay

Remarks This function provides the capability of Inter-Cell Soft Handover test as described in TS.34.121 7.7.1 of the 3GPP standard. The test requires two basestations that generate the same signal but have a 10 chip timing offset. The two basestations are simulated by two ESGs and Sync Delay is the synchronization delay between the ESGs.

:DLINK:SSCH:POWer**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:SSCH:POWer <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:SSCH:POWer?

This command sets the power level for the secondary synchronization channel (SSCH). The variable <val> is expressed in units of decibels (dB).

RST** –8.30000000E+000**Range** –40 to 0**Field Entry** SSCH Power**:DLINK:SSCH:SSGRoup*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:SSCH:SSGRoup?

This command query returns the secondary scramble code group for the secondary synchronization channel (SSCH).

***RST** +0**Field Entry** SSCH 2nd Scramble Group

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:DLINK:SSCH[:STATe]**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:SSCH[:STATe] ON|OFF|1|0

This command enables or disables the secondary synchronization channel (SSCH).

RST** 1**Field Entry** SSCH State**:DLINK:TGAP:FSTRUCT*Supported** E4438C with Option 400

[:SOURCE]:RADIO[1]|2|3|4:WCDMA:TGPP[:BBG]:DLINK:TGAP:FSTRUCT A|B

[:SOURCE]:RADIO[1]|2|3|4:WCDMA:TGPP[:BBG]:DLINK:TGAP:FSTRUCT?

This command selects the compressed frame structure for the transmission gaps.

A The pilot field of the last slot in the transmission gap is transmitted and transmission is turned off during the rest of the transmission gap.

B The TPC field of the first slot and the pilot field of the last slot in the transmission gap are transmitted and transmission is turned off during the rest of the transmission gap.

RST** A**Field Entry** Frame Struct**:DLINK:TGAP:POFFset*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:TGAP:POFFset <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:DLINK:TGAP:POFFset?

This command specifies the amount of power to be increased when the data is being compressed for the transmission gap power offset.

The variable <val> is expressed in units of decibels (dB).

***RST** +0.00000000E+000**Range** 0–6**Field Entry** PwrOffs

:DLINK:TGAP:PSI[1]:CFN**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:CFN <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:CFN?

This command sets the connection frame number (CFN) for the first radio of the first pattern 1.

***RST** 0**Range** 1–255**Field Entry** TGCFN

Remarks The connection frame number (CFN) is counted internally relative to the system sync signal.

:DLINK:TGAP:PSI[1]:CMMethod**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:CMMehtod SF2|PUNcture

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:CMMethod?

This command selects the compressed mode (CM) method.

SF2 This choice selects a compressed mode method that reduces the spread factor (SF) by 2. This is done by reducing the spreading factor in half. When the dedicated physical data channel's (DPDCH) symbol rate is 960 kbps, the frame is not compressed because it uses the lowest SF value and cannot be reduced.

PUNcture This choice selects a compressed mode method that punctures the convolutional encoder to a lower rate which reduces the number of symbols to be transmitted.

***RST** SF2**Key Entry** **SF2** **Puncture**

Remarks To edit the parameters for this command using the ESG front panel keys, highlight the **CM Method** field and select either **SF2** or **Puncture** softkeys.

If the parameter is changed, the apply command must be executed after the change. Refer to “:DLINK:APPLY” on page 919.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIo:WCDMa:TGPP[:BBG])

:DLINK:TGAP:PSI[1]:D**Supported** E4438C with Option 400

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:D <val>

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:D?

This command sets the transmission gap distance.

RST** +0**Range** 0, 15–269**Field Entry** TGD**Remarks** This command specifies the number of slots between the starting slot of two consecutive transmission gaps within a gap pattern.**:DLINK:TGAP:PSI[1]:L1*Supported** E4438C with Option 400

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:L1 3|4|5|7|10|14

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:L1?

This command specifies the length of the first transmission gap (TGL1).

The length is expressed in number of slots.

RST** 7**Field Entry** TGL1**:DLINK:TGAP:PSI[1]:L2*Supported** E4438C with Option 400

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:L2 3|4|5|7|10|14|OMITted

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:L2?

This command specifies the length of the second transmission gap (TGL2).

The length is expressed in number of slots.

RST** OMIT**Field Entry** TGL2**Key Entry** **Omitted*Remarks** When OMITted is selected, TGL2 = TGL1.

:DLINK:TGAP:PSI[1]:PL1**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:PL1 <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:PL1?

This command specifies the duration of the transmission gap pattern length 1 (TGPL1).

The variable <val> is expressed in number of frames.

RST** +2**Range** 1–144**Field Entry** TGPL1**:DLINK:TGAP:PSI[1]:PL2*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:PL2 <val>|OMITted

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:PL2?

This command specifies the duration of the transmission gap pattern length 2 (TGPL2).

The variable is expressed in number of frames.

RST** OMIT**Range** 1–144**Key Entry** **Omitted*Remarks** When OMITted is selected, TGPL2 = TGPL1.**:DLINK:TGAP:PSI[1]:PRC****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:PRC <val>|INFIinity

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:PSI[1]:PRC?

This command sets the transmission gap pattern repetition count.

RST** 1**Range** 1–511**Key Entry** **Infinity*Field Entry** TGPRC

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

Remarks The pattern repetition count (PRC) sets the number of transmission gap patterns within the transmission gap pattern sequence. When `INFINITY` is selected, the PRC will continue indefinitely.

:DLINK:TGAP:PSI[1]:PS

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : TGAP : PSI [ 1 ] : PS ACTIVE | INACTIVE
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : TGAP : PSI [ 1 ] : PS?
```

This command sets the transmission gap pattern status.

ACTIVE This choice activates the compressed mode.

INACTIVE This choice sets the compressed mode to inactive.

***RST** INAC

Key Entry **Active** **Inactive**

:DLINK:TGAP:PSI[1]:SN

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : TGAP : PSI [ 1 ] : SN <val>
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : TGAP : PSI [ 1 ] : SN?
```

This command specifies the timeslot number of the first transmission gap within the first radio frame.

***RST** +11

Range 0–14

Field Entry TGSN

:DLINK:TGAP:RPARAMETER

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : TGAP : RPARAMETER DREF11 | DREF12 |
DREF21 | DREF22
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : DLINK : TGAP : RPARAMETER?
```

This command sets the downlink reference compressed mode parameters as defined in 3GPP standard.

DREF11 This choice sets the reference parameter to 1.1.

DREF12 This choice sets the reference parameter to 1.2.

DREF21 This choice sets the reference parameter to 2.1.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

DREF22	This choice sets the reference parameter to 2.2.			
*RST	CUST			
Key Entry	DL Reference 1.1	DL Reference 1.2	DL Reference 2.1	DL Reference 2.2
Remarks	The query returns CUSTom when the parameters are set individually.			

:DLINK:TGAP:SCFN

Supported	E4438C with Option 400			
	[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:SCFN <val>			
	[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:SCFN?			
	This command sets the stop connection frame number (CFN) when the stop trigger is used.			
	When the stop trigger is received at the signal generator, the compressed mode will finish even if the transmission gap pattern repetition count (TGPRC) is still remaining.			
*RST	+0			
Range	0–255			
Field Entry	SCFN			
Remarks	The compressed mode stop trigger must be executed for this command to work. Refer to, “:DLINK:TGAP:STOP:TRIGger” on page 961.			

:DLINK:TGAP:START:TRIGger

Supported	E4438C with Option 400			
	[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:START:TRIGger			
	This command starts the signal generator compressed pattern transmission. Compressed pattern transmission begins with the specified transmission gap connection frame number (TGCFN).			
Key Entry	Compressed Mode Start Trigger			

:DLINK:TGAP:START:TRIGger:POLarity

Supported	E4438C with Option 400			
	[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:START:TRIGger:POLarity			
	POSitive NEGative			
	[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TGAP:START:TRIGger:POLarity?			
	This command sets the compressed mode start trigger polarity. The compressed pattern transmission begins when this trigger is received.			

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

POSitive	This choice sets the trigger to start when the trigger signal is high.
NEGative	This choice sets the trigger to start when the trigger signal is low.
*RST	POS
Key Entry	Comp Mode Start Trigger Polarity Pos Neg

:DLINK:TGAP:STOP:TRIGger

Supported E4438C with Option 400

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : TGAP : STOP : TRIGger

This command stops the signal generator compressed pattern transmission. Compressed pattern transmission begins with the specified transmission gap connection frame number (TGCFN).

Key Entry **Compressed Mode Stop Trigger**

:DLINK:TGAP:STOP:TRIGger:POLarity

Supported E4438C with Option 400

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : TGAP : STOP : TRIGger : POLarity
POSitive | NEGative

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : TGAP : STOP : TRIGger : POLarity?

This command sets the compressed mode stop trigger polarity. The compressed pattern transmission stops when this trigger is received.

POSitive	This choice sets the trigger to stop when the trigger signal is high.
NEGative	This choice sets the trigger to stop when the trigger signal is low.
*RST	POS
Key Entry	Comp Mode Stop Trigger Polarity Pos Neg

:DLINK:TGAP[:STATE]

Supported E4438C with Option 400

[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : TGAP [: STATE] 1 | 0 | ON | OFF
[:SOURCE] : RADIO : WCDMA : TGPP [: BBG] : DLINK : TGAP [: STATE] ?

This command enables or disables the transmission gap compressed mode.

*RST	0
Key Entry	Compressed Mode On Off

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Remarks When compressed mode is enabled, DPCH2 is automatically disabled and can't be enabled.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK:TSETup

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :DLINK:TSETup REFSensitivity | MAXinput | ACS |
BLOcking | SPURious | INTermod | PERFreq
```

This command configures the test setup for the downlink channels.

REFSensitivity This choice selects reference sensitivity. This is the minimum receiver input power measured at the antenna connector.

MAXinput This choice selects maximum input interference. The receiver is stressed with high-levels of interference from unwanted signals.

ACS This choice selects adjacent channel selectivity (ACS). This is the receiver ability to receive a wanted signal at the assigned channel frequency with the presence of adjacent signals.

ACS is the ratio of the receiver filter attenuation (on the assigned channel) to the receive filter attenuation on the adjacent channel(s).

BLOcking This choice selects the blocking characteristics. This is a measure of the receiver ability to receive a wanted signal at the assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the adjacent channels.

SPURious This choice selects spurious emission power. The emissions are generated or amplified by a receiver.

INTermod This choice selects intermodulation. Third order intermodulation (TIO) or higher mixing of the two interfering RF signals signal in the band of the desired channel.

PERFreq This choice selects the performance requirement of the dedicated channel. This is a static propagation conditions that is determined by the maximum block error rate (BLER) allowed when the receiver input signal is at a specified Eb/No limit.

Key Entry	Ref Sensitivity	Max Input	ACS	Blocking
	Spurious Response	Intermod	Performance Req	

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK:TXDV****Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TXDV NONE | OANT1 | OANT2 | OANTO1 | OANTO2
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK:TXDV?

This command selects the transmit diversity mode of the downlink signal.

NONE This choice disables the transmit diversity mode.

OANT1 This choice selects a Transmit Diversity Openloop Antenna 1 mode.

OANT2 This choice selects a Transmit Diversity Openloop Antenna 2 mode.

OANTO1 This choice selects a Transmit Diversity Openloop Antenna 1 mode with the SCH TSTD (Synchronization Channel Transmit Switched Time Diversity) off.

OANTO2 This choice selects a Transmit Diversity Openloop Antenna 2 mode with the SCH TSTD (Synchronization Channel Transmit Switched Time Diversity) off.

***RST** NONE**Field Entry** TX Diversity**Key Entry** **None** **OpenLoop Ant1** **OpenLoop Ant2**
OpenLoop Ant1 SCH TSTD OFF **OpenLoop Ant2 SCH TSTD OFF**

:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:BLKSize**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:
BLKSize <val>[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:
BLKSize?

This command sets the block size (BLKSize) for the selected dedicated transport channel (DCH). The transport channel position affects the behavior of this command as described below.

Transport Channel Mode	Signal Generator Behavior
FLEXible	Changing the block size causes the signal generator to recalculate the block set size. The block size, number of blocks and the block set size values are interdependent as shown in the following formula: $\text{block size} = \text{block set size} \div \text{number of blocks}$
FIXed	There are two signal generator behaviors in this mode: <ul style="list-style-type: none"> change the block size to zero, and it remains zero regardless of the block set size and number of blocks values change the block size to a value other than zero, and the signal generator recalculates the block size as a quotient of the block set size and the number of blocks (block set size \div number of blocks), ignoring the value entered by the command

***RST** 20**Range** 0–5000**Field Entry** Blk Size

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

For information on the number of blocks and block set size commands, see “:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:NBLocks” on page 969, and “:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:BSSize” on page 965.

Refer to the “:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:POSITION” command on page 970 for information on setting the transport channel position.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:BPFFrame****Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6 :
BPFFrame?

This query returns the number of bits per frame for the selected dedicated transport channel (DCH).

RST** 60**Field Entry** Bits/Frame**:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:BRATe*Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6 :
BRATe?

This query returns the block rate for the selected dedicated transport channel (DCH).

RST** 20**:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:BSSize*Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6 :
BSSize <val>
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6 :
BSSize?This command sets the block set size (BSSize) for the selected dedicated transport channel (DCH).
The transport channel position affects the behavior of this command as described below.**Transport
Channel Mode****Signal Generator Behavior**

FLEXible	This command has no effect on the block size value. The block size value changes only when there is a value change in the number of blocks or the block size according to the following formula:
----------	--

$$\text{block set size} \geq \text{block size} \times \text{number of blocks}$$

Transport Channel Mode	Signal Generator Behavior
FIXed	<p>Changing the block set size value automatically changes the block size, so that the block set size approximates or is the product of the block size and number of blocks values:</p> $\text{block set size} \geq \text{block size} \times \text{number of blocks}$ <p>The change in the block set size value generates a settings conflict error, which the signal generator corrects when it recalculates the block size value.</p>
*RST	20
Range	0–200000
Field Entry	Blk Set Size
Remarks	<p>Refer to the “DLINK[:TGRoup [A] B]:DCH[1] 2 3 4 5 6:POsition” command on page 970 for information on setting the transport channel position.</p> <p>For information on the number of blocks and block size commands, see “DLINK[:TGRoup [A] B]:DCH[1] 2 3 4 5 6:NBLOCKS” on page 969, and “DLINK[:TGRoup [A] B]:DCH[1] 2 3 4 5 6:BLKSize” on page 964.</p> <p>If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “DLINK:APPLY” on page 919.</p>

DLINK[:TGRoup [A]| B]:DCH[1]| 2 | 3 | 4 | 5 | 6:CODE

Supported	E4438C with Option 400
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] B]:DCH[1] 2 3 4 5 6:CODE HCONv TCONv TURBo NONE	
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] B]:DCH[1] 2 3 4 5 6:CODE?	

This command selects the encoder type.

HCONv	This choice selects coding with the 1/2 rate convolutional encoder.
TCONv	This choice selects coding with the 1/3 rate convolutional encoder.
TURBo	This choice selects coding with the turbo coder.
NONE	This choice selects no coding.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

*RST	HCON
Key Entry	1/2 Conv 1/3 Conv Turbo None
Remarks	If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:CRC

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[1] | 2 | 3 | 4 | 5 | 6 :
CRC <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[1] | 2 | 3 | 4 | 5 | 6 :
CRC?
```

This command sets the number of cyclic redundancy check (CRC) bits for the dedicated transport channel (DCH).

*RST	8
Field Entry	CRC Size
Remarks	If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[1] | 2 | 3 | 4 | 5 | 6 :
DATA PN9 | FIX4 | "<file name>"
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[1] | 2 | 3 | 4 | 5 | 6 :
DATA?
```

This command configures the data for the downlink dedicated transport channel (DCH) selected.

"<file name>" This variable specifies a data pattern that has been stored in memory.

*RST	PN9
Key Entry	PN9 FIX4 "<User File>"
Remarks	If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919.

:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:EINSert**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:EINSert BLER | BER | NONE

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:EINSert?

This command selects the error insertion mode.

BLER This choice selects a block error rate (BLER) mode.**BER** This choice selects a bit error rate (BER) mode.**NONE** This choice selects no BLER or BER mode (no error blocks or bit are inserted)***RST** NONE**Key Entry** **BLER** **BER** **None****:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:FIX4****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:FIX4 <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:DLINK[:TGRoup[A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:FIX4?

This command sets a fixed data type to be transmitted on the selected downlink dedicated transport channel (DCH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

RST** #B0000**Range** 0–15**Key Entry** **FIX4*Remarks** If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:DLINK:APPLY” on page 919](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:DLINK[:TGRoup [A]|B]:DCH[1]|2|3|4|5|6:NBLocks**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :DLINK [ :TGRoup [A] | B ] :DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :
NBLocks <val>
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :DLINK [ :TGRoup [A] | B ] :DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :
NBLocks?
```

This command sets the number of blocks (NBLocks) transmitted by the selected downlink dedicated transport channel (DCH). The transport channel position affects the behavior of this command as described below.

Transport Channel Mode	Signal Generator Behavior
FLEXible	Changing the number of blocks causes the signal generator to recalculate the block set size; <i>block size</i> remains constant. The equation is as follows: $\text{number of blocks} \leq \text{block set size} \div \text{block size}$
FIXed	Changing the number of blocks causes the signal generator to recalculate the block size; <i>block set size</i> remains constant. Changing the number of blocks also causes the ESG to generate a settings conflict error that is corrected when the signal generator recalculates the block size. The equation is as follows: $\text{number of blocks} \leq \text{block set size} \div \text{block size}$
*RST	1
Range	1–64
Field Entry	# of Blocks
Remarks	Refer to the “:DLINK[:TGRoup [A] B]:DCH[1] 2 3 4 5 6:POSITION” command on page 970 for information on setting the transport channel position. For information on the block size (BLKSize) and block set size (BSSize) commands, see “:DLINK[:TGRoup [A] B]:DCH[1] 2 3 4 5 6:BLKSize” on page 964 and “:DLINK[:TGRoup [A] B]:DCH[1] 2 3 4 5 6:BSSize” on page 965 . If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:DLINK:APPLY” on page 919 .

:DLINK[:TGRoup [A]|B]:DCH[1]|2|3|4|5|6:POSITION

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : DLINK [ : TGRoup [ A ] | B ] : DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :
POSITION FLEXible | FIXed
```

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : DLINK [ : TGRoup [ A ] | B ] : DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :
POSITION?
```

This command selects a position for the data transmitted by the downlink dedicated transport channel (DCH).

The transport position selection, flexible or fixed, determines how the three block settings, block set size, block size, and number of blocks, for the transport channel are determined.

FLEXible This choice allows the signal generator to automatically set the block set size. The relationship between block set size, block size, and number of blocks is as follows:
 $\text{block set size} = \text{number of blocks} \times \text{block size}$

FIXed This choice allows a user-defined block set size. The relationship between block set size, block size, and number of blocks is as follows:
 $\text{block set size} \geq \text{number of blocks} \times \text{block size}$

***RST** FLEX

Key Entry **Transp Position Flexible Fixed**

Remarks For more information on the block parameters, refer to the “:DLINK[:TGRoup [A]|B]:DCH[1]|2|3|4|5|6:NBLocks” command on page 970, the “:DLINK[:TGRoup [A]|B]:DCH[1]|2|3|4|5|6:BSSize” command on page 965 and the “:DLINK[:TGRoup [A]|B]:DCH[1]|2|3|4|5|6:BLKSize” command on page 964.

:DLINK[:TGRoup [A]|B]:DCH[1]|2|3|4|5|6:PPERcentage

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : DLINK [ : TGRoup [ A ] | B ] : DCH [ 1 ] | 2 | 3 | 4 | 5 | 6 :
PPERcentage?
```

This query returns the percentage of the total bits removed from or added to the fully coded channel.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:RMATCh**Supported** E4438C with Option 400

```
[ :SOURce ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :
RMATCh <val>
[ :SOURce ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :
RMATCh?
```

This command sets the rate matching attribute.

***RST** 1**Range** 1–256**Field Entry** Rate Match Attr

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:DLINK:APPLY” on page 919](#).

:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6:TTI**Supported** E4438C with Option 400

```
[ :SOURce ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :
TTI 10000 | 20000 | 40000 | 80000
[ :SOURce ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[ 1 ] | 2 | 3 | 4 | 5 | 6 :
TTI?
```

This command sets the transmission time interval (TTI) allowed for the dedicated channel (DCH) to transmit.

The choices are expressed in units of milliseconds (msec) where 20000=20 msec.

***RST** 10000**Field Entry** TTI

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:DLINK:APPLY” on page 919](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:DLINK[:TGRoup [A] | B]:DCH[1] | 2 | 3 | 4 | 5 | 6[:STATe]****Supported** E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[ 1 ] | 2 | 3 | 4 | 5 |
6 [ :STATe ] ON | OFF | 1 | 0
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :DLINK[ :TGRoup[A] | B ] :DCH[ 1 ] | 2 | 3 | 4 | 5 |
6 [ :STATe ] ?
```

This command enables or disables the selected dedicated transport channel (DCH).

***RST** DCH 1: 1 DCH 2–6: 0**Key Entry** **TrCH State Off On**

Remarks DCH1 reset value cannot be turned off. The channels must be turned on sequentially. If one channel is turned off then all higher numbered channels will automatically be turned off.

If the parameter is changed, the apply command must be executed after the change. Refer to “[:DLINK:APPLY](#)” on page 919.

:LINK**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :LINK DOWN | UP
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :LINK ?
```

This command sets the uplink or downlink mode.

RST** DOWN**Key Entry** **Link Down Up*:POLarity[:ALL]****Supported** E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :POLarity[ :ALL ] NORMal | INVert
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :POLarity[ :ALL ] ?
```

This command selects the polarity for the Q channel.

NORMal This choice selects normal phase polarity.

INVert This choice inverts the internal Q signal.

***RST** NORM**Key Entry** **Phase Polarity Normal Invert**

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:ULINK:APPLY****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:APPLY

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:APPLY?

This command immediately starts the channel coding generation process according to the channel setup and data for the uplink physical and transport channels.

The query returns a response that determines whether or not the execution of the command is necessary. The response from the query is as follows:

1 This response is returned if the execution of the command is required.

0 This response is returned if the execution of the command is not required.

***RST** +0

Key Entry **Apply Channel Setup**

:ULINK:AWGN:CN**Supported** E4438C with Option 400 and 403

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:AWGN:CN <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:AWGN:CN?

This command sets the in band carrier to noise ratio. The noise is the total noise level of the in-channel.

The variable <val> is expressed in units of decibels (dB).

***RST** -1.80000000E+001

Range -30 to 30

Field Entry C/N value

Remarks In compressed mode, carrier power means normal frame power. A change in the C/N value will change the Eb/No value and vice versa.

:ULINK:AWGN:CPOWer

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK:AWGN:CPOWer?

This query returns the carrier power level when the additive white gaussian noise (AWGN) is on.

The power value is expressed in units of decibels (dBm/3.84 MHz).

***RST** -1.56957537E+002

Field Entry C Power

Remarks In compressed mode, carrier power means normal frame power.

:ULINK:AWGN:DRATe

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK:AWGN:DRATe?

This query returns the data rate of the Eb reference channel.

***RST** +1.22000000E+004

Field Entry Ref Data Rate

:ULINK:AWGN:EBNO

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK:AWGN:EBNO <val>

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK:AWGN:EBNO?

This command sets the Eb/No ratio. The Eb is defined as the carrier power divided by the bit rate. No is noise power divided by the bandwidth (3.84MHz).

The variable <val> setting is affected by the carrier to noise ratio (C/N) and the data rate. A change to either of these values will affect your Eb/No setting. Use the formula in the range field to determine a correct Eb/No value.

***RST** +6.97971394E+000

Range Eb/No = C/N x 3.84MHz/Data Rate

Field Entry Eb/No value (dB)

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:ULINK:AWGN:EBRef

Supported E4438C with Option 400 and 403

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:AWGN:EBRef DPCCh | DPDCh | DCH1 |
DCH2 | DCH3 | DCH4 | DCH5 | DCH6
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:AWGN:EBRef?
```

This command selects the Eb reference and it is used in the Eb/No value.

DPCCh This choice selects a dedicated physical control channel.

DPDCh This choice selects a dedicated physical data channel.

DCH1 This choice select dedicated transport channel 1.

DCH2 This choice select dedicated transport channel 2.

DCH3 This choice select dedicated transport channel 3.

DCH4 This choice select dedicated transport channel 4.

DCH5 This choice select dedicated transport channel 5.

DCH6 This choice select dedicated transport channel 6.

***RST** DCH1

Key Entry **DPCCH** **DPDCH** **DCH1** **DCH2**
DCH3 **DCH4** **DCH5** **DCH6**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:AWGN:FNBW

Supported E4438C with Option 400 and 403

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:AWGN:FNBW?
```

This query returns the flat noise bandwidth (BW). Flat noise bandwidth is calculated by $BW=(1.6) \times$ (Chip rate) and the result is close to the 0 dB roll-off point.

***RST** +6.14400000E+006

Field Entry Flat Noise BW

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:AWGN:NPOWer****Supported** E4438C with Option 400 and 403

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:AWGN:NPOWer?

This query returns the in-channel noise level when the additive white gaussian noise (AWGN) is on.

The power value is expressed in units of decibels (dBm/3.84 MHz).

RST** -1.38957537E+002**Field Entry** N Power**:ULINK:AWGN:TICPower*Supported** E4438C with Option 400 and 403

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:AWGN:TICPower?

This query returns the total in-channel power (carrier with noise) as defined by the 3GPP standard.

Field Entry TotalPwr**Remarks** The total in-channel power is a sum of carrier power and in-channel noise power. Changing the noise related parameters such as C/N, Eb/No, and Eb Ref will cause a recalculation of the total in-channel power.

The maximum value returned by this query depends on the power option that is installed in the signal generator.

:ULINK:AWGN[:STATe]**Supported** E4438C with Option 400 and 403

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:AWGN:STATe ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:AWGN:STATe?

This command enables or disables the additive white gaussian noise (AWGN). AWGN can only be turned on when DPCCH is selected as the physical channel. Refer to “[:ULINK:PHYSical\[1\]:TYPE](#)” on page 998.***RST** 0**Key Entry** Channel State Off On**Remarks** If the parameter is changed, the apply command must be executed after the change. Refer to “[:ULINK:APPLY](#)” on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:ULINK:CRATE****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:CRATE <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:CRATE?

This command sets the chip rate for the uplink configuration. The variable <val> is expressed in cycles per second (cps).

RST** +3.8400000E+006**Range** 1E3–4.25E6**Field Entry** Chip Rate**Remarks** The chip rate is equivalent to the spreading rate of the channel.**:ULINK:DPCCh:BETA*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:BETA <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:BETA?

This command sets the beta value for the uplink dedicated physical control channel (DPCCH). The beta value and the power ratio are coupled. When the power ratio is updated, the beta value is converted to the beta ratio (amplitude ratio).

***RST** +11**Range** 0–15**Field Entry** Beta**Remarks** After this command is sent, the channel power level for the DPCCH is re-calculated. If the channel power is set directly, the beta value of this command becomes invalid and is reset to –1.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:DPCCh:CCODE**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:CCODE <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:CCODE?

This command sets the channelization code for the uplink dedicated physical control channel (DPCCH).

***RST** 0**Range** 0–255**Field Entry** Channel Code

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPCCh:DATA**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:DATA PN9 | PN15 | FIX4 |

"<file name>" | STD

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:DATA?

This command configures the data pattern for the uplink dedicated physical control channel (DPCCH).

STD This choice sets the DPCCH to use the bits field as defined by the slot format.

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** STD**Key Entry** **PN9** **PN15** **FIX4** **User File** **3GPP STD**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:DPCCh:DATA:FIX4

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIo : WCDMa : TGPP [ : BBG ] : ULINK : DPCCh : DATA : FIX4 <val>
```

```
[ :SOURCE ] : RADIo : WCDMa : TGPP [ : BBG ] : ULINK : DPCCh : DATA : FIX4?
```

This command sets the 4-bit data pattern of the uplink dedicated physical control channel (DPCCH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

***RST** #B0000

Range 0–15

Key Entry **FIX4**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPCCh:FBI:PATtern

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIo : WCDMa : TGPP [ : BBG ] : ULINK : DPCCh : FBI : PATtern PN9 | PN15 | FIX |
"<file name>"
```

```
[ :SOURCE ] : RADIo : WCDMa : TGPP [ : BBG ] : ULINK : DPCCh : FBI : PATtern?
```

This command configures the pattern of the feedback information (FBI) for the uplink dedicated physical control channel (DPCCH).

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** FIX

Key Entry **PN9 PN15 FIX User File**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIo:WCDMa:TGPP[:BBG])**:ULINK:DPCCh:FBI:PATtern:FIX**

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIo:WCDMa:TGPP [ :BBG ] :ULINK:DPCCh:FBI:PATtern:FIX <val>
```

```
[ :SOURCE ] :RADIo:WCDMa:TGPP [ :BBG ] :ULINK:DPCCh:FBI:PATtern:FIX?
```

This command sets the 30-bit feedback information (FBI) pattern for the uplink dedicated physical control channel (DPCCH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only decimal values.

***RST** +0

Range 0–10737418235

Key Entry **FIX**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPCCh:FBI[:STATe]

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIo:WCDMa:TGPP [ :BBG ] :ULINK:DPCCh:FBI [ :STATe ] ?
```

This query returns whether or not the feedback information (FBI) bits are included in the uplink dedicated physical control channel (DPCCH). The FBI is included when a status of one is returned. A zero indicates no FBI.

***RST** 0

Range N/A

Field Entry FBI State

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:ULINK:DPCCh:POWer****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:POWer <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:POWer?

This command sets the power level for the uplink dedicated physical control channel (DPCCH).

The variable <val> is expressed in units of decibels (dB).

***RST** -2.69000000E+000**Range** -40 to 0**Field Entry** DPCCH Power

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPCCh:RATE**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:RATE?

This query returns the symbol rate for the uplink dedicated physical control channel (DPCCH).

RST** +1.50000000E+004**Field Entry** Symbol Rate**:ULINK:DPCCh:SLOTformat*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:SLOTformat <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:SLOTformat?

This command sets the slot format for the uplink dedicated physical control channel (DPCCH). The variable <val> is expressed in unit of bits.

***RST** +0**Range** 0–5**Field Entry** Slot Format

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:DPCCh:TFCI:PATtern

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : DPCCh : TFCI : PATtern PN9 | PN15 | FIX
"<file name>"
```

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : DPCCh : TFCI : PATtern?
```

This command configures the transport format combination indicator (TFCI) bit pattern for the uplink dedicated physical control channel (DPCCH).

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** FIX

Key Entry **PN9 PN15 FIX User File**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:DPCCh:TFCI:PATtern:FIX

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : DPCCh : TFCI : PATtern : FIX <val>
```

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : DPCCh : TFCI : PATtern : FIX?
```

This command sets the transport format combination indicator (TFCI) 10-bit data pattern for the uplink dedicated physical control channel (DPCCH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only decimal values.

***RST** +0

Range 0–1023

Field Entry TFCI Pattern

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:ULINK:DPCCh:TFCI[:STATe]****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:TFCI[:STATe]?

This query returns the status of the transport format combination indicator (TFCI) for the uplink dedicated physical control channel (DPCCH).

RST** 1**Range** N/A**Field Entry** TFCI State**:ULINK:DPCCh:TPC:NSTeps*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:TPC:NSTeps <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh:TPC:NSTeps?

This command sets the number of steps to increase or decrease the transmit power control (TPC) for the uplink dedicated physical control channel (DPCCH).

The variable <val> is expressed in units of decibels (dB).

***RST** +1**Range** 1–80**Field Entry** TPC Pat Steps**Remarks** Refer to “:ULINK:DPCCh:TPC:PATtern” on page 984.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:DPCCh:TPC:PATtern**Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPC:PATtern PN9 | PN15 | FIX4 |
"<file name>" | UDOW | DUP | UALL | DALL
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPC:PATtern?
```

This command configures the transmit power control (TPC) pattern for the uplink dedicated physical control channel (DPCCH).

"<file name>" This variable specifies a data pattern that has been stored in memory.

UDOW This choice repetitively steps up and down the TPC pattern.

DUP This choice repetitively steps down and up the TPC pattern.

UALL This choice consecutively steps up the TPC pattern.

DALL This choice consecutively steps down the TPC pattern.

***RST** PN9

Key Entry **PN9 PN15 FIX4 "<file name>" Up/Down Down/Up All Up**

All Down

Remarks Refer to [“:ULINK:DPCCh:TPC:NSTeps” on page 983](#).

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:DPCCh:TPC:PATtern:FIX4****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPC:PATtern:FIX4 <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPC:PATtern:FIX4?

This command sets the transmit power control (TPC) 4 bit data pattern for the uplink dedicated physical control channel (DPCCH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

***RST** #B0000**Range** 0–15**Field Entry** TPC Pattern

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPCCh:TPC:PATtern:TRIGger:POLarity**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPC:PATtern:TRIGger:POLarity POSitive|NEGative

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPC:PATtern:TRIGger:POLarity?

This command sets the transmit power control (TPC) pattern trigger polarity for the uplink dedicated physical control channel (DPCCH).

POSitive This choice sets the pattern signal to trigger when the signal is high.**NEGative** This choice sets the pattern signal to trigger when the signal is low.***RST** POS**Key Entry** **TPC Pat Trig Polarity Neg Pos**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPCCh:TPC:PATtern:TRIGger[:STATe]**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPC:PATtern:TRIGger[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPC:PATtern:TRIGger[:STATe]?

This command enables or disables the transmit power control (TPC) pattern trigger state for the uplink dedicated physical control channel (DPCCH).

***RST** 0**Field Entry** TPC UserFile Trig

Remarks The TPC pattern trigger input is located on the AUX I/O connector (ALT PWR IN, pin#16). For more information about the rear panel AUX I/O connector, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*. If the parameter is changed, the apply command must be executed after the change. Refer to "[:ULINK:APPLY](#)" on page 973.

:ULINK:DPCCh:TPOWer**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPCCh:TPOWer?

This query returns the "Total Power" value displayed on the user interface (UI). The power value is the relative power difference between the total in-channel signal power and the active channel reference power (0dB).

***RST** +0.00000000E+000

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to "[:ULINK:APPLY](#)" on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:DPCCh[:STATe]**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh[:STATe] ON|OFF|1|0

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPCCh[:STATe]?

This command enables or disables the operating state for the uplink dedicated physical control channel (DPCCH).

***RST** 1**Field Entry** Channel State

Remarks If the parameter is changed, the apply command must be executed after the change. Refer to “:ULINK:APPLY” on page 973.

:ULINK:DPDCh:BETA**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPDCh:BETA <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPDCh:BETA?

This command sets the beta value for uplink dedicated physical data channel (DPDCH).

***RST** +15**Range** 0–15**Field Entry** Beta

Remarks The beta value and power ratio are coupled. After this command is sent, the value of the channel power level of the DPDCH is re-calculated.

If the channel power is set directly, the value of this command becomes invalid and is set to –1.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:DPDCh:CCODE

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:DPDCh:CCODE <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:DPDCh:CCODE?
```

This command sets the channelization code for the uplink dedicated physical data channel (DPDCH). There are commands that are associated with the channelization code and they are the slot format and the symbol rate.

If the slot format is changed, so will the symbol rate. If the symbol rate is changed, so will the slot format. In addition, the channelization code will change. If current channelization code exceed the new maximum value for the specified slot format or symbol rate, a setting conflict error is generated and the value is clipped to the maximum value. Refer to [Table 9-3 on page 988](#).

Table 9-3 Channelization Code Maximum Value

Channelization Code	Slot Format	Symbol Rate
255	0	15
127	1	30
63	2	60
31	3	120
15	4	240
7	5	780
3	6	960

***RST** +16

Range 0–255

Field Entry Channel Code

Remarks Refer to “:ULINK:DPDCh:SLOTformat” on page 992 and “:ULINK:DPDCh:RATE” on page 990. If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:DPDCh:DATA

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:DPDCh:DATA PN9 | PN15 | FIX4 |
"<file name>" | TRANSpch
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:DPDCh:DATA?
```

This command configures the data pattern of the uplink dedicated physical data channel (DPDCH).

TRANSpch This choice sets the data that is generated from the transport channel setup.

