Agilent E5052A Signal Source Analyzer

Programmer's Guide

First Edition

FIRMWARE REVISIONS

This manual applies directly to instruments that have the firmware revision 1.0x.
For additional information about firmware revisions, see Appendix A.

Agilent Technologies

Agilent Part No. E5052-90001

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Notices

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Manual Printing History

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

August 2004 First Edition (part number: E5052-90001)

Typeface Conventions

Bold	Boldface type is used when a term is defined. For example: **icons** are symbols.

Italic	Italic type is used for emphasis and for titles of manuals and other publications.
[Key]	Indicates the hardkey whose key label is Key.
[Key] - **Item**	Indicates a series of key operations in which you press the **[Key]** key, select (highlight) the item called **Item** on the displayed menu using the **[↓]** key and so on, and then press the **[Enter]** key.

Documentation Map

The following manuals are available for the Agilent E5052A.

- ***User's Guide*** **(Part Number E5052-900x0, attached to Option ABA)**

  This manual describes most of the basic information needed to use the E5052A. It provides a function overview, detailed operation procedure for each function (from preparation for measurement to analysis of measurement results), specifications, and supplemental information. For programming guidance on performing automatic measurement with the E5052A, please see the *Programming Manual*.

- ***Programmer's Guide*** **(Part Number E5052-900x1, attached to Option ABA)**

  This manual provides programming information for performing automatic measurement with the E5052A. It includes an outline of remote control, procedures for detecting measurement start (trigger) and end (sweep end), application programming examples, a command reference, and related information.

- ***VBA Programmer's Guide*** **(Part Number E5052-900x2, attached to Option ABA)**

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

NOTE The number position shown by "x" in the part numbers above indicates the edition number.

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1 Making Effective Use of This Manual

This chapter describes the contents of this guide.Using this chapter with the table of contents helps you to retrieve description of a subject you wish to understand as well as to obtain an overview of this guide.Also see the latter part of this chapter for brief description of usage of this guide, focusing on searching commands.

Contents of This Manual

This is a programming guide with Agilent E5052A.

This guide describes programming method mainly aiming at learning how to write a program that remotely controls the E5052A using SCPI commands, focusing on sample usage with the HTBasic.

Controlling the E5052A using the built-in VBA is not covered by this guide; it is described in *VBA Programmer's Guide*.For using the E5052A VBA, see *VBA Programmer's Guide*.

Description in this guide assumes that the reader has learned manual operation of the E5052A.Thus, this guide does not describe each feature of the E5052A in detail.For detailed information on each feature, see *User's Guide*.

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

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

This chapter describes the contents of this guide.Using this chapter with the table of contents helps you to retrieve description of a subject you wish to understand as well as to obtain an overview of this guide.Also see the latter part of this chapter for brief description of usage of this guide, focusing on searching commands.

Chapter 2, "Overview of Remote Control."

This chapter provides an overview of the remote control system and the SCPI commands.

Chapter 3, "Making a Measurement."

This chapter describes how to trigger the instrument to start a new measurement cycle and how to detect the end of a measurement cycle.

Chapter 4, "Reading/Writing Measurement Data."

This chapter provides an overview of the Agilent E5052A's internal data transfer format and explains how to read and write measurement results (internal data array and marker position).

Chapter 5, "Saving and Recalling (File Management)."

This chapter explains how to save and recall instrument status and measurement results onto/from the files. The chapter also discusses file management in general.

Chapter 6, "Working with Automatic Test Systems."

This chapter describes useful features that are available when the Agilent E5052A is integrated with an automatic test system.

Chapter 7, "SCPI Command Reference."

This chapter describes the SCPI command reference for the Agilent E5052A. It describes the commands using their abbreviated format in alphabetical order. If you want to look up commands using their fully qualified format, refer to the index for the desired SCPI command. If you want to look up commands by their function, refer to SCPI command list by function.

Appendix A, “Manual Changes.”

This appendix contains the information required to adapt this manual to earlier versions or configurations of the Agilent E5052A than that indicated by the current printing date of this manual. The information in this manual applies directly to the E5052A model that has the serial number prefix listed on the title page of this manual.

Appendix B, “Status Reporting System.”

This appendix describes the status reporting system of the Agilent E5052A.

Appendix C, “Communication with External Instruments Using 24-bit I/O Port.”