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** TRAN

Key Entry **PN9 PN15 FIX4 User File Transport CH**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPDCh:DATA:FIX4

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:DPDCh:DATA:FIX4 <val>
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:DPDCh:DATA:FIX4?
```

This command sets the fixed 4-bit binary data for the uplink dedicated physical data channel (DPDCH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

***RST** #B0000

Range 0–15

Field Entry Data

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPDCh:POWer**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh:POWer <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh:POWer?

This command sets the power level for the uplink dedicated physical data channel (DPDCH).

The variable <val> is expressed in units of decibels (dB).

***RST** +0.00000000E+000**Range** -40 to 0**Field Entry** DPDCH Power

Remarks The power ratio and the beta value are coupled. After the beta value is specified and sent, the value of the channel power level of the DPDCH is re-calculated.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:DPDCh:RATE**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh:RATE <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh:RATE?

This command sets the symbol rate for the uplink dedicated physical data channel (DPDCH). There are commands that are associated with the symbol rate and they are the channelization code and the slot format.

If the slot format is changed, so will the symbol rate. If the symbol rate is changed, so will the slot format. In addition, the channelization code will change. If current channelization code exceed the new maximum value for the specified slot format or symbol rate, a setting conflict error is generated and the value is clipped to the maximum value. Refer to [Table 9-4](#).

Table 9-4 Channelization Code Maximum Value

Channelization Code	Slot Format	Symbol Rate
255	0	15
127	1	30

Table 9-4 Channelization Code Maximum Value

Channelization Code	Slot Format	Symbol Rate
63	2	60
31	3	120
15	4	240
7	5	780
3	6	960

The variable <val> is expressed in units of kilo symbols per second (ksps).

***RST** +6.00000000E+004

Range 15000–960000

Field Entry Symbol Rate

Remarks Refer to “:ULINK:DPDCh:CCODE” on page 988 and “:ULINK:DPDCh:RATE” on page 990. If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:DPDCh:RBER

Supported E4438C with Option 400

[:SOURCE] :RADio :WCDMa :TGPP [:BBG] :ULINK :DPDCh :RBER?

This query returns inserted error bit rate which is specified by the transport channel cycle length and transport channel error length commands.

Inserted error bit rate is calculated by the following formula: $\text{TrCH BER ErrLen} / \text{TrCH BER Cycle}$. Refer to “:ULINK:DPDCh:TBER[:CLENGTH]” on page 993 and “:ULINK:DPDCh:TBER:ELENGTH” on page 993.

***RST** 0.0

Field Entry TrCH BER

:ULINK:DPDCh:SLOTformat**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh:SLOTformat <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh:SLOTformat?

This command sets the slot format for the uplink dedicated physical data channel (DPDCH).

There are commands that are associated with the slot format and they are the channelization code and the symbol rate.

If the slot format is changed, so will the symbol rate. If the symbol rate is changed, so will the slot format. In addition, the channelization code will change. If current channelization code exceed the new maximum value for the specified slot format or symbol rate, a setting conflict error is generated and the value is clipped to the maximum value. Refer to [Table 9-5 on page 992](#).

Table 9-5 Channelization Code Maximum Value

Channelization Code	Slot Format	Symbol Rate
255	0	15
127	1	30
63	2	60
31	3	120
15	4	240
7	5	780
3	6	960

***RST** +2**Range** 0–6**Field Entry** Slot Format

Remarks Refer to “:ULINK:DPDCh:CCODE” on page 988 and “:ULINK:DPDCh:RATE” on page 990. If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:DPDCh:TBER[:CLENGTH]**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPDCh:TBER[:CLENGTH] <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPDCh:TBER[:CLENGTH]?

This command sets the cycle length of the Transport Channel BER insertion of dedicated physical channel (DPCH).

***RST** 0**Range** 0–65535**Field Entry** TrCH BER Cycle

Remarks A zero in the TrCH BER Cycle field, disables the error insertion function (error rate equals 0%).

:ULINK:DPDCh:TBER:ELENGTH**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPDCh:TBER:ELENGTH <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:DPDCh:TBER:ELENGTH?

This command sets the error length of the Transport Channel BER.

***RST** 0**Range** 0–4095**Field Entry** TrCH BER ErrLen

Remarks The Transport Channel BER error length must be smaller than or equal to the Transport Channel BER cycle length.

The TrCH ELEN (transport channel error length) is truncated by the TrCH CLEN (transport channel cycle length) when the TrCH BER cycle length is smaller than TrCH BER length.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:DPDCh:TPOWer****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh:TPOWer?

This query returns the “Total Power” value displayed on the user interface (UI). The power value is the relative power difference between the total in-channel signal power and the active channel reference power (0dB).

RST** +0**:ULINK:DPDCh[:STATe]*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh[:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:DPDCh[:STATe]?

This command enables or disables the operating state for the uplink dedicated physical data channel (DPDCH).

***RST** 1**Field Entry** Channel State

Remarks If the parameter is changed, the apply command must be executed after the change. Refer to “:ULINK:APPLY” on page 973.

:ULINK:FCLock:INTerval**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:FCLock:INTerval FCL10|FCL20|FCL40|FCL80|FCL2560

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:FCLock:INTerval?

This command selects the frame clock interval supplied to the source.

The frame clock interval is set in units of milliseconds (msec).

***RST** FCL80**Key Entry** 10 msec 20 msec 40 msec 80 msec 2560 msec

Remarks This command is not used when the sync source is set to ESG. Refer to “:ULINK:SYNC[:SOURCE]” on page 1053.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:FCLOCK:POLARITY

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:FCLOCK:POLARITY POSitive | NEGative
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:FCLOCK:POLARITY?
```

This command sets the polarity of the frame clock for the uplink synchronization source.

POSitive This choice sets the clock gate to trigger when the signal is high.

NEGative This choice sets the clock gate to trigger when the signal is low.

***RST** POS

Key Entry **Frame Clock Polarity Neg Pos**

Remarks This command is not used when the sync source is set to ESG. Refer to “:ULINK:SYNC[:SOURCE]” on page 1053.

:ULINK:FILT

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:FILT RNYQuist | NUQuist | GAUSSian |
RECTangle | IS95 | IS95_EQ | IS95_MOD | IS95_MOD_EQ | AC4Fm | UGGaussian |
" <user FIR > "
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:FILT?
```

This command selects the filter type for the uplink configuration.

IS95 This choice selects a filter that meets the criteria of the IS-95 standard.

IS95_EQ This choice selects a filter which is a combination of the IS-95 filter (above) and the equalizer filter described in the IS-95 standard. This filter is only used for IS-95 baseband filtering.

IS95_MOD This choice selects a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance) with lower passband rejection than the filter specified in the IS-95 standard.

IS95_MOD_EQ This choice selects a filter which is a combination of the equalizer filter described in the IS-95 standard and a filter that meets the criteria of the IS-95 error function (for improved adjacent channel performance), with lower passband rejection.

AC4Fm This choice selects a predefined Association of Public Safety Communications Officials (APCO) specified compatible 4-level frequency modulation (C4FM) filter.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

UGGaussian	This choice selects a backwards compatible GSM Gaussian filter (Gaussian filter with a fixed BbT value of 0.300) for the ESG E44xxB Option UN3 or UN4.
"<user FIR>"	This variable is any filter file that you have stored into memory.
*RST	RNYQ
Key Entry	Root Nyquist Nyquist Gaussian Rectangle IS-95 IS-95 w/EQ IS-95 Mod IS-95 Mod w/EQ APCO 25 C4FM UN3/4 GSM Gaussian User FIR
Remarks	Refer to “File Name Variables” on page 13 for information on the file name syntax.

:ULINK:FILTer:ALPHa

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:FILTer:ALPHa <val>

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:FILTer:ALPHa?

This command changes the alpha value for the Nyquist or root Nyquist filter.

***RST** +2.20000000E-001

Range 0.000–1.000

Key Entry **Filter Alpha**

Remarks This command is effective only after a root Nyquist or Nyquist filter is selected; it does not affect other types of filters.

To change the current filter type, refer to [“:ULINK:FILTer” on page 995](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIo:WCDMA:TGPP[:BBG])**:ULINK:FILTer:BBT**

Supported E4438C with Option 400

[:SOURce] :RADIo :WCDMA :TGPP [:BBG] :ULINK :FILTer :BBT <value>

[:SOURce] :RADIo :WCDMA :TGPP [:BBG] :ULINK :FILTer :BBT?

This command changes the bandwidth-multiplied-by-bit-time filter parameter value for the Gaussian filter.

***RST** +5.00000000E-001

Range **0.000–1.000**

Key Entry **Filter BbT**

Remarks This command is effective only after a Gaussian filter is selected; it does not affect other types of filters.

To change the current filter type, refer to “[:ULINK:FILTer]” on page 995.

:ULINK:FILTer:CHANnel

Supported E4438C with Option 400

[:SOURce] :RADIo :WCDMA :TGPP [:BBG] :ULINK :FILTer :CHANnel EVM|ACP

[:SOURce] :RADIo :WCDMA :TGPP [:BBG] :ULINK :FILTer :CHANnel?

This command optimizes a filter for minimized error vector magnitude (EVM) or for minimized adjacent channel power (ACP).

EVM This choice provides the most ideal passband.

ACP This choice improves stopband rejection. This feature only applies to root Nyquist and Nyquist filters.

***RST** EVM

Key Entry **Optimize FIR For EVM ACP**

Remarks To change the current filter type, refer to “[:ULINK:FILTer]” on page 995.

:ULINK:FOFFset

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:FOFFset <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:FOFFset?
```

This command sets the SFN-CFN frame number offset. The command adds in delays of the internal frame counter by specifying the starting frame number count.

When the FOFFset is set to “0,” the frame number starts at the system sync trigger.

An example of specifying a frame number count: Set the FOFFset to 2. This makes the signal generator to trigger 2 frames after the SFN RST.

***RST** 0

Range 0–255

Key Entry SFN-CFN Frame Offset

Remarks For additional information, refer to 3GPP TS25.402 for SFN and CFN relationship.

:ULINK:PADJust

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:PADJust EQUal | SCALE
```

This command adjusts the code domain power levels of all uplink channels.

EQUal This choice will adjust all channel powers to equal power settings.

SCALE This choice will scale the channel power levels so that the sum of the powers are equal to 0 dB.

Key Entry Equal Powers Scale To 0dB

:ULINK:PHYSical[1]:TYPE

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:PHYSical[1]:TYPE PRACH | DPCCCh
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:PHYSical[1]:TYPE?
```

This command sets the physical channel type.

PRACH This choice selects a physical random access channel type.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

DPCCh This choice selects a dedicated physical control channel type.

***RST** DPCC

Key Entry PRACH DPCC

:ULINK:PMODE:TPControl:HOLD

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIo : WCDMa : TGPP [ : BBG ] : ULINK : PMODE : TPControl : HOLD 1 | 0 | ON | OFF
```

```
[ :SOURCE ] : RADIo : WCDMa : TGPP [ : BBG ] : ULINK : PMODE : TPControl : HOLD?
```

This command sets the transmission power control of the dedicated physical channel (DPCH).

ON This choice enables the power hold mode.

OFF This choice disables the power hold mode and enables the dynamic power control

***RST** 1

Key Entry Power Hold Off On

Remarks The power hold mode is automatically enabled when the dedicated physical channel (DPCH) **Power Mode Norm TPC** is set to **TPC** (refer to “[:ULINK:PMODE[:SElect]]” on page 1002).

:ULINK:PMODE:TPControl:POWER:INITial

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIo : WCDMa : TGPP [ : BBG ] : ULINK : PMODE : TPControl : POWER :
```

```
INITial <val>
```

```
[ :SOURCE ] : RADIo : WCDMa : TGPP [ : BBG ] : ULINK : PMODE : TPControl : POWER : INITial?
```

This command sets the initial power (in dB; relative to Max Power: 0.00 dB) of the DPCH power control.

***RST** +0.00000000E+000

Range 0 to -40

Field Entry Init Power

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Remarks	<p>If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.</p> <p>The value of <val> must be smaller or equal to the value use for the command: “:ULINK:PMODE:TPControl:POWER:MINimum” on page 1000. Init Power is relative to Max Power (the amplitude set on the signal generator). For more information refer to “:ULINK:PMODE:TPControl:POWer:MAXimum” on page 1000.</p>
----------------	---

:ULINK:PMODE:TPControl:POWer:MAXimum

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:PMODE:TPControl:POWer:MAXimum?
```

This query returns the maximum power (in dB; relative to Max Power) of the dedicated physical channel (DPCH).

Max Power is a grayed out field that will always be 0.00 dB. The value of this field is a relative value to the maximum amplitude set for the signal generator. For example, if the signal generator amplitude is set to -20 dBm, the Min Power set to -40 dB, and the Init Power is set to -10 dB, then the absolute initial power level will be -30 dBm (10 dBm below the signal generator amplitude) and the absolute minimum power will be -60 dBm (40 dBm below the signal generator amplitude).

***RST** +0.00000000E+000

Field Entry Max Power

Remarks The value of this query will always be zero. The maximum power is mapped to the actual RF output power.

:ULINK:PMODE:TPControl:POWer:MINimum

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:PMODE:TPControl:POWer:MINimum <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:PMODE:TPControl:POWer:MINimum?
```

This command sets the minimum power of the dedicated physical channel (DPCH). The variable <val> is expressed in units of dB.

***RST** -4.00000000E+001

Range -40 to 0

Field Entry Min Power

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURce]:RADio:WCDMa:TGPP[:BBG])

Remarks	<p>If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.</p> <p>The minimum power is decreased in increments determined by the value set for the Power Step. Refer to “:ULINK:PMODE:TPControl:POWer:STEP” on page 1001. Minimum power is limited by the amplitude set on the signal generator. The signal generator amplitude must be set to -96 dBm or lower for the minimum power to be set to -40 dB. For more information, refer to “:ULINK:PMODE:TPControl:POWer:MAXimum” on page 1000.</p>
----------------	---

:ULINK:PMODE:TPControl:POWer:RESet

Supported E4438C with Option 400

```
[ :SOURce ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PMODE:TPControl:POWer:RESet
[ :SOURce ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PMODE:TPControl:POWer:MINimum?
```

This command resets the transmit power of the dedicated physical channel (DPCH) to the initial power.

Key Entry **Reset to Initial Power**

Remarks When the DPCH power mode is changed to TPControl, this command is performed. Refer to [“:ULINK:PMODE\[:SElect\]”](#) on page 1002 to select the power mode. Any time the power mode is changed, the start power is always set to the initial power.

:ULINK:PMODE:TPControl:POWer:STEP

Supported E4438C with Option 400

```
[ :SOURce ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PMODE:TPControl:POWer:
STEP DB0_5 | DB1_0 | DB2_0 | DB3_0
[ :SOURce ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PMODE:TPControl:POWer:STEP?
```

This command set the power step of the dedicated physical channel (DPCH) power control. Initial power can only be increased in steps set by the power step.

***RST** DB0_5

Key Entry Power Step

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY”](#) on page 973.

:ULINK:PMODE:TPControl:TRIGger:POLarity**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PMODE:TPControl:TRIGger:
POLarity POSitive|NEGative

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PMODE:TPControl:TRIGger:POLarity?

This command sets the uplink dedicated physical channel (DCPH) transmit power control signal polarity.

RST** POS**Key Entry** **Power Control Signal Polarity Neg Pos*:ULINK:PMODE[:SElect]****Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PMODE[:SElect] NORMal|TPControl
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PMODE[:SElect]?

This command sets the dedicated physical channel (DPCH) power control mode.

NORMal This choice selects the normal power mode. Compressed frames are available.

TPC This choice selects the TPC power mode. Compressed gaps are not available.

RST** NORM**Key Entry** **Power Mode Norm TPC*:ULINK:PRACH:AICH:NUMBER****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:AICH:NUMBER?

This query returns the number of received acquisition indication channel (AICH) trigger during one configured physical random access channel (PRACH) signal generation.

The result value can be queried after the PRACH signal generation is completed and until the next PRACH generation trigger is received.

The signal begins when the PRACH start trigger and ends when the specified number of signals are generated.

To specify a number of PRACHs, refer to “:ULINK:PRACH[:SINGLE]:PREamble:NUMBER” on [page 1034](#).

***RST** -1

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Field Entry	Number of AICH
Remarks	A -1 status represents a PRACH generation is on going.

:ULINK:PRACH:AICH:POLarity

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH : AICH :
POLarity POSition | NEGative
[ : SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH : AICH : POLarity ?
```

This command sets the trigger signal polarity for the acquisition indication channel (AICH).

POSitive	This choice sets the signal polarity to trigger when the signal goes high.
NEGative	This choice sets the signal polarity to trigger when the signal goes low.
*RST	POS

Key Entry **AICH Trigger Polarity Pos Neg**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#)

:ULINK:PRACH:AWGN:CN

Supported E4438C with Option 400 and 403

```
[ : SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH : AWGN : CN <val>
[ : SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH : AWGN : CN ?
```

This command sets the in band carrier to noise ratio.

The variable <val> is expressed in units of decibels (dB).

***RST** -2.25005194E+001

Range -30 to 30

Field Entry C/N value

Remarks A change in the C/N value will change the Eb/No value and vice versa.

:ULINK:PRACH:AWGN:CPOWer**Supported** E4438C with Option 400 and 403

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:AWGN:CPOWer?

This query returns the carrier power level when the physical random access channel's (PRACH) additive white gaussian noise (AWGN) is on.

RST** -1.61435521E+002**Field Entry** C Power**:ULINK:PRACH:AWGN:DRATe*Supported** E4438C with Option 400 and 403

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:AWGN:DRATe?

This query returns the data rate of the Eb reference channel.

RST** +1.22000000E+004**Field Entry** Ref Data Rate**:ULINK:PRACH:AWGN:EBNO*Supported** E4438C with Option 400 and 403

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:AWGN:EBNO <val>

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:AWGN:EBNO?

This command sets the Eb/No value. The Eb is defined as carrier divided by the bit rate. No is noise power divided by the bandwidth (3.84 MHz). This ratio is only referred when EREF is CONTrol or DATA.

The variable <val> setting is affected by the carrier to noise ratio (C/N) and the data rate. A change to either of these values will affect your Eb/No setting. Use the formula in the range field to determine a correct Eb/No value.

***RST** +4.10000000E+000**Range** $Eb/No = C/N \times 3.84MHz/DataRate$ **Field Entry** Eb/No

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIo:WCDMA:TGPP[:BBG])

:ULINK:PRACH:AWGN:ECNO

Supported E4438C with Option 400 and 403

```
[ :SOURCE ] :RADIo:WCDMA:TGPP [ :BBG ] :ULINK:PRACH:AWGN:ECNO <val>
```

```
[ :SOURCE ] :RADIo:WCDMA:TGPP [ :BBG ] :ULINK:PRACH:AWGN:ECNO?
```

This command sets the E_c/N_o value. The E_c is defined as carrier divided by the chip rate. N_o is the noise power divided by the bandwidth (3.84 MHz). This ratio is only referred when EREF is PREamble.

***RST** -2.05000000E+001

Range -30 to 30

Field Entry E_c/N_o value

:ULINK:PRACH:AWGN:EREF

Supported E4438C with Option 400 and 403

```
[ :SOURCE ] :RADIo:WCDMA:TGPP [ :BBG ] :ULINK:PRACH:AWGN:EREF PREamble |
CONTrol | DATA | RACH
```

```
[ :SOURCE ] :RADIo:WCDMA:TGPP [ :BBG ] :ULINK:PRACH:AWGN:EREF?
```

This command selects the E_b (E_c) reference. It is used for specifying the bit (chip) rate of physical/transport channel.

PREamble This choice selects a preamble part as the E_c/N_o reference.

CONTrol This choice selects a message control part as the E_b/N_o reference.

DATA This choice selects a message data part as the E_b/N_o reference.

RACH This choice selects a random access channel as the E_b/N_o reference.

***RST** RACH

Key Entry **Preamble** Msg Ctrl Msg Data **RACH TrCH**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:PRACH:AWGN:NPOWer

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK:PRACH:AWGN:NPOWer?

This query returns the in-channel noise level when the additive white gaussian noise (AWGN) is on.

***RST** -1.38935002E+002

Field Entry N Power

:ULINK:PRACH:AWGN:TICPower

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK:PRACH:AWGN:TICPower?

This query returns the in-channel power within the 3.84 MHz bandwidth.

***RST** **DPCH:** -1.38924800E+002
 Single PRACH: -1.38924800E+002
 Multiple PRACH: -1.56970651E+002

Field Entry TotalPwr

:ULINK:PRACH:AWGN[:STATe]

Supported E4438C with Option 400 and 403

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK:PRACH:AWGN[:STATe] ON | OFF | 1 | 0
 [:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK:PRACH:AWGN[:STATe]?

This command enables or disables the additive white gaussian noise (AWGN) for the physical random access channel (PRACH). The AWGN can only be turned on when PRACH is selected as the physical channel.

***RST** 0

Key Entry Channel State Off On

Remarks Refer to “:ULINK:PHYSical[1]:TYPE” on page 998.

If the parameter is changed, the apply command must be executed after the change. Refer to “:ULINK:APPLY” on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:PRACH:MESSAge:CPART:BETA

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:PRACH:MESSAge:CPART:BETA <val>
```

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:PRACH:MESSAge:CPART:BETA?
```

This command sets the beta ratio (amplitude ratio) for the physical random access channel (PRACH) message control part. The variable <val> is an integer value.

Changing the control power value (see “:ULINK:PRACH:MESSAge:CPART:POWer” on page 1008 for information on setting PRACH control power) changes the beta to power ratio, and the ESG may not be able to compute a proper control beta value. If this occurs, the query will return a minus one (-1).

***RST** +11

Range 0–15

Field Entry Ctrl Beta

Remarks A change to the beta value will also cause a change to the control power setting.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:PRACH:MESSAge:CPART:DATA

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:PRACH:MESSAge:CPART:DATA PN9 |
PN15 | FIX4 | "<file name>" | STD
```

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:PRACH:MESSAge:CPART:DATA?
```

This command selects the data type to be inserted into the physical random access channel (PRACH) message control part.

STD This choice selects a slot format defined in the 3GPP standard.

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** STD

Key Entry **PN9** **PN15** **FIX4** **User File** **3GPP STD**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:PRACH:MESSAge:CPARt:DATA:FIX4**

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH : MESSAge : CPARt : DATA :
FIX4 <val>
```

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH : MESSAge : CPARt : DATA : FIX4?
```

This command sets a fixed 4 bit pattern for use as physical random access channel (PRACH) message part data.

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

***RST** #B0000

Range 0–15

Key Entry **Fix4**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH:MESSAge:CPARt:POWER

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH : MESSAge : CPARt : POWER <val>
```

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH : MESSAge : CPARt : POWER?
```

This command sets the power level for the physical random access channel (PRACH) message control part.

The variable <val> is expressed in units of decibels (dB).

***RST** -2.69000000E+000

Range -40 to 0

Field Entry Ctrl Pwr

Remarks Changing the control power changes the beta to power ratio. Refer to [“:ULINK:PRACH:MESSAge:CPARt:BETA” on page 1007](#) for more information.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#)

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:PRACH:MESSAge:CPARt:RATE****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MESSAge:CPARt:RATE?

This query returns the message data part symbol rate for the physical random access channel (PRACH).

***RST** +1.50000000E+004**Key Entry** **Symbol Rate**

Remarks The symbol rate of 15 kbps is the only supported rate per the 3GPP standards, TS 25.211 v3.10 (2002-03).

:ULINK:PRACH:MESSAge:CPARt:SLOTformat**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MESSAge:CPARt:SLOTformat?

This query returns the message control part slot format for the physical random access channel (PRACH).

***RST** 0**Range** 0–3**Field Entry** Slot Format

Remarks The slot format is a static value set to zero in accordance with the 3GPP standards, TS 25.211 v3.10 (2002-03).

:ULINK:PRCh:MESSage:CPARt:TFCI:PATtern**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRCh:MESSage:CPARt:TFCI:PATtern PN9|PN15|FIX| "<file name>"

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRCh:MESSage:CPARt:TFCI:PATtern?

This command selects data type to be inserted into the transport format combination indicator (TFCI) of the message control part located in the physical random access channel (PRACH).

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** FIX**Key Entry** **PN9** **PN15** **FIX** **User File**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRCh:MESSage:CPARt:TFCI:PATtern:FIX**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRCh:MESSage:CPARt:TFCI:PATtern:FIX <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRCh:MESSage:CPARt:TFCI:PATtern:FIX?

This command sets a fixed bit pattern to be inserted into the transport format combination indicator (TFCI).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only decimal values.

***RST** +0**Range** 0–1023**Field Entry** TFCI Pattern

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:PRACH:MESSAge:CPARt:TFCI[:STATe]**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:MESSAge:CPARt:TFCI[:STATe]?

This query returns the transport format combination indicator (TFCI) bits to determine if they exist or not in the currently specified slot format. A query returned with a “1” determines a TFCI exists and a “0,” no bits exist.

RST** 1**Field Entry** TFCI State**:ULINK:PRACH:MESSAge:DPARt:BETA*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:MESSAge:DPARt:BETA <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:MESSAge:DPARt:BETA?

This command sets the beta ratio (amplitude ratio) for the message data part of the physical random access channel (PRACH).

The variable <val> is an integer value. Changing the data power value (refer to, “:ULINK:PRACH:MESSAge:DPARt:POWer” on page 1013 for more information on setting PRACH data power) changes the beta to power ratio, and the signal generator may not be able to compute a proper data beta value. If this occurs, the query will return a minus one (-1).

***RST** +15**Range** 0–15**Field Entry** Data Beta**Remarks** A change to the beta value will also cause a change to the data power setting.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:PRACH:MESSAge:DPARt:DATA

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MESSAge:DPARt:DATA PN9 |
PN15|FIX4| "<file name>" |TRANspch
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MESSAge:DPARt:DATA?
```

This command sets the data type to be inserted into physical random access channel (PRACH) message data part.

TRANspch This choice sets the data that is generated from the transport channel setup.

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** TRAN

Key Entry **PN9 PN15 FIX4 User File Transport CH**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH:MESSAge:DPARt:DATA:FIX4

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MESSAge:DPARt:DATA:
FIX4 <val>
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MESSAge:DPARt:DATA:FIX4?
```

This command sets a pseudo-random pattern as output data type in the message data part of the physical random access channel (PRACH).

While the variable <val> is expressed in binary or decimal formats, the query returns only binary values.

***RST** #B0000

Range 0∠15

Key Entry **FIX4**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:PRACH:MESSAge:DPART:POWer****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MESSAge:DPART:POWer <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MESSAge:DPART:POWer?

This command sets the power level for the physical random access channel (PRACH) message data part.

The variable <val> is expressed in units of decibels (dB).

***RST** +0.00000000E+000**Range** -40 to 0**Field Entry** Data Pwr

Remarks Changing the data power changes the beta to power ratio. Refer to [“:ULINK:PRACH:MESSAge:DPART:BETA” on page 1011](#) for more information.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#)

:ULINK:PRACH:MESSAge:DPART:RATE**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MESSAge:DPART:RATE <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MESSAge:DPART:RATE?

This command sets the symbol rate for the message data part of the physical random access channel (PRACH).

There are commands that are associated with the symbol rate and they are the channelization code and the slot format.

If the slot format is changed, so will the symbol rate. If the symbol rate is changed, so will the slot format. In addition, the channelization code will change. If current channelization code exceed the new maximum value for the specified slot format or symbol rate, a setting conflict error is generated and the value is clipped to the maximum value. Refer to [Table 9-6](#).

Table 9-6 Channelization Code Maximum Value

Channelization Code	Slot Format	Symbol Rate
255	0	15
127	1	30
63	2	60
31	3	120

The variable <val> is expressed in units of kilo symbols per second (ksps).

***RST** 60**Range** 15–120**Field Entry** Symbol Rate

Remarks Channel code value is determined by slot format choice. Refer to [“:ULINK:PRACH:MESSAge:DPART:SLOTformat”](#) on page 1015 and [“:ULINK:PRACH\[:SINGLE\]:MESSAge:DPART:CCODE”](#) on page 1032.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY”](#) on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIo:WCDMa:TGPP[:BBG])

:ULINK:PRACH:MESSAge:DPART:SLOTformat**Supported** E4438C with Option 400

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:MESSAge:DPART:SLOTformat <val>

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:MESSAge:DPART:SLOTformat?

This command sets the slot format value for the message data part of the physical random access channel (PRACH).

There are commands that are associated with the slot format and they are the channelization code and the symbol rate.

If the slot format is changed, so will the symbol rate. If the symbol rate is changed, so will the slot format. In addition, the channelization code will change. If current channelization code exceed the new maximum value for the specified slot format or symbol rate, a setting conflict error is generated and the value is clipped to the maximum value. Refer to [Table 9-7](#).

Table 9-7 Channelization Code Maximum Value

Channelization Code	Slot Format	Symbol Rate
255	0	15
127	1	30
63	2	60
31	3	120

The variable <val> is expressed in units of kilo symbols per second (ksps).

***RST** 2**Range** 0–3**Field Entry** Slot Format

Remarks Refer to “:ULINK:PRACH:MESSAge:DPART:RATE” on page 1014 and “:ULINK:PRACH[:SINGle]:MESSAge:DPART:CCODE” on page 1032.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:PRACH:MODE[:SElect]**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MODE [ :SElect ] SINGLE | MULTi
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MODE [ :SElect ] ?
```

This command sets the channel mode of the physical random access channel (PRACH).

SINGLE This choice generates a single PRACH.

MULTi This choice generates up to eight PRACHes.

***RST** SING

Key Entry **PRACH Mode** **Single** **Multi**

:ULINK:PRACH:MULTi:MESSAge:TPOWer**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MULTi:MESSAge:TPOWer <val>
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MULTi:MESSAge:TPOWer ?
```

This command sets the message total power value in the physical random access channel (PRACH). The total power indicates a power of one PRACH.

***RST** -1.54060000E+002

Range -1.00 to 1.94

Field Entry Msg Pwr

Remarks This value is used only when POWER:MODE is set to TOTAL. Refer to [“:ULINK:PRACH:PREAmble:POWer:MODE” on page 1023](#).

The maximum power for this command is limited by the power of the signal generator (ESG maximum power – 18.06 dBm). If the signal generator power is set to +20 dBm, the maximum value of this command is +1.94 dBm.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:PRACH:MULTi:MESSAge[:STATe]**Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:MULTi:MESSAge[:STATe]
ON|OFF

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:MULTi:MESSAge[:STATe]?

This command enables or disables the message part of the physical random access channel (PRACH) for the multiple PRACH mode.

RST** ON**Field Entry** Message Part**:ULINK:PRACH:MULTi:NUMBer*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:MULTi:NUMBer <val>|INFINITY

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:MULTi:NUMBer?

This command specifies the number of the physical random access channel (PRACH) 80 ms configuration patterns to be transmitted after the PRACH start trigger has been received.

INFINITY This choice means the repeating number will continue while the PRACH mode is selected and the start trigger is ignored.

***RST** 1**Range** 1–2147447836**Field Entry** Number of 80ms

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:PRACH:MULTi:PREAmble:NUMBer**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:MULTi:PREAmble:NUMBer?

This query returns the number of Preambles on the multiple physical random access channel (PRACH) mode. This number is fixed to 1 in the current version.

***RST** 1**Field Entry** Num of Pre

:ULINK:PRACH:MULTi:PREamble:POWer:INITial

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIo:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MULTi:PREamble:POWer:
INITial?
```

This query returns the initial power of PRACH preambles on the multiple physical random access channel (PRACH) mode.

***RST** -1.54060000E+002

Range -154.06 to 10

Field Entry Init Pwr

Remarks For the multiple PRACH mode, the initial power is the same as the maximum power for the PRACH preamble.

:ULINK:PRACH:MULTi:PREamble:POWer:MAX

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIo:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MULTi:PREamble:POWer
:Max<val>
[ :SOURCE ] :RADIo:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:MULTi:PREamble:POWer:
Max?
```

This command sets the power of the preamble on the multiple physical random access channel (PRACH) mode.

***RST** -1.54060000E+002

Range -1.0 to 1.94

Field Entry Max Pwr

Remarks The maximum power for this command is limited by the power of the signal generator (ESG maximum power – 18.06 dBm). If the signal generator power is set to +20 dBm, the maximum value of this command is +1.94 dBm.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIo:WCDMa:TGPP[:BBG])

:ULINK:PRACH:MULTi:PREamble:POWer:RSTep**Supported** E4438C with Option 400

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:PREamble:POWer:RSTep?

This query, for the multiple physical random access channel (PRACH) mode, always returns zero, because power ramping is not supported for the multiple PRACH mode.

RST** +0**Field Entry** Ramp Step**:ULINK:PRACH:MULTi:PREamble:PPM*Supported** E4438C with Option 400

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:PREamble:PPM <val>

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:PREamble:PPM?

This command sets the difference between the preamble and the message control part in the physical random access channel (PRACH).

RST** -4.56000000E+000**Range** -20 to 10**Field Entry** Pp-m**:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:MESSAge:CPARt:CCODE*Supported** E4438C with Option 400

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:MESSAge:CPARt:CCODE?

This query returns the channel code of the message control part of physical random access channel (PRACH) on the multiple PRACH mode.

***RST** 255**Range** 0–255**Field Entry** CHCode Ctl**Remarks** This command affects the PRACH setting on the multiple PRACH mode only.

:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:MESSAge:DPARt:CCODE**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:
MESSAge:DPARt:CCODE?

This query returns the channel code of the message data part of physical random access channel (PRACH) on the multiple PRACH mode.

RST** 245**Range** 0–255**Field Entry** ChCode Dat**Remarks** This command affects the PRACH setting on the multiple PRACH mode only.**:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:PREAmble:SIGNature*Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:
PREAmble:SIGNature <val>[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:
PREAmble:SIGNature?

This command sets the signature encoded in the multiple physical random access channel's (PRACH) preamble.

***RST**

		Signature
UE	1	0
	2	1
	3	2
	4	3
	5	4
	6	5
	7	6
	8	7

Field Entry Pre Sig

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:SPOStion[1]|2|3|4|5|6|7|8[:ASLot]

Supported E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:SPOStion[1]|2|3|4|5|6|7|8[:ASLot] <val>|OFF

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8:SPOStion[1]|2|3|4|5|6|7|8[:ASLot]?

This command sets each physical random access channel (PRACH) start access slot position within 80ms.

*RST

		Start Access Slot Pos							
		1	2	3	4	5	6	7	8
UE	1	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	2	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	3	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	4	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	5	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
UE	6	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	7	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	8	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Range 0–59

Field Entry Start Access Slot Position in 80ms Period

Remarks This command can only be executed while in the PRACH Mode is set to Multi. Refer to “:ULINK:PRACH:MODE[:SElect]” on page 1016.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8[:STATE]****Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8
[:STATE] 0|1|ON|OFF
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:MULTi:UE[1]|2|3|4|5|6|7|8
[:STATE]?
```

This command enables or disables each physical random access channel (PRACH) individually on the multiple PRACH mode.

***RST**

		State
UE	1	ON
	2	OFF
	3	OFF
	4	OFF
	5	OFF
	6	OFF
	7	OFF
	8	OFF

Field Entry On/Off**Remarks** This command will not run if the power of all assigned physical random access channels exceed the power of the signal generator.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:PRACH:PREamble:POWer:AVERAge**Supported** E4438C with Option 400

```
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:PREamble:POWer:AVERAge?
```

This query returns the average power of preambles that were sent before the acquisition indication channel (AICH) trigger was received.

***RST** -999**Field Entry** Preamble power average**Remarks** The average power value can be queried after the physical random access channel’s (PRACH) signal generation is completed. Refer to “:ULINK:PRACH[:SINGLE]:PREamble:NUMBer” on page 1034.

:ULINK:PRACH:PREamble:POWer:MODE**Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:PREamble:POWer:MODE PPM|
TOTAl

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH:PREamble:POWer:MODE?

This command sets the message power calculation mode for the physical random access channel (PRACH).

PPM This choice calculates the message power based on the power differences between the preamble and the message control part. The difference is specified by the PPM command. This is based on 3GPP standards.

TOTAL This choice calculates message power based on power differences between preamble and message total part. The message total power is specified by the MESSage:TPOWer command. Refer to [“:ULINK:PRACH\[:SINGLE\]:MESSAge:TPOWer”](#) on page 1033.

***RST** PPM**Key Entry** **PRACH Power Setup Mode Pp-m Total**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY”](#) on page 973.

:ULINK:PRACH:RPARAMeter**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:RPARAMeter TB168 | TB360

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:RPARAMeter?

This command sets a set of parameters as defined in 3GPP Standard (TS25.104) Reference Measurement Channel for the uplink (UL) physical random access channel (PRACH).

TB168 This choice sets the parameters for the transport block size = 168.

TB360 This choice sets the parameters for the transport block size = 360.

RST** TB168**Key Entry** **TrCh BlkSize 168** **TrCh BlkSize 360*Remarks** When parameters are sets individually, CUSTom is returned for the query.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH:SCRamblecode**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:SCRamblecode <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:SCRamblecode?

This command sets the physical random access channel’s (PRACH) scrambling code.

***RST** +0**Range** 0–8191**Field Entry** PRACH Scrambling Code**Remarks** The signature data is scrambled against a 4096 chip segment of the 225 complex gold code generator.

If the parameter set by this command is changed while the signal is

active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:PRACH:SDElay

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO :WCDMA :TGPP [ :BBG ] :ULINK :PRACH :SDElay <val>
```

```
[ :SOURCE ] :RADIO :WCDMA :TGPP [ :BBG ] :ULINK :PRACH :SDElay?
```

This command sets the number of timeslots to be delayed from the uplink synchronization source. One timeslot is equivalent to 2560 chips.

The variable <val> range is dependent on the Tp-a setting.

***RST** +0

Range	Tp-a Setting	<val>
	0	-14 to 119
	7680	-11 to 119
	12800	-9 to 119

Key Entry **Timeslot Offset**

Remarks The actual amount of timing difference is (TOFFset + SDElay * 2560) – (Tp–a).

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

To set the Tp-a value, refer to [“:ULINK:PRACH:TPA” on page 1026](#).

:ULINK:PRACH:SUBChannel

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO :WCDMA :TGPP [ :BBG ] :ULINK :PRACH :SUBChannel <val>
```

```
[ :SOURCE ] :RADIO :WCDMA :TGPP [ :BBG ] :ULINK :PRACH :SUBChannel?
```

This command sets the sub-channel number to send the first preamble of the physical random access channel's (PRACH).

***RST** +0

Range 0–11

Field Entry Start Sub-Channel#

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH:TOFFset

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TOFFset <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TOFFset?
```

This command sets additional timing offset for the physical random access channel (PRACH).

The timing offset is to adjust the time distance from the uplink PRACH frame timing which is the downlink's AICH framing timing minus the T_p-a to the actual uplink PRACH signal frame timing from the signal generator.

The downlink's AICH frame timing is provided by the synchronization signal. The

The variable <val> is expressed in chips.

***RST** +0

Range -512 to 2560

Key Entry **Timing Offset**

Remarks The actual timing offset is the timing difference from the synchronization signal from the signal generator's RF signal
(TOFFset + SDElay * 2560) - (T_p-a).

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [":ULINK:APPLY" on page 973](#).

:ULINK:PRACH:TPA

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TPA 0 | 7680 | 12800
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TPA?
```

This command sets the time period (distance) between the physical random access channel's (PRACH) preamble to the acquisition indication channel's (AICH) frame.

The variable <val> is expressed in units of "chip".

***RST** 7680

Key Entry **Base Delay T_p-a**

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

Remarks	The actual timing offset is $(TOFFset + SDElay * 2560) - (Tp-a)$. If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973. This command is not used when the sync source is set to ESG. Refer to “:ULINK:SYNC[:SOURCE]” on page 1053.
----------------	--

:ULINK:PRACH:TPM

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : ULINK : PRACH : TPM <val>
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : ULINK : PRACH : TPM?
```

This command sets the time period between the preamble and the message part.

The variable <val> is expressed in access slot units.

***RST** +3

Range 1–15

Field Entry Tp-m

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

This command is used for single and multiple physical random access channel (PRACH) modes.

:ULINK:PRACH:TPOWer

Supported E4438C with Option 400

```
[ :SOURCE ] : RADIO : WCDMA : TGPP [ : BBG ] : ULINK : PRACH : TPOWer?
```

This query returns the total power value of the physical random access channels (PRACH).

The value is the relative power difference between the total in-channel signal power of the PRACH message part and the active channel reference power (0dB) in the message part.

***RST** +0

Remarks This command is used for single and multiple physical random access channel (PRACH) modes.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:PRACH:TPP**

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TPP <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TPP?
```

This command sets the time period between the preamble and another preamble before the message part.

The variable <val> is expressed in access slot units.

***RST** +3

Range 1–60

Field Entry Tp-p

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

This command is used for single and multiple physical random access channel (PRACH) modes.

:ULINK:PRACH:TRIGger

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TRIGger
```

This command specifies the start of the physical random access channel’s (PRACH) pattern.

Key Entry **PRACH Trigger**

Remarks The PRACH trigger source must be set to “Trigger” before executing this command. Refer to [“:ULINK:PRACH:TRIGger:SOURCE” on page 1029](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:ULINK:PRACH:TRIGGER:POLARITY**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:TRIGGER:
POLARITY POSitive|NEGative

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:TRIGGER:POLARITY?

This command sets the trigger polarity of the physical random access channel type (PRACH).

POSitive This choice sets the signal to trigger when the trigger signal is high.

NEGative This choice sets the signal to trigger when the trigger signal is low.

RST** POS**Key Entry** **PRACH Trigger Polarity Neg Pos*Remarks** If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).**:ULINK:PRACH:TRIGGER:SOURCe****Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:TRIGGER:
SOURCe IMMEDIATE|TRIGGER

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH:TRIGGER:SOURCe?

This command sets the trigger source of the physical random access channel (PRACH).

IMMEDIATE This choice resets the waveform and immediately replays it from the start.

TRIGGER This choice plays the waveform after receiving the trigger command.

RST** IMMEDIATE**Key Entry** **PRACH Trigger Source Immedi Trigger*Remarks** Refer to [“:ULINK:PRACH:TRIGGER:POLARITY” on page 1029](#) and [“:ULINK:PRACH:TRIGGER” on page 1028](#) for additional information.If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH:TTI

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TTI 10000 | 20000
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH:TTI ?
```

This command sets the transmission time interval (TTI) period of the message part.

The choices are expressed in units of milliseconds (msec) where 20000=20 msec.

***RST** +20000

Field Entry TTI

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH[:SINGLE]:MESSAge[:STATe]

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH [ :SINGLE ] :MESSAge [ :STATe ]
```

```
ON | OFF | AICH
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH [ :SINGLE ] :MESSAge [ :STATe ] ?
```

This command enables or disables the message part of the physical random access channel (PRACH).

ON This choice enables the message part to be generated after the number of preambles are generated. The “Number of Preamble” must be specified.

OFF This choice does not allow the message part to be generated. Only the preambles are transmitted.

AICH This choice enables the acquisition indication channel preamble power ramping mode.

***RST** ON

Key Entry **On Off AICH**

Remarks For more information about the rear panel AUX I/O connector, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:ULINK:PRACH[:SINGLE]:NUMBER

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : NUMBER <val> |
INFinity
```

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : NUMBER?
```

This command specifies the number of the physical random access channel (PRACH) patterns to repeat after the PRACH start trigger has been received.

INFinity This choice means the repeating number will continue while the PRACH mode is selected and the start trigger is ignored.

***RST** 1

Range 1–2147483647

Field Entry Number of PRACH

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH[:SINGLE]:MESSAGE:CPART:CCODE

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : MESSAGE : CPART :
CCODE <val>
```

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : MESSAGE : CPART :
CCODE?
```

This command sets the channelization code for the physical random access channel (PRACH) message control part.

***RST** +15

Range 0–255

Field Entry Channel Code

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH[:SINGLE]:MESSAge:DPARt:CCODE**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH[:SINGLE]:MESSAge:DPARt:CCODE <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:PRACH[:SINGLE]:MESSAge:DPARt:CCODE?

This command sets the channelization code for the physical random access channel (PRACH) message data part.

There are commands that are associated with the channelization code and they are the slot format and the symbol rate.

If the slot format is changed, so will the symbol rate. If the symbol rate is changed, so will the slot format. In addition, the channelization code will change. If current channelization code exceed the new maximum value for the specified slot format or symbol rate, a setting conflict error is generated and the value is clipped to the maximum value. Refer to [Table 9-8](#).

Table 9-8 Channelization Code Maximum value

Channelization Code	Slot Format	Symbol Rate
255	0	15
127	1	30
63	2	60
31	3	120

***RST** +0**Range** 0–255**Field Entry** Channel Code

Remarks Channel code value is determined by slot format choice. Refer to “:ULINK:PRACH:MESSAge:DPARt:SLOTformat” on page 1015 and “:ULINK:PRACH:MESSAge:DPARt:RATE” on page 1014.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:PRACH[:SINGLE]:MESSAGE:TPOWER**Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH[:SINGLE]:MESSAGE:
TPOWER <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH[:SINGLE]:MESSAGE:TPOWER?

This command sets the message total power value for the single physical random access channel (PRACH) and multiple PRACH modes. The variable <val> is expressed in units of decibels (dB). The RF output power is limited to the signal generator's specifications

***RST** -1.36000000E+002**Range** -136 to 20**Field Entry** Msg Pwr

Remarks This value is used only when POWER:MODE is set to TOTAL. Refer to [“:ULINK:PRACH:PREamble:POWER:MODE” on page 1023](#).

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH[:SINGLE]:NUMBER**Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH[:SINGLE]:
NUMBER <val>|INFINITY

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:PRACH[:SINGLE]:NUMBER?

This command specifies the number of the physical random access channel (PRACH) patterns to repeat after the PRACH start trigger has been received.

INFINITY This choice means the repeating number will continue while the PRACH mode is selected and the start trigger is ignored.

***RST** 1**Range** 1–2147447836**Field Entry** Number of PRACH

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH[:SINGLE]:PREamble:NUMBER

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : PREamble :
NUMBER <val> | INFINITY
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : PREamble : NUMBER ?
```

This command specifies the number of preambles to repeat in one physical random access channel (PRACH) pattern.

INFINITY This choice means the repeating preamble will play continuously while the PRACH mode is selected.

***RST** 1

Range 1–8388607

Field Entry PRACH Timing Setup: Number of Preamble
PRACH Power Setup: Num of Pre

:ULINK:PRACH[:SINGLE]:PREamble:POWER:INITIAL

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : PREamble :
POWER : INITIAL ?
```

This query returns the initial preamble power from POWER:MAX value, RSTep (ramp step) and PREamble:NUMBER commands.

***RST** -1.36000000E+002

Field Entry Init Pwr

:ULINK:PRACH[:SINGLE]:PREamble:POWER:MAX

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : PREamble :
POWER : MAX <val>
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : PRACH [ : SINGLE ] : PREamble :
POWER : MAX ?
```

This command sets the maximum preamble power for the physical random access channel (PRACH).

In power ramping mode (RSTep is a non-zero value), the preamble power can go up until the acquisition indication channel's (AICH) signal is not received (maximum power).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

The variable <val> is expressed in units of decibels (dB).

***RST** -1.36000000E+002

Range -136 to 20

Field Entry Max Pwr

Remarks The actual RF output is limited to the signal generator’s specifications although the value can be entered up to 20 dBm.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:PRACH[:SINGLE]:PREamble:POWER:RSTep

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH [ :SINGLE ] :PREamble:POWER:RSTep <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH [ :SINGLE ] :PREamble:POWER:RSTep?
```

This command sets the power ramping steps for the single physical random access channel (PRACH) preamble.

The variable <val> is expressed in units of decibels (dB).

***RST** 0

Range 0–10

Field Entry Ramp Step

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

This command is used for single and multiple physical random access channel (PRACH) modes.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:PRACH[:SINGLE]:PREamble:PPM**

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH [ :SINGLE ] :PREamble:PPM <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH [ :SINGLE ] :PREamble:PPM?
```

This command sets the power difference between the preamble and the message control part in the single physical random access channel (PRACH).

The variable <val> is expressed in units of decibels (dB).

***RST** -4.56032509E+000

Range -20 to 10

Field Entry Pp-m

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:PRACH[:SINGLE]:PREamble:SIGNature

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH [ :SINGLE ] :PREamble:SIGNature <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:PRACH [ :SINGLE ] :PREamble:SIGNature?
```

This command sets the signature encoded in the single physical random access channel's (PRACH) preamble.

***RST** +0

Range 0–15

Field Entry Signature

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:RMCHannel**

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:RMCHannel RMC122 | RMC64 | RMC144 |
RMC384 | UDI64 | AMR122
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:RMCHannel?
```

This command configures the uplink reference measurement (RMC) channel by providing a one command access to a typical RMC configuration.

RMC122	This choice selects a reference measurement channel with a 12.2 kbps rate as per 3GPP TS 25.141.
RMC64	This choice selects a reference measurement channel with a 64.0 kbps rate as per 3GPP TS 25.141.
RMC144	This choice selects a reference measurement channel with a 144.0 kbps rate as per 3GPP TS 25.141.
RMC384	This choice selects a reference measurement channel with a 384.0 kbps rate as per 3GPP TS 25.141.
UDI64	This choice selects an ISDN unrestricted digital information 1B with a 64.0 kbps rate as per 3GPP TS 25.944.
ARM122	This choice selects an adaptive multiple rate of 12.2 kbps as per 3GPP TS 25.944.

***RST** RMC122

Key Entry	RMC122 kbps (25.141)	RMC64 kbps (25.141)
	RMC144 kbps (25.141)	RMC384 kbps (25.141)
	AMR 122 kbps	UDI 64 kbps

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:RPANel:DPCH:INPut:ALTPower****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:RPANel:DPCH:INPut:ALTPower?

This query returns the type of signal at the alternate power input (ALT PWR IN, AUX I/O connector pin#16) for the dedicated physical channel (DPCH) mode.

***RST** USER

Remarks The signal name is TPC user file trigger (USER). For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:DPCH:INPut:BBGRef**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:RPANel:DPCH:INPut:BBGRef?

This query returns the type of signal at the baseband generator reference input (BASEBAND GEN REF IN, rear panel connector) for the dedicated physical channel (DPCH) mode.

***RST** CCL

Remarks The signal name is baseband generator chip clock (CCL). For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:DPCH:INPut:BGATe**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:RPANel:DPCH:INPut:BGATe?

This query returns the type of signal at the gate burst (BURST GATE IN, rear panel connector) for the dedicated physical channel (DPCH) mode.

***RST** CSTT

Remarks In compressed mode the signal name is compressed mode start trigger (CSST). In power control mode, the signal name is DPCH power control signal (DPCS). For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:RPANel:DPCH:INPut:PTRigger1**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:RPANel:DPCH:INPut:PTRigger1?

This query returns the type of signal at the pattern trigger input 1 (PATT TRIG IN 1, rear panel) for the dedicated physical channel (DPCH) mode.

***RST** FSYN

Remarks The signal name is frame synchronization (FSYN). For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:DPCH:INPut:PTRigger2**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:RPANel:DPCH:INPut:PTRigger2?

This query returns the type of signal at the pattern trigger input 2 (PATT TRIG IN 2, AUX I/O connector pin#17) for the dedicated physical channel (DPCH) mode.

***RST** CSPT

Remarks The signal name is compress mode stop trigger (CSPT). For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:DPCH:OUTPut:DCLock**Supported** E4438C with Option 400

```
[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:RPANel:DPCH:OUTPut:DCLock RPS0 |
RPS1 | RPS2 | RPS3 | RPS4 | RPS5 | RPS6 | RPS7 | RPS8 | RPS9 | RPS10
[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:RPANel:DPCH:OUTPut:DCLock?
```

This command assigns a signal to the data clock output at the selected rear panel AUX I/O connector pin#6. Refer to [Table 9-9 on page 1039](#) for command parameters and output signal type.

Table 9-9 Rear Panel Signal (RPS) Output Type

Command Parameter	Signal Out
RPS0	None

Table 9-9 Rear Panel Signal (RPS) Output Type

Command Parameter	Signal Out
RPS1	Chip Clock
RPS2	DPDCH raw data
RPS3	DPDCH raw data clock
RPS4	DPCCH raw data
RPS5	DPCCH raw data clock
RPS6	10ms frame pulse
RPS7	Trigger sync reply
RPS8	Compressed frame
RPS9	TTI frame pulse
RPS10	CFN #0 frame pulse

***RST** RPS1

Key Entry NONE (RPS0) Chip Clock (RPS1) DPDCH Raw Data (RPS2)
 DPDCH Data Raw Clock (RPS3) DPCCH Raw Data (RPS4)
 DPCCH Raw Data Clock (RPS5) 10 ms Frame Pulse (RPS6)
 Trigger Sync Reply (RPS7) Compressed Frame (RPS8)
 TTI Frame Clock (RPS9) CFN #0 Frame Pulse (RPS10)

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:RPANel:DPCH:OUTPut:DOUT

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIo:WCDMa:TGPP[ :BBG ] :ULINk:RPANel:DPCH:OUTPut:DOUT RPS0 |
RPS1 | RPS2 | RPS3 | RPS4 | RPS5 | RPS6 | RPS7 | RPS8 | RPS9 | RPS10
[ :SOURCE ] :RADIo:WCDMa:TGPP[ :BBG ] :ULINk:RPANel:DPCH:OUTPut:DOUT?
```

This command assigns a signal to the data output at the selected rear panel AUX I/O connector pin#7. Refer to [Table 9-9 on page 1039](#) for command parameters and output signal type.

***RST** RPS4

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	DPDCH Raw Data (RPS2)
	DPDCH Data Raw Clock (RPS3)		DPCCH Raw Data (RPS4)
	DPCCH Raw Data Clock (RPS5)		10 ms Frame Pulse (RPS6)
	Trigger Sync Reply (RPS7)		Compressed Frame (RPS8)
	TTI Frame Clock (RPS9)		CFN #0 Frame Pulse (RPS10)

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:DPCH:OUTPut:EVENT1

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIo:WCDMa:TGPP[ :BBG ] :ULINk:RPANel:DPCH:OUTPut:
EVENT1 RPS0 | RPS1 | RPS2 | RPS3 | RPS4 | RPS5 | RPS6 | RPS7 | RPS8 | RPS9 | RPS10
[ :SOURCE ] :RADIo:WCDMa:TGPP[ :BBG ] :ULINk:RPANel:DPCH:OUTPut:EVENT1?
```

This command assigns a signal to the EVENT 1 at the rear panel output connector. Refer to [Table 9-9 on page 1039](#) for command parameters and output signal type.

***RST** RPS2

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	DPDCH Raw Data (RPS2)
	DPDCH Data Raw Clock (RPS3)		DPCCH Raw Data (RPS4)
	DPCCH Raw Data Clock (RPS5)		10 ms Frame Pulse (RPS6)
	Trigger Sync Reply (RPS7)		Compressed Frame (RPS8)
	Frame Clock (RPS9)		CFN #0 Frame Pulse (RPS10)

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:DPCH:OUTPut:EVENT2

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:RPANel:DPCH:OUTPut:
EVENT2 RPS0|RPS1|RPS2|RPS3|RPS4|RPS5|RPS6|RPS7|RPS8|RPS9|RPS10
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:RPANel:DPCH:OUTPut:EVENT2?
```

This command assigns a signal to the EVENT 2 at the rear panel output connector. Refer to [Table 9-9 on page 1039](#) for command parameters and output signal types.

***RST** RPS3

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	DPDCH Raw Data (RPS2)
	DPDCH Data Raw Clock (RPS3)		DPCCH Raw Data (RPS4)
	DPCCH Raw Data Clock (RPS5)		10 ms Frame Pulse (RPS6)
	Trigger Sync Reply (RPS7)		Compressed Frame (RPS8)
	TTI Frame Clock (RPS9)		CFN #0 Frame Pulse (RPS10)

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:DPCH:OUTPut:EVENT3

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:RPANel:DPCH:OUTPut:
EVENT3 RPS0|RPS1|RPS2|RPS3|RPS4|RPS5|RPS6|RPS7|RPS8|RPS9|RPS10
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:RPANel:DPCH:OUTPut:EVENT3?
```

This command assigns a signal to the EVENT 3 output at the selected rear panel AUX I/O connector pin#19. Refer to [Table 9-9 on page 1039](#) for command parameters and output signal type.

***RST** RPS0

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	DPDCH Raw Data (RPS2)
	DPDCH Data Raw Clock (RPS3)		DPCCH Raw Data (RPS4)
	DPCCH Raw Data Clock (RPS5)		10 ms Frame Pulse (RPS6)
	Trigger Sync Reply (RPS7)		Compressed Frame (RPS8)
	TTI Frame Clock (RPS9)		CFN #0 Frame Pulse (RPS10)

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:RPANel:DPCH:OUTPut:EVENT4

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:RPANel:DPCH:OUTPut :
EVENT4 RPS0 | RPS1 | RPS2 | RPS3 | RPS4 | RPS5 | RPS6 | RPS7 | RPS8 | RPS9 | RPS10
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:RPANel:DPCH:OUTPut :EVENT4?
```

This command assigns a signal to the EVENT 4 output at the selected rear panel AUX I/O connector pin#18. Refer to [Table 9-9 on page 1039](#) for command parameters and output signal type.

***RST** RPS0

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	DPDCH Raw Data (RPS2)
	DPDCH Data Raw Clock (RPS3)	DPCCH Raw Data (RPS4)	
	DPCCH Raw Data Clock (RPS5)	10 ms Frame Pulse (RPS6)	
	Trigger Sync Reply (RPS7)	Compressed Frame (RPS8)	
	TTI Frame Clock (RPS9)	CFN #0 Frame Pulse (RPS10)	

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:DPCH:OUTPut:SSYNc

Supported E4438C with Option 400

```
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:RPANel:DPCH:OUTPut :SSYNc RPS0 |
RPS1 | RPS2 | RPS3 | RPS4 | RPS5 | RPS6 | RPS7 | RPS8 | RPS9 | RPS10
[ :SOURCE ] :RADIO:WCDMA:TGPP [ :BBG ] :ULINK:RPANel:DPCH:OUTPut :SSYNc?
```

This command assigns a signal to SYM SYNC OUT at the selected rear panel AUX I/O connector pin#5. Refer to [Table 9-9 on page 1039](#) for command parameters and output signal type.

***RST** RPS6

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	DPDCH Raw Data (RPS2)
	DPDCH Data Raw Clock (RPS3)	DPCCH Raw Data (RPS4)	
	DPCCH Raw Data Clock (RPS5)	10 ms Frame Pulse (RPS6)	
	Trigger Sync Reply (RPS7)	Compressed Frame (RPS8)	
	TTI Frame Clock (RPS9)	CFN #0 Frame Pulse (RPS10)	

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:PRACH:INPut:ALTPower**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:RPANel:PRACH:INPut:ALTPower?

This query returns the signal type at the ALT PWR IN (alternate power in) connector pin for the physical random access channel (PRACH) mode.

***RST** NONE**Field Entry** Alt power in

Remarks For more information about the rear panel AUX I/O connector pin configuration, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:PRACH:INPut:BBGRef**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:RPANel:PRACH:INPut:BBGRef?

This query returns the type of signal at the baseband generator reference input (BASEBAND GEN REF IN, rear panel connector) for the physical random access channel (PRACH) mode.

***RST** CCL

Remarks The signal name is baseband generator chip clock (CCL). For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:PRACH:INPut:BGATe**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:RPANel:PRACH:INPut:BGATe?

This query returns the signal type at the BURST GATE IN connector for the physical random access channel (PRACH) mode.

***RST** PSTR**Field Entry** Burst gate in

Remarks The signal name is PRACH start trigger (PSTR). For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:ULINK:RPANel:PRACH:INPut:PTRigger1

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:INPut:PTRigger1?
```

This query returns the signal type at the pattern trigger in 1 (PATT TRIG IN) connector for the physical random access channel (PRACH) mode.

***RST** FSYN

Field Entry Pattern trigger in 1

Remarks The signal name is frame synchronization (FSYN). For more information about the rear panel I/O connectors' configuration, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:PRACH:INPut:PTRigger2

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:INPut:PTRigger2?
```

This query returns the signal type at the pattern trigger input 2 (PATT TRIG IN 2 AUX I/O connector pin#17) for the physical random access channel (PRACH) mode.

***RST** AITR

Field Entry Pattern trigger in 2

Remarks The signal name is AICH trigger (AITR). For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:PRACH:OUTPut:DCLock

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:OUTPut:DCLock RPS0 |
RPS1 | RPS6 | RPS7 | RPS11 | RPS12 | RPS13 | RPS14 | RPS15 | RPS16 |
RPS17 | RPS19 | RPS20 | RPS21 | RPS22 | RPS23 | RPS24 | RPS25
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:OUTPut:DCLock?
```

This command assigns a signal at the data clock output for the selected rear panel AUX I/O connector pin#6.

RPS0 none

RPS1 This choice assigns the chip clock signal.

RPS6	This choice assigns the 10ms frame pulse signal.
RPS7	This choice assigns the trigger sync reply signal.
RPS11	This choice assigns the message-data raw data signal. In the multiple PRACH mode, RPS11 outputs the message-data raw data signal of PRACH#1. If the PRACH#1 is not “on”, no signal output is output.
RPS12	This choice assigns the message-data raw clock signal. In the multiple PRACH mode, RPS12 outputs the message-data raw clock signal of PRACH#1. If the PRACH#1 is not “on”, no signal output is output.
RPS14	This choice assigns the message-ctrl raw data clock signal. In the multiple PRACH mode, RPS14 outputs the message-control raw data clock signal of PRACH#1. If the PRACH#1 is not “on”, no signal output is output.
RPS15	This choice assigns the preamble raw data signal. In the multiple PRACH mode, RPS15 outputs the preamble raw data signal of PRACH#1. If the PRACH#1 is not “on”, no signal output is output.
RPS16	This choice assigns the preamble raw data clock signal. In the multiple PRACH mode, RPS16 outputs the preamble raw data clock signal of PRACH#1. If the PRACH#1 is not “on”, no signal output is output.
RPS17	This choice assigns the sub channel timing signal. Sub channel timing is used on the single PRACH mode.
RPS19	This choice assigns the PRACH processing signal. This signal indicates the PRACH is generating.
RPS20	This choice assigns the 80ms frame pulse signal.
RPS21	This choice assigns the preamble pulse signal. This signal indicates the preamble timing of all configured PRACHes. One pulse for one preamble. In the multiple PRACH mode, this output relates to PRACH#1. If the PRACH#1 in not “on”, no signal is output.
RPS22	This choice assigns the message pulse signal. This signal indicates the message part timing of all configured PRACHes. In the multiple PRACH mode, this output relates to PRACH#1. If the PRACH#1 in not “on”, no signal is output.
RPS23	This choice assigns the PRACH pulse signal. This signal indicates the start timing of all configured PRACHes. In the multiple PRACH mode, this output relates to PRACH#1. If the PRACH#1 in not “on”, no signal is output.
RPS24	This choice assigns the ESG synchronization signal. This signal is used for the multiple EAG synchronization on the multiple PRACH mode.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

RPS25 This choice assigns the PRACH start trigger echo back signal. The PRACH start trigger echo back signal is used for the multiple ESG connection on the multiple PRACH mode.

*RST RPS0

Key Entry NONE (RPS0) Chip Clock (RPS1) Message-Data Raw Data (RPS11)
 10ms Frame Pulse (RPS6) Trigger Sync Reply (RPS7)
 Message-Data Raw Clock (RPS12) Message-Control Raw Data (RPS13)
 Message-Control Raw Data Clock(RPS14)
 Preamble Raw Data(RPS15) Preamble Raw Data Clock(RPS16)
 Sub Channel Timing(RPS17) PRACH Processing(RPS19)
 80ms Frame Pulse(RPS20) Preamble Pulse(RPS21)
 Message Pulse(RPS22) PRACH Pulse(RPS23)
 ESG-Sync Sig(RPS24) Start-Trigger EchoBack(RPS25)

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:PRACH:OUTPut:DOUT

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:OUTPut:DOUT RPS0 |
RPS1 | RPS6 | RPS7 | RPS11 | RPS12 | RPS13 | RPS14 | RPS14 | RPS15 | RPS16 | RPS17 | RPS19 |
RPS20 | RPS21 | RPS22 | RPS23 | RPS24 | RPS25
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:OUTPut:DOUT?
```

This command assigns a signal to the data output at the selected rear panel AUX I/O connector pin#7.

For parameter descriptions refer to “:ULINK:RPANel:PRACH:OUTPut:DCLock” on page 1045.

*RST RPS0

Key Entry NONE (RPS0) Chip Clock (RPS1) Message-Data Raw Data (RPS11)
 10ms Frame Pulse (RPS6) Trigger Sync Reply (RPS7)
 Message-Data Raw Clock (RPS12) Message-Control Raw Data (RPS13)
 Message-Control Raw Data Clock(RPS14)
 Preamble Raw Data(RPS15) Preamble Raw Data Clock(RPS16)
 Sub Channel Timing(RPS17) PRACH Processing(RPS19)
 80ms Frame Pulse(RPS20) Preamble Pulse(RPS21)

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

	Message Pulse(RPS22)	PRACH Pulse(RPS23)
	ESG-Sync Sig(RPS24)	Start-Trigger EchoBack(RPS25)
Remarks	For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the <i>E4428C/38C ESG Signal Generators User's Guide</i> .	

:ULINK:RPANel:PRACH:OUTPut:EVENT1

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : RPANel : PRACH : OUTPut : EVENT1 RPS0 |
RPS1 | RPS6 | RPS7 | RPS11 | RPS12 | RPS13 | RPS14 | RPS14 | RPS15 | RPS16 | RPS17 | RPS19 |
RPS20 | RPS21 | RPS22 | RPS23 | RPS24 | RPS25
[ : SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : RPANel : PRACH : OUTPut : EVENT1?
```

This command assigns a signal to the EVENT 1 at the selected rear panel connector.

For parameter descriptions refer to “:ULINK:RPANel:PRACH:OUTPut:DCLock” on page 1045.

***RST** RPS0

Key Entry **NONE (RPS0)** **Chip Clock (RPS1)** **Message-Data Raw Data (RPS11)**
10ms Frame Pulse (RPS6) **Trigger Sync Reply (RPS7)**
Message-Data Raw Clock (RPS12) **Message-Control Raw Data (RPS13)**
Message-Control Raw Data Clock(RPS14)
Preamble Raw Data(RPS15) **Preamble Raw Data Clock(RPS16)**
Sub Channel Timing(RPS17) **PRACH Processing(RPS19)**
80ms Frame Pulse(RPS20) **Preamble Pulse(RPS21)**
Message Pulse(RPS22) **PRACH Pulse(RPS23)**
ESG-Sync Sig(RPS24) **Start-Trigger EchoBack(RPS25)**

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIo:WCDMa:TGPP[:BBG])**:ULINK:RPANel:PRACH:OUTPut:EVENT2****Supported** E4438C with Option 400[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:RPANel:PRACH:OUTPut:EVENT2 RPS0|
RPS1|RPS6|RPS7|RPS11|RPS12|RPS13|RPS14|RPS14|RPS15|RPS16|RPS17|RPS19|RPS20|RPS21|
RPS22|RPS23|RPS24|RPS25

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:RPANel:PRACH:OUTPut:EVENT2?

This command assigns a signal to the EVENT 2 at the rear panel connector.

For parameter descriptions refer to “:ULINK:RPANel:PRACH:OUTPut:DCLock” on page 1045.

***RST** RPS0

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	Message-Data Raw Data (RPS11)
	10ms Frame Pulse (RPS6)	Trigger Sync Reply (RPS7)	
	Message-Data Raw Clock (RPS12)	Message-Control Raw Data (RPS13)	
	Message-Control Raw Data Clock(RPS14)		
	Preamble Raw Data(RPS15)	Preamble Raw Data Clock(RPS16)	
	Sub Channel Timing(RPS17)	PRACH Processing(RPS19)	
	80ms Frame Pulse(RPS20)	Preamble Pulse(RPS21)	
	Message Pulse(RPS22)	PRACH Pulse(RPS23)	
	ESG-Sync Sig(RPS24)	Start-Trigger EchoBack(RPS25)	

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.**:ULINK:RPANel:PRACH:OUTPut:EVENT3****Supported** E4438C with Option 400[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:RPANel:PRACH:OUTPut:EVENT3 RPS0|
RPS1|RPS6|RPS7|RPS11|RPS12|RPS13|RPS14|RPS14|RPS15|RPS16|RPS17|RPS19|
RPS20|RPS21|RPS22|RPS23|RPS24|RPS25

[:SOURCE]:RADIo:WCDMa:TGPP[:BBG]:ULINK:RPANel:PRACH:OUTPut:EVENT3?

This command assigns a signal to the EVENT 3 output at the selected rear panel AUX I/O connector pin#19.

For parameter descriptions refer to “:ULINK:RPANel:PRACH:OUTPut:DCLock” on page 1045.

***RST** RPS0

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	Message-Data Raw Data (RPS11)
	10ms Frame Pulse (RPS6)	Trigger Sync Reply (RPS7)	
	Message-Data Raw Clock (RPS12)	Message-Control Raw Data (RPS13)	
	Message-Control Raw Data Clock(RPS14)		
	Preamble Raw Data(RPS15)	Preamble Raw Data Clock(RPS16)	
	Sub Channel Timing(RPS17)	PRACH Processing(RPS19)	
	80ms Frame Pulse(RPS20)	Preamble Pulse(RPS21)	
	Message Pulse(RPS22)	PRACH Pulse(RPS23)	
	ESG-Sync Sig(RPS24)	Start-Trigger EchoBack(RPS25)	

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:PRACH:OUTPut:EVENT4

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:OUTPut:EVENT4 4RPS0 |
RPS1 | RPS6 | RPS7 | RPS11 | RPS12 | RPS13 | RPS14 | RPS14 | RPS15 | RPS16 | RPS17 | RPS19 |
RPS20 | RPS21 | RPS22 | RPS23 | RPS24 | RPS25
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:OUTPut:EVENT4?
```

This command assigns a signal to the EVENT 4 output at the selected rear panel AUX I/O connector pin#18.

For parameter descriptions refer to “:ULINK:RPANel:PRACH:OUTPut:DCLock” on page 1045.

***RST** RPS0

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	Message-Data Raw Data (RPS11)
	10ms Frame Pulse (RPS6)	Trigger Sync Reply (RPS7)	
	Message-Data Raw Clock (RPS12)	Message-Control Raw Data (RPS13)	
	Message-Control Raw Data Clock(RPS14)		
	Preamble Raw Data(RPS15)	Preamble Raw Data Clock(RPS16)	
	Sub Channel Timing(RPS17)	PRACH Processing(RPS19)	
	80ms Frame Pulse(RPS20)	Preamble Pulse(RPS21)	
	Message Pulse(RPS22)	PRACH Pulse(RPS23)	
	ESG-Sync Sig(RPS24)	Start-Trigger EchoBack(RPS25)	

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:RPANel:PRACH:OUTPut:SSYNc

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:OUTPut:SSYNc RPS0 |
RPS1 | RPS6 | RPS7 | RPS11 | RPS12 | RPS13 | RPS14 | RPS14 | RPS15 | RPS16 | RPS17 | RPS19 |
RPS20 | RPS21 | RPS22 | RPS23 | RPS24 | RPS25
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:RPANel:PRACH:OUTPut:SSYNc?
```

This command assigns a signal to SYM SYNC OUT at the selected rear panel AUX I/O connector pin#5.

For parameter descriptions refer to “:ULINK:RPANel:PRACH:OUTPut:DCLock” on page 1045.

***RST** RPS0

Key Entry	NONE (RPS0)	Chip Clock (RPS1)	Message-Data Raw Data (RPS11)
	10ms Frame Pulse (RPS6)	Trigger Sync Reply (RPS7)	
	Message-Data Raw Clock (RPS12)	Message-Control Raw Data (RPS13)	
	Message-Control Raw Data Clock(RPS14)		
	Preamble Raw Data(RPS15)	Preamble Raw Data Clock(RPS16)	
	Sub Channel Timing(RPS17)	PRACH Processing(RPS19)	
	80ms Frame Pulse(RPS20)	Preamble Pulse(RPS21)	
	Message Pulse(RPS22)	PRACH Pulse(RPS23)	
	ESG-Sync Sig(RPS24)	Start-Trigger EchoBack(RPS25)	

Remarks For more information about the rear panel connector configurations, refer to "Signal Generator Overview" in the *E4428C/38C ESG Signal Generators User's Guide*.

:ULINK:SCRamblecode

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:SCRamblecode <val>
[ :SOURCE ] :RADio:WCDMa:TGPP[ :BBG ] :ULINK:SCRamblecode?
```

This command sets the uplink scramble code.

***RST** +0

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Range 0–16777215
Field Entry Scrambling Code

:ULINK:SDElay

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : SDElay <val>
[ : SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : SDElay?
```

This command sets the number of timeslots to be delayed for the dedicated physical channel (DPCH).

***RST** +0

Range 0–119

Key Entry **Timeslot Offset**

Remarks The actual amount of timing offset is
 $(T_0) + (TOFFset) + (SDElay) * 2560$ chips, where $T_0 = 1024$ chips.

This command is not used when the sync source is set to ESG. Refer to
[“:ULINK:SYNC\[:SOURCE\]” on page 1053.](#)

:ULINK:SFNRst:POLarity

Supported E4438C with Option 400

```
[ :SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : SFNRst : POLarity POSitive | NEGative
[ : SOURCE ] : RADio : WCDMa : TGPP [ : BBG ] : ULINK : SFNRst : POLarity?
```

This command sets the polarity of the system frame number reset signal for the uplink synchronization source.

POSitive This choice sets the signal to trigger when the trigger signal is high.

NEGative This choice sets the signal to trigger when the trigger signal is low.

***RST** POS

Key Entry **SFN RST Polarity Neg Pos**

Remarks This command is not used when the sync source is set to ESG. Refer to
[“:ULINK:SYNC\[:SOURCE\]” on page 1053.](#)

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:SYNC:MODE**

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:SYNC:MODE SINGLE | CONTinuous

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:SYNC:MODE?

This command selects the uplink frame synchronization triggering mode.

SINGLE This choice sets the signal generator, once triggered, to generate frames based on the reference clock.

CONTinuous This choice sets the signal generator to continuously align the frame sync trigger signal and the frame timing.

***RST** SING

Key Entry **Frame Sync Trigger Mode Single Cont**

:ULINK:SYNC[:SOURCE]

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:SYNC [:SOURCE] SFN_RST | FCLock | ESG

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:SYNC [:SOURCE]?

This command selects the uplink frame synchronization source type.

SFN_RST This choice sets the signal to trigger on the system frame number reset signal.

FCLock This choice sets the signal to trigger on the frame clock.

ESG This choice sets the signal to trigger on the synchronization signal of a primary ESG.