This chapter provides necessary information for communicating with external instruments (for example, a handler in a production line) by using the 24-bit I/O port equipped with the Agilent E5052A.

Appendix D, “Error Messages.”

The Agilent E5052A provides error messages to indicate its operating status. This appendix describes the error messages of the E5052A, listed in alphabetical order.

How to Use This Manual

As described in “Contents of This Manual” on page 22 chapters 3 to 5 provide task-based descriptions of SCPI commands that are useful for programming and explain how you can use them.These chapters contain explanations and sample program listings that you can use to develop your custom programs. For more information on individual commands, see Chapter 7, “SCPI Command Reference,”.

Looking up SCPI commands

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

Lookup by Abbreviated Command Name (see NOTE.)

The command reference is organized alphabetically according to the abbreviated name used as the title for each command&srq;s description.

Lookup by Full Command Name (see NOTE.)

You can use the index at the end of the manual to find full command names along with the page numbers where they appear.

Lookup by Command Function

“List by function” on page 285 provides a command function list and indicates the page numbers where the commands appear in the command reference.

Lookup by Front panel key

“Softkey Functions” on page 305 provides a complete list of COM objects that correspond to the front panel key tree and indicates the page numbers where the commands appear in the command reference.

NOTE

Some SCPI commands supported by the E5052A have optional syntax elements. In the command reference conventions, these elements are enclosed between square brackets ([]) or printed in lowercase letters. See “Syntax” on page 78 for more information.

How to Code the Corresponding Commands

The description of each function may contain the corresponding SCPI commands. If SCPI command exists for each measuring mode, use xx. And y used to express the maximum trace number varies for each measuring mode, because the trace number is not the same for each mode.

Example: CALC:xx[1-1]:TRAC[1-y]:DATA:FDAT

The parameters for each measuring mode are as follows:

- **FP**: Frequency/Power measurement
- **PN**: Phase noise measurement

- **SP**: Spectrum monitor measurement
- **TR**: Transient measurement
- **USER**: User-defined window

NOTE Some SCPI commands preclude the availability of certain measuring modes.

2 Overview of Remote Control

This chapter provides an overview of the remote control system and the SCPI commands.

Types of Remote Control Systems

Depending on the system controller and the interface, you can configure four types of remote control systems as shown in the table below.

System controller	Interface	Overview
External controller (external computer such as PC and workstation)	GPIB	System to control the E5052A and other devices connected via GPIB from the external controller. For more information, refer to “GPIB Remote Control System” on page 29.
	LAN	System to control the E5052A and other devices connected via LAN from the external controller. For more information, refer to “LAN Remote Control System” on page 31.
E5052A	——	System to control the E5052A itself using built-in E5052A VBA. For more information, refer to *VBA Programmers Guide*.
	USB/GPIB	System to control the E5052A itself and external devices connected via GPIB using built-in E5052A VBA. For more information, refer to *VBA Programmers Guide*.

GPIB Remote Control System

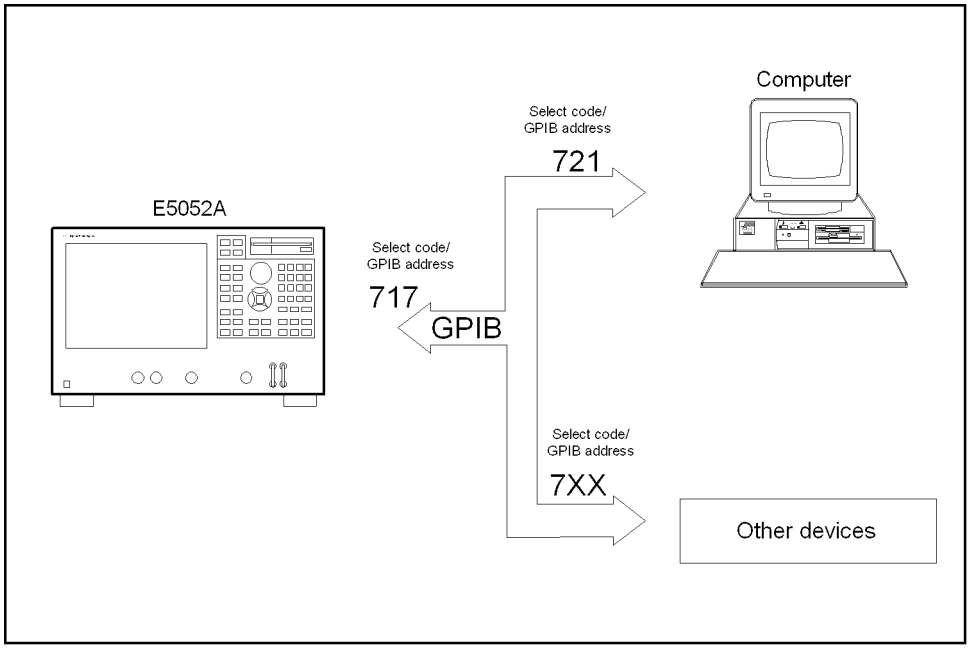
What is GPIB?