***RST** FCL

Key Entry **Sync Source SFN FClk ESG**

:ULINK:TGAP:POFFset

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:POFFset <val> | AUTO
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:POFFset?
```

This command specifies the amount of power to be increased when the data is being compressed for the transmission gap power offset.

AUTO This choice sets the power to increase using the gap pattern parameters calculation based on 3GPP standard. When AUTO is selected, the query returns “AUTO” as the value.

The variable <val> is expressed in units of decibels (dB).

***RST** AUTO

Range 0–6

Field Entry PwrOffs

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK:TGAP:PSI[1] | 2 | 3 | 4 | 5 | 6:CFN

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:PSI [ 1 ] | 2 | 3 | 4 | 5 | 6 :CFN <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:PSI [ 1 ] | 2 | 3 | 4 | 5 | 6 :CFN?
```

This command sets the connection frame number (CFN) for the first radio frame of the first pattern 1.

***RST** 0

Range 1–255

Field Entry TGCFN

Remarks In the signal generator, CFN is counted internally relative to the system sync signal.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK:TGAP:PSI[1]:CMMethod**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADIO :WCDMA :TGPP [ :BBG ] :ULINK :TGAP :PSI [ 1 ] :CMMethod SF2 | HIGHER
[ :SOURCE ] :RADIO :WCDMA :TGPP [ :BBG ] :ULINK :TGAP :PSI [ 1 ] :CMMethod?
```

This command selects the compressed mode (CM) method.

SF2 This choice selects a compressed mode method that reduced the spread factor (SF) by 2. This is done by increasing the data rate by reducing the spreading factor in half. When the dedicated physical data channel's (DPDCH) symbol rate is 960 kbps, the frame is not compressed because it uses the lowest SF value and it cannot be reduced.

HIGHER This choice selects a higher layer scheduling method. The emulated higher layer scheduling method mode keeps the same physical layer data rate even when a transmission gap is created.

***RST** SF2**Key Entry** **SF/2 Higher Layer**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

The ULINK:APPLY command will fail if the CM method is higher layer and DPDCH data is TrCH. CM method should be SF/2 if the DPDCH data is TrCH.

:ULINK:TGAP:PSI[1]|2|3|4|5|6:D**Supported** E4438C with Option 400

```
[ :SOURCE ] :RADIO :WCDMA :TGPP [ :BBG ] :ULINK :TGAP :PSI [ 1 ] | 2 | 3 | 4 | 5 | 6 :D
<val> | UNDEFINED
[ :SOURCE ] :RADIO :WCDMA :TGPP [ :BBG ] :ULINK :TGAP :PSI [ 1 ] | 2 | 3 | 4 | 5 | 6 :D?
```

This command sets the transmission gap distance. The command specifies the number of slots between the starting slots of two consecutive transmission gaps within a transmission gap pattern.

UNDEFINED This choice sets one transmission gap. When UNDEFINED is selected, then there is only one transmission gap within the transmission gap pattern.

***RST** UND**Range** 15–269**Field Entry** TGD

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:ULINK:TGAP:PSI[1]|2|3|4|5|6:L1****Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6
:L1 3|4|5|7|10|14

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:L1?

This command specifies the length of the first transmission gap (TGL1). The length is expressed in number of slots.

RST** +7**Field Entry** TGL1**:ULINK:TGAP:PSI[1]|2|3|4|5|6:L2*Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6
:L2 3|4|5|7|10|14|OMITted

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:L2?

This command specifies the length of the second transmission gap (TGL2). When OMITted is selected, TGL2=TGL1.

RST** OMIT**Field Entry** TGL2**:ULINK:TGAP:PSI[1]|2|3|4|5|6:PL1*Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:PL1 <val>
[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:PL1?

This command specifies the duration of the transmission gap pattern length 1 (TGPL1). The pattern length is expressed in number of frames.

***RST** +2**Range** 1–144**Field Entry** TGPL1

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:ULINK:TGAP:PSI[1]|2|3|4|5|6:PL2****Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:PL2 <val> |
OMITted

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:PL2?

This command specifies the duration of the transmission gap pattern length 2 (TGPL2).

The variable <val> is expressed in number of frames. When OMITted is selected, TGPL2=TGPL1.

RST** OMIT**Range** 1–144**Field Entry** TGPL2**Key Entry** **Omitted*:ULINK:TGAP:PSI[1]|2|3|4|5|6:POWer****Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:POWer?

This query returns each power level for a compressed slot.

The return string has five real numbers followed by dBm (for normal power) or dB (for before/after gap power) separated by a single space character. When a value does not exist because of a specified compressed pattern (Example: Gap2 does not exist when TGD is “UNDEFINED”), it returns “–dB.”

Normal power value represents an actual power level in dBm and relative power is represented in dB.

:ULINK:TGAP:PSI[1]|2|3|4|5|6:PRC**Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:PRC <val> |
INFINity

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK:TGAP:PSI[1]|2|3|4|5|6:PRC?

This command sets the transmission gap pattern repetition count. The pattern repetition count (PRC) sets the number of transmission gap patterns within the transmission gap pattern sequence.

***RST** INF**Range** 1–511**Field Entry** TGPRC

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Key Entry	Infinity
Remarks	When INFINITY is selected, the PRC will continue indefinitely.

:ULINK:TGAP:PSI[1]|2|3|4|5|6:PS

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:PSI [ 1 ] | 2 | 3 | 4 | 5 | 6 :PS ACTive |
INACTive
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:PSI [ 1 ] | 2 | 3 | 4 | 5 | 6 :PS?
```

This command sets the transmission gap pattern status.

ACTive This choice sets the compressed mode active.

INACTive This choice sets the compressed mode inactive.

***RST** INAC

Key Entry **TGPS Active Inactive**

:ULINK:TGAP:PSI[1]|2|3|4|5|6:SN

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:PSI [ 1 ] | 2 | 3 | 4 | 5 | 6 :SN <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:PSI [ 1 ] | 2 | 3 | 4 | 5 | 6 :SN?
```

This command specifies the timeslot number of the first transmission gap within the first radio frame.

***RST** +11

Range 0–14

Field Entry TGSN

:ULINK:TGAP:RPARAMeter

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:RPARAMeter DREF11 | DREF12 |
DREF21 | DREF22
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:RPARAMeter?
```

This command sets the downlink reference compressed mode parameters as defined in 3GPP Standard TS25.101.

DREF11 This choice sets the reference parameter to 1.1.

DREF12 This choice sets the reference parameter to 1.2.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

DREF21	This choice sets the reference parameter to 2.1.		
DREF22	This choice sets the reference parameter to 2.2.		
*RST	CUST		
Key Entry	DL Reference 1.1	DL Reference 1.2	DL Reference 2.1
	DL Reference 2.2		
Remarks	The query returns CUSTom when the parameters are set individually.		

:ULINK:TGAP:SCFN

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:SCFN <val>
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP:SCFN?
```

This command sets the stop connection frame number (CFN) when the stop trigger is used.

When the stop trigger is received at the signal generator, the next stop CFN, the compressed mode will finish even if the transmission gap pattern repetition count (TGPRC) is still remaining.

*RST +0

Range 0–255

Field Entry SCFN

Remarks The compressed mode stop trigger must be used for this command to executed. Refer to “:ULINK:TGAP:STOP:TRIGger” on page 1060.

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

This command is not used when the sync source is set to ESG. Refer to “:ULINK:SYNC[:SOURCE]” on page 1053.

:ULINK:TGAP[:STATe]

Supported E4438C with Option 400

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP [ :STATe ] ON|OFF|1|0
```

```
[ :SOURCE ] :RADio:WCDMa:TGPP [ :BBG ] :ULINK:TGAP [ :STATe ] ?
```

This command enables or disables the uplink transmission gap pattern.

*RST 1

Key Entry **Compress Mode Off On**

:ULINK:TGAP:START:TRIGger

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:TGAP:START:TRIGger

This command starts the compressed mode trigger.

Key Entry **Compressed Mode Start Trigger**

:ULINK:TGAP:START:TRIGger:POLarity

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:TGAP:START:TRIGger:

POLarity POSitive|NEGative

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:TGAP:START:TRIGger:POLarity?

This command sets the compressed mode start trigger signal polarity.

POSitive This choice sets the trigger to start when the trigger signal is high.

NEGative This choice sets the trigger to start when the trigger signal is low.

***RST** POS

Key Entry **Comp Mode Start Trigger Polarity Neg Pos**

:ULINK:TGAP:STOP:TRIGger

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:TGAP:STOP:TRIGger

This command stops the compressed mode trigger.

Key Entry **Compressed Mode Stop Trigger**

:ULINK:TGAP:STOP:TRIGger:POLarity

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:TGAP:STOP:TRIGger:

POLarity POSitive|NEGative

[:SOURCE] :RADio:WCDMa:TGPP [:BBG] :ULINK:TGAP:STOP:TRIGger:POLarity?

This command sets the compressed mode stop trigger signal polarity.

POSitive This choice sets the trigger to stop when the trigger signal is high.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

NEGative This choice sets the trigger to stop when the trigger signal is low.

*RST POS

Key Entry **Comp Mode Stop Trigger Polarity Neg Pos**

:ULINK:TOFFset

Supported E4438C with Option 400

[:SOURCE] : RADio : WCDMa : TGPP [: BBG] : ULINK : TOFFset <val>

[:SOURCE] : RADio : WCDMa : TGPP [: BBG] : ULINK : TOFFset?

This command sets additional timing offset for the dedicated physical channel (DPCH). Timing offset is the time delay between the downlink signal and the uplink signal. The downlink signal timing is provided by the synchronization signal.

*RST +0

Range -512 to 2560

Key Entry **Timing Offset**

Remarks The actual amount of timing offset is (T0) + (TOFFset) + (SDElay) where T0 = 1024 chips.

:ULINK:TStatus:COMPressed

Supported E4438C with Option 400

[:SOURCE] : RADio : WCDMa : TGPP [: BBG] : ULINK : TStatus : COMPressed?

This query returns the status of compressed pattern generation. A “0” response indicates the compressed mode pattern signal is not generating. A “1” response indicates that the compressed mode pattern signal is generating.

*RST 0

:ULINK:TStatus:RACH

Supported E4438C with Option 400

[:SOURCE] : RADio : WCDMa : TGPP [: BBG] : ULINK : TStatus : RACH?

This query returns the status of the physical random access channel (PRACH). A “0” response indicates the PRACH signal is not generating. A “1” response indicates that the PRACH signal is generating.

*RST 0

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:TSTATUS:RECEIVE****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:TSTATUS:RECEIVE?

This query returns the frame synchronization signal reception status.

When the frame synchronization signal is received after synchronization configuration, the received value becomes “1.” If the signal is not received, the value is “0.”

RST** 0**:ULINK:TSTATUS:SYNC*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:TSTATUS:SYNC?

This query returns the frame synchronization status. A “0” status indicates frame synchronization is fine or no frame synchronization signal is received). A “1” indicates frame synchronization is out sync and the synchronization signal does not match with the signal generator’s timing. The signal generator will generate incorrect data

RST** 0**:ULINK:[TGRoup[1]]:DCH[1]|2|3|3|5|6:BLKSize*Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:[TGRoup[1]]:DCH[1]|
2|3|4|5|6:BLKSize <val>
[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:[TGRoup[1]]:DCH[1]|
2|3|4|5|6:BLKSize?

This command sets the block size for the selected uplink dedicated channel (DCH).

***RST** DCH1: 244 DCH2: 100 DCH3,4,5,6: 20**Range** 0–5000**Key Entry** Blk Size**Remarks** If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:BPFRame**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:BPFRame?

This query returns the number of bits per frame for the selected dedicated transport channel (DCH).

RST** DCH1: 490 DCH2: 110 DCH3–6: 60**Field Entry** Bits/Frame**:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:BRATe*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:BRATe?

This query returns the bit rate for the selected dedicated transport channel (DCH)

RST** DCH1: 12200 DCH2: 2500 DCH3–6: 2000**Range** 0–5000**:ULINK[:TGRoup[1]]:DCH[1]|2|3|3|5|6:CODE*Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:CODE HCONv|TCONv|TURBo|NONE
[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:CODE?

This command sets the encoder type for the uplink dedicated channel (DCH) selected.

HCONv This choice selects a coding with the 1/2 rate convolutional encoder.**TCONv** This choice selects a coding with the 1/3 rate convolutional encoder.**TURBo** This choice selects a coding with the turbo coder.**NONE** This choice selects no coding type.***RST** DCH1,2: TCONv DCH3,4,5,6: HCONv**Key Entry** 1/2 Conv 1/3 Conv Turbo NONE**Remarks** If the choice, set by this command, is changed while the signal is active, the apply command must be sent to set the change. See “:ULINK:APPLY” on page 973.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK:[TGRoup[1]]:DCH[1]|2|3|3|5|6:CRc****Supported** E4438C with Option 400

```
[ :SOURCE ]:RADio:WCDMa:TGPP[:BBG]:ULINK:[ TGRoup[ 1 ] ]:DCH[ 1 ] |
2|3|4|5|6:CRc 0|8|12|16|24
[ :SOURCE ]:RADio:WCDMa:TGPP[:BBG]:ULINK:[ TGRoup[ 1 ] ]:DCH[ 1 ] |
2|3|4|5|6:CRc?
```

This command specifies the number of cyclic redundancy code (CRC) bits to be added to each transport channel block.

***RST** DCH1: 16 DCH2: 12 DCH3,4,5,6: 8**Field Entry** CRC Size

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK:[TGRoup[1]]:DCH[1]|2|3|3|5|6:DATA**Supported** E4438C with Option 400

```
[ :SOURCE ]:RADio:WCDMa:TGPP[:BBG]:ULINK:[ TGRoup[ 1 ] ]:DCH[ 1 ] |
2|3|4|5|6:DATA PN9|FIX4| "<file name>"
[ :SOURCE ]:RADio:WCDMa:TGPP[:BBG]:ULINK:[ TGRoup[ 1 ] ]:DCH[ 1 ] |
2|3|4|5|6:DATA?
```

This command configures the data type to be inserted into the selected uplink dedicated channel (DCH).

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** PN9**Key Entry** **PN9** **FIX4** **User File**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])**:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BER:ACTual****Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|
2|3|4|5|6:DATA:BER:ACTual?

This query returns the actual inserted error ratio in the uplink dedicated channel (DCH) selected.

RST** +0.0000000E+000**Remarks** The actual bit error rate can be different from the specified bit error rate due to the internal bit generation.**:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BER:ERRor:BIT*Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:BER:ERRor:BIT?

This query returns the actual error bits inserted in total number of bits.

RST** +0**Field Entry** Error Bits**:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BER:TOTal:BIT*Supported** E4438C with Option 400[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:BER:TOTal:BIT?

This query returns the total number of bits inserted for the bit error ratio calculation.

***RST** 0**Field Entry** Total Bits

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BER[:VALue]**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:BER[:VALue] <val>[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:BER[:VALue]?

This command specifies the bit error rate (BER) value to be inserted into the selected uplink dedicated channel (DCH). The variable <val> is expressed in decimal form as a percent ratio (1.0=100%).

***RST** 0.0000000+000**Range** 0.0001–1.0**Field Entry** BER

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BLER:ACTual**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|
2|3|4|5|6:DATA:BLER:ACTual?

This query returns the actual block error ratio inserted.

***RST** 0.0000000E+000

Remarks The actual block error rate can be different from the specified block error rate due to the internal bit generation.

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:BLER:ERRor:BLOCK**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:BLER:ERRor:BLOCK?

This query returns the number of error blocks inserted.

***RST** +0**Field Entry** Error Blocks

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADIO:WCDMA:TGPP[:BBG])

:ULINK[:TGRoup[1] | 2:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:BLER:TOTal:BLOCK**Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1] | 2:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:BLER:TOTal:BLOCK?

This query returns the error blocks actually inserted in total number of blocks.

RST** +0**Field Entry** Total Blocks**:ULINK[:TGRoup[1]]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:BLER[:VALue]*Supported** E4438C with Option 400

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:BLER[:VALue] <val>

[:SOURCE]:RADIO:WCDMA:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1] | 2 | 3 | 4 | 5 | 6:DATA:BLER[:VALue]?

This command specifies the block error rate (BLER) value to be inserted into the selected uplink dedicated channel (DCH).

The variable <val> is expressed in decimal form as a percent ratio (1.0=100%).

***RST** +0.00000000E+000**Range** 0.0–1.00**Field Entry** BLER**Remarks** If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:EINSert**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:EINSert BLER|BER|NONE[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:EINSert?

This command selects the error insertion mode.

BLER This choice selects a block error rate (BLER) mode.**BER** This choice selects a bit error rate (BER) mode.**NONE** This choice selects no BLER or BER mode (no error blocks or bits inserted).***RST** NONE**Key Entry** **BLER** **BER** **None****:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:DATA:FIX4****Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:FIX4 <val>[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
DATA:FIX4?

This command sets the 4 bit data pattern for the selected uplink dedicated channel (DCH).

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

***RST** #B0000**Range** 0–15**Key Entry** **FIX4**

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:NBLock**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:NBLock <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:NBLock?

This command specifies the number of transport blocks coded on to the selected dedicated channel (DCH).

RST** +1**Range** 0–4095**Field Entry** Num of Blk**:ULINK[:TGRoup [1]]:DCH[1]|2|3|4|5|6:PPERcentage*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:PPERcentage?

This query returns the percentage of the total bits removed from or added to the fully coded channel.

The value is returned in the unit of percent and a negative value means repetition.

Field Entry Puncture**:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:RMATch****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:RMATch <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:RMATch?

This command specifies the rate matching parameters of each dedicated channel (DCH) selected.

***RST** DCH1: 2 DCH2: 12 DCH3,4,5,6: 1**Range** 1–256**Field Entry** Rate Match Attr

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:TTI****Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:
TTI 10000|20000|40000|80000

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6:TTI?

This command sets the transmission time interval (TTI) period for the dedicated channel (DCH) selected. TTI is the time interval of the amount of data to be transmitted.

The choices are expressed in units of milliseconds (msec) where 20000 = 20 msec.

RST** DCH1: 20000 DCH2: 40000 DCH3,4,5,6: 10000**Field Entry** TTI**Remarks** The data amount equals the block size (BLKsize) times the number of transport blocks (NBlock).**:ULINK[:TGRoup[1]]:DCH[1]|2|3|4|5|6[:STATe]*Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|
2|3|4|5|6[:STATe] ON|OFF|1|0[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:DCH[1]|
2|3|4|5|6[:STATe]?

This command enables or disables the operating state of the dedicated channel (DCH) selected.

***RST** DCH1,2: 1 DCH3,4,5,6: 0**Key Entry** TrCH State Off On

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:ULINK[:TGRoup[1]]:RACH[1]:BLKSize**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:BLKSize <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:BLKSize?

This command sets the transport block size for the random access channel (RACH) coding where the input data is carried.

***RST** +168**Range** 0–5000**Field Entry** Blk Size

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK[:TGRoup [1]]:RACH[1]:BPFRame**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:BPFRame?

This query returns the bits per frame for the selected random access channel (RACH).

RST** +600**:ULINK[:TGRoup [1]]:RACH[1]:BRATe*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:BRATe?

This query returns the bit rate for the random access transport channel (RACH).

RST** +8400**:ULINK[:TGRoup[1]]:RACH[1]:CODE*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:CODE?

This query returns the type of channel coding for error protection.

***RST** HCON

:ULINK[:TGRoup[1]]:RACH[1]:CRC**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:
CRC 0|8|12|16|24

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:CRC?

This command specifies the number of cyclic redundancy code (CRC) bits that are to be added to each transport channel block.

***RST** +16**Field Entry** CRC Size

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK[:TGRoup[1]]:RACH[1]:DATA**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA PN9 |
FIX4| "<file name>"

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA?

This command sets the type of data to be inserted into the random access channel (RACH).

"<file name>" This variable specifies a data pattern that has been stored in memory.

***RST** PN9**Key Entry** **PN9** **FIX4** **User File**

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER:ACTual**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER:
ACTual?

This query returns the actual error ratio inserted.

***RST** +0

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

Range	0–5000
Key Entry	Actual BER
Remarks	The specified error ratio and actual ratio will not match when the internal bit generation goes into “pre-computing” mode.

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER:ERRor:BIT

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK[:TGRoup[1]] :RACH[1] :DATA:BER:ERRor:BIT?

This query returns the actual error bits inserted for the total number of bits.

***RST** 0

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER:TOTal:BIT

Supported E4438C with Option 400

[:SOURCE] :RADio:WCDMa:TGPP[:BBG] :ULINK[:TGRoup[1]] :RACH[1] :DATA:BER:TOTal:BIT?

This query returns the total number of bits inserted for the bit error ratio calculation.

***RST** 0

Remarks The specified error ratio and actual ratio will not match when the internal bit generation goes into “pre-computing” mode.

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER[:VALue]**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER[:VALue] <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:BER[:VALue]?

This command sets the bit error rate value for the random access channel (RACH).

RST** +0.00000000E+000**Range** 0.0000–1.0**Field Entry** BER**Remarks** If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).**:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:ACTual*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:ACTual?

This query returns the actual error ratio inserted.

RST** 0.00000000E+000**Remarks** The specified error ratio and actual error ratio will not match when the internal bit generation goes into “pre-computing” mode.**:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:ERRor:BLOCK*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:ERRor:BLOCK?

This query returns the actual block errors inserted in the total number of blocks.

***RST** +0**Remarks** The specified error ratio and actual error ratio will not match when the internal bit generation goes into “pre-computing” mode.

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])

:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:TOTal:BLOCK**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER:TOTal:BLOCK?

This query returns the total blocks inserted for the block error ratio calculation.

RST** +0**Remarks** The specified error ratio and actual error ratio will not match when the internal bit generation goes into “pre-computing” mode.**:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER[:VALue]*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER[:VALue] <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:BLER[:VALue]?

This command sets the inserted block error rate value. The variable <val> is expressed in decimal form, but it is a percent ratio (1.0=100%).

***RST** 0**Range** 0.0001–1.0**Field Entry** BLER**Remarks** If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to “:ULINK:APPLY” on page 973.

:ULINK[:TGRoup[1]]:RACH[1]:DATA:EINsert**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:
EINsert BLER|BER|NONE

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:EINsert?

This command selects an error mode or no error insertion.

BLER This choice selects block error rate (BLER) mode.**BER** This choice selects a bit error rate (BER) mode.**NONE** This choice selects no BLER or BER mode (no error blocks or bits inserted).***RST** NONE**Key Entry** **BLER** **BER** **None****Remarks** If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).**:ULINK[:TGRoup[1]]:RACH[1]:DATA:FIX4****Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:
FIX4 <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:DATA:FIX4?

This command sets a fixed 4 bit pattern for use as a data pattern.

While the variable <val> can be entered in binary, hexadecimal, or decimal formats, the query returns only binary values.

***RST** #B0000**Range** 0–15**Field Entry** Data**Remarks** If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#).

Wideband CDMA Base Band Generator Subsystem—Option 400 ([:SOURCE]:RADio:WCDMa:TGPP[:BBG])**:ULINK[:TGRoup[1]]:RACH[1]:NBLOCK****Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:NBLOCK <val>

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:NBLOCK?

This command sets the number of transport blocks coded into one random access channel (RACH).

***RST** +1**Range** 0–4095**Field Entry** Num of Blk**Remarks** The total input data into one RACH is the block size (BLKsize) multiplied by the number of transport blocks (NBLOCK).

If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY” on page 973](#)

:ULINK[:TGRoup [1]]:RACH[1]:PPERcentage**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:PPERcentage?

This query returns the percentage of the total bits removed from or added to the fully coded channel.

RST** –2.12500000E+002**Field Entry** Puncture**:ULINK[:TGRoup[1]]:RACH[1]:RMArch*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK:RACH[1]:RMArch?

This query returns the rate match parameters of each random access channel (RACH).

***RST** +1

:ULINK[:TGRoup[1]]:RACH[1]:TTI**Supported** E4438C with Option 400[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:
TTI 10000|20000

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1]:TTI?

This command sets the transmission time interval (TTI) period for the random access channel (RACH).

The choices are expressed in units of milliseconds (msec) where 20000=20 msec.

***RST** 20000**Field Entry** TTI

Remarks If the parameter set by this command is changed while the signal is active, the apply command must be executed for the change to occur. Refer to [“:ULINK:APPLY”](#) on page 973.

:ULINK[:TGRoup[1]]:RACH[1][:STATe]**Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG]:ULINK[:TGRoup[1]]:RACH[1][:STATe]?

This query returns the state of the random access channel (RACH).

RST** 1**[:STATe]*Supported** E4438C with Option 400

[:SOURCE]:RADio:WCDMa:TGPP[:BBG][:STATe] ON|OFF|1|0

[:SOURCE]:RADio:WCDMa:TGPP[:BBG][:STATe]?

This command enables or disables W-CDMA functionality.

***RST** 0**Key Entry** **W-CDMA Off On**

Symbols

of Blocks field, 969
 # of Carriers softkey, 281, 283
 # Points softkey, 56
 # Skipped Points softkey, 300
 ΦM Dev, 195
 ΦM Dev Couple Off On, 195
 FM ΦM Normal High BW, 190
 ΦM Off On, 194
 ΦM Path 1 2, 189
 ΦM Stop Rate, 192
 ΦM Sweep Time, 193
 ΦM Tone 2 Ampl Percent of Peak, 192

Numerics

0.7V,1.4V,1.65V,2.5V softkey, 417
 1 DPCH softkey, 344, 349
 1.23 MHz softkey, 261
 1.25 MHz softkey, 261
 1/2 Conv softkey, 966, 968, 1063
 1/3 Conv softkey, 966, 968, 1063
 10 msec softkey, 994
 1048576 softkey, 210
 10ms Frame Pulse (DRPS11) softkey, 948, 950, 951, 952, 953
 10ms Frame Pulse (RPS6) softkey
 See wideband CDMA base band generator
 subsystem keys and fields
 12.2 kbps (34.121) softkey, 931
 128QAM softkey
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 131072 softkey, 210
 144 kbps (34.121) softkey, 931
 16 1's & 16 0's softkey
 See custom subsystem keys
 See DECT subsystem keys

See EDGE subsystem keys
See GSM subsystem keys
See NADC subsystem keys
See PDC subsystem keys
See PHS subsystem keys
See TETRA subsystem keys
 16384 softkey, 210
 16-Lvl FSK softkey
 See DECT subsystem keys
 See PHS subsystem keys
 16PSK softkey
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 16QAM softkey
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 2 Carriers softkey, 345
 2 SR3 Carriers softkey, 246
 2.100 MHz softkey, 31, 206, 220, 244, 273, 297, 326, 342, 469
 20 msec softkey, 994
 2560 msec softkey, 994
 256QAM softkey
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys

Index

- See* TETRA subsystem keys
 - 262144 softkey, [210](#)
 - 2-Lvl FSK softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - 2nd Scr Offset field, [932](#), [939](#)
 - 3 Carriers softkey, [228](#), [246](#), [345](#)
 - 3 DPCH softkey, [344](#), [349](#)
 - 3.84MHz chip-clk (DRPS4) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
 - 32 1's & 32 0's softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - 32 Ch Fwd softkey, [226](#), [229](#)
 - 32768 softkey, [210](#)
 - 32QAM softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - 384 kbps (34.121) softkey, [931](#)
 - 4 1's & 4 0's softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- 4 Carriers softkey, [228](#), [246](#), [345](#)
 - 40 msec softkey, [994](#)
 - 40.000 MHz softkey, [31](#), [203](#), [206](#), [215](#), [220](#), [239](#), [244](#), [268](#), [273](#), [296](#), [297](#), [324](#), [326](#), [340](#), [342](#), [462](#), [469](#)
 - 4-Lvl FSK softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - 4QAM softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - 5 Channel softkey, [252](#)
 - 524288 softkeys, [210](#)
 - 64 1's & 64 0's softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - 64 Ch Fwd softkey, [226](#), [229](#)
 - 64 kbps (34.121) softkey, [931](#)
 - 64QAM softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys

See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 65536 softkey, [210](#)
 8 1's & 8 0's softkey
 See custom subsystem keys
 See DECT subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 8 Bit Pattern softkey, [461](#)
 8 Channel softkey, [252](#)
 80 msec softkey, [994](#)
 80ms Frame Pulse (DRPS13) softkey, [948](#), [950](#),
 [951](#), [952](#), [953](#)
 80ms Frame Pulse (RPS20) softkey
 See wideband CDMA base band generator
 subsystem keys and fields
 8648A/B/C/D softkey, [154](#), [156](#)
 8656B,8657A/B softkey, [154](#), [156](#)
 8657D NADC softkey, [154](#), [156](#)
 8657D PDC softkey, [154](#), [156](#)
 8657J PHS softkey, [154](#), [156](#)
 8-Lvl FSK softkey
 See DECT subsystem keys
 See PHS subsystem keys
 8PSK softkey
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 9 Ch Fwd softkey, [226](#), [229](#)
 9 Channel softkey, [245](#)

A

A field softkey
 See DECT subsystem keys
 A softkey, [923](#)
 abort list/step sweep, [164](#)
 Access denied, [114](#)
 Access softkey, [700](#)
 ACS softkey, [962](#)
 Activate Secure Display softkey, [158](#)
 Active softkey, [959](#)
 Actual BER softkey, [1072](#)
 Actual BLER field, [1066](#), [1074](#)
 Add Comment To Seq[n] Reg[nn] softkey, [121](#)
 Adjust Gain softkey, [433](#)
 Adjust Phase softkey, [46](#)
 AICH softkey, [1030](#)
 AICH Trigger Polarity Pos Neg softkey, [1003](#)
 ALC
 BW
 100 Hz, 1 kHz, 10 kHz, [57](#)
 Auto, [57](#), [58](#)
 Off,On, [57](#), [58](#)
 ALC BW Normal Narrow, [22](#)
 ALC BW Setting
 Auto, [57](#), [58](#)
 alc hold markers
 awgn subsystem, [207](#)
 cdma subsystem, [221](#)
 cdma2000 arb subsystem, [255](#)
 dmodulation subsystem, [274](#)
 dual arb subsystem, [303](#)
 multitone subsystem, [327](#), [328](#)
 wideband CDMA ARB subsystem, [363](#)
 wideband CDMA ARBsubsystem, [363](#)
 ALC level, [59](#)
 ALC Off On softkey, [61](#)
 All Down softkey, [934](#), [984](#)
 All softkey, [102](#), [120](#)
 All Timeslots softkey
 See DECT subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys

Index

- See* TETRA subsystem keys
- All Up softkey, [934](#), [984](#)
- Alt Amp Delta softkey, [62](#)
- Alt Ampl Off On softkey, [63](#)
- Alt power in field, [1044](#)
- alternate amplitude markers
 - awgn arb subsystem, [207](#)
 - cdma subsystem, [220](#)
 - cdma2000 arb subsystem, [255](#)
 - dmodulation subsystem, [274](#)
 - dual arb subsystem, [303](#)
 - multitone arb subsystem, [326](#)
 - multitone subsystem, [326](#)
 - wideband CDMA ARB subsystem, [363](#)
- AM softkeys
 - AM Depth, [175](#)
 - AM Depth Couple Off On, [176](#)
 - AM Off On, [175](#)
 - AM Off On softkey, [171](#)
 - AM Path 1 2, [170](#)
 - AM Stop Rate, [172](#)
 - AM Sweep Rate, [173](#)
 - AM Tone 2 Ampl Percent Of Peak, [173](#)
 - AM Tone 2 Rate, [172](#)
- AM wideband, [171](#)
- AM_ADDR softkey, [460](#)
- Ampl softkeys
 - Ampl, [48](#), [65](#)
 - Ampl Offset, [67](#)
 - Ampl Ref Off On, [66](#)
 - Ampl Ref Set, [65](#)
 - Ampl Start, [48](#), [66](#)
 - Ampl Stop, [48](#), [67](#)
- Amplitude hardkey, [65](#), [68](#)
- amplitude modulation subsystem keys
 - AM Depth, [175](#)
 - AM Depth Couple Off On, [176](#)
 - AM Off On, [171](#), [175](#)
 - AM Path 1 2, [170](#)
 - AM Stop Rate, [172](#)
 - AM Sweep Rate, [173](#)
 - AM Tone 2 Ampl Percent Of Peak, [173](#)
 - AM Tone 2 Rate, [172](#)
 - Bus, [174](#)
 - Dual-Sine, [173](#)
 - Ext, [174](#)
 - Ext Coupling DC AC, [171](#)
 - Ext1, [174](#)
 - Ext2, [174](#)
 - Free Run softkey, [174](#)
 - Incr Set, [170](#), [176](#)
 - Internal, [174](#)
 - Noise, [173](#)
 - Ramp, [173](#)
 - Sine, [173](#)
 - Square, [173](#)
 - Swept-Sine, [173](#)
 - Triangle, [173](#)
 - Trigger Key, [174](#)
- amplitude step, [68](#)
- AMR 12.2 kbps softkey, [931](#), [1037](#)
- APCO 25 C4FM softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
- APCO 25 w/C4FM softkey, [280](#), [281](#), [282](#)
- APCO 25 w/C4QPSK softkey, [280](#), [281](#), [282](#)
- APCO 25 w/CQPSK softkey, [563](#)
- Apply Channel Setup softkey, [249](#), [253](#), [352](#), [360](#), [919](#), [973](#)
- Apply to Waveform softkey, [298](#), [300](#)
- Arb AWGN Off On softkey, [212](#)
- ARB Off On softkey, [322](#)
- ARB Reference Ext Int softkey
 - See* AWGN subsystem keys
 - See* bluetooth subsystem keys
 - See* CDMA ARB subsystem keys

See CDMA2000 ARB subsystem keys
See Dmodulation subsystem keys
See dual ARB subsystem keys
See multitone subsystem keys
See wideband CDMA ARB subsystem keys
 ARB Sample Clock softkey, [211](#), [226](#), [260](#), [280](#),
 [311](#), [332](#), [368](#), [474](#)
 arbitrary waveform
 runtime scaling, [310](#)
 scaling files, [310](#)
 Atten Hold Off On softkey, [64](#)
 Auto softkey, [57](#), [58](#)
 automatic leveling control, [61](#)
 Aux I/O Trigger Polarity Pos Neg softkey, [456](#)
 Aux softkey
 See sense subsystem keys
 Auxiliary Software Options softkey, [80](#)
 AWGN Off On softkey, [464](#)
 AWGN subsystem keys
 1048576, [210](#)
 131072, [210](#)
 16384, [210](#)
 2.100 MHz, [206](#)
 262144, [210](#)
 32768, [210](#)
 40.000 MHz, [203](#), [206](#)
 524288, [210](#)
 65536, [210](#)
 Arb AWGN Off On, [212](#)
 ARB Reference Ext Int, [211](#)
 ARB Sample Clock, [211](#)
 Bandwidth, [203](#)
 Clear Header, [204](#)
 I/Q Mod Filter Manual Auto, [206](#)
 I/Q Output Filter Manual Auto, [204](#)
 Marker 1, [207](#), [208](#)
 Marker 1 Polarity Neg Pos, [210](#)
 Marker 2, [207](#), [208](#)
 Marker 2 Polarity Neg Pos, [210](#)
 Marker 3, [207](#), [208](#)
 Marker 3 Polarity Neg Pos, [210](#)
 Marker 4, [207](#), [208](#)
 Marker 4 Polarity Neg Pos, [210](#)
 Modulator Atten Manual Auto, [205](#)
 Noise Seed Fixed Random, [212](#)

None, [207](#), [208](#)
 Reference Freq, [210](#)
 Save Setup To Header, [204](#)
 Through, [203](#), [206](#)
 Waveform Length, [210](#)

B

B softkey, [897](#), [902](#), [923](#)
 B1 softkey, [895](#), [900](#)
 B2 softkey, [895](#), [900](#)
 Bandwidth softkey, [203](#), [459](#)
 Base Delay Tp-a softkey, [1026](#)
 BBG Chip Clock Ext Int softkey
 See wideband CDMA base band generator
 subsystem keys and fields
 BBG Data Clock Ext Int softkey
 See custom subsystem keys
 See DECT subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 BBG Data Clock field, [476](#)
 BBG Ref Ext Int softkey
 See custom subsystem keys
 See DECT subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 BBG1 softkey, [24](#), [34](#)
 BD_ADDR softkey, [460](#)
 Begin Data Format Pattern Framed softkey
 See DECT subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 Begin Frame softkey
 See DECT subsystem keys
 See EDGE subsystem keys