GPIB (General Purpose Interface Bus) is an interface standard for connecting computers and peripherals, and it supports the following international standards: IEEE 488.1, IEC-625, IEEE 488.2, and JIS-C1901. The GPIB interface allows you to control the Agilent E5052A from an external computer. The computer sends commands and instructions to the E5052A and receives data sent from the E5052A via GPIB.

System configuration

Use GPIB cables to connect the E5052A to the external controller (computer) and peripherals. Figure 2-1 shows an overview of the system configuration of the GPIB remote control system.

Figure 2-1 **Configuration of GPIB remote control system**



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NOTE When the power of the E5052A is turned off, the SRQ signal of the built-in GPIB remains active. With the power turned off, disconnect the GPIB remote control system and the E5052A to prevent malfunction.

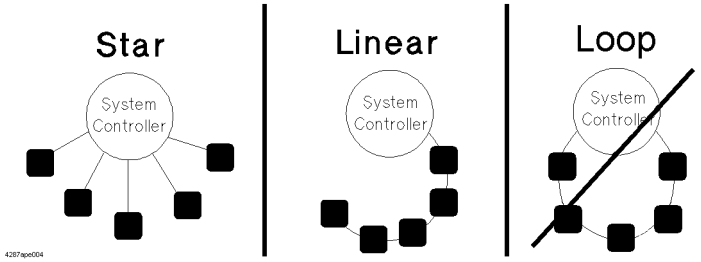
Required equipment

1. E5052A
2. External controller (computer)

   Use a personal computer or workstation equipped with the GPIB interface. You need to install software in the external controller to control this instrument via GPIB (for example, HTBasic or Agilent VEE).
3. Other devices (other instruments and/or specific-purpose peripherals)
4. GPIB cables for connecting the E5052A, the external controller, and other devices

Size of system you can construct

- You can connect up to 15 devices in a single GPIB system.
- The length of cables connecting devices must be 4 m or less. The total length of connecting cables in a single GPIB system must be 2 m × the number of connected devices (including the controller) or shorter. You cannot construct a system with a total cable length exceeding 20 m.
- The number of connectors connected to an individual device must be 4 or fewer. If you connect 5 or more connectors, excessive force is applied to the connector part, which may result in failure.
- You can choose the device connection topology from star, linear, and combined. Loop connection is not supported.



Device selector

The device selector is a unique value assigned to each device that is used by the controller to select the control target (to send/receive messages) among devices connected on the GPIB remote control system.

The device selector consists of a select code (usually 7) and a GPIB address. For example, when the select code is 7 and the GPIB address is 17, the device selector is 717. The select code must be set for each system. The GPIB address must be set to a unique value for each device, which is used to identify devices on the same system. In the descriptions and sample programs in this manual, it is assumed that the device selector is set to 717.

Setting the GPIB address of the E5052A

[System] - Misc Setup - GPIB Setup - Talker/Listener Address

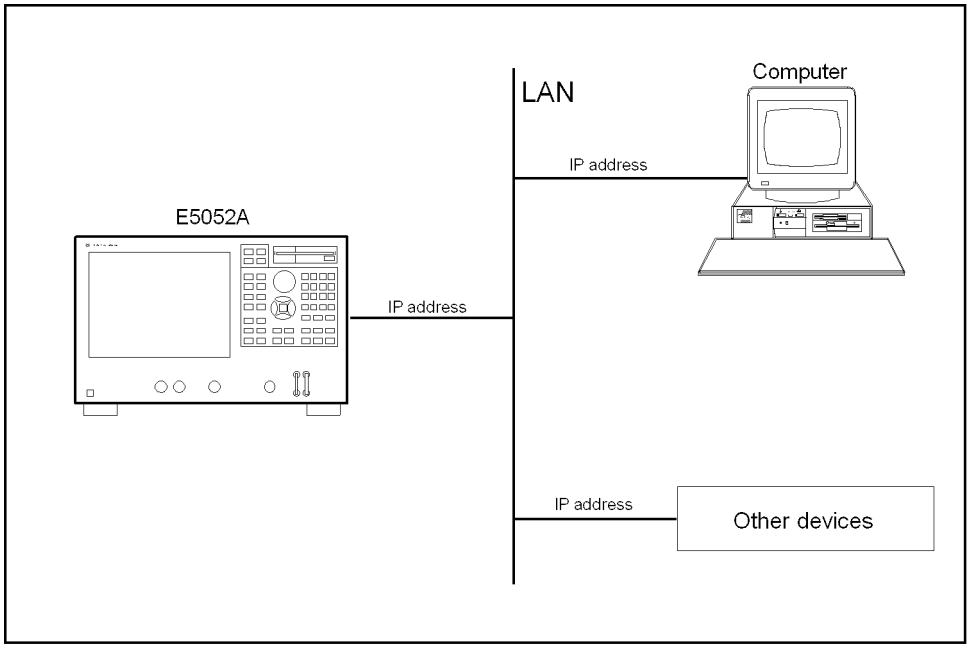
LAN Remote Control System

The LAN (Local Area Network) remote control system provides two methods for controlling the E5052A: using the SICL-LAN server and using the telnet server.

System configuration

Use LAN cables to connect the E5052A and the external controller (computer). Figure 2-2 shows the configuration of the LAN remote control system.

Figure 2-2 **Configuration of LAN remote control system**



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Required equipment

1. E5052A
2. External controller (personal computer or workstation that can be connected to LAN, with Agilent I/O Library installed)
3. Other devices (other instruments and/or special-purpose peripherals)
4. LAN cable for connecting the E5052A with the external controller

Preparing the E5052A

Before controlling the E5052A via LAN, you need to configure the network function. For detailed information on the procedure, refer to *User's Guide*.

Control over SICL-LAN server

In the control system using the SICL-LAN server, communication between the external controller (client) and the E5052A (server) is performed using the SICL-LAN protocol. Communication is performed using SICL (Standard Instrument Control Library). You can control the E5052A by programming using SICL or VISA in C language in the UNIX environment, or Visual C++, Visual Basic, or VEE in the Windows environment.

Preparing the E5052A

To communicate with the external controller, follow these steps to turn on the SICL-LAN server of the E5052A in advance.

Step 1. Turn on the SICL-LAN server of the E5052A.

[System] - Misc Setup - Network Setup - SICL-LAN Server [ON]

Step 2. Set the GPIB address of the E5052A for control with the SICL-LAN server. “XX” indicates the address number.

[System] - Misc Setup - Network Setup - SICL-LAN Address [XX]

NOTE You need to restart the E5052A firmware after changing the on/off setting or address setting of the SICL-LAN server.

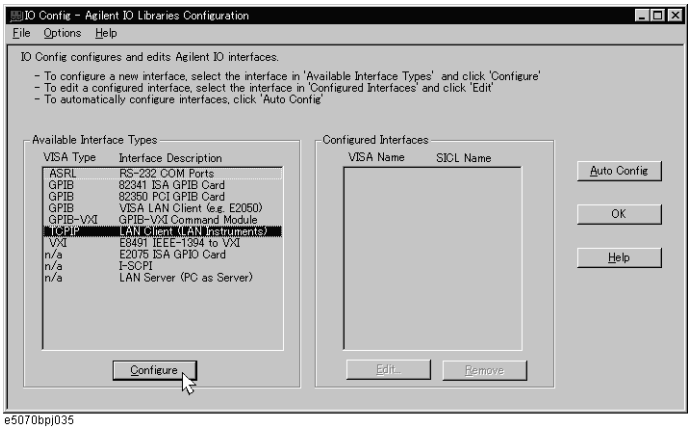
Preparing the external controller

In order to establish communication with the E5052A using the TCP/IP protocol, you need to set the I/O interface of the external controller in advance. This section shows the setting procedure for using the external controller in the Windows environment.