Index

- See* GSM subsystem keys
- See* NADC subsystem keys
- See* PDC subsystem keys
- See* PHS subsystem keys
- See* TETRA subsystem keys
- Begin Timeslot # softkey
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- BER Display % Exp softkey, [403](#)
- BER field, [1066](#), [1074](#)
- BER Mode Off On softkey
 - See* sense subsystem keys
- BER softkey, [1068](#), [1076](#)
- BERT Off On softkey, [453](#)
- BERT Resync Off On softkey, [453](#)
- Beta field, [977](#), [987](#)
- Binary softkey, [92](#), [122](#)
- binary values, [18](#)
- Bit Count softkey
 - See* sense subsystem keys
- Bit Delay Off On softkey, [455](#)
- Bit Order softkey, [380](#)
- Bit Rate field
 - See* CDMA2000 BBG subsystem keys and fields
- Bit softkey, [92](#)
- BLER field, [1067](#), [1075](#)
- BLER softkey, [1068](#), [1076](#)
- Blk Set Size field, [965](#)
- Blk Size field, [964](#), [1062](#), [1071](#)
- Block Count softkey
 - See* calculate subsystem keys
 - See* sense subsystem keys
- Block Erasure softkey
 - See* sense subsystem keys
- Blocking softkey, [962](#)
- Bluetooth Off On softkey, [474](#)
- Bluetooth softkey, [563](#)
- bluetooth subsystem keys
 - 2.100 MHz, [469](#)
 - 40.000 MHz, [462](#), [469](#)
 - 8 Bit Pattern, [461](#)
 - AM_ADDR, [460](#)
 - ARB Reference Ext Int, [473](#)
 - ARB Sample Clock, [474](#)
 - AWGN Off On, [464](#)
 - BD_ADDR, [460](#)
 - Bluetooth Off On, [474](#)
 - Burst Off On, [460](#)
 - Burst Power Ramp, [474](#)
 - C/N[1 MHz], [464](#)
 - Clear Header, [463](#)
 - Clock/Gate Delay, [461](#)
 - Continuous PN9, [461](#)
 - Drift Deviation, [465](#)
 - Freq Drift Type Linear Sine, [466](#)
 - Freq Offset, [466](#)
 - I/Q Mod Filter Manual Auto, [470](#)
 - I/Q Output Filter Manual Auto, [462](#)
 - Impairments Off On, [463](#)
 - Marker 1, [470](#), [471](#)
 - Marker 1 Polarity Neg Pos, [471](#)
 - Marker 2, [470](#), [471](#)
 - Marker 2 Polarity Neg Pos, [472](#)
 - Marker 3, [470](#), [471](#)
 - Marker 3 Polarity Neg Pos, [472](#)
 - Marker 4, [470](#), [471](#)
 - Marker 4 Polarity Neg Pos, [472](#)
 - Mod Index, [467](#)
 - Modulator Atten Manual Auto, [468](#), [469](#)
 - Noise Seed, [465](#)
 - None, [470](#), [471](#)
 - Packet (DH1), [472](#)
 - Reference Freq, [473](#)
 - Save Setup To Header, [463](#)
 - Symbol Timing Err, [468](#)
 - Through, [462](#), [469](#)
 - Truncated PN9, [461](#)
- boolean SCPI parameters, [10](#)
- boolean, numeric response data, [11](#)
- BPSK softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys

- See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - Brightness softkey, [84](#)
 - Build New Waveform Sequence softkey, [311](#)
 - burst
 - shape, [113](#)
 - Burst Envelope Int Ext Off softkey, [22](#)
 - Burst gate in field, [1044](#)
 - Burst Gate In Polarity Neg Pos softkey, [128](#), [129](#)
 - Burst Off On softkey, [460](#)
 - Burst Power Ramp softkey, [474](#)
 - Bus softkey
 - list trigger source, [53](#)
 - See* amplitude modulation subsystem keys
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* frequency modulation subsystem keys
 - See* GSM subsystem keys
 - See* low frequency output subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* phase modulation subsystem keys
 - See* PHS subsystem keys
 - See* sense subsystem keys
 - See* TETRA subsystem keys
 - See* trigger subsystem keys
 - See* wideband CDMA ARB subsystem keys
- C**
- C Power field, [974](#), [1004](#)
 - C/N softkey, [501](#), [513](#)
 - C/N value field, [919](#), [973](#), [1003](#)
 - C/N[1 MHz] softkey, [464](#)
 - C4FM softkey, [860](#)
 - calculate subsystem keys
 - BER Display % Exp, [403](#)
 - Block Count, [421](#)
 - Class II RBER, [400](#), [401](#)
 - Class Ib RBER, [400](#), [401](#)
 - Cycle End, [401](#)
 - Error Rate, [394](#), [395](#), [396](#), [397](#), [398](#), [399](#)
 - Exceeds Any Limit, [401](#)
 - Fail Hold, [401](#)
 - Frame Erasure, [400](#), [401](#)
 - No Limits, [395](#), [398](#), [399](#), [401](#)
 - Pass/Fail Limits, [402](#)
 - Pass/Fail Off On, [402](#)
 - Update Display Cycle End Cont, [403](#)
 - calibration subsystem keys
 - DCFM/DCΦM Cal, [70](#)
 - Execute Cal, [70](#), [71](#)
 - I/Q Calibration, [70](#)
 - Revert to Default Cal Settings, [71](#)
 - Start Frequency, [72](#)
 - Stop Frequency, [72](#)
 - Carrier Bandwidth softkey, [307](#)
 - Carrier Phases Fixed Random softkey, [281](#)
 - Carrier to Noise Ratio softkey, [307](#)
 - CC softkey, [824](#), [828](#), [830](#)
 - CDL softkey, [792](#)
 - CDMA ARB subsystem keys
 - 2.100 MHz, [220](#)
 - 3 Carriers, [228](#)
 - 32 Ch Fwd, [226](#), [229](#)
 - 4 Carriers, [228](#)
 - 40.000 MHz, [215](#), [220](#)
 - 64 Ch Fwd, [226](#), [229](#)
 - 9 Ch Fwd, [226](#), [229](#)
 - APCO 25 C4FM, [216](#)
 - ARB Reference Ext Int, [225](#)
 - ARB Sample Clock, [226](#)
 - Bus, [233](#)
 - CDMA Off On, [237](#)
 - Chip Rate, [214](#)
 - Clear Header, [218](#)
 - Clip |I+jQ| To, [214](#)
 - Clip |I| To, [213](#)
 - Clip |Q| To, [213](#)
 - Clip At PRE POST FIR Filter, [213](#)
 - Clipping Type |I+jQ| |I|,|Q|, [214](#)
 - Continuous, [231](#), [261](#)
 - CPICH, [353](#)
 - Custom CDMA Multicarrier, [228](#)
 - Custom CDMA State, [226](#), [229](#)

Index

Equal Powers, 227
Ext, 233
Ext Delay Off On, 235
Ext Delay Time, 234
Ext Polarity Neg Pos, 235
Filter Alpha, 217
Filter BbT, 217
Free Run, 232
Gate Active Low High, 233
Gated, 231, 261
Gaussian, 216
I/Q Mapping Normal Invert, 219
I/Q Mod Filter Manual Auto, 220
I/Q Output Filter Manual Auto, 215
Immediate, 225
IS-2000 SR3 DS, 216
IS-95, 216
IS-95 Mod, 216
IS-95 Mod w/EQ, 216
IS-95 w/EQ, 216
IS-97 Levels, 227
Marker 1, 220, 221, 222
Marker 1 Polarity Neg Pos, 224
Marker 2, 220, 221, 222
Marker 2 Polarity Neg Pos, 224
Marker 3, 220, 221, 222
Marker 3 Polarity Neg Pos, 224
Marker 4, 220, 221, 222
Marker 4 Polarity Neg Pos, 224
Modulator Atten Manual Auto, 219
Multicarrier Off On, 226
None, 220, 221, 222
Nyquist, 216
Off, 225
On, 225
Optimize FIR For EVM ACP, 218
Oversample Ratio, 224
Paging, 227
Patt Trig In 1, 236
Patt Trig In 2, 236
Pilot, 226, 227, 229
Rectangle, 216
Reference Freq, 224
Reset & Run, 232
Reverse, 226
Root Nyquist, 216
Save Setup To Header, 218
Scale to 0dB, 227
Single, 231, 261
Store Custom CDMA State, 230
Store Custom Multicarrier, 229
Sync, 227
Through, 215, 220
Traffic, 227
Trigger & Run, 232
Trigger Key, 233
UN3/4 GSM Gaussian, 216
User FIR, 216
Waveform Length, 236
WCDMA, 216
CDMA Freq field, 495
CDMA Off On softkey, 237
CDMA softkey, 93
CDMA2000 ARB subsystem keys
 1.23 MHz, 261
 1.25 MHz, 261
 2 SR3 Carriers, 246
 2.100 MHz, 244
 3 Carriers, 246
 4 Carriers, 246
 40.000 MHz, 239, 244
 5 Channel, 252
 8 Channel, 252
 9 Channel, 245
 APCO 25 C4FM, 240
 Apply Channel Setup, 249, 253
 ARB Reference Ext Int, 258
 ARB Sample Clock, 260
 Bus, 264
 CDMA2000 Off On, 267
 Clear Header, 243
 Clip $|I+jQ|$ To, 239
 Clip $|I|$ To, 238
 Clip $|Q|$ To, 238
 Clip At PRE POST FIR Filter, 238
 Clipping Type $|I+jQ| |I|,|Q|$, 239
 Config, 250, 253
 Continuous, 261
 Custom CDMA2000 Carrier, 245, 247
 Custom CDMA2000 Multicarrier, 246

- Custom CDMA2000 State, 252
- Edit Channel Setup, 250, 253
- Equal Powers, 251, 254
- Ext, 264
- Ext Delay Off On, 266
- Ext Delay Time, 265
- Ext Polarity Neg Pos, 266
- Filter Alpha, 241
- Filter BbT, 242
- Free Run, 263
- Gate Active Low High, 264
- Gated, 261
- Gaussian, 240
- I/Q Mapping Normal Invert, 245
- I/Q Mod Filter Manual Auto, 244
- I/Q Output Filter Manual Auto, 240
- Immediate, 259
- Insert Row, 250, 253
- IS-2000 SR3 DS, 240
- IS-95, 240
- IS-95 Mod, 240
- IS-95 Mod w/EQ, 240
- IS-95 w/EQ, 240
- Link Forward Reverse, 245
- Marker 1, 255, 256
- Marker 1 Polarity Neg Pos, 258
- Marker 2, 255, 256
- Marker 2 Polarity Neg Pos, 258
- Marker 3, 255, 256
- Marker 3 Polarity Neg Pos, 258
- Marker 4, 255, 256
- Marker 4 Polarity Neg Pos, 258
- Modulator Atten Manual Auto, 243, 244
- Multicarrier Off On, 245
- None, 255, 256
- Nyquist, 240
- Off, 259
- On, 259
- Optimize FIR For EVM ACP, 242
- Patt Trig In 1, 267
- Patt Trig In 2, 267
- Pilot, 245, 252
- PN Offset, 250, 253
- Radio Config, 251
- Rate, 250, 253
- Rectangle, 240
- Reference Freq, 258
- Reset & Run, 263
- Root Nyquist, 240
- Save Setup To Header, 243
- Scale to 0dB, 251, 254
- Single, 261
- Spread Rate 1, 245, 252, 260
- Spread Rate 3, 245, 252, 260
- Spreading Type Direct Mcarrier, 245, 261
- SR1 9 Channel, 247
- SR1 Pilot, 247
- SR3 Direct 9 Channel, 247
- SR3 Direct Pilot, 247
- SR3 Mcarrier 9 Channel, 247
- SR3 MCarrier Pilot, 247
- Store Custom CDMA State, 249, 252
- Store Custom Multicarrier, 247
- Through, 239, 244
- Trigger & Run, 263
- Trigger Key, 264
- UN3/4 GSM Gaussian, 240
- User FIR, 240
- Walsh Code, 250, 253
- WCDMA, 240
- CDMA2000 BBG subsystem keys and fields
 - APCO 25 C4FM, 477, 510
 - BBG Data Clock, 476
 - Bit Rate, 484, 488, 493, 507, 517, 519, 523, 528, 533, 537, 540
 - C/N, 501, 513
 - CDMA Freq, 495
 - CDMA2000 Off On, 543
 - Change, 505
 - Chip Rate, 476, 509
 - DAYLT, 495
 - EbNo, 480, 485, 491, 496, 502, 505, 515, 521, 523, 527, 532, 535, 538
 - EcNo, 489, 524, 529
 - Equal Powers, 504, 513
 - Even Second Delay, 476, 509
 - Ext, 479, 490, 518
 - Ext CDMA Freq, 496
 - External, 508
 - Falling, 543

Index

- Field 1, 486
- Field 2, 486
- Field 3, 487
- Filter Alpha, 478, 511
- Filter BbT, 478, 481, 511
- FIX4, 479, 480, 490, 514, 515, 518, 520, 521, 526, 531, 535, 538
- Frame Length, 516, 518, 522, 532, 536, 539
- Frame Offset, 491, 516, 519, 522, 527, 532, 536, 539
- FSYNCH Type, 500
- Full, 525, 530
- Gaussian, 477, 510
- Half, 525, 530
- Header, 482, 492
- Internal, 508
- Inverted, 513
- IS-95, 477, 510
- IS-95 MOD, 510
- IS-95 Mod, 477
- IS-95 MOD w/EQ, 510
- IS-95 Mod w/EQ, 477
- IS-95 w/EQ, 477, 510
- Leap Seconds, 497
- Link Forward Reverse, 475
- Long Code Mask, 512
- Long Code State, 479, 512
- LTM OFF, 497
- Message Type, 498
- Network ID, 498
- Noise Off On, 502, 514
- Normal, 513
- Nyquist, 477, 510
- Optimize FIR For EVM ACP, 478, 512
- P Rev, 499
- P Rev Min, 497
- Paging Indicator, 506
- Permuted ESN, 482, 492
- Phase Polarity, 505
- PN Offset, 508
- PN15, 479, 490, 514, 518, 520, 526, 531, 534, 538
- PN9, 479, 490, 514, 518, 520, 526, 531, 534, 538
- Power, 482, 487, 489, 493, 498, 503, 506, 516, 519, 522, 525, 528, 530, 533, 536, 540
- PRAT, 499
- QOF, 483, 493
- Quarter, 525, 530
- Radio Config, 484, 494, 517, 520, 528, 533, 537, 540
- RadioConfig 1/2 Access, 475
- RadioConfig 1/2 Traffic, 475
- RadioConfig 3/4 Common Control, 475
- RadioConfig 3/4 Enhanced Access, 475
- RadioConfig 3/4 Traffic, 475
- Ramp, 483
- Ramp Time, 483
- Rectangle, 477, 510
- Reserved, 499
- Rising, 543
- Root Nyquist, 477, 510
- Scale to 0dB, 504, 513
- Spread Rate, 507
- State, 488, 490, 495, 501, 504, 507, 517, 520, 524, 526, 529, 531, 534, 537, 541
- State field, 485
- System ID, 500
- Time, 500
- Trigger Advance, 542
- Turbo Coding, 494, 541
- UN3/4 GSM Gaussian, 477, 510
- User File, 479, 485, 490, 514, 518, 520, 526, 531, 534, 538
- User FIR, 477, 510
- Walsh, 488, 494, 501, 504, 507, 523, 525, 529, 530, 534, 537, 541
- Walsh field, 484
- CDMA2000 Off On softkey, 267, 543
- CDPD softkey, 280, 281, 282, 563
- CDVCC softkey, 792, 795
- CFN #0 Frame Pulse (RPS10) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
- Chan Code field, 929, 938
- Chan Code softkey, 928
- Change field, 505
- Channel Code field, 988, 1031
 - See* wideband CDMA base band generator subsystem keys and fields
- Channel Number softkey, 39
- Channel softkey, 352, 360

- Channel State field, 987, 994
- Channel State Off On softkey, 1006
 - See wideband CDMA base band generator subsystem keys and fields
- ChCode Ctl field, 1019
- ChCode Dat field, 1020
- Chip Clock (RPS1) softkey
 - See wideband CDMA base band generator subsystem keys and fields
- Chip Rate field, 476, 509, 928, 977
- Chip Rate softkey, 214, 338
- Class Ib Bit Error softkey, 447, 448
- Class II Bit Error softkey, 448
- Class II RBER softkey, 400, 401
- Class Ib RBER softkey, 400, 401
- Clear Header softkey, 204, 218, 243, 271, 293, 323, 340, 463
- clearing markers, 298
- Clip |I+jQ| To softkey, 214, 239
- Clip |I| To softkey, 213, 238, 336, 346
- Clip |Q| To softkey, 213, 238, 336, 347
- Clip At PRE POST FIR Filter, 213
- Clip At PRE POST FIR Filter softkey, 238, 336
- Clip Type |I+jQ| To softkey, 337, 347
- Clipping Type |I+jQ| |I|,|Q| softkey, 214, 239, 292, 337, 347
- Clock Delay Off On softkey, 415
- Clock Per Sample softkey, 376
- Clock Phase softkey, 376
- Clock Polarity Neg Pos softkey, 416
- Clock Polarity softkey, 377
- Clock Rate softkey, 378
- Clock Skew softkey, 379
- Clock Source softkey, 379
- Clock Time Delay softkey, 415
- Clock/Gate Delay softkey, 461
- command tree, SCPI, 6, 7
- Common Mode I/Q Offset softkey, 25
- communication subsystem keys
 - Default Gateway, 74
 - GPIB Address, 73
 - Hostname, 74
 - IP Address, 74
 - LAN Config, 73
 - Meter Address, 75
 - Meter Channel A B, 75
 - Meter Timeout, 76
 - Power Meter, 76
 - Reset RS-232, 77
 - RS-232 Baud Rate, 77
 - RS-232 ECHO Off On, 77
 - RS-232 Timeout, 78
 - Subnet Mask, 75
- Comp Mode Start Trigger Polarity Neg Pos softkey, 1060
- Comp Mode Start Trigger Polarity Pos Neg softkey, 960, 961
- Comp Mode Stop Trigger Polarity Neg Pos softkey, 1060
- Comp Mode Stop Trigger Polarity Pos Neg softkey, 961
- Compressed Frame (RPS8) softkey
 - See wideband CDMA base band generator subsystem keys and fields
- Compressed Mode Off On softkey, 1059
- Compressed Mode Start Trigger softkey, 937, 960, 1060
- Compressed Mode Stop Trigger softkey, 961, 1060
- Config softkey, 250, 253
- Configure Cal Array softkey, 20
- continuous
 - segment advance, 316
- Continuous PN9 softkey, 461
- Continuous softkey
 - dual ARB subsystem keys, 316
 - See CDMA ARB subsystem keys
 - See CDMA2000 ARB subsystem keys
 - See custom subsystem keys
 - See DECT subsystem keys
 - See Dmodulation subsystem keys
 - See dual ARB subsystem keys
 - See EDGE subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See TETRA subsystem keys
 - See wideband CDMA ARB subsystem keys
- Copy File softkey, 103, 112, 122
- correction subsystem keys

Index

Configure Cal Array, 20
Flatness Off On, 21
Load From Selected File, 20
Preset List, 21
Store To File, 21
CPICH softkey, 353
CRC Size field, 967, 1064, 1072
creating a waveform
 sequence, dual ARB, 311
creating a waveform, multitone, 323
CS-1 softkey, 637, 638, 692
CS-4 softkey, 637, 639, 696
CSID softkey, 852, 870
Ctrl Beta field, 1007
Ctrl Pwr field, 1008
Custom CDMA Multicarrier softkey, 228
Custom CDMA State softkey, 226, 229
Custom CDMA2000 Carrier softkey, 245, 247
Custom CDMA2000 Multicarrier softkey, 246
Custom CDMA2000 State softkey, 252
Custom Digital Mod State softkey, 281, 282
Custom Off On softkey, 568
Custom softkey, 585, 596, 652, 700, 855
custom subsystem keys
 128QAM, 560
 16 1's & 16 0's, 553
 16PSK, 560
 16QAM, 560
 256QAM, 560
 2-Lvl FSK, 560
 32 1's & 32 0's, 553
 32QAM, 560
 4 1's & 4 0's, 553
 4-Lvl FSK, 560
 4QAM, 560
 64 1's & 64 0's, 553
 64QAM, 560
 8 1's & 8 0's, 553
 8PSK, 560
 APCO 25 C4FM, 557
 APCO 25 w/CQPSK, 563
 BBG Data Clock Ext Int, 545
 BBG Ref Ext Int, 556
 Bit Rate, 546
 Bluetooth, 563
 BPSK, 560
 Bus, 565
 CDPD, 563
 Continuous, 563
 Custom Off On, 568
 D8PSK, 560
 Diff Data Encode Off On, 555
 Ext, 553, 565
 Ext BBG Ref Freq, 556
 Ext Data Clock Normal Symbol, 555
 Ext Delay Bits, 566
 Ext Delay Off On, 566
 Ext Polarity Neg Pos, 567
 Fall Delay, 548, 549
 Fall Time, 548, 549
 Filter Alpha, 544
 Filter BbT, 545
 FIX4, 553, 554
 Free Run, 564
 Freq Dev, 559
 Gate Active Low High, 564
 Gated, 563
 Gaussian, 557
 Gray Coded QPSK, 560
 I/Q Scaling, 558
 IS-95, 557
 IS-95 Mod, 557
 IS-95 Mod w/EQ, 557
 IS-95 OQPSK, 560
 IS-95 QPSK, 560
 IS-95 w/EQ, 557
 MSK, 560
 None, 563
 Nyquist, 557
 Optimize FIR For EVM ACP, 553
 OQPSK, 560
 $\pi/4$ DQPSK, 560
 Patt Trig In 1, 567
 Patt Trig In 2, 567
 Phase Dev, 559
 Phase Polarity Normal Invert, 561
 PN11, 553
 PN15, 553
 PN20, 553
 PN23, 553

- PN9, 553
 PRAM Files, 554
 QPSK, 560
 Rectangle, 557
 Reset & Run, 564
 Rise Delay, 550
 Rise Time, 551, 552
 Root Nyquist, 557
 Single, 563
 Symbol Rate, 561
 Trigger & Run, 564
 Trigger Key, 565
 UN3/4 GSM Gaussian, 557
 User File, 553
 User FIR, 557
 User FSK, 560
 User I/Q, 560
 Custom TS softkey, 641, 651, 691, 698
 Custom WCDMA State softkey, 359
 Cycle Count softkey, 455
 Cycle End softkey, 401
- D**
- D8PSK softkey
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 data
 memory subsystem, 103
 data append
 memory subsystem, 104
 Data Beta field, 1011
 data bit, 105
 data block, 112
 Data Clock Out Neg Pos softkey, 131
 Data Clock Polarity Neg Pos softkey, 128, 130, 132
 Data field, 989, 1076
 data files, 103
 data FSK, 107
 data IQ, 108
 Data Mode Raw Enc TLM softkey, 664, 665
 Data Out Polarity Neg Pos softkey, 131, 133
 Data Polarity Neg Pos softkey, 129, 130, 416
 Data Pwr field, 1013
 Data Rate field, 939
 data subsystem keys
 Error Out, 409
 PN9, 409
 Reference Out, 409
 Data Type softkey, 388
 DATA/CLK/SYNC Rear Outputs Off On softkey, 133
 DAYLT field, 495
 dBm softkey, 168
 dBuV softkey, 168
 dBuVemf softkey, 168
 DC softkey, 187
 DCFM/DCΦM Cal softkey, 70
 DCH1 softkey, 975
 DCH2 softkey, 975
 DCH3 softkey, 975
 DCH4 softkey, 975
 DCH5 softkey, 975
 DCH6 softkey, 975
 decimal values, 18
 Dect Off On softkey, 617
 DECT softkey, 280, 281, 282
 DECT subsystem keys
 128QAM, 584
 16 1's & 16 0's, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
 16-Lvl FSK, 578
 16PSK, 584
 16QAM, 584
 256QAM, 584
 2-Lvl FSK, 584
 32 1's & 32 0's, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
 32QAM, 584
 4 1's & 4 0's, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
 4-Lvl FSK, 584
 4QAM, 584

Index

- 64 1's & 64 0's, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- 64QAM, 584
- 8 1's & 8 0's, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- 8-Lvl FSK, 578
- 8PSK, 584
- A field, 586, 589, 592, 594, 597, 598, 599, 602, 604, 606
- All Timeslots, 610
- APCO 25 C4FM, 581
- BBG Data Clock Ext Int, 569
- BBG Ref Ext Int, 580
- Begin Frame, 610
- Begin Timeslot #, 610, 611
- Bit Rate, 570
- BPSK, 584
- Bus, 609, 614
- Continuous, 612
- Custom, 585, 596
- D8PSK, 584
- Data Format Pattern Framed, 577
- Dect Off On, 617
- DM0, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- DM1, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- Dummy Bearer 1, 596
- Dummy Bearer 2, 596
- Ext, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607, 609, 614
- Ext Data Clock Normal Symbol, 580
- Ext Delay Bits, 615
- Ext Delay Off On, 617
- Ext Polarity Neg Pos, 616
- FACC, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- Fall Delay, 572, 573
- Fall Time, 572, 573
- FDEV1_FS, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- FDEV1_HS, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- FDEV2_FS, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- Filter Alpha, 569
- Filter BbT, 570
- FIX4, 578, 585, 586, 588, 591, 593, 595, 596, 597, 600, 601, 603, 604, 605, 606, 607, 608
- Free Run, 613
- Freq Dev, 582
- Gate Active Low High, 614
- Gated, 612
- Gaussian, 581
- Gray Coded QPSK, 584
- I/Q Scaling, 582
- IS-95, 581
- IS-95 Mod, 581
- IS-95 Mod w/EQ, 581
- IS-95 OQPSK, 584
- IS-95 QPSK, 584
- IS-95 w/EQ, 581
- Low Capacity, 585, 596
- Low Capacity with Z field, 585, 596
- MSK, 584
- Nyquist, 581
- Optimize FIR For EVM ACP, 577
- OQPSK, 584
- P, 587, 590, 592, 594, 598, 599, 600, 602, 604, 606
- $\pi/4$ DQPSK, 584
- Patt Trig In 1, 616
- Patt Trig In 2, 616
- Phase Dev, 583
- Phase Polarity Normal Invert, 584
- PN11, 578, 585, 588, 591, 593, 595, 596, 603, 605, 607
- PN15, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- PN20, 578, 585, 588, 591, 593, 595, 596, 603, 605, 607
- PN23, 578, 585, 588, 591, 593, 595, 596, 603, 605, 607
- PN9, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- PN9 Mode Normal Quick, 571
- QPSK, 584
- Recall Secondary Frame State, 608
- Rectangle, 581
- Reset & Run, 613
- Restore DECT Factory Default, 579

- Rise Delay, 574
- Rise Time, 575, 576
- Root Nyquist, 581
- S, 587, 590, 592, 594, 598, 599, 600, 603, 605, 607
- Save Secondary Frame State, 608
- Secondary Frame Off On, 609
- Sine, 552, 576
- Single, 612
- Sync Out Offset, 610
- Timeslot Ampl Main Delta, 589, 601
- Timeslot Off On, 589, 602
- Traffic Bearer, 585, 596
- Traffic Bearer with Z field, 585, 596
- Trigger & Run, 613
- Trigger Key, 609, 614
- UN3/4 GSM Gaussian, 581
- User File, 552, 576, 578, 585, 588, 591, 593, 595, 596, 600, 603, 605, 607
- User FIR, 581
- User FSK, 583, 584
- User I/Q, 584
- dect subsystem keys
 - PRAM File, 579
- DECTsubsystem keys
 - Symbol Rate, 611
- Default Gateway softkey, 74
- Delay Bits softkey, 455
- Delete All NVWFM Files softkey, 123
- Delete All WFM Files softkey, 123
- Delete All WFM1 Files softkey, 123
- Delete File softkey, 124
- Delete softkeys
 - Delete All ARB CDMA Files, 116
 - Delete All ARB DMOD Files, 116
 - Delete All ARB DWCDMA Files, 116
 - Delete All ARB FCDMA Files, 117
 - Delete All ARB MCDMA Files, 118
 - Delete All ARB MDMOD Files, 118
 - Delete All ARB MDWCDMA Files, 118
 - Delete All ARB MFCDMA Files, 118
 - Delete All ARB MTONE Files, 118
 - Delete All ARB RCDMA Files, 119
 - Delete All ARB UWCDMA Files, 120
 - Delete All Binary Files, 116
 - Delete All Bit Files, 116
 - Delete All Files, 115
 - Delete All FIR Files, 117
 - Delete All FSK Files, 117
 - Delete All I/Q Files, 117
 - Delete All List Files, 117
 - Delete All SEQ Files, 119
 - Delete All SHAPE Files, 119
 - Delete All State Files, 119
 - Delete All UFLT Files, 119
 - Delete File, 120
- DHCP, 73
- Diagnostic Info softkey, 79, 80, 82, 87
- diagnostic subsystem keys
 - Auxiliary Software Options, 80
 - Diagnostic Info, 79, 80, 82
 - Installed Board Info, 79
 - Options Info, 81
- diagnostic subsystem softkeys
 - Waveform Licenses, 81, 82
- Diff Data Encode Off On softkey, 555, 682
- Diff. Mode I Offset softkey, 25
- Diff. Mode Q Offset softkey, 26
- Digital Modulation Off On softkey, 291
- digital modulation subsystem keys
 - 2.100 MHz, 31
 - 40.000 MHz, 31
 - ALC BW Normal Narrow, 22
 - BBG1, 24, 34
 - Burst Envelope Int Ext Off, 22
 - Common Mode I/Q Offset, 25
 - Diff. Mode I Offset, 25
 - Diff. Mode Q Offset, 26
 - Ext 50 Ohm, 24, 34
 - Ext 600 Ohm, 24, 34
 - Ext In 600 Ohm I Offset, 26
 - Ext In 600 Ohm Q Offset, 27
 - High Crest Mode Off On, 23
 - I Offset, 28
 - I/Q Adjustments Off On, 31
 - I/Q Gain Balance Source 1, 28
 - I/Q Mod Filter Manual Auto, 32
 - I/Q Off On, 36
 - I/Q Out Gain Balance, 26
 - I/Q Output Atten, 27
 - I/Q Timing Skew, 30

Index

- I/Q Timing Skew Path softkey, 31
- Int I/Q Skew Corrections RF BB Off, 34
- Int Phase Polarity Normal Invert, 24, 33
- Modulator Atten Manual Auto, 32, 33
- Off, 24, 34
- Q Offset, 29
- Quadrature Skew, 29
- Sum, 24
- Summing Ratio (SRC1/SRC2) x.xx dB, 35
- Through, 31
- digital signal interface module, 376
- digital subsystem softkeys, 383
 - Bit Order, 380
 - Clock Per Sample, 376
 - Clock Phase, 376
 - Clock Polarity, 377
 - Clock Rate, 378
 - Clock Skew, 379
 - Clock Source, 379
 - Data Type, 388
 - Direction, 381
 - Frame Polarity, 383
 - I Gain, 381
 - I Offset, 382
 - IQ Polarity, 384
 - Logic Type, 389
 - Loop Back Test Type, 389
 - N5102A Off On, 391
 - Negate I, 382
 - Negate Q, 385
 - Pass Through Preset, 391
 - Port Config, 390
 - Q Gain, 384
 - Q Offset, 386
 - Reference Frequency, 378
 - Rotation, 386
 - Scaling, 387
 - Signal Type, 388
 - Swap IQ, 383
 - Word Alignment, 380
 - Word Size, 387
- Direction softkey, 381
- discrete response data, 11
- discrete SCPI parameters, 9
- display
 - secure mode, 158
- display contrast hardkeys, 84
- display subsystem keys
 - Brightness, 84
 - display contrast, 84
 - Inverse Video Off On, 85
 - Update in Remote Off On, 85
- DL Reference 1.1 softkey, 1058
 - wideband CDMA base band generator subsystem softkeys
 - DL Reference 1.1, 959
- DL Reference 1.2 softkey, 1058
 - wideband CDMA base band generator subsystem softkeys
 - DL Reference 1.2, 959
- DL Reference 2.1 softkey, 1058
 - wideband CDMA base band generator subsystem softkeys
 - DL Reference 2.1, 959
- DL Reference 2.2 softkey, 1058
 - wideband CDMA base band generator subsystem softkeys
 - DL Reference 2.2, 959
- DM0 softkey
 - See* DECT subsystem keys
- DM1 softkey
 - See* DECT subsystem keys
- DMOD softkey, 93
- Dmodulation subsystem keys
 - # of Carriers, 281, 283
 - 128QAM, 277
 - 16PSK, 277
 - 16QAM, 277
 - 2.100 MHz, 273
 - 256QAM, 277
 - 2-Lvl FSK, 277
 - 32QAM, 277
 - 40.000 MHz, 268, 273
 - 4-Lvl FSK, 277
 - 4QAM, 277
 - 64QAM, 277
 - 8PSK, 277
 - APCO 25 C4FM, 269
 - APCO 25 w/C4FM, 280, 281, 282
 - APCO 25 w/C4QPSK, 280, 281, 282

- ARB Reference Ext Int, [279](#)
- ARB Sample Clock, [280](#)
- BPSK, [277](#)
- Bus, [288](#)
- Carrier Phases Fixed Random, [281](#)
- CDPD, [280](#), [281](#), [282](#)
- Clear Header, [271](#)
- Continuous, [285](#)
- Custom Digital Mod State, [281](#), [282](#)
- D8PSK, [277](#)
- DECT, [280](#), [281](#), [282](#)
- Digital Modulation Off On, [291](#)
- EDGE, [280](#), [281](#), [282](#)
- Ext, [288](#)
- Ext Delay Off On, [289](#)
- Ext Delay Time, [289](#)
- Ext Polarity Neg Pos, [290](#)
- Filter Alpha, [270](#)
- Filter BbT, [270](#)
- Free Run, [286](#)
- Freq Dev, [277](#)
- Freq Spacing, [281](#)
- Gate Active Low High, [287](#)
- Gated, [285](#)
- Gaussian, [269](#)
- Gray Coded QPSK, [277](#)
- GSM, [280](#), [281](#), [282](#)
- I/Q Mod Filter Manual Auto, [273](#)
- I/Q Output Filter Manual Auto, [268](#)
- Immediate, [279](#)
- Initialize Table, [282](#)
- Insert Row, [247](#), [282](#)
- IS-2000 SR3 DS, [269](#)
- IS-95, [269](#)
- IS-95 Mod, [269](#)
- IS-95 Mod w/EQ, [269](#)
- IS-95 OQPSK, [277](#)
- IS-95 QPSK, [277](#)
- IS-95 w/EQ, [269](#)
- Load/Store, [282](#)
- Marker 1, [274](#), [275](#)
- Marker 1 Polarity Neg Pos, [278](#)
- Marker 2, [274](#), [275](#)
- Marker 2 Polarity Neg Pos, [278](#)
- Marker 3, [274](#), [275](#)
- Marker 3 Polarity Neg Pos, [278](#)
- Marker 4, [274](#), [275](#)
- Marker 4 Polarity Neg Pos, [278](#)
- Modulator Atten Manual Auto, [272](#)
- MSK, [277](#)
- Multicarrier Off On, [280](#)
- NADC, [280](#), [281](#), [282](#)
- None, [274](#), [275](#)
- Nyquist, [269](#)
- Off, [279](#)
- On, [279](#)
- Optimize FIR For EVM ACP, [271](#)
- OQPSK, [277](#)
- $\pi/4$ DQPSK, [277](#)
- Patt Trig In 1, [290](#)
- Patt Trig In 2, [290](#)
- PDC, [280](#), [281](#), [282](#)
- PHS, [280](#), [281](#), [282](#)
- PWT, [280](#), [281](#), [282](#)
- QPSK, [277](#)
- Rectangle, [269](#)
- Reference Freq, [210](#), [278](#)
- Reset & Run, [286](#)
- Root Nyquist, [269](#)
- Save Setup To Header, [271](#)
- Select File, [247](#), [280](#)
- Single, [285](#)
- Store Custom Dig Mod State, [283](#)
- Symbol Rate, [284](#)
- TETRA, [280](#), [281](#), [282](#)
- Through, [268](#), [273](#)
- Trigger & Run, [286](#)
- Trigger Key, [288](#)
- UN3/4 GSM Gaussian, [269](#)
- User FIR, [269](#)
- WCDMA, [269](#)
- Dn Custom Cont softkey, [908](#)
- Dn Normal Cont softkey, [908](#)
- Dn Normal Disc softkey, [908](#)
- Dn Sync Cont softkey, [908](#)
- Dn Sync Disc softkey, [908](#)
- Do Power Search softkey, [59](#), [60](#), [61](#)
- Doppler Shift softkey, [665](#)
- Down Custom softkey, [797](#), [831](#)
- Down TCH All softkey, [797](#), [831](#)

Index

- Down TCH softkey, [797](#), [831](#)
- Down/Up softkey, [934](#), [984](#)
- Downlink MCS-1 softkey, [637](#), [639](#), [692](#)
- Downlink MCS-5 softkey, [642](#)
- Downlink MCS-9 softkey, [642](#)
- downloading files, [114](#)
- DPCCH + 1 DPDCH softkey, [359](#)
- DPCCH + 2 DPDCH softkey, [359](#)
- DPCCH + 3 DPCCH softkey, [359](#)
- DPCCH + 4 DPDCH softkey, [359](#)
- DPCCH + 5 DPDCH softkey, [359](#)
- DPCCH Pilot data-clk (DRPS23) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPCCH Power field, [981](#)
- DPCCH Raw Data (RPS4) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
- DPCCH Raw Data Clock (RPS5) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
- DPCCH softkey, [359](#), [975](#), [998](#)
- DPCCH TFC I data-clk (DRPS22) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPCCH TPC indicator (DRPS21) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPCH + 1 softkey, [920](#), [921](#)
- DPCH + 2 softkey, [920](#), [921](#)
- DPCH Channel Balance softkey, [928](#)
- DPCH Compressed Frame Indicator (DRPS32) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPCH data stream (DRPS24) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPCH data-clk (0) (DRPS28) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPCH Gap Indicator (DRPS33) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPCH softkey, [353](#)
- DPCH TimeSlot pulse (DRPS25) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPCH10ms Frame-Pulse (DRPS26) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPDCH data-clk withDTX (DRPS20) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPDCH data-clk WithOutDTX (DRPS30) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
- DPDCH Power field, [990](#)
- DPDCH Raw Data (RPS2) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
- DPDCH Raw DataClock (RPS3) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
- DPDCH softkey, [975](#)
- Drift Deviation softkey, [465](#)
- dual ARB subsystem
 - generate sine, [292](#)
 - markers, *See* markers
 - runtime scaling, [310](#)
 - scaling waveform files, [310](#)
 - Through, [296](#)
- dual ARB subsystem keys
 - # Skipped Points, [300](#)
 - 2.100 MHz, [297](#)
 - 40.000 MHz, [296](#), [297](#)
 - Apply to Waveform, [298](#), [300](#)
 - ARB Off On, [322](#)
 - ARB Reference Ext Int, [23](#), [309](#)
 - ARB Sample Clock, [311](#)
 - Build New Waveform Sequence, [311](#)
 - Bus, [318](#)
 - Carrier Bandwidth, [307](#)
 - Carrier to Noise Ratio, [307](#)
 - Clear Header, [293](#)
 - Clipping Type $|I+jQ|$ $|I|,|Q|$, [292](#)
 - Continuous, [316](#)
 - Edit Repetitions, [311](#)
 - Ext, [318](#)
 - Ext Delay Off On, [319](#)
 - Ext Delay Time, [319](#)
 - Ext Polarity Neg Pos, [320](#)
 - First Mkr Point, [298](#), [300](#)
 - Free Run, [315](#)
 - Gate Active Low High, [315](#)
 - Gated, [313](#)
 - Header RMS, [293](#)
 - I/Q Mod Filter Manual Auto, [298](#)
 - I/Q Output Filter Manual Auto, [295](#), [296](#)
 - Immediate, [309](#)
 - Insert Waveform, [311](#)
 - Last Mkr Point, [298](#), [300](#)

- Marker 1, 303
 - Marker 1 2 3 4, 298
 - Marker 2, 303
 - Marker 3, 303
 - Marker 4, 303
 - Marker Polarity Neg Pos, 306, 330, 366, 471
 - Markers, 300, 304
 - Modulator Atten Manual Auto, 296, 297
 - Name and Store, 311
 - Noise Bandwidth Factor, 306
 - None, 303, 304
 - Off, 309
 - On, 309
 - Patt Trig In 1, 320
 - Patt Trig In 2, 320
 - Real-time Noise Off On, 308
 - Reference Freq, 308
 - Reset & Run, 315
 - Save Setup To Header, 295
 - Scale Waveform Data, 310
 - Scaling, 310
 - Segment Advance, 313
 - Select Waveform, 321
 - Set Marker Off All Points, 299
 - Set Marker Off Range Of Points, 298
 - Set Marker On Range Of Points, 300
 - Single, 313, 316
 - Through, 296, 297
 - Toggle Marker 1 2 3 4, 311
 - Trigger & Run, 315
 - Trigger Key, 318
 - Waveform Runtime Scaling, 310
 - Dual-Sine softkey, 173, 180, 187, 193
 - Dummy Bearer 1 softkey, 596
 - Dummy Bearer 2 softkey, 596
 - Dummy softkey, 700
 - DWCDMA softkey, 94
 - Dwell Type List Step softkey, 50
- E**
- Eb/No field, 1004
 - Eb/No value (dB) field, 974
 - EbNo field, 502
 - See* CDMA2000 BBG subsystem keys and fields
 - Ec/No value field, 920, 1005
 - EcNo field, 489, 524, 529
 - EDGE BERT Off On softkey, 438
 - EDGE Off On softkey, 661
 - EDGE softkey, 280, 281, 282, 630
 - EDGE subsystem keys
 - 128QAM, 633
 - 16 1's & 16 0's, 626, 635, 637, 642
 - 16PSK, 633
 - 16QAM, 633
 - 256QAM, 633
 - 2-Lvl FSK, 633
 - 32 1's & 32 0's, 626, 635, 637, 642
 - 32QAM, 633
 - 4 1's & 4 0's, 626, 635, 637, 642
 - 4-Lvl FSK, 633
 - 4QAM, 633
 - 64 1's & 64 0's, 626, 635, 637, 642
 - 64QAM, 633
 - 8 1's & 8 0's, 626, 635, 637, 642
 - 8PSK, 633
 - All Timeslots, 653
 - APCO 25 C4FM, 630
 - BBG Ref Ext Int, 629
 - Begin Frame, 653
 - Begin Timeslot #, 653, 654
 - BPSK, 633
 - Bus, 634, 658
 - Continuous, 656
 - CS-1, 637, 638
 - CS-4, 637, 639
 - Custom, 652
 - Custom TS, 641, 651
 - D8PSK, 633
 - Data Format Pattern Framed, 625
 - Downlink MCS-1, 637, 639
 - Downlink MCS-5, 642
 - Downlink MCS-9, 642
 - EDGE, 630
 - EDGE Off On, 661
 - E-TCH/F43.2, 642
 - Ext, 626, 634, 635, 642, 658
 - Ext BBG Ref Freq, 629
 - Ext Data Clock Ext Int, 618
 - Ext Data Clock Normal Symbol, 628
 - Ext Delay Bits, 659

Index

- Ext Delay Off On, 660
- Ext Polarity Neg Pos, 660
- Fall Delay, 619, 620
- Fall Time, 621
- Filter Alpha, 618
- Filter BbT, 619
- FIX4, 626, 627, 635, 636, 637, 639, 642, 648
- Free Run, 656
- Freq Dev, 631
- G, 636, 650
- Gate Active Low High, 657
- Gated, 656
- Gaussian, 630
- GMSK, 652
- Gray Coded QPSK, 633
- I/Q Scaling, 631
- IS-95, 630
- IS-95 Mod, 630
- IS-95 Mod w/EQ, 630
- IS-95 OQPSK, 633
- IS-95 QPSK, 633
- IS-95 w/EQ, 630
- MSK, 633
- Multislot Off On, 642
- Normal, 652
- Normal All, 652
- Nyquist, 630
- Optimize FIR For EVM ACP, 626
- OQPSK, 633
- $\pi/4$ DQPSK, 633
- Patt Trig In 1, 661
- Patt Trig In 2, 661
- Phase Dev, 632
- Phase Polarity Normal Invert, 633
- PN11, 626, 635, 642
- PN15, 626, 635, 637, 638, 639, 640, 642, 646, 647, 648, 649
- PN20, 626, 635, 642
- PN23, 626, 635, 642
- PN9, 626, 635, 637, 638, 639, 640, 642, 646, 647, 648, 649
- QPSK, 633
- Recall Secondary Frame State, 634
- Rectangle, 630
- Reset & Run, 656
- Restore EDGE Factory Default, 628
- Rise Delay, 622, 623
- Rise Time, 623, 624
- Root Nyquist, 630
- S, 641
- Save Secondary Frame State, 634
- Secondary Frame Off On, 635
- Sine, 625
- Single, 656
- Symbol Rate, 654
- Sync Out Offset, 653
- T1, 650
- T2, 651
- TCH/FS, 637, 640
- Timeslot Ampl Main Delta, 651
- Timeslot Off On, 652
- Trigger & Run, 656
- Trigger Key, 634, 658
- TSC0, 641, 651
- TSC1, 641, 651
- TSC2, 641, 651
- TSC3, 641, 651
- TSC4, 641, 651
- TSC5, 641, 651
- TSC6, 641, 651
- TSC7, 641, 651
- UN3/4 GSM Gaussian, 630
- Uncoded, 642
- Uplink MCS-1, 637, 640
- Uplink MCS-5, 642
- Uplink MCS-9, 642
- User File, 625, 626, 635, 637, 642
- User FIR, 630
- User FSK, 632, 633
- User I/Q, 632, 633
- edge subsystem keys
 - PRAM File, 627
- Edit Channel Setup softkey, 250, 253
- Edit Repetitions softkey, 311
- Enter Secure Mode softkey, 160
- Equal Energy per Symbol softkey, 357
- Equal Powers softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields

- See* wideband CDMA base band generator subsystem keys and fields
- Erase All softkey, [159](#)
- Erase and Overwrite All softkey, [161](#)
- Erase and Sanitize All softkey, [161](#)
- Erase softkey, [159](#)
- ERROR
 - [221](#), [114](#)
- Error BER softkey, [1073](#)
- Error Bits softkey, [1065](#)
- Error Blocks field, [1066](#)
- Error Count softkey, [438](#)
 - See* sense subsystem keys
- Error Info softkey, [153](#)
- error messages, resolving, [712](#)
- Error Out softkey, [409](#)
- Error Rate softkey
 - See* calculate subsystem keys
 - See* calculate subsystem keys
- ESG file overview, [710](#)
- ET softkey, [690](#)
- E-TCH/F43.2 softkey, [642](#)
- Even Second Delay field, [476](#), [509](#)
- Exceeds Any Limit softkey, [401](#)
- Exceeds Any Thresholds softkey
 - See* sense subsystem keys
- Execute Cal softkey, [70](#), [71](#)
- Ext 50 Ohm softkey, [24](#), [34](#)
- Ext 600 Ohm softkey, [24](#), [34](#)
- Ext BBG Ref Freq softkey
 - See* custom subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- Ext CDMA Freq field, [496](#)
- Ext Clock Rate x1 x2 x4 softkey, [918](#)
- Ext Data Clock Ext Int softkey
 - See* EDGE subsystem keys
 - See* PDC subsystem keys
- Ext Data Clock Normal Symbol softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
- Ext Delay Bits softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- Ext Delay Off On softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
- Ext Delay Time softkey, [234](#), [265](#), [289](#), [319](#), [372](#)
- Ext Frame Trigger Delay softkey, [423](#)
- Ext In 600 Ohm I Offset softkey, [26](#)
- Ext In 600 Ohm Q Offset softkey, [27](#)
- Ext Polarity Neg Pos softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys

Index

- See* TETRA subsystem keys
- See* wideband CDMA ARB subsystem keys
- Ext softkey
 - List/Sweep subsystem, [53](#)
 - See* amplitude modulation subsystem keys
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* frequency modulation subsystem keys
 - See* GSM subsystem keys
 - See* low frequency output subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* phase modulation subsystem keys
 - See* PHS subsystem keys
 - See* sense subsystem keys
 - See* TETRA subsystem keys
 - See* trigger subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
- Ext softkeys
 - Ext Coupling DC AC, [171](#), [178](#), [191](#)
 - Ext Detector, [62](#)
 - Ext Pulse, [200](#)
 - Ext1, [174](#), [182](#), [194](#)
 - Ext2, [174](#), [182](#), [194](#)
- extended numeric SCPI parameter, [8](#)
- External Frame Trigger Polarity Neg Pos softkey, [423](#)
- External softkey, [508](#)
- F**
- FACC softkey
 - See* DECT subsystem keys
- Fail Hold softkey, [401](#)
- Fall Delay softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- Fall Time softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- Falling softkey, [543](#)
- FBI State field, [980](#)
- FCDMA softkey, [94](#)
- FCOR softkey, [897](#), [902](#)
- FCorr softkey, [700](#)
- FDEV1_FS softkey
 - See* DECT subsystem keys
- FDEV1_HS softkey
 - See* DECT subsystem keys
- FDEV2_FS softkey
 - See* DECT subsystem keys
- Field 1 field, [486](#)
- Field 2 field, [486](#)
- Field 3 field, [487](#)
- file
 - names, [103](#)
 - retrieval, [114](#)
 - systems, [14](#)
 - types, [14](#)
- file overview, HDSOA, [710](#)
- Filter Alpha softkey, [996](#)
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys

- See* PDC subsystem keys
- See* PHS subsystem keys
- See* TETRA subsystem keys
- See* wideband CDMA ARB subsystem keys
- See* wideband CDMA base band generator subsystem keys and fields
- Filter BbT softkey, [997](#)
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
- FIR data, [106](#)
- FIR softkey, [95](#)
- First Mkr Point softkey, [298](#), [300](#)
- First Spread Code softkey, [352](#), [360](#)
- FIX softkey, [980](#)
- FIX4 softkey, [639](#), [979](#), [1008](#), [1012](#)
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA baseband generator subsystem keys and fields
- Flat Noise BW field, [975](#)
- Flatness Off On softkey, [21](#)
- FM softkeys
 - FM Dev, [183](#)
 - FM Dev Couple Off On, [183](#)
 - FM Off On, [182](#)
 - FM Path 1 2, [177](#)
 - FM Stop Rate, [179](#)
 - FM Sweep Rate, [181](#)
 - FM Tone 2 Amp Percent of Peak, [180](#)
 - FM Tone 2 Rate, [179](#)
- forgiving listening and precise talking, [7](#)
- Frame Clock Polarity Neg Pos softkey, [995](#)
- Frame Count softkey
 - See* sense subsystem keys
- Frame Erasure softkey, [448](#)
 - See* calculate subsystem keys
- Frame Length field
 - See* CDMA2000 BBG subsystem keys and fields
- Frame Offset field
 - See* CDMA2000 BBG subsystem keys and fields
- Frame offset field, [532](#)
- Frame Polarity softkey, [383](#)
- Frame Repeat Single Cont softkey, [789](#)
- Frame Struct field, [955](#)
- Frame Sync Trigger Mode Single Cont softkey, [1053](#)
- Frame Trigger Source Int Ext softkey, [424](#)
- Free Run softkey
 - list trigger source, [53](#)
 - See* amplitude modulation subsystem keys
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* frequency modulation subsystem keys
 - See* GSM subsystem keys
 - See* low frequency output subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* phase modulation subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* trigger subsystem keys
 - See* wideband CDMA ARB subsystem keys
- Freq Dev softkey

Index

- See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* TETRA subsystem keys
 - Freq softkeys
 - Freq, [41, 48](#)
 - Freq & Ampl, [48](#)
 - Freq Channels Off On, [40](#)
 - Freq Drift Type Linear Sine, [466](#)
 - Freq Multiplier, [41](#)
 - Freq Offset, [42, 466](#)
 - Freq Ref Off On, [43](#)
 - Freq Ref Set, [42](#)
 - Freq Spacing, [281, 333](#)
 - Freq Start, [43, 48](#)
 - Freq Stop, [44, 48](#)
 - Frequency hardkey, [37, 40, 41, 44, 45](#)
 - frequency modulation subsystem keys
 - Bus, [181](#)
 - Dual-Sine, [180](#)
 - Ext, [181](#)
 - Ext Coupling DC AC, [178](#)
 - Ext1, [182](#)
 - Ext2, [182](#)
 - FM Dev, [183](#)
 - FM Dev Couple Off On, [183](#)
 - FM Off On, [182](#)
 - FM Path 1 2, [177](#)
 - FM Stop Rate, [179](#)
 - FM Sweep Rate, [181](#)
 - FM Tone 2 Amp Percent of Peak, [180](#)
 - FM Tone 2 Rate, [179](#)
 - Free Run, [181](#)
 - Incr Set, [178](#)
 - Internal 1, [182](#)
 - Internal 2, [182](#)
 - Noise, [180](#)
 - Ramp, [180](#)
 - Sine, [180](#)
 - Square, [180](#)
 - Swept-Sine, [180](#)
 - Triangle, [180](#)
 - Trigger Key, [181](#)
 - frequency subsystem keys
 - Adjust Phase, [46](#)
 - Channel Number, [39](#)
 - Freq, [41, 48](#)
 - Freq Channels Off On, [40](#)
 - Freq Multiplier, [41](#)
 - Freq Offset, [42](#)
 - Freq Ref Off On, [43](#)
 - Freq Ref Set, [42](#)
 - Freq Start, [43, 48](#)
 - Freq Stop, [44, 48](#)
 - Frequency, [37, 40, 41, 44, 45](#)
 - Off, [41, 48](#)
 - Phase Ref Set, [46](#)
 - Ref Oscillator Source Auto Off On, [46](#)
 - FSK softkey, [95](#)
 - FSYNCH Type field, [500](#)
 - Full softkey, [525, 530](#)
 - Function Generator softkey, [188](#)
- ## G
- G softkey, [636, 650](#)
 - Gain Unit dB Lin Index softkey, [362](#)
 - Gate Active Low High softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - Gate Clk Delay softkey, [412](#)
 - Gate Delay Off On softkey, [413](#)
 - Gate Mode Time Clk softkey, [412](#)
 - Gate Off On softkey, [414](#)
 - Gate Polarity Neg Pos softkey, [414](#)
 - Gate Time Delay softkey, [413](#)

- Gated softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
- Gaussian softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
- generate sine, [292](#)
- GMSK softkey, [652](#)
- Goto Row softkey, [331](#)
- GPIB Address softkey, [73](#)
- GPS Ref (f0) softkey, [669](#)
- GPS Ref Clk Ext Int softkey, [669](#)
- GPS subsystem
 - Data Mode Raw Enc TLM, [665](#)
- GPS subsystem keys
 - APCO 25 C4FM, [665](#)
 - Data Mode Raw Enc TLM, [664](#)
 - Doppler Shift, [665](#)
 - Filter Alpha, [666](#)
 - Filter BbT, [667](#)
 - FIX4, [664](#)
 - Gaussian, [665](#)
 - GPS Ref (f0), [669](#)
 - GPS Ref Clk Ext Int, [669](#)
 - IQ Phase Normal Invert, [668](#)
 - IS-95, [665](#)
 - IS-95 Mod, [665](#)
 - IS-95 Mod w/EQ, [665](#)
 - IS-95 w/EQ, [665](#)
 - Nyquist, [665](#)
 - Optimize FIR For EVM ACP, [667](#)
 - P Code Pwr, [668](#)
 - PN15, [664](#)
 - PN9, [664](#)
 - Ranging Code C/A P C/A+P, [668](#)
 - Real-time GPS Off On, [670](#)
 - Rectangle, [665](#)
 - Root Nyquist, [665](#)
 - Satellite ID, [670](#)
 - UN3/4 GSM Gaussian, [665](#)
 - User File, [664](#)
 - User FIR, [665](#)
- Gray Coded QPSK softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- GSM BERT Off On softkey, [451](#)
- GSM Off On softkey, [709](#)
- GSM softkey, [280](#), [281](#), [282](#)
- GSM subsystem keys
 - 128QAM, [687](#)
 - 16 1's & 16 0's, [680](#), [689](#), [690](#), [692](#), [699](#)
 - 16PSK, [687](#)
 - 16QAM, [687](#)
 - 256QAM, [687](#)
 - 2-Lvl FSK, [687](#)
 - 32 1's & 32 0's, [680](#), [689](#), [690](#), [692](#), [699](#)
 - 32QAM, [687](#)
 - 4 1's & 4 0's, [680](#), [689](#), [690](#), [692](#), [699](#)

Index

4-Lvl FSK, 687
4QAM, 687
64 1's & 64 0's, 680, 689, 690, 692, 699
64QAM, 687
8 1's & 8 0's, 680, 689, 690, 692, 699
8PSK, 687
Access, 700
All Timeslots, 701
APCO 25 C4FM, 684
BBG Data Clock Ext Int, 671
BBG Ref Ext Int, 683
Begin Frame, 701
Begin Timeslot #, 701, 702
Bit Rate, 672
BPSK, 687
Bus, 688, 705
Continuous, 704
CS-1, 692
CS-4, 696
Custom, 700
Custom TS, 691, 698
D8PSK, 687
Data Format Pattern Framed, 679
Diff Data Encode Off On, 682
Downlink MCS-1, 692
Dummy, 700
ET, 690
Ext, 680, 688, 689, 690, 699, 705
Ext BBG Ref Freq, 581, 683
Ext Data Clock Normal Symbol, 682
Ext Delay Bits, 706
Ext Delay Off On, 707
Ext Polarity Neg Pos, 707
Fall Delay, 674, 675
Fall Time, 674, 676
FCorr, 700
Filter Alpha, 671
Filter BbT, 672
FIX4, 680, 681, 689, 690, 691, 692, 697, 699, 700
Free Run, 704
Freq Dev, 685
Gate Active Low High, 705
Gated, 704
Gaussian, 684
Gray Coded QPSK, 687
GSM Off On, 709
I/Q Scaling, 685
IS-95, 684
IS-95 Mod, 684
IS-95 Mod w/EQ, 684
IS-95 OQPSK, 687
IS-95 QPSK, 687
IS-95 w/EQ, 684
MSK, 687
Multislot Off On, 691
Normal, 700
Normal All, 700
Nyquist, 684
Optimize FIR For EVM ACP, 680
OQPSK, 687
 $\pi/4$ DQPSK, 687
Patt Trig In 1, 708
Patt Trig In 2, 708
Phase Dev, 686
Phase Polarity Normal Invert, 687
PN11, 680, 699
PN15, 680, 689, 690, 692, 696, 697, 699
PN20, 680, 699
PN23, 680, 699
PN9, 680, 689, 690, 692, 696, 697, 699
PN9 Mode Normal Quick, 673
QPSK, 687
Recall Secondary Frame State, 688
Rectangle, 684
Reset & Run, 704
Restore Factory Default, 681
Rise Delay, 676, 677
Rise Time, 678
Root Nyquist, 684
S, 698
Save Secondary Frame State, 688
Secondary Frame Off On, 689
Sine, 679
Single, 704
SS, 690
Symbol Rate, 702
Sync, 700
Sync Out Offset, 701
TCH/FS, 692
Timeslot Ampl Main Delta, 699

- Timeslot Off On, 699
 - Trigger & Run, 704
 - Trigger Key, 688, 705
 - TS, 700
 - TSC0, 691, 698
 - TSC1, 691, 698
 - TSC2, 691, 698
 - TSC3, 691, 698
 - TSC4, 691, 698
 - TSC5, 691, 698
 - TSC6, 691, 698
 - TSC7, 691, 698
 - UN3/4 GSM Gaussian, 684
 - Uplink MCS-1, 692
 - User File, 679, 680, 689, 690, 692, 699
 - User FIR, 684
 - User FSK, 686, 687
 - User I/Q, 686, 687
 - gsm subsystem keys
 - PRAM Files, 681
- H**
- Half softkey, 525, 530
 - Header field, 482, 492
 - Help Mode Single Cont softkey, 154
 - hexadecimal values, 18
 - High Amplitude softkey
 - See sense subsystem keys
 - High Crest Mode Off On softkey, 23
 - Higher Layer softkey, 1055
 - Hostname softkey, 74
 - HSDPA file overview, 710
 - HSDPA over W-CDMA SCPI commands, 710
 - HSDPA user files, 710
- I**
- I Gain softkey, 381
 - I Offset softkey, 28, 382
 - I/Q Adjustments Off On softkey, 31
 - I/Q Calibration softkey, 70
 - I/Q Gain Balance Source 1 softkey, 28
 - I/Q Mapping Normal Invert softkey, 219, 245, 341
 - I/Q Mod Filter Manual Auto softkey, 32, 206, 220, 244, 273, 298, 326, 343, 470
 - I/Q Off On softkey, 36
 - I/Q Out Gain Balance softkey, 26
 - I/Q Output Atten softkey, 27
 - I/Q Output Filter Manual Auto softkey, 204, 215, 240, 268, 295, 296, 324, 341, 462
 - I/Q Scaling softkey
 - See custom subsystem keys
 - See DECT subsystem keys
 - See EDGE subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See TETRA subsystem keys
 - I/Q softkey, 96
 - I/Q Timing Skew Path, 31
 - I/Q timing Skew softkey, 30
 - IDLE softkey, 852, 871
 - IEEE 488.2 common command keys
 - Diagnostic Info, 87
 - RECALL Reg, 88
 - Run Complete Self Test, 90
 - Save Reg, 89
 - Save Seq[n] Reg[nn], 89
 - Select Seq, 88
 - Immediate softkey, 225, 259, 279, 309
 - See sense subsystem keys
 - Impairments Off On softkey, 463
 - Impedance 75 Ohm High softkey, 416
 - Incr Set hardkey, 68
 - See amplitude modulation subsystem keys
 - See frequency modulation subsystem keys
 - See phase modulation subsystem keys
 - Increment Scramble Code softkey, 348
 - Increment Timing Offset softkey, 351
 - Infinity softkey, 958, 1057
 - Init Power field, 999
 - Init Pwr field, 1018, 1034
 - Initial Bit Count softkey, 437
 - Initial Block Count softkey, 427, 430
 - Initial Frame Count softkey, 447
 - Initialize Phase Fixed Random softkey, 334
 - Initialize Table softkey, 282
 - input subsystem keys
 - 0.7V, 417

Index

- 1.4V, [417](#)
- 1.6V, [417](#)
- 2.5V, [417](#)
- Clock Delay Off On, [415](#)
- Clock Polarity Neg Pos, [416](#)
- Clock Time Delay, [415](#)
- Data Polarity Neg Pos, [416](#)
- Gate Clk Delay, [412](#)
- Gate Delay Off On, [413](#)
- Gate Mode Time Clk, [412](#)
- Gate Off On, [414](#)
- Gate Polarity Neg Pos, [414](#)
- Gate Time Delay, [413](#)
- Impedance 75 Ohm High, [416](#)
- Resolution, [414](#)
- Insert Row softkey, [247](#), [250](#), [253](#), [282](#)
- Insert Waveform softkey, [311](#)
- Installed Board Info softkey, [79](#)
- Int I/Q Skew Corrections RF BB Off softkey, [34](#)
- Int softkeys
 - Int Doublet, [200](#)
 - Int Free-Run, [200](#)
 - Int Gated, [200](#)
 - Int Phase Polarity Normal Invert, [24](#), [33](#)
 - Int Triggered, [200](#)
- integer response data, [11](#)
- Intermod softkey, [962](#)
- Internal softkeys
 - Internal, [62](#), [174](#), [508](#)
 - Internal 1, [182](#), [194](#)
 - Internal 2, [182](#), [194](#)
 - Internal Monitor, [188](#)
 - Internal Square, [200](#)
- Inverse Video Off On softkey, [85](#)
- Inverted softkey, [513](#)
- IP address, [73](#)
- IP Address softkey, [74](#)
- IQ Phase Normal Invert softkey, [668](#)
- IQ Polarity softkey, [384](#)
- IS-2000 SR3 DS softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* Dmodulation subsystem keys
 - See* wideband CDMA ARB subsystem keys
- IS-95 Mod softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band subsystem keys and fields
- IS-95 Mod w/EQ softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
- IS-95 OQPSK softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- IS-95 QPSK softkey
 - See* custom subsystem keys

- See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - IS-95 softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
 - IS-95 w/EQ softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - IS-97 Levels softkey, [227](#)
- J**
- [jy](#), [833](#)
- L**
- LAN Config softkey, [73](#)
 - Last Mkr Point softkey, [298](#), [300](#)
 - Leap Seconds field, [497](#)
 - Left Alternate softkey, [352](#)
 - Left softkey, [924](#)
 - LF Out softkeys
 - LF Out Amplitude, [184](#)
 - LF Out Off On, [188](#)
 - LF Out Stop Freq, [184](#), [185](#), [191](#)
 - LF Out Sweep Rate, [186](#)
 - LF Out Sweep Time, [187](#)
 - LF Out Tone 2 Ampl % of Peak, [185](#)
 - LF Out Tone 2 Freq, [184](#), [185](#), [191](#)
 - Link Down Up softkey, [343](#), [972](#)
 - Link Forward Reverse softkey, [245](#), [475](#)
 - list data, [112](#)
 - List softkey, [96](#), [122](#)
 - list/sweep subsystem keys
 - # Points, [56](#)
 - Ampl, [48](#), [65](#)
 - Ampl Start, [48](#), [66](#)
 - Ampl Stop, [48](#), [67](#)
 - Dwell Type List Step, [50](#)
 - Freq, [41](#), [48](#)
 - Freq & Ampl, [48](#)
 - Freq Start, [43](#), [48](#)
 - Freq Stop, [44](#), [48](#)
 - Load List From Step Sweep, [54](#)
 - Manual Mode Off On, [52](#)
 - Manual Point, [51](#)
 - Off, [41](#), [48](#), [65](#)
 - Preset List, [55](#)
 - Step Dwell, [55](#)
 - Sweep Direction Down Up, [49](#)
 - Sweep Retrace Off On, [53](#)
 - Sweep Type List Step, [54](#)
 - Load From Selected File softkey, [20](#), [120](#), [125](#), [332](#)
 - Load List From Step Sweep softkey, [54](#)
 - Load/Store softkey, [282](#)
 - Logic Type softkey, [389](#)
 - Long Code Mask field, [512](#)
 - Long Code State field, [479](#), [512](#)
 - Loop Back Test Type softkey, [389](#)
 - Low Amplitude softkey, [426](#), [429](#)

Index

- See* sense subsystem keys
- Low Capacity softkey, [585](#), [596](#)
- Low Capacity with Z field softkey, [585](#), [596](#)
- low frequency output subsystem keys
- Bus, [187](#)
 - DC, [187](#)
 - Dual-Sine, [187](#)
 - Ext, [187](#)
 - Free Run, [187](#)
 - Function Generator, [188](#)
 - Internal Monitor, [188](#)
 - LF Out Amplitude, [184](#)
 - LF Out Off On, [188](#)
 - LF Out Stop Freq, [184](#), [185](#), [191](#)
 - LF Out Sweep Rate, [186](#)
 - LF Out Sweep Time, [187](#)
 - LF Out Tone 2 Ampl % of Peak, [185](#)
 - LF Out Tone 2 Freq, [184](#), [185](#), [191](#)
 - Noise, [187](#)
 - Ramp, [187](#)
 - Sine, [187](#)
 - Square, [187](#)
 - Swept-Sine, [187](#)
 - Triangle, [187](#)
 - Trigger Key, [187](#)
- LTM OFF field, [497](#)
- M**
- Manual Mode Off On softkey, [52](#)
- Manual Point softkey, [51](#)
- Marker 1 2 3 4 softkey, [300](#)
- Marker 1 Polarity Neg Pos softkey, [210](#), [224](#), [258](#), [278](#), [471](#)
- dual ARB subsystem, [306](#), [330](#), [471](#)
 - wideband CDMA ARB subsystem, [366](#)
- Marker 1 softkey, [207](#), [208](#), [220](#), [221](#), [222](#), [255](#), [256](#), [274](#), [275](#), [303](#), [326](#), [327](#), [328](#), [363](#), [364](#), [470](#), [471](#)
- dual ARB subsystem, [304](#)
- Marker 2 Polarity Neg Pos softkey, [210](#), [224](#), [258](#), [278](#), [472](#)
- dual ARB subsystem, [306](#), [330](#), [366](#), [471](#)
- Marker 2 softkey, [207](#), [208](#), [220](#), [221](#), [222](#), [255](#), [256](#), [274](#), [275](#), [303](#), [326](#), [327](#), [328](#), [363](#), [364](#), [470](#), [471](#)
- dual ARB subsystem, [304](#)
- Marker 3 Polarity Neg Pos softkey, [210](#), [224](#), [258](#), [278](#), [472](#)
- dual ARB subsystem, [306](#), [330](#), [471](#)
 - wideband CDMA ARB subsystem, [366](#)
- Marker 3 softkey, [207](#), [208](#), [220](#), [221](#), [222](#), [255](#), [256](#), [274](#), [275](#), [303](#), [326](#), [327](#), [328](#), [363](#), [364](#), [470](#), [471](#)
- dual ARB subsystem, [304](#)
- Marker 4 Polarity Neg Pos softkey, [210](#), [224](#), [258](#), [278](#), [472](#)
- dual ARB subsystem, [306](#), [330](#), [471](#)
 - wideband CDMA ARB subsystem, [366](#)
- Marker 4 softkey, [207](#), [208](#), [220](#), [221](#), [222](#), [255](#), [256](#), [274](#), [275](#), [303](#), [326](#), [327](#), [328](#), [363](#), [364](#), [470](#), [471](#)
- dual ARB subsystem, [304](#)
- marker polarity, [210](#)
- Marker softkey, [298](#)
- Markers, [298](#)
- markers
- alc hold
 - AWGN subsystem, [207](#)
 - CDMA ARB subsystem, [221](#)
 - CDMA2000 ARB subsystem, [255](#)
 - Dmodulation subsystem, [274](#)
 - dual ARB subsystem, [303](#)
 - multitone subsystem, [327](#), [328](#)
 - wideband CDMA ARB subsystem, [363](#)
 - alternate amplitude
 - AWGN subsystem, [207](#)
 - CDMA ARB subsystem, [220](#)
 - CDMA2000 ARB subsystem, [255](#)
 - Dmodulation subsystem, [274](#)
 - dual ARB subsystem, [303](#)
 - multitone subsystem, [326](#)
 - wideband CDMA ARB subsystem, [363](#)
 - clearing, [298](#)
 - marker polarity
 - CDMA ARB subsystem, [224](#)
 - CDMA2000 ARB subsystem, [258](#)
 - Dmodulation subsystem, [278](#)
 - dual ARB subsystem, [306](#), [471](#)
 - multitone subsystem, [330](#)
 - wideband CDMA ARB subsystem, [366](#)
 - polarity
 - AWGN subsystem, [210](#)
 - RF blanking/pulse

- AWGN subsystem, 208
- CDMA ARB subsystem, 222
- CDMA2000 ARB subsystem, 256
- Demodulation subsystem, 275
- dual ARB subsystem, 304
- wideband CDMA ARB subsystem, 364
- setting, 300
- shifting points, 300
- mass memory subsystem keys
 - Binary, 122
 - Copy File, 122
 - Delete All NVWFM Files, 123
 - Delete All WFM Files, 123
 - Delete All WFM1 Files, 123
 - Delete File, 124
 - List, 122
 - Load From Selected File, 125
 - Rename File, 125
 - State, 122
 - Store To File, 125
 - User Flatness, 122
- Max Input softkey, 962
- Max Power field, 1000
- Max Pwr field, 1018, 1034
- MCDMA softkey, 97
- MDMOD softkey, 97
- MDWCDMA softkey, 98
- Measurement Mode BER% Search softkey, 446
- Measurement Mode BLER% Search softkey, 432
- memory subsystem, 105, 107, 108
- memory subsystem keys, 111, 113
 - Add Comment To Seq[n] Reg[nn], 121
 - All, 102, 120
 - Binary, 92
 - Bit, 92
 - CDMA, 93
 - Copy File, 103, 112
 - Data PRAM, 110
 - Delete All ARB CDMA Files, 116
 - Delete All ARB DMOD Files, 116
 - Delete All ARB DWCDMA Files, 116
 - Delete All ARB FCDMA Files, 117
 - Delete All ARB MCDMA Files, 118
 - Delete All ARB MDWCDMA Files, 118
 - Delete All ARB MTONE Files, 118
 - Delete All ARB RCDMA Files, 119
 - Delete All ARB UWCDMA Files, 120
 - Delete All Binary Files, 116
 - Delete All Bit Files, 116
 - Delete All Files, 115
 - Delete All FIR Files, 117
 - Delete All FSK Files, 117
 - Delete All I/Q Files, 117
 - Delete All List Files, 117
 - Delete All MDMOD Files, 118
 - Delete All MFCDMA Files, 118
 - Delete All SEQ Files, 119
 - Delete All SHAPE Files, 119
 - Delete All State Files, 119
 - Delete All UFLT Files, 119
 - Delete File, 120
 - DMOD, 93
 - DWCDMA, 94
 - FCDMA, 94
 - FIR, 95
 - FSK, 95
 - I/Q, 96
 - List, 96
 - Load From Selected File, 120
 - MCDMA, 97
 - MDMOD, 97
 - MDWCDMA, 98
 - MFCDMA, 98
 - MTONE, 99
 - Oversample Ratio, 106
 - RCDMA, 99
 - Rename File, 121
 - SEQ, 100
 - SHAPE, 100
 - State, 101
 - Store To File, 121
 - User Flatness, 101
 - UWCDMA, 102
- Message Data Raw Data (RPS11) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
- Message Part field, 1017
- Message Pulse (RPS22) softkey
 - See* wideband CDMA base band generator subsystem keys and fields

Index

- Message Type field, 498
 - Message-Control Raw Data Clock (RPS12) softkey
 - See wideband CDMA base band generator
 - subsystem keys and fields
 - Meter Address softkeys, 75
 - Meter Channel A B softkey, 75
 - Meter Timeout softkey, 76
 - MFCDMA softkey, 98
 - Min Power field, 1000
 - Mod Index softkey, 467
 - Mod On/Off hardkey, 127
 - Modulator Atten Manual Auto softkey, 32, 33, 205, 219, 243, 244, 272, 296, 297, 325, 342, 468, 469
 - Msg Ctrl softkey, 1005
 - Msg Data softkey, 1005
 - Msg Pwr field, 1016, 1033
 - MSK softkey
 - See custom subsystem keys
 - See DECT subsystem keys
 - See Dmodulation subsystem keys
 - See EDGE subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See TETRA subsystem keys
 - MTONE softkey, 99
 - multicarrier, 344
 - Multicarrier Off On softkey, 226, 245, 280
 - Multicarrier softkey, 344
 - Multislot Off On softkey, 642, 691
 - Multitone Off On softkey, 335
 - multitone subsystem keys
 - 2.100 MHz, 326
 - 40.000 MHz, 324, 326
 - ARB Reference Ext Int, 330
 - ARB Sample Clock, 332
 - Clear Header, 323
 - Freq Spacing, 333
 - Goto Row, 331
 - I/Q Mod Filter Manual Auto, 326
 - I/Q Output Filter Manual Auto, 324
 - Initialize Phase Fixed Random, 334
 - Load From Selected File, 332
 - Marker 1, 326, 327, 328
 - Marker 2, 326, 327, 328
 - Marker 3, 326, 327, 328
 - Marker 4, 326, 327, 328
 - Modulator Atten Manual Auto, 325
 - Multitone Off On, 335
 - None, 326, 327, 328
 - Number Of Tones, 333, 334
 - Random Seed Fixed Random, 335
 - Reference Freq, 330
 - Save Setup To Header, 323
 - Store To File, 332
 - Through, 324, 326
 - Toggle State, 331, 333
 - mV softkey, 168
 - mVemf softkey, 168
- ## N
- N Power field, 976, 1006
 - N5102A, 376
 - See digital subsystem
 - N5102A Off On softkey, 391
 - NADC Off On softkey, 805
 - NADC softkey, 280, 281, 282
 - NADC subsystem keys
 - 128QAM, 788
 - 16 1's & 16 0's, 782, 791, 793, 795, 796
 - 16PSK, 788
 - 16QAM, 788
 - 256QAM, 788
 - 2-Lvl FSK, 788
 - 32 1's & 32 0's, 782, 791, 793, 795, 796
 - 32QAM, 788
 - 4 1's & 4 0's, 782, 791, 793, 795, 796
 - 4-Lvl FSK, 788
 - 4QAM, 788
 - 64 1's & 64 0's, 782, 791, 793, 795, 796
 - 64QAM, 788
 - 8 1's & 8 0's, 782, 791, 793, 795, 796
 - 8PSK, 788
 - All Timeslots, 798
 - APCO 25 C4FM, 785
 - BBG Data Clock Ext Int, 772
 - BBG Ref Ext Int, 784
 - Begin Frame, 798
 - Begin Timeslot #, 798, 799

- Bit Rate, 773
- BPSK, 788
- Bus, 790, 802
- CDL, 792
- CDVCC, 792, 795
- Continuous, 800
- D8PSK, 788
- Data Format Pattern Framed, 780
- Down Custom, 797
- Down TCH, 797
- Down TCH All, 797
- Ext, 782, 790, 791, 793, 795, 796, 802
- Ext BBG Ref Freq, 785
- Ext Data Clock Normal Symbol, 784
- Ext Delay Bits, 803
- Ext Delay Off On, 804
- Ext Polarity Neg Pos, 804
- Fall Delay, 775, 776
- Fall Time, 776, 777
- Filter Alpha, 772
- Filter BbT, 773
- FIX4, 782, 783, 791, 793, 794, 795, 796, 797
- Frame Repeat Single Cont, 789
- Free Run, 801
- Freq Dev, 787
- Gate Active Low High, 802
- Gated, 800
- Gaussian, 785
- Gray Coded QPSK, 788
- I/Q Scaling, 786
- IS-95, 785
- IS-95 Mod, 785
- IS-95 Mod w/EQ, 785
- IS-95 OQPSK, 788
- IS-95 QPSK, 788
- IS-95 w/EQ, 785
- MSK, 788
- NADC Off On, 805
- Nyquist, 785
- Optimize FIR For EVM ACP, 781
- OQPSK, 788
- $\pi/4$ DQPSK, 788
- Patt Trig In 1, 804
- Patt Trig In 2, 804
- Phase Dev, 787
- PN11, 782, 791, 793, 795, 796
- PN15, 782, 791, 793, 795, 796
- PN20, 782, 791, 793, 795, 796
- PN23, 782, 791, 793, 795, 796
- PN9, 782, 791, 793, 795, 796
- PN9 Mode Normal Quick, 774
- Polarity Normal Invert, 789
- QPSK, 788
- Rate Full Half, 786
- Recall Secondary Frame State, 789
- Rectangle, 785
- Reset & Run, 801
- Restore NADC Factory Default, 783
- Rise Delay, 778
- Rise Time, 779, 780
- Root Nyquist, 785
- SACCH, 792, 796
- Save Secondary Frame State, 790
- Secondary Frame Off On, 790
- Sine, 775, 781
- Single, 800
- Symbol Rate, 799
- SYNC, 793, 796
- Sync Out Offset, 798
- Timeslot Ampl Main Delta, 794
- Timeslot Off On, 794
- Trigger & Run, 801
- Trigger Key, 790, 802
- UN3/4 GSM Gaussian, 785
- Up Custom, 797
- Up TCH, 797
- Up TCH All, 797
- User File, 775, 781, 782, 791, 793, 795, 796
- User FIR, 785
- User FSK, 787, 788
- User I/Q, 788
- nadc subsystem keys
 - PRAM Files, 782
- Name and Store softkey, 311
- Negate I softkey, 382
- Negate Q softkey, 385
- Network ID field, 498
- No Limits softkey
 - See* calculate subsystem keys
- No Thresholds softkey

Index

See sense subsystem keys
Noise Bandwidth Factor softkey, 306
Noise Off On softkey, 502, 514
Noise Seed Fixed Random softkey, 212
Noise Seed softkey, 465
Noise softkey, 173, 180, 187, 193
NONE (RPS0) softkey
 See wideband CDMA base band generator
 subsystem keys and fields
NONE softkey, 1063
None softkey, 159, 207, 208, 220, 221, 222, 255,
 256, 274, 275, 303, 304, 326, 327, 328, 363,
 364, 470, 471, 563, 966, 968, 1068, 1076
Normal All softkey, 652, 700
Normal softkey, 513, 652, 700, 924
Num of Blk field, 1069, 1077
Num of Pre field, 1017, 1034
Number of AICH field, 1002
Number of PRACH 80ms field, 1017
Number of PRACH field, 1031, 1033
Number of Preamble field, 1034
Number Of Tones softkey, 333, 334
numeric boolean response data, 11
Numeric Format, 383
Numeric Format softkey, 383
numeric SCPI parameter, 8
numeric, extended SCPI parameter, 8
Nyquist softkey
 See CDMA ARB subsystem keys
 See CDMA2000 ARB subsystem keys
 See CDMA2000 BBG subsystem keys and fields
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys
 See EDGE subsystem keys
 See GPS subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 See wideband CDMA ARB subsystem keys
 See wideband CDMA base band generator
 subsystem keys and fields

0

OCNS softkey, 353
octal values, 18
Off softkey, 24, 34, 41, 48, 65, 225, 259, 279, 309,
 1030
Omitted softkey, 958, 1057
On softkey, 225, 259, 279, 309, 1030
On/Off field, 940, 1022
OpenLoop Ant1 SCH TSTD OFF softkey, 963
OpenLoop Ant1 softkey, 963
OpenLoop Ant2 SCH TSTD OFF softkey, 963
OpenLoop Ant2 softkey, 963
Optimize ACP ADJ ALT softkey, 343, 358
Optimize FIR For EVM ACP softkey, 997
 See CDMA ARB subsystem keys
 See CDMA2000 ARB subsystem keys
 See CDMA2000 BBG subsystem keys and fields
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys
 See EDGE subsystem keys
 See GPS subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 See wideband CDMA ARB subsystem keys
 See wideband CDMA base band generator
 subsystem keys and fields
options
 001/002
 all subsystem, 202, 458
 custom subsystem, 544
 Dmodulation subsystem, 268
 dual ARB subsystem, 292
 multitone subsystem, 323
 400
 wideband CDMA ARB subsystem, 336
 wideband CDMA base band generator
 subsystem, 918
 401
 CDMA ARB subsystem, 213
 CDMA2000 ARB subsystem, 238
 CDMA2000 BBG subsystem, 475

- 402
 DECT subsystem, [569](#)
 EDGE subsystem, [618](#)
 GSM subsystem, [671](#)
 NADC subsystem, [772](#)
 PDC subsystem, [806](#)
 PHS subsystem, [839](#)
 TETRA subsystem, [875](#)
- 403
 AWGN real-time subsystem, [459](#)
 AWGN subsystem, [203](#)
- 406
 bluetooth subsystem, [460](#)
- 409
 GPS subsystem, [664](#)
- UN7/300
 calculate subsystem, [394](#)
 data subsystem, [404](#)
 input subsystem, [412](#), [418](#)
 sense subsystem, [421](#)
- Options Info softkey, [81](#)
- OQPSK softkey
See custom subsystem keys
See DECT subsystem keys
See Dmodulation subsystem keys
See EDGE subsystem keys
See GSM subsystem keys
See NADC subsystem keys
See PDC subsystem keys
See PHS subsystem keys
See TETRA subsystem keys
- Output Blanking Off On Auto softkey, [126](#)
- output subsystem keys
 Mod On/Off, [127](#)
 Output Blanking Off On Auto, [126](#)
 RF On/Off, [127](#)
- Oversample Ratio softkey, [106](#), [224](#)
- Overwrite softkey, [159](#)
- P**
- P Code Pwr softkey, [668](#)
- P Rev field, [499](#)
- P Rev Min field, [497](#)
- P softkey, [587](#)
- $\pi/4$ DQPSK softkey
See custom subsystem keys
See DECT subsystem keys
See Dmodulation subsystem keys
See EDGE subsystem keys
See GSM subsystem keys
See NADC subsystem keys
See PDC subsystem keys
See PHS subsystem keys
See TETRA subsystem keys
- Packet (DH1) softkey, [472](#)
- Paging Indicator field, [506](#), [944](#)
- Paging softkey, [227](#)
- parameter types. *See* SCPI commands parameter types
- Pass Amplitude softkey, [426](#), [430](#)
See sense subsystem keys
- Pass Through Preset softkey, [391](#)
- Pass/Fail Limits softkey, [402](#)
- Pass/Fail Off On softkey, [402](#)
- paths, SCPI command tree, [7](#)
- Patt Trig In 1 softkey
See CDMA ARB subsystem keys
See CDMA2000 ARB subsystem keys
See custom subsystem keys
See DECT subsystem keys
See Dmodulation subsystem keys
See dual ARB subsystem keys
See EDGE subsystem keys
See GSM subsystem keys
See NADC subsystem keys
See PDC subsystem keys
See PHS subsystem keys
See TETRA subsystem keys
See wideband CDMA ARB subsystem keys
 subsystem keys
- Patt Trig In 2 softkey
See CDMA ARB subsystem keys
See CDMA2000 ARB subsystem keys
See custom subsystem keys
See DECT subsystem keys
See Dmodulation subsystem keys
See dual ARB subsystem keys
See EDGE subsystem keys
See GSM subsystem keys
See NADC subsystem keys

Index

- See* PDC subsystem keys
- See* PHS subsystem keys
- See* TETRA subsystem keys
- See* wideband CDMA ARB subsystem keys
 - subsystem keys
- Pattern trigger in 1 field, 1045
- Pattern trigger in 2 field, 1045
- PCCPCH + SCH + 3 DPCH softkey, 344, 349
- PCCPCH + SCH +1 DPCH softkey, 344, 349
- PCCPCH + SCH softkey, 344, 349
- P-CCPCH data (DRPS39) softkey, 948, 950, 951, 952, 953
- P-CCPCH data-clk (DRPS38) softkey, 948, 950, 951, 952, 953
- PCCPCH softkey, 920, 921
- PDC Off On softkey, 838
- PDC softkey, 280, 281, 282
- PDC subsystem keys
 - 128QAM, 821
 - 16 1's & 16 0's, 815, 824, 825, 827, 829
 - 16PSK, 821
 - 16QAM, 821
 - 256QAM, 821
 - 2-Lvl FSK, 821
 - 32 1's & 32 0's, 815, 824, 825, 827, 829
 - 32QAM, 821
 - 4 1's & 4 0's, 815, 824, 825, 827, 829
 - 4-Lvl FSK, 821
 - 4QAM, 821
 - 64 1's & 64 0's, 815, 824, 825, 827, 829
 - 64QAM, 821
 - 8 1's & 8 0's, 815, 824, 825, 827, 829
 - 8PSK, 821
 - All Timeslots, 831
 - APCO 25 C4FM, 818
 - BBG Ref Ext Int, 817
 - Begin Frame, 831
 - Begin Timeslot #, 831, 832
 - Bit Rate, 807
 - BPSK, 821
 - Bus, 823, 835
 - CC, 824, 828, 830
 - Continuous, 834
 - D8PSK, 821
 - Data Format Pattern Framed, 814
 - Down Custom, 831
 - Down TCH, 831
 - Down TCH All, 831
 - Ext, 815, 823, 824, 825, 827, 829, 835
 - Ext BBG Ref Freq, 818
 - Ext Data Clock Ext Int, 806
 - Ext Data Clock Normal Symbol, 817
 - Ext Delay Bits, 836
 - Ext Delay Off On, 837
 - Ext Polarity Neg Pos, 837
 - Fall Delay, 809, 810
 - Fall Time, 809, 811
 - Filter Alpha, 806
 - Filter BbT, 807
 - FIX4, 815, 816, 824, 825, 826, 827, 829
 - Free Run, 834
 - Freq Dev, 820
 - Gate Active Low High, 835
 - Gated, 834
 - Gaussian, 818
 - Gray Coded QPSK, 821
 - I/Q Scaling, 819
 - IS-95, 818
 - IS-95 Mod, 818
 - IS-95 Mod w/EQ, 818
 - IS-95 OQPSK, 821
 - IS-95 QPSK, 821
 - IS-95 w/EQ, 818
 - MSK, 821
 - Nyquist, 818
 - Optimize FIR For EVM ACP, 815
 - OQPSK, 821
 - $\pi/4$ DQPSK, 821
 - Patt Trig In 1, 838
 - Patt Trig In 2, 838
 - PDC Off On, 838
 - Phase Dev, 820
 - Phase Polarity Normal Invert, 822
 - PN11, 815, 825, 827, 829
 - PN15, 815, 824, 825, 827, 829
 - PN20, 815, 825, 827, 829
 - PN23, 815, 825, 827, 829
 - PN9, 815, 824, 825, 827, 829
 - PN9 Mode Normal Quick, 808
 - QPSK, 821

- Rate Full Half, 819
- Recall Secondary Frame State, 822
- Rectangle, 818
- Reset & Run, 834
- Restore PDC Factory Default, 816
- Rise Delay, 811, 812
- Rise Time, 813
- Root Nyquist, 818
- SACCH, 825, 828, 830
- Save Secondary Frame State, 822
- Secondary Frame Off On, 823
- Sine, 814
- Single, 834
- SW, 825, 828, 830
- Symbol Rate, 832
- Sync Out Offset, 831
- Timeslot Ampl Main Delta, 826
- Timeslot Off On, 827
- Trigger & Run, 834
- Trigger Key, 823, 835
- UN3/4 GSM Gaussian, 818
- Up Custom, 831
- Up TCH, 831
- Up TCH All, 831
- Up VOX, 831
- User File, 814, 815, 824, 825, 827, 829
- User FIR, 818
- User FSK, 821
- User I/Q, 821
- pdcc subsystem keys
 - PRAM Files, 816
- Performance Req softkey, 962
- Permuted ESN field, 482, 492
- Phase Dev softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- phase modulation subsystem keys
 - ΦM Sweep Time softkey, 193
 - FM ΦM Normal High BW softkey, 190
 - ΦM Dev Couple Off On, 195
 - ΦM Dev softkey, 195
 - ΦM Off On softkey, 194
 - ΦM Path 1 2, 189
 - ΦM Tone 2 Ampl Percent of Peak, 192
 - ΦM Tone 2 Rate, 192
 - Bus, 193
 - Dual-Sine, 193
 - Ext, 193
 - Ext Coupling DC AC, 191
 - Ext1, 194
 - Ext2, 194
 - Free Run, 193
 - Incr Set, 190, 196
 - Internal 1, 194
 - Internal 2, 194
 - Noise, 193
 - Ramp, 193
 - Sine, 193
 - Square, 193
 - Swept-Sine, 193
 - Triangle, 193
 - Trigger Key, 193
- Phase Polarity field, 505
- Phase Polarity Normal Invert softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
- Phase Polarity Normal Inverted softkey, 972
- Phase Ref Set softkey, 46
- PHS Off On softkey, 874
- PHS softkey, 280, 281, 282
- PHS subsystem keys
 - 128QAM, 860
 - 16 1's & 16 0's, 849, 851, 854, 869, 873
 - 16-Lvl FSK, 860
 - 16PSK, 860
 - 16QAM, 860
 - 256QAM, 860

Index

2-Lvl FSK, 860
32 1's & 32 0's, 849, 851, 854, 869, 873
32QAM, 860
4 1's & 4 0's, 849, 851, 854, 869, 873
4-Lvl FSK, 860
4QAM, 860
64 1's & 64 0's, 849, 851, 854, 869, 873
64QAM, 860
8 1's & 8 0's, 849, 851, 854, 869, 873
8-Lvl FSK, 860
8PSK, 860
All Timeslots, 862
APCO 25 C4FM, 857
BBG Data Clock Ext Int, 839
BBG Ref Ext Int, 856
Begin Frame, 862
Begin Timeslot #, 862, 863
Bit Rate, 840
BPSK, 860
Bus, 861, 868
C4FM, 860
Continuous, 864
CSID, 852, 870
Custom, 855
D8PSK, 860
Data Format Pattern Framed, 848
Ext, 849, 851, 854, 861, 868, 869, 873
Ext BBG Ref Freq, 856
Ext Data Clock Normal Symbol, 855
Ext Delay Bits, 866
Ext Delay Off On, 867
Ext Polarity Neg Pos, 867
Fall Delay, 843, 844
Fall Time, 843, 845
Filter Alpha, 839
Filter BbT, 840
FIX4, 849, 850, 851, 854, 869, 870, 873
Free Run, 865
Gate Active Low High, 866
Gated, 864
Gaussian, 857
Gray Coded QPSK, 860
I/Q Scaling, 858
IDLE, 852, 871
IS-95, 857
IS-95 Mod, 857
IS-95 Mod w/EQ, 857
IS-95 OQPSK, 860
IS-95 QPSK, 860
IS-95 w/EQ, 857
MSK, 860
Nyquist, 857
Optimize FIR For EVM ACP, 849
OQPSK, 860
 $\pi/4$ DQPSK, 860
Patt Trig In 1, 867
Patt Trig In 2, 867
Phase Dev, 858, 859
Phase Polarity Normal Invert, 860
PHS Off On, 874
PN11, 849, 851, 854, 869, 873
PN15, 849, 851, 854, 869, 873
PN20, 849, 851, 854, 869, 873
PN23, 849, 851, 854, 869, 873
PN9, 849, 851, 854, 869, 873
PN9 Mode Normal Quick, 841
PSID, 852, 871
QPSK, 860
Recall Secondary Frame State, 860
Rectangle, 857
Reset & Run, 865
Restore PHS Factory Default, 850
Rise Delay, 845, 846
Rise Time, 847
Root Nyquist, 857
SA, 853, 872
Save Secondary Frame State, 861
Scramble Off On, 842
Scramble Seed, 842
Secondary Frame Off On, 861
Sine, 848
Single, 864
Symbol Rate, 863
SYNC, 855
Sync Out Offset, 862
TCH, 855
TCH All, 855
Timeslot Ampl Main Delta, 851, 870
Timeslot Off On, 853, 872
Timeslot Type, 873

- Trigger & Run, 865
- Trigger Key, 861, 868
- UN3/4 GSM Gaussian, 857
- User File, 848, 849, 851, 854, 869, 873
- User FIR, 857
- User FSK, 859, 860
- User I/Q, 859, 860
- UW, 853, 854, 871, 872
- phs subsystem keys
 - PRAM Files, 850
- PI Bits field, 944
- PICH 10ms FramePulse (DRPS37) softkey, 948, 950, 951, 952, 953
- PICH data (DRPS35) softkey, 948, 950, 951, 952, 953
- PICH data-clk (DRPS34) softkey, 948, 950, 951, 952, 953
- PICH softkey, 353, 920, 921
- PICH TimeSlot Pulse (DRPS36) softkey, 948, 950, 951, 952, 953
- Pilot softkey, 226, 227, 229, 245, 252
- Playback Ratio field, 924
- PN Offset field, 508
- PN Offset softkey, 250, 253
- PN11 softkey
 - See custom subsystem keys
 - See DECT subsystem keys
 - See EDGE subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See sense subsystem keys
 - See TETRA subsystem keys
- PN15 softkey
 - See CDMA2000 BBG subsystem keys and fields
 - See custom subsystem keys
 - See DECT subsystem keys
 - See EDGE subsystem keys
 - See GPS subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See sense subsystem keys
- See TETRA subsystem keys
- See wideband CDMA base band generator
 - subsystem keys and fields
- PN20 softkey
 - See custom subsystem keys
 - See DECT subsystem keys
 - See EDGE subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See sense subsystem keys
 - See TETRA subsystem keys
- PN23 softkey
 - See custom subsystem keys
 - See DECT subsystem keys
 - See EDGE subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See sense subsystem keys
 - See TETRA subsystem keys
- PN9 Mode Normal Quick softkey
 - See DECT subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See TETRA subsystem keys
- PN9 Mode Preset softkey, 157
- PN9 softkey
 - See CDMA2000 BBG subsystem keys and fields
 - See custom subsystem keys
 - See data subsystem keys
 - See DECT subsystem keys
 - See EDGE subsystem keys
 - See GPS subsystem keys
 - See GSM subsystem keys
 - See NADC subsystem keys
 - See PDC subsystem keys
 - See PHS subsystem keys
 - See sense subsystem keys
 - See TETRA subsystem keys

Index

- See* wideband CDMA base band generator
 - subsystem keys and fields
- polarity
 - awgn subsystem, 210
 - markers
 - cdma arb subsystem, 224
 - cdma2000 arb subsystem, 258
 - dmodulation subsystem, 278
 - dual ARB subsystem, 306, 471
 - multitone subsystem, 330
 - wideband CDMA ARB subsystem, 366
 - polarity markers
 - awgn subsystem, 210
- Polarity Normal Invert softkey, 789
- Port Config softkey, 390
- Power Control Signal Polarity Neg Pos softkey, 1002
- Power field
 - See* CDMA2000 BBG subsystem keys and fields
 - See* wideband CDMA baseband generator
 - subsystem keys and fields
- Power Hold Off On softkey, 999
- Power Meter softkey, 76
- Power Mode Norm TPC softkey, 1002
- Power On Last Preset softkey, 155
- Power Search Manual Auto softkey, 59, 60, 61
- Power softkey, 360
- power subsystem keys
 - ALC Off On, 61
 - Alt Amp Delta, 62
 - Alt Ampl Off On, 63
 - Ampl, 48, 65
 - Ampl Offset, 67
 - Ampl Ref Off On, 66
 - Ampl Ref Set, 65
 - Ampl Start, 48, 66
 - Ampl Stop, 48, 67
 - Amplitude, 65, 68
 - Atten Hold Off On, 64
 - Auto, 57, 58
 - Do Power Search, 59, 60, 61
 - Ext Detector, 62
 - Internal, 62
 - Off, 48, 65
 - Power Search Manual Auto, 59, 60, 61
 - Set ALC Level, 59
 - Set Atten, 64
 - Source Module, 62
 - step, 68
 - PPCCPCH softkey, 353, 354
 - Pp-m field, 1019, 1036
 - PRACH Mode Single Multi softkey, 1016
 - PRACH Power Setup Mode Pp-m Total softkey, 1023
 - PRACH Processing (RPS19) softkey
 - See* wideband CDMA base band generator
 - subsystem keys and fields
 - PRACH Scrambling Code field, 1024
 - PRACH softkey, 998
 - PRACH Trigger Polarity Neg Pos softkey, 1029
 - PRACH Trigger softkey, 1028
 - PRACH Trigger Source Immedi Trigger softkey, 1029
- PRAM
 - downloads, 110
 - list, 111
- PRAM DATA BLOCK, 112
- pram files
 - CUSTOM subsystem keys, 554
 - DECTsubsystem keys, 579
 - EDGE subsystem keys, 627
 - GSM subsystem keys, 681
 - NADC subsystem keys, 782
 - PDC subsystem keys, 816
 - PHS subsystem keys, 850
 - TETRA subsystem keys, 886
- PRAM LIST, 112
- PRAM?, 112
- PRAT field, 499
- Pre Sig field, 1020
- Preamble power average field, 1022
- Preamble Pulse (RPS21) softkey
 - See* wideband CDMA base band generator
 - subsystem keys and fields
- Preamble Raw Data (RPS15) softkey
 - See* wideband CDMA base band generator
 - subsystem keys and fields
- Preamble Raw Data Clock (RPS16) softkey
 - See* wideband CDMA base band generator
 - subsystem keys and fields

Preamble softkey, [1005](#)
 precise talking and forgiving listening, [7](#)
 Preset hardkey, [156](#)
 Preset List softkey, [21](#), [55](#)
 Preset Normal User softkey, [157](#)
 PSCH softkey, [353](#)
 PSCH State field, [946](#)
 PSID softkey, [852](#), [871](#)
 pulse modulation subsystem keys
 Ext Pulse, [200](#)
 Int Doublet, [200](#)
 Int Free-Run, [200](#)
 Int Gated, [200](#)
 Int Triggered, [200](#)
 Internal Square, [200](#)
 Pulse Off On, [200](#)
 Pulse Period, [198](#)
 Pulse Rate, [197](#)
 Pulse Width, [199](#)
 Pulse softkeys
 Pulse Off On, [200](#)
 Pulse Period, [198](#)
 Pulse Rate, [197](#)
 Pulse Width, [199](#)
 Pulse/RF blanking, [304](#)
 pulse/RF blanking markers
 awgn subsystem, [208](#)
 cdma arb subsystem, [222](#)
 cdma2000 arb, [256](#)
 dmodulation, [275](#)
 dual ARB subsystem, [304](#)
 wideband cdma arb, [364](#)
 Puncture fields, [1069](#), [1077](#)
 Puncture softkey, [956](#)
 PwrOffs field, [955](#), [1054](#)
 PWT softkey, [280](#), [281](#), [282](#)

Q

Q Gain softkey, [384](#)
 Q Offset softkey, [29](#), [386](#)
 QOF field, [483](#), [493](#)
 QPSK softkey
 See custom subsystem keys
 See DECT subsystem keys
 See Dmodulation subsystem keys

See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys
 See PHS subsystem keys
 See TETRA subsystem keys
 Quadrature Skew softkey, [29](#)
 Quarter softkey, [525](#), [530](#)
 quotes, SCPI command use of, [17](#)

R

RACH TrCH softkey, [1005](#)
 Radio Config field
 See CDMA2000 BBG subsystem keys and fields
 Radio Config softkey, [251](#)
 RadioConfig 1/2 Access softkey, [475](#)
 RadioConfig 1/2 Traffic softkey, [475](#)
 RadioConfig 3/4 Common Control softkey, [475](#)
 RadioConfig 3/4 Enhanced Access softkey, [475](#)
 RadioConfig 3/4 Traffic softkey, [475](#)
 Ramp field, [483](#)
 Ramp softkey, [173](#), [180](#), [187](#), [193](#)
 Ramp Step field, [1019](#), [1035](#)
 Ramp Time field, [483](#)
 Random Seed Fixed Random softkey, [335](#)
 Random softkey, [352](#), [360](#)
 Ranging Code C/A P C/A+P softkey, [668](#)
 Rate Full Half softkey, [786](#), [819](#)
 Rate Match Attr field, [971](#), [1069](#), [1077](#)
 Rate softkey, [250](#), [253](#)
 RCDMA softkey, [99](#)
 real response data, [10](#)
 Real-time AWGN Off On softkey, [459](#)
 real-time AWGN subsystem keys
 Bandwidth, [459](#)
 Real-time AWGN Off On, [459](#)
 Real-time GPS Off On softkey, [670](#)
 Real-time Noise softkey, [308](#)
 RECALL Reg softkey, [88](#)
 Recall Secondary Frame State softkey
 See DECT subsystem keys
 See EDGE subsystem keys
 See GSM subsystem keys
 See NADC subsystem keys
 See PDC subsystem keys

Index

- See* PHS subsystem keys
 - See* TETRA subsystem keys
 - Rectangle softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
 - Ref Data Rate field, [974](#), [1004](#)
 - Ref Oscillator Source Auto Off On softkey, [46](#)
 - Ref Sensitivity softkey, [962](#)
 - Reference Freq softkey, [473](#)
 - See* AWGN subsystem keys
 - See* bluetooth subsystem keys
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* multitone subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - Reference Frequency softkey, [378](#)
 - Reference Out softkey, [409](#)
 - Rename File, [121](#)
 - Rename File softkey, [125](#)
 - Reserved field, [499](#)
 - Reset & Run softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
- Reset RS-232 softkey, [77](#)
 - Reset to Initial Power softkey, [1001](#)
 - Resolution softkey, [414](#)
 - resolving error messages/setting conflicts, [712](#)
 - response data types. *See* SCPI commands response types
 - Restore DECT Factory Default softkey, [579](#)
 - Restore EDGE Factory Default softkey, [628](#)
 - Restore Factory Default softkey, [681](#)
 - Restore NADC Factory Default softkey, [783](#)
 - Restore PDC Factory Default softkey, [816](#)
 - Restore PHS Factory Default softkey, [850](#)
 - Restore Sys Defaults softkey, [157](#)
 - Restore TETRA Factory Default softkey, [887](#)
 - Resync Limits softkey, [452](#)
 - Retrigger Mode Off On softkey, [367](#)
 - Reverse softkey, [226](#)
 - Revert to Default Cal Settings softkey, [71](#)
 - rf blanking, [304](#)
 - RF blanking/pulse markers
 - awgn subsystem, [208](#)
 - cdma arb subsystem, [222](#)
 - cdma2000 arb subsystem, [256](#)
 - dmodulation subsystem, [275](#)
 - dual ARB subsystem, [304](#)
 - wideband cdma arb subsystem, [364](#)
 - RF On/Off hardkey, [127](#)
 - Right Alternate softkey, [352](#)
 - Right softkey, [924](#)
 - Rise Delay softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - Rise Time softkey
 - See* custom subsystem keys

- See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - Rising softkey, [543](#)
 - RMC 144 kbps (25.141) softkey, [1037](#)
 - RMC 384 kbps (25.141) softkey, [1037](#)
 - RMC 64 kbps (25.141) softkey, [1037](#)
 - RMC122 kbps (25.141) softkey, [1037](#)
 - RMS header info, [293](#)
 - Root Nyquist softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
 - rotate markers, [300](#)
 - Rotation softkey, [386](#)
 - route subsystem keys
 - Burst Gate In Polarity Neg Pos, [128](#), [129](#)
 - Data Clock Out Neg Pos, [131](#)
 - Data Clock Polarity Neg Pos, [128](#), [130](#), [132](#)
 - Data Out Polarity Neg Pos, [131](#), [133](#)
 - Data Polarity Neg Pos, [129](#), [130](#)
 - DATA/CLK/SYNC Rear Outputs Off On, [133](#)
 - Symbol Sync Out Polarity Neg Pos, [132](#), [133](#)
 - Symbol Sync Polarity Neg Pos, [129](#), [130](#)
 - RS-232 Baud Rate softkey, [77](#)
 - RS-232 ECHO Off On softkeys, [77](#)
 - RS-232 Timeout softkeys, [78](#)
 - Run Complete Self Test softkey, [90](#)
 - runtime scaling, [310](#)
- ## S
- S softkey, [641](#), [698](#)
 - See* DECT subsystem keys
 - SA softkey, [853](#), [872](#)
 - SACCH softkey, [792](#), [796](#), [825](#), [828](#), [830](#)
 - Sanitize softkey, [159](#)
 - Satellite ID softkey, [670](#)
 - Save Reg softkey, [89](#)
 - Save Secondary Frame State softkey
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - Save Seq[n] Reg[nn] softkey, [89](#)
 - Save Setup To Header softkey, [204](#), [218](#), [243](#), [271](#), [295](#), [323](#), [340](#), [463](#)
 - Save User Preset softkey, [158](#)
 - Scale to 0dB softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
 - Scale Waveform Data softkey, [310](#)
 - scaling
 - during playback, [310](#)
 - waveform files, [310](#)
 - Scaling softkey, [310](#), [387](#)
 - SCCPCH softkey, [353](#), [354](#)
 - SCFN field, [960](#), [1059](#)
 - SCH slot-pulse (DRPS10) softkey, [948](#), [950](#), [951](#), [952](#), [953](#)
 - SCPI
 - errors, [153](#)
 - SCPI command subsystems
 - all, [458](#)
 - amplitude modulation, [170](#)
 - AWGN, [203](#)
 - AWGN real-time, [459](#)

Index

- bluetooth, 460
- calculate, 394
- calibration, 70
- CDMA ARB, 213
- CDMA2000 ARB, 238
- CDMA2000 BBG, 475
- communication, 73
- correction, 20
- custom, 544
- data, 404
- DECT, 569
- diagnostic, 79
- digital, 376
- digital modulation, 22
- display, 83
- Dmodulation, 268
- Dual ARB, 292
- E4438C, 202
- EDGE, 618
- frequency, 37
- frequency modulation, 177
- GPS subsystem, 664
- GSM, 671
- HSDPA over W-CDMA, 710
- IEEE 488.2 common commands, 86
- input, 412, 418
- list/sweep, 48
- low frequency output, 184
- mass memory, 122
- memory, 92
- multitone, 323
- N5102A, 376
- NADC, 772
- output, 126
- PDC, 806
- phase modulation, 189
- PHS, 839
- power, 57
- pulse modulation, 197
- route, 128
- sense, 421
- status, 134
- system, 152
- TETRA, 875
- trigger, 164
- unit, 168
- wideband CDMA ARB, 336
- wideband CDMA base band generator, 918
- SCPI commands
 - command tree paths, 7
 - parameter and response types, 7
 - parameter types
 - boolean, 10
 - discrete, 9
 - extended numeric, 8
 - numeric, 8
 - string, 10
 - response data types
 - discrete, 11
 - integer, 11
 - numeric boolean, 11
 - real, 10
 - string, 11
 - root command, 6
- SCPI softkey, 154, 156
- Scramble Code softkey, 352, 358, 360
- Scramble Off On softkey, 842, 878
- Scramble Offset softkey, 352, 360
- Scramble Seed softkey, 842, 878
- Scrambling Code field, 953, 954, 1051
- Screen Saver Delay
 - 1 hr softkey, 161
- Screen Saver Mode softkeys, 162
- Screen Saver Off On softkeys, 162
- Second DPDCH I Q softkey, 358
- Secondary Frame Off On softkey
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- secure wave directory, 114
- security functions
 - erase, 159
 - none, 159
 - overwrite, 159, 161
 - sanitize, 159, 161
 - secure display, 158

- secure mode, 160
- segment advance
 - trigger response, 316
- Segment Advance softkey, 313
- Select File softkey, 247, 280
- Select Seq softkey, 88
- Select Waveform softkey, 321
- sense subsystem keys
 - Adjust Gain, 433
 - Aux, 434, 450, 456
 - Aux I/O Trigger Polarity Pos Neg, 456
 - BER Mode Off On, 421, 425, 444
 - BERT Off On, 453
 - BERT Resync Off On, 453
 - Bit Count, 435, 437
 - Bit Delay Off On, 455
 - Block Count, 424, 426, 428, 440, 444
 - Block Erasure, 422, 427, 440, 441, 442, 444, 445
 - Bus, 434, 450, 456
 - Class Ib Bit Error, 447, 448
 - Class II Bit Error, 448
 - Cycle Count, 455
 - Delay Bits, 455
 - EDGE BERT Off On, 438
 - Error Count, 438, 453
 - Exceeds Any Thresholds, 448
 - Ext, 434, 450, 456
 - Ext Frame Trigger Delay, 423
 - External Frame Polarity Net Pos, 423
 - Frame Count, 443, 446
 - Frame Erasure, 448
 - Frame Trigger Source Int Ext, 424
 - GSM BERT Off On, 451
 - High Amplitude, 425, 429, 436
 - Immediate, 434, 450, 456
 - Initial Bit Count, 437
 - Initial Block Count, 427, 430
 - Initial Frame Count, 447
 - Low Amplitude, 426, 429, 436, 443
 - Measurement Mode BER% Search, 446
 - Measurement Mode BLER% Search, 432
 - No Thresholds, 422, 427, 442, 445, 448, 454
 - Pass Amplitude, 426, 430, 437
 - PN11, 452
 - PN15, 452
 - PN20, 452
 - PN23, 452
 - PN9, 452
 - Resync Limits, 452
 - Spcl Pattern 0's 1's, 451
 - Spcl Pattern Ignore Off On, 452
 - Spectrum Invert Off On, 433, 447
 - Stop Measurement, 431, 445
 - Sync Source BCH PDCH, 434
 - Sync Source BCH TCH, 450
 - Synchronize to BCH/PDCH, 433
 - Synchronize to BCH/TCH, 449
 - Target BER %, 425, 428
 - Timeslot, 432, 445
 - Total Bits, 454
 - Trigger Key, 434, 450, 456
 - Uplink Timing Advance, 435, 451
- SEQ softkey, 100
- sequence, creating, 311
- Set ALC Level softkey, 59
- Set Atten softkey, 64
- Set Marker Off All Points softkey, 299
- Set Marker Off Range Of Points softkey, 298
- Set Marker On Range Of Points softkey, 300
- setting conflicts, resolving, 712
- setting markers, 300
- setup sweep, 48
- SF/2 softkey, 1055
- SF2 softkey, 956
- SFN reset-signal (DRPS5) softkey, 948, 950, 951, 952, 953
- SFN RST Polarity softkey, 1052
- SFN-CFN Frame Offset softkey, 998
- SHAPE softkey, 100
- shift markers, 300
- Signal Type softkey, 388
- Signature field, 1036
- Sine softkey
 - See* amplitude modulation subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* frequency modulation subsystem keys
 - See* GSM subsystem keys
 - See* low frequency output subsystem keys
 - See* NADC subsystem keys

Index

- See* PDC subsystem keys
- See* phase modulation subsystem keys
- See* PHS subsystem keys
- See* TETRA subsystem keys
- single
 - segment advance, [316](#)
- Single softkey
 - dual ARB subsystem keys, [316](#)
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
- Single Sweep softkey, [165](#)
- skew, [30](#), [31](#)
- skew, I/Q
 - adjustment, [29](#)
- Slot Format field, [925](#), [932](#), [981](#), [992](#), [1009](#), [1015](#)
- softkey, [121](#)
- software options, [80](#)
- Source Module softkey, [62](#)
- Spcl Pattern 0's 1's softkey, [451](#)
- Spcl Pattern Ignore Off On softkey, [452](#)
- Spectrum Invert Off On softkey
 - See* sense subsystem keys
- Spread Rate 1 softkey, [245](#), [252](#), [260](#)
- Spread Rate 3, [252](#)
- Spread Rate 3 softkey, [245](#), [260](#)
- Spread Rate field, [507](#)
- Spreading Type Direct Mcarrier, [245](#)
- Spreading Type Direct Mcarrier softkey, [261](#)
- Spurious Response softkey, [962](#)
- Square softkey, [173](#), [180](#), [187](#), [193](#)
- square wave pulse rate
 - internally generated, [197](#)
- SR1 9 Channel softkey, [247](#)
- SR1 Pilot softkey, [247](#)
- SR3 Direct 9 Channel softkey, [247](#)
- SR3 Direct Pilot softkey, [247](#)
- SR3 Mcarrier 9 Channel softkey, [247](#)
- SR3 MCarrier Pilot softkey, [247](#)
- SS softkey, [690](#)
- SSB softkey, [897](#), [902](#)
- SSCH 2nd Scramble Group field, [954](#)
- SSCH Power field, [954](#)
- SSCH softkey, [353](#)
- SSCH State field, [955](#)
- Standard softkey, [352](#)
- Start Access Slot Position in 80ms Period field, [1021](#)
- Start Frequency softkey, [72](#)
- Start Sub-Channel# field, [1025](#)
- State field
 - See* CDMA2000 BBG subsystem keys and fields
- State softkey, [101](#), [122](#)
- STD softkey, [978](#)
- Step Dwell softkey, [55](#)
- Step Power field, [1001](#)
- Stop Frequency softkey, [72](#)
- Stop Measurement softkey
 - See* sense subsystem keys
- Store Custom CDMA State softkey, [230](#), [249](#), [252](#)
- Store Custom Dig Mod State softkey, [283](#)
- Store Custom Multicarrier softkey, [229](#), [247](#)
- Store Custom W-CDMA State softkey, [348](#), [351](#)
- Store To File softkey, [21](#), [121](#), [125](#), [332](#), [360](#)
- string response data, [11](#)
- string SCPI parameter, [10](#)
- strings, quote usage, [17](#)
- STS softkey, [898](#), [903](#)
- Sub Channel Timing (RPS17) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
- Subnet Mask softkey, [75](#)
- subsystems, SCPI commands
 - See* SCPI command subsystems
- Sum softkey, [24](#)
- Summing Ratio (SRC1/SRC2) x.xx dB softkey, [35](#)
- SW softkey, [825](#), [828](#), [830](#)
- Swap IQ softkey, [383](#)
- Sweep Direction Down Up softkey, [49](#)
- Sweep Repeat Single Cont softkey, [164](#)

Sweep Retrace Off On softkey, 53
sweep setup, 48
Sweep Type List Step softkey, 54
sweep/list subsystem keys
 Load From Selected File
 Store to File, 48
Swept-Sine softkey, 173, 180, 187, 193
Symbol Out Polarity Neg Pos softkey, 132
Symbol Rate field, 981, 990, 1014
Symbol Rate softkey, 284, 352, 360, 654, 1009
Symbol Sync Out Polarity Neg Pos softkey, 133
Symbol Sync Polarity Neg Pos softkey, 129, 130
Symbol Timing Err softkey, 468
Sync Out Offset softkey, 610, 653, 701, 798, 831, 862, 909
SYNC softkey, 793, 796, 855
Sync softkey, 227, 700
Sync Source BCH PDCH softkey, 434
Sync Source BCH TCH softkey, 450
Sync Source SFN FCk ESG softkey, 1053
Synchronize to BCH/PDCH softkey, 433
Synchronize to BCH/TCH softkey, 449
System ID field, 500
system subsystem keys
 8648A/B/C/D, 154, 156
 8656B,8657A/B, 154, 156
 8657D NADC, 154, 156
 8657D PDC, 154, 156
 8657J PHS, 154, 156
 Activate Secure Display, 158
 Enter Secure Mode, 160
 erase, 159
 Erase All, 159
 Erase and Overwrite All, 161
 Erase and Sanitize All, 161
 Error Info, 153
 Help Mode Single Cont, 154
 none, 159
 overwrite, 159
 PN9 Mode Preset, 157
 Power On Last Preset, 155
 Preset, 156
 Preset Normal User, 157
 Restore Sys Defaults, 157
 sanitize, 159

Save User Preset, 158
SCPI, 154, 156
Screen Saver Delay
 1 hr, 161
Screen Saver Mode, 162
Screen Saver Off On, 162
Time/Date, 152, 163
View Next Error Message, 153

T

T1 softkey, 650
T2 softkey, 651
Target BER % softkey
 See sense subsystem keys
TCH All softkey, 855
TCH softkey, 855
TCH/FS softkey, 637, 640, 692
tDPCH Offset field, 933
Test Model 1 w/16 DPCH softkey, 344, 349
Test Model 1 w/32 DPCH softkey, 344, 349
Test Model 1 w/64 DPCH softkey, 344, 349
Test Model 2 softkey, 344, 349
Test Model 3 w/16 DPCH softkey, 344, 349
Test Model 3 w/32 DPCH softkey, 344, 349
Test Model 4 softkey, 344, 349
Test Model 5 w/2HSPDSCH softkey, 344, 349
Test Model 5 w/4HSPDSCH softkey, 344, 349
Test Model 5 w/8HSPDSCH softkey, 344, 349
TETRA Off On softkey, 917
TETRA softkey, 280, 281, 282
TETRA subsystem keys
 128QAM, 892
 16 1's & 16 0's, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
 16PSK, 892
 16QAM, 892
 256QAM, 892
 2-Lvl FSK, 892
 32 1's & 32 0's, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
 32QAM, 892
 4 1's & 4 0's, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
 4-Lvl FSK, 892
 4QAM, 892

Index

- 64 1's & 64 0's, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
- 64QAM, 892
- 8 1's & 8 0's, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
- 8PSK, 892
- All Timeslots, 909
- APCO 25 C4FM, 889
- B, 897, 902
- B1, 895, 900
- B2, 895, 900
- BBG Data Clock Ext Int, 875
- BBG Ref Ext Int, 888
- Begin Frame, 909
- Begin Timeslot #, 909, 910
- Bit Rate, 876
- BPSK, 892
- Bus, 893, 914
- Continuous, 912
- D8PSK, 892
- Data Format Pattern Framed, 884
- Dn Custom Cont, 908
- Dn Normal Cont, 908
- Dn Normal Disc, 908
- Dn Sync Cont, 908
- Dn Sync Disc, 908
- Ext, 885, 893, 894, 896, 898, 899, 901, 903, 905, 906, 907, 914
- Ext BBG Ref Freq, 888
- Ext Data Clock Normal Symbol, 887
- Ext Delay Bits, 915
- Ext Delay Off On, 915
- Ext Polarity Neg Pos, 916
- Fall Delay, 878, 880
- Fall Time, 879, 880
- FCOR, 897, 902
- Filter Alpha, 875
- Filter BbT, 876
- FIX4, 885, 886, 894, 896, 898, 899, 901, 903, 905, 906, 907, 908
- Free Run, 912
- Freq Dev, 890
- Gate Active Low High, 913
- Gated, 912
- Gaussian, 889
- Gray Coded QPSK, 892
- I/Q Scaling, 890
- IS-95, 889
- IS-95 Mod, 889
- IS-95 Mod w/EQ, 889
- IS-95 OQPSK, 892
- IS-95 QPSK, 892
- IS-95 w/EQ, 889
- MSK, 892
- Nyquist, 889
- Optimize FIR For EVM ACP, 885
- OQPSK, 892
- $\pi/4$ DQPSK, 892
- Patt Trig In 1, 916
- Patt Trig In 2, 916
- Phase Dev, 891
- Phase Polarity Normal Invert, 892
- PN11, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
- PN15, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
- PN20, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
- PN23, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
- PN9, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
- PN9 Mode Normal Quick, 877
- QPSK, 892
- Recall Secondary Frame State, 893
- Rectangle, 889
- Reset & Run, 912
- Restore TETRA Factory Default, 887
- Rise Delay, 881, 882
- Rise Time, 882, 883
- Root Nyquist, 889
- Save Secondary Frame State, 893
- Scramble Off On, 878
- Scramble Seed, 878
- Secondary Frame Off On, 894
- Sine, 884
- Single, 912
- SSB, 897, 902
- STS, 898, 903
- Symbol Rate, 910

- Sync Out Offset, 909
- TETRA Off On, 917
- Timeslot Ampl Main Delta, 904
- Timeslot Off On, 904
- Trigger & Run, 912
- Trigger Key, 893, 914
- TS, 895, 900, 904, 905, 907
- UN3/4 GSM Gaussian, 889
- Up Control 1, 908
- Up Control 2, 908
- Up Custom, 908
- Up Normal, 908
- User File, 884, 885, 894, 896, 898, 899, 901, 903, 905, 906, 907
- User FIR, 889
- User FSK, 891, 892
- User I/Q, 891, 892
- tetra subsystem keys
 - PRAM Files, 886
- TFCI Field Off On softkey, 352, 357, 360, 362
- TFCI Pat field, 933
- TFCI Pattern field, 982, 1010
- TFCI State field, 983, 1011
- Tfirst field, 926
- TGCFN field, 956, 1054
- TGD field, 957, 1055
- Tgl field, 926
- TGL1 field, 957, 1056
- TGL2 field, 957, 1056, 1057
- TGPL1 field, 958, 1056
- TGPRC field, 1057
- TGPS Inactive Active softkey, 1058
- TGSN field, 959, 1058
- Through softkey, 31, 203, 206, 215, 220, 239, 244, 268, 273, 296, 297, 324, 326, 340, 342, 462, 469
- Time field, 500
- Time/Date softkey, 152, 163
- Timeslot Ampl Main Delta softkey
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- Timeslot Off On softkey
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
- Timeslot Offset softkey, 1025
- Timeslot softkey
 - See* sense subsystem keys
- Timeslot Type softkey, 873
- Timing Offset softkey, 1026, 1052, 1061
- tOCNS Offset field, 940
- Toggle Marker 1 2 3 4 softkey, 311
- Toggle State softkey, 331, 333
- Total Bits field, 1065
- Total Bits softkey, 454
- Total Block field, 1067
- TotalPwr field, 976, 1006
- TPC Pat Steps field, 983
- TPC Pat Trig Polarity Neg Pos softkey, 985
- TPC Pattern field, 985
- TPC Steps field, 934
- TPC UserFile Trig field, 986
- Tp-m field, 1027
- Tp-p field, 1028
- Traffic Bearer softkey, 585, 596
- Traffic Bearer with Z field softkey, 585, 596
- Traffic softkey, 227
- Transp Chan A softkey, 929
- Transp Chan B softkey, 929
- Transp Position Flexible Fixed softkey, 970
- Transport CH softkey, 941
- TrCH BER field, 991
- TrCh BlkSize 168 softkey, 1024
- TrCh BlkSize 360 softkey, 1024
- TrCH State Off On softkey, 1078
- TrCHI State Off On softkey, 972
- Triangle softkey, 173, 180, 187, 193
- Trigger & Run softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys

Index

- See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - Trigger Advance field, [542](#)
 - Trigger In Polarity Neg Pos softkey, [166](#)
 - Trigger Key softkey
 - list/sweep subsystem, [53](#)
 - See* amplitude modulation subsystem keys
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* dual ARB subsystem keys
 - See* EDGE subsystem keys
 - See* frequency modulation subsystem keys
 - See* GSM subsystem keys
 - See* low frequency output subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* phase modulation subsystem keys
 - See* PHS subsystem keys
 - See* sense subsystem keys
 - See* TETRA subsystem keys
 - See* trigger subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - Trigger Out Polarity Neg Pos softkey, [165](#)
 - trigger source, list sweep, [53](#)
 - trigger subsystem keys
 - Bus, [166](#), [542](#)
 - Ext, [166](#), [542](#)
 - Free Run, [166](#), [542](#)
 - Single Sweep, [165](#)
 - Sweep Repeat Single Cont, [164](#)
 - Trigger In Polarity Neg Pos, [166](#)
 - Trigger Key, [166](#), [542](#)
 - Trigger Out Polarity Neg Pos, [165](#)
 - Trigger Sync Reply (RPS7) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
 - triggers
 - response selection
 - segment advance mode, dual ARB, [316](#)
 - Truncated PN9 softkey, [461](#)
 - TS softkey, [700](#), [895](#), [900](#), [904](#), [905](#), [907](#)
 - TSC0 softkey, [641](#), [651](#), [691](#), [698](#)
 - TSC1 softkey, [641](#), [651](#), [691](#), [698](#)
 - TSC2 softkey, [641](#), [651](#), [691](#), [698](#)
 - TSC3 softkey, [641](#), [651](#), [691](#), [698](#)
 - TSC4 softkey, [641](#), [651](#), [691](#), [698](#)
 - TSC5 softkey, [641](#), [651](#), [691](#), [698](#)
 - TSC6 softkey, [641](#), [651](#), [691](#), [698](#)
 - TSC7, [641](#), [691](#), [698](#)
 - TSC7 softkey, [641](#), [651](#), [691](#), [698](#)
 - TTI field, [971](#), [1030](#), [1070](#), [1078](#)
 - TTI Frame Clock (RPS9) softkey
 - See* wideband CDMA base band generator subsystem keys and fields
 - Turbo Coding field, [494](#), [541](#)
 - Turbo softkey, [966](#), [968](#), [1063](#)
 - Type softkey, [352](#), [360](#)
- ## U
- UDI 64 kbps softkey, [1037](#)
 - UDI ISDN (25.101) softkey, [931](#)
 - UN3/4 GSM Gaussian softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA ARB subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
 - Uncoded softkey, [642](#)
 - unit subsystem keys
 - dBm, [168](#)
 - dBuV, [168](#)
 - dBuVemf, [168](#)

- mV, 168
 - mVemf, 168
 - uV, 168
 - uVemf, 168
 - unprotected
 - memory subsystem, 114
 - unspecified RMS, 293
 - Up Control 1 softkey, 908
 - Up Control 2 softkey, 908
 - Up Custom softkey, 797, 831, 908
 - Up Normal softkey, 908
 - Up TCH All softkey, 797, 831
 - Up TCH softkey, 797, 831
 - Up VOX softkey, 831
 - Up/Down softkey, 934, 984
 - Update Display Cycle End Cont softkey, 403
 - Update in Remote Off On softkey, 85
 - Uplink MCS-1 softkey, 637, 640, 692
 - Uplink MCS-5 softkey, 642
 - Uplink MCS-9 softkey, 642
 - Uplink Timing Advance softkey
 - See* sense subsystem keys
 - uploading files, 114
 - User File softkey
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - See* wideband CDMA base band generator subsystem keys and fields
 - user files, HSDPA, 710
 - User FIR softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* CDMA2000 BBG subsystem keys and fields
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* Dmodulation subsystem keys
 - See* EDGE subsystem keys
 - See* GPS subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - User Flatness softkey, 101, 122
 - User FSK softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - User I/Q softkey
 - See* custom subsystem keys
 - See* DECT subsystem keys
 - See* EDGE subsystem keys
 - See* GSM subsystem keys
 - See* NADC subsystem keys
 - See* PDC subsystem keys
 - See* PHS subsystem keys
 - See* TETRA subsystem keys
 - uV softkey, 168
 - uVemf softkey, 168
 - UW softkey, 853, 854, 871, 872
 - UWCDMA softkey, 102
- ## V
- View Next Error Message softkey, 153
- ## W
- Walsh Code softkey, 250, 253
 - Walsh field
 - See* CDMA2000 BBG subsystem keys and fields
 - waveform
 - sequence, dual ARB, 311
 - Waveform Length softkey, 210, 236
 - waveform license time remaining, 82

Index

- Waveform Licenses softkey, [81](#), [82](#)
- Waveform Runtime Scaling softkey, [310](#)
- waveform scaling
 - during playback, [310](#)
 - files, [310](#)
- waveform, creating a multitone, [323](#)
- W-CDMA Off On softkey, [374](#), [1078](#)
- WCDMA softkey
 - See* CDMA ARB subsystem keys
 - See* CDMA2000 ARB subsystem keys
 - See* Dmodulation subsystem keys
 - See* wideband CDMA ARB subsystem keys
- wideband AM, [171](#)
- wideband CDMA ARB subsystem keys
 - 1 DPCH, [344](#), [349](#)
 - 2 Carriers, [345](#)
 - 2.100 MHz, [342](#)
 - 3 Carriers, [345](#)
 - 3 DPCH, [344](#), [349](#)
 - 4 Carriers, [345](#)
 - 40.000 MHz, [340](#), [342](#)
 - APCO 25 C4FM, [338](#)
 - Apply Channel Setup, [352](#), [360](#)
 - ARB Reference Ext Int, [366](#)
 - ARB Sample Clock, [368](#)
 - Bus, [371](#)
 - Channel, [352](#), [360](#)
 - Chip Rate, [338](#)
 - Clear Header, [340](#)
 - Clip |I| To, [336](#), [346](#)
 - Clip |Q| To, [336](#), [347](#)
 - Clip At PRE POST FIR Filter, [336](#)
 - Clip Type |I+jQ| To, [337](#), [347](#)
 - Clipping Type |I+jQ| |I|,|Q|, [337](#), [347](#)
 - Continuous, [368](#)
 - Custom WCDMA State, [359](#)
 - DPCCH, [359](#)
 - DPCCH + 1 DPDCH, [359](#)
 - DPCCH + 2 DPDCH, [359](#)
 - DPCCH + 3 DPDCH, [359](#)
 - DPCCH + 4 DPDCH, [359](#)
 - DPCCH + 5 DPDCH, [359](#)
 - DPCH, [353](#)
 - Equal Energy per Symbol, [357](#)
 - Ext Delay Off On, [372](#)
 - Ext Delay Time, [372](#)
 - Ext Key, [371](#)
 - Ext Polarity Neg Pos, [373](#)
 - Filter Alpha, [339](#)
 - Filter BbT, [339](#)
 - First Spread Code, [352](#), [360](#)
 - Free Run, [370](#)
 - Gain Unit dB Lin Index, [362](#)
 - Gate Active Low High, [370](#)
 - Gated, [368](#)
 - Gaussian, [338](#)
 - I/Q Mapping Norma Invert, [341](#)
 - I/Q Mod Filter Manual Auto, [343](#)
 - I/Q Output Filter Manual Auto, [341](#)
 - Increment Scramble Code, [348](#)
 - Increment Timing Offset, [351](#)
 - IS-2000 SR3 DS, [338](#)
 - IS-95, [338](#)
 - IS-95 Mod, [338](#)
 - IS-95 Mod w/EQ, [338](#)
 - IS-95 w/EQ, [338](#)
 - Left Alternate, [352](#)
 - Link Down Up, [343](#)
 - Marker 1, [363](#), [364](#)
 - Marker 2, [363](#), [364](#)
 - Marker 3, [363](#), [364](#)
 - Marker 4, [363](#), [364](#)
 - Marker Polarity Neg Pos, [366](#)
 - Modulator Atten Manual Auto, [342](#)
 - None, [363](#), [364](#)
 - Nyquist, [338](#)
 - OCNS, [353](#)
 - Optimize ACP ADJ ALT, [343](#), [358](#)
 - Optimize FIR For EVM ACP, [340](#)
 - Patt Trig In 1, [373](#)
 - Patt Trig In 2, [373](#)
 - PCCPCH + SCH, [344](#), [349](#)
 - PCCPCH + SCH + 1 DPCH, [344](#), [349](#)
 - PCCPCH + SCH + 3 DPCH, [344](#), [349](#)
 - PICH, [353](#)
 - Power, [360](#)
 - PPCCPCH, [353](#), [354](#)
 - PSCH, [353](#)
 - Random, [352](#), [360](#)
 - Rectangle, [338](#)

- Reference Freq, [366](#)
- Reset & Run, [370](#)
- Retrigger Mode Off On, [367](#)
- Right Alternate, [352](#)
- Root Nyquist, [338](#)
- Save Setup To Header, [340](#)
- Scale to 0dB, [357](#)
- SCCPCH, [353](#), [354](#)
- Scramble Code, [352](#), [358](#), [360](#)
- Scramble Offset, [352](#), [360](#)
- Second DPDCH I Q, [358](#)
- Single, [368](#)
- SSCH, [353](#)
- Standard, [352](#)
- Store Custom W-CDMA State, [348](#), [351](#)
- Store To File, [360](#)
- Symbol Rate, [352](#), [360](#)
- Test Model 1 w/16 DPCH, [344](#), [349](#)
- Test Model 1 w/32 DPPCH, [344](#), [349](#)
- Test Model 1 w/64 DPCH, [344](#), [349](#)
- Test Model 2, [344](#), [349](#)
- Test Model 3 w/16 DPCH, [344](#), [349](#)
- Test Model 3 w/32 DPCH, [344](#), [349](#)
- Test Model 4, [344](#), [349](#)
- Test Model 5 w/2HSPDSCH, [344](#), [349](#)
- Test Model 5 w/4HSPDSCH, [344](#), [349](#)
- Test Model 5 w/8HSPDSCH, [344](#), [349](#)
- TFCI Field Off On, [352](#), [357](#), [360](#), [362](#)
- Through, [340](#), [342](#)
- Trigger & Run, [370](#)
- Trigger Key, [371](#)
- Type, [352](#), [360](#)
- UN3/4 GSM Gaussian, [338](#)
- User FIR, [338](#)
- WCDMA, [338](#)
- W-CDMA Off On, [374](#)
- wideband CDMA base band generator subsystem
 - keys and fields
 - # of Blocks, [969](#)
 - 1/2 Conv, [966](#), [968](#), [1063](#)
 - 1/3 Conv, [966](#), [968](#), [1063](#)
 - 10 msec, [994](#)
 - 10ms Frame Pulse (DRPS11), [948](#), [950](#), [951](#), [952](#), [953](#)
 - 10ms Frame Pulse (RPS6), [1045](#), [1047](#), [1048](#), [1049](#), [1050](#), [1051](#)
 - 12.2 kbps (34.121), [931](#)
 - 144 kbps (34.121), [931](#)
 - 20 msec, [994](#)
 - 2560 msec, [994](#)
 - 2nd Scr Offset, [932](#), [939](#)
 - 3.84MHz chip-clk (DRPS4), [948](#), [950](#), [951](#), [952](#), [953](#)
 - 384 kbps (34.121), [931](#)
 - 40 msec, [994](#)
 - 64 kbps (34.121), [931](#)
 - 80 msec, [994](#)
 - 80ms Frame Pulse (DRPS13), [948](#), [950](#), [951](#), [952](#), [953](#)
 - 80ms Frame Pulse (RPS20), [1045](#), [1047](#), [1048](#), [1049](#), [1050](#), [1051](#)
 - A, [923](#)
 - ACS, [962](#)
 - Active, [959](#)
 - Actual BER, [1072](#)
 - Actual BLER, [1066](#), [1074](#)
 - AICH, [1030](#)
 - AICH Trigger Polarity Pos Neg, [1003](#)
 - All Down, [934](#), [984](#)
 - All Up, [934](#), [984](#)
 - Alt power in, [1044](#)
 - AMR 12.2 kbps, [931](#), [1037](#)
 - APCO 25 C4FM, [935](#), [995](#)
 - Apply Channel Setup, [919](#), [973](#)
 - B, [923](#)
 - Base Delay Tp-a, [1026](#)
 - BBG Chip Clock Ext Int, [918](#)
 - BBG Data Clock Ext In, [922](#)
 - BER, [1066](#), [1068](#), [1074](#), [1076](#)
 - Beta, [977](#), [987](#)
 - BLER, [1067](#), [1068](#), [1075](#), [1076](#)
 - Blk Set Size, [965](#)
 - Blk Size, [964](#), [1062](#), [1071](#)
 - Blocking, [962](#)
 - Burst gate in, [1044](#)
 - C Power, [974](#)
 - C Power value, [1004](#)
 - C/N value, [919](#), [973](#), [1003](#)
 - CFN #0 Frame Pulse (RPS10), [1039](#)

Index

Chan Code, [928](#), [929](#), [938](#)
Channel Code, [943](#), [978](#), [988](#), [1031](#), [1032](#)
Channel Code field, [942](#)
Channel State, [987](#), [994](#)
Channel State Off On, [922](#), [926](#), [927](#), [929](#), [935](#),
[937](#), [940](#), [941](#), [943](#), [945](#), [953](#), [976](#), [1006](#), [1063](#),
[1070](#), [1071](#)
ChCode Ctl, [1019](#)
ChCode Dat, [1020](#)
Chip Clock (RPS1), [1039](#), [1045](#), [1047](#), [1048](#),
[1049](#), [1050](#), [1051](#)
Chip Rate, [928](#), [977](#)
Comp Mode Start Trigger Polarity Neg Pos, [1060](#)
Comp Mode Start Trigger Polarity Pos Neg, [960](#),
[961](#)
Comp Mode Stop Trigger Polarity Neg Pos, [1060](#)
Comp Mode Stop Trigger Polarity Pos Neg, [961](#)
Compressed Mode Off On, [1059](#)
Compressed Mode Start Trigger, [937](#), [960](#), [1060](#)
Compressed Mode Stop Trigger, [961](#), [1060](#)
CRC Size, [967](#), [1064](#), [1072](#)
Ctrl Beta, [1007](#)
Ctrl Pwr, [1008](#)
Data, [989](#)
Data Beta, [1011](#)
Data field, [1076](#)
Data Pwr, [1013](#)
Data Rate, [939](#)
DCH1, [975](#)
DCH2, [975](#)
DCH3, [975](#)
DCH4, [975](#)
DCH5, [975](#)
DCH6, [975](#)
DL Reference 1.1, [1058](#)
DL Reference 1.2, [1058](#)
DL Reference 2.1, [1058](#)
DL Reference 2.2, [1058](#)
Down/Up, [934](#), [984](#)
DPCCH, [975](#), [998](#)
DPCCH Pilot data-clk (DRPS23), [948](#), [950](#), [951](#),
[952](#), [953](#)
DPCCH Power, [981](#)
DPCCH Raw Data (RPS4), [1039](#)
DPCCH Raw Data Clock (RPS5), [1039](#)
DPCCH TFCI data-clk (DRPS22), [948](#), [950](#), [951](#),
[952](#), [953](#)
DPCCH TPC indicator (DRPS21), [948](#), [950](#), [951](#),
[952](#), [953](#)
DPCH + 1, [920](#), [921](#)
DPCH + 2, [920](#), [921](#)
DPCH 10ms Frame-Pulse (DRPS26), [948](#), [950](#),
[951](#), [952](#), [953](#)
DPCH Channel Balance, [928](#)
DPCH Compressed Frame Indicator (DRPS32),
[948](#), [950](#), [951](#), [952](#), [953](#)
DPCH data stream (DRPS24), [948](#), [950](#), [951](#), [952](#),
[953](#)
DPCH data-clk (0) (DRPS28), [948](#), [950](#), [951](#), [952](#),
[953](#)
DPCH Gap Indicator (DRPS33), [948](#), [950](#), [951](#),
[952](#), [953](#)
DPCH TimeSlot pulse (DRPS25), [948](#), [950](#), [951](#),
[952](#), [953](#)
DPDCH, [975](#)
DPDCH data-clk withDTX (DRPS20), [948](#), [950](#),
[951](#), [952](#), [953](#)
DPDCH data-clk WithOutDTX (DRPS30), [948](#),
[950](#), [951](#), [952](#), [953](#)
DPDCH Power, [990](#)
DPDCH Raw Data (RPS2), [1039](#)
DPDCH Raw Data Clock (RPS3), [1039](#)
Eb/No, [1004](#)
Eb/No value (dB), [974](#)
Ec/No value, [920](#), [1005](#)
Equal Powers, [941](#), [998](#)
Error BER, [1073](#)
Error Bits, [1065](#)
Error Blocks, [1066](#)
Ext, [934](#)
Ext Clock Rate x1 x2 x4, [918](#)
FBI State, [980](#)
Filter Alpha, [936](#), [996](#)
Filter BbT, [936](#), [997](#)
FIX, [980](#)
FIX4, [930](#), [941](#), [942](#), [943](#), [944](#), [967](#), [968](#), [979](#), [989](#),
[1007](#), [1008](#), [1010](#), [1012](#), [1068](#), [1072](#)
Flat Noise BW, [975](#)
Frame Clock Polarity Neg Pos, [995](#)
Frame Struct, [955](#)

- Frame Sync Trigger Mode Single Cont, 1053
- Gaussian, 935, 995
- Higher Layer, 1055
- Infinity, 958, 1057
- Init Power, 999
- Init Pwr, 1018, 1034
- Intermod, 962
- IS-95, 935, 995
- IS-95 Mod, 935, 995
- IS-95 Mod w/EQ, 935, 995
- IS-95 w/EQ, 995
- Left, 924
- Link Down Up, 972
- Max Input, 962
- Max Power, 1000
- Max Pwr, 1018, 1034
- Message Data Raw Data (RPS11), 1045, 1047, 1048, 1049, 1050, 1051
- Message Part, 1017
- Message Pulse (RPS22), 1045, 1047, 1048, 1049, 1050, 1051
- Message-Control Raw Data (RPS13), 1047, 1048, 1049, 1050, 1051
- Message-Control Raw Data Clock (RPS12), 1045, 1047, 1048, 1049, 1050, 1051
- Min Power, 1000
- Msg Ctrl, 1005
- Msg Data, 1005
- Msg Pwr, 1016, 1033
- N Power, 976, 1006
- NONE, 1063
- None, 966, 968, 1068, 1076
- NONE (RPS0), 1039, 1045, 1047, 1048, 1049, 1050, 1051
- Normal, 924
- Num of Blk, 1069, 1077
- Num of Pre, 1017, 1034
- Number of AICH, 1002
- Number of PRACH, 1031, 1033
- Number of PRACH 80ms, 1017
- Number of Preamble, 1034
- Nyquist, 935, 995
- Off, 1030
- Omitted, 958, 1057
- On, 1030
- On/Off, 940, 1022
- OpenLoop Ant1, 963
- OpenLoop Ant1 SCH TSTD OFF, 963
- OpenLoop Ant2, 963
- OpenLoop Ant2 SCH TSTD OFF, 963
- Optimize FIR For EVM ACP, 937, 997
- Paging Indicator, 944
- Pattern trigger in 1, 1045
- Pattern trigger in 2, 1045
- PCCPCH, 920, 921
- P-CCPCH data (DRPS39), 948, 950, 951, 952, 953
- P-CCPCH data-clk (DRPS38), 948, 950, 951, 952, 953
- Performance Req, 962
- Phase Polarity Normal Invert, 945
- Phase Polarity Normal Inverted, 972
- PI Bits, 944
- PICH, 920, 921
- PICH 10ms FramePulse (DRPS37), 948, 950, 951, 952, 953
- PICH data (DRPS35), 948, 950, 951, 952, 953
- PICH data-clk (DRPS34), 948, 950, 951, 952, 953
- PICH TimeSlot Pulse (DRPS36), 948, 950, 951, 952, 953
- Playback Ratio, 924
- PN15, 923, 929, 938, 941, 943, 978, 979, 982, 984, 989, 1007, 1010, 1012
- PN9, 923, 929, 938, 941, 943, 967, 978, 979, 982, 984, 989, 1007, 1010, 1012, 1064, 1072
- Power, 924, 927, 930, 938, 942, 945, 946
- Power Control Signal Polarity Neg Pos, 1002
- Power Hold Off On, 999
- Power Mode Norm TPC, 1002
- Pp-m, 1019, 1036
- PRACH, 998
- PRACH Mode Single Multi, 1016
- PRACH Power Setup Mode Pp-m Total, 1023
- PRACH Processing (RPS19), 1045, 1047, 1048, 1049, 1050, 1051
- PRACH Scrambling Code, 1024
- PRACH Trigger, 1028
- PRACH Trigger Polarity Neg Pos, 1029
- PRACH Trigger Source Immedi Trigger, 1029
- Pre Sig, 1020

Index

- Preamble, 1005
- Preamble power average, 1022
- Preamble Pulse (RPS21), 1045, 1047, 1048, 1049, 1050, 1051
- Preamble Raw Data (RPS15), 1045, 1047, 1048, 1049, 1050, 1051
- Preamble Raw Data Clock (RPS16), 1045, 1047, 1048, 1049, 1050, 1051
- PSCH State, 946
- Puncture, 956, 1069, 1077
- PwrOffs, 955, 1054
- RACH TrCH, 1005
- Ramp Step, 1019, 1035
- Rate Match Attr, 971, 1069, 1077
- Rectangle, 935, 995
- Ref Data Rate, 974, 1004
- Ref Sensitivity, 962
- Reset to Initial Power, 1001
- Right, 924
- RMC 144 kbps (25.141), 1037
- RMC 384 kbps (25.141), 1037
- RMC 64 kbps (25.141), 1037
- RMC122 kbps (25.141), 1037
- Root Nyquist, 935, 995
- Scale to 0dB, 941, 998
- SCFN, 960, 1059
- SCH slot-pulse (DRPS10), 948, 950, 951, 952, 953
- Scrambling Code, 953, 954, 1051
- SF/2, 1055
- SF2, 956
- SFN reset-signal (DRPS5), 948, 950, 951, 952, 953
- SFN RST Polarity, 1052
- SFN-CFN Frame Offset, 998
- Signature, 1036
- Slot Format, 925, 932, 981, 992, 1009, 1015
- Spurious Response, 962
- SSCH 2nd Scramble Group, 954
- SSCH Power, 954
- SSCH State, 955
- Start Access Slot Position in 80ms Period, 1021
- Start Sub-Channel#, 1025
- STD, 978
- Step Power, 1001
- Sub Channel Timing (RPS17), 1045, 1047, 1048, 1049, 1050, 1051
- Symbol Rate, 981, 990, 1009, 1014
- Sync Source SFN FCIk ESG, 1053
- tDPCH Offset, 933
- TFCI Pat, 933
- TFCI Pattern, 982, 1010
- TFCI State, 983, 1011
- Tfirst, 926
- TGCFN, 956, 1054
- TGD, 957, 1055
- Tgl, 926
- TGL1, 957, 1056
- TGL2, 957, 1056
- TGPL1, 958, 1056
- TGPL2, 1057
- TGPRC, 1057
- TGPS Inactive Active, 1058
- TGSN, 959, 1058
- Timeslot Offset, 1025
- Timing Offset, 1026, 1052, 1061
- tOCNS Offset, 940
- Total Bits, 1065
- Total Blocks, 1067
- TotalPwr, 976, 1006
- TPC Pat Steps, 983
- TPC Pat Trig Polarity Neg Pos, 985
- TPC Pattern, 985
- TPC Steps, 934
- TPC UserFile Trig, 986
- Tp-m, 1027
- Tp-p, 1028
- Transp Chan A, 929
- Transp Chan B, 929
- Transp Position Flexible Fixed, 970
- Transport CH, 941
- TrCH BER, 991
- TrCh BlkSize 168, 1024
- TrCh BlkSize 360, 1024
- TrCH State Off On, 972, 1078
- Trigger Sync Reply (RPS7), 1045, 1047, 1048, 1049, 1050, 1051
- TTI, 971, 1030, 1070, 1078
- TTI Frame Clock (RPS9), 1039
- Turbo, 966, 968, 1063

UDI 64 kbps, [1037](#)
UDI ISDN (25.101), [931](#)
UN3/4 GSM Gaussian, [935](#)
Up/Down, [934](#), [984](#)
User File, [929](#), [934](#), [941](#), [943](#), [967](#), [978](#), [979](#), [982](#),
[989](#), [1007](#), [1010](#), [1012](#), [1064](#), [1072](#)
User FIR, [935](#), [995](#)
W-CDMA Off On, [1078](#)
Word Alignment softkey, [380](#)
Word Size softkey, [387](#)