NOTE You need to install the Agilent I/O Libraries in advance.

Step 1. From the Start menu of your PC, click Program - Agilent I/O Libraries - I/O Config to open the Config setting screen.

Step 2. In the IO Config setting screen, select **“TCPIP LAN Client (LAN Instruments)**” and then click the **Configure** button.



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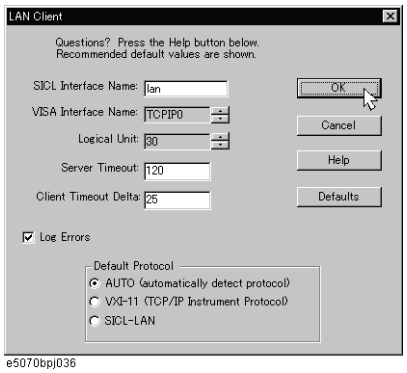
Step 3. In the LAN Client setting screen, leave the initial settings and click the **OK** button. You can

change the settings as necessary. For details, refer to the manual of the Agilent I/O Libraries.



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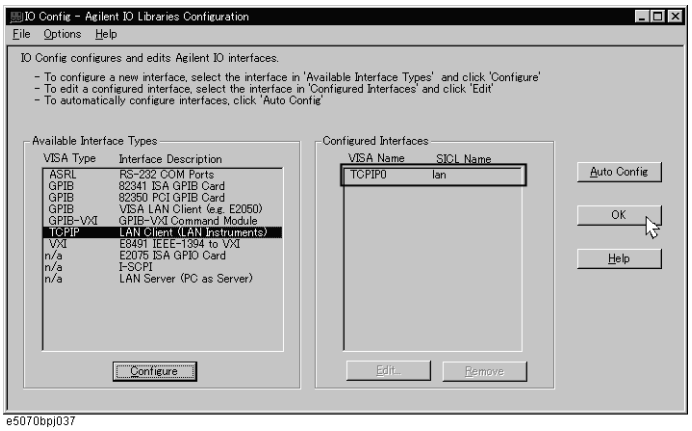
Step 4. In the IO Config setting screen, check that the LAN Client has been added and then click the **OK** button.



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Control using C or Visual Basic

You can control the E5052A by programming using SICL with the C language in the UNIX environment, or Visual C++ or Visual Basic in the Windows environment.

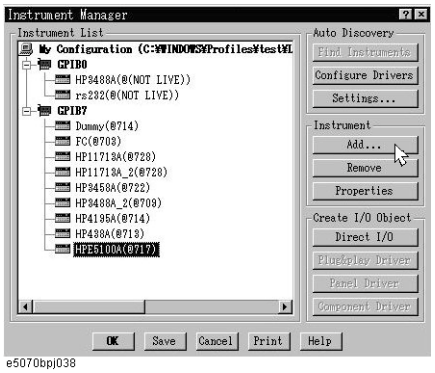
Control using Agilent VEE

Agilent VEE allows you to control the E5052A via the I/O interface. The following example shows how to control the E5052A when it is set as follows: the address of the SICL-LAN server is 17 and the IP address is 1.10.100.50.

NOTE When using Agilent VEE for PC, use Agilent VEE Pro 6 for Windows or later.

Step 1. On the Agilent EVE's **I/O** menu, click **Instrument Manager...**.

Step 2. In the Instrument Manager setting screen, click **Add...**.



Step 3. The Instrument Properties setting screen appears. Make the settings as follows: Name (1 in the figure below): **SICL_LAN** (you can specify any name), Interface (2 in figure): **GPIB**, and Address (3 in figure): **917** (for the E5052A, fixed to 9; 17 is the address of the SICL-LAN server). Then, click Gateway: **This host**. The Select or Enter Gateway setting screen appears. Enter the IP address or host name of the E5052A (4 in figure).

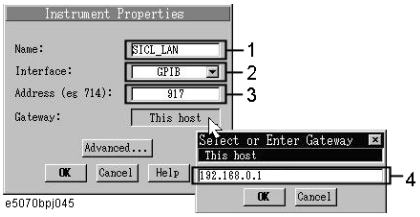
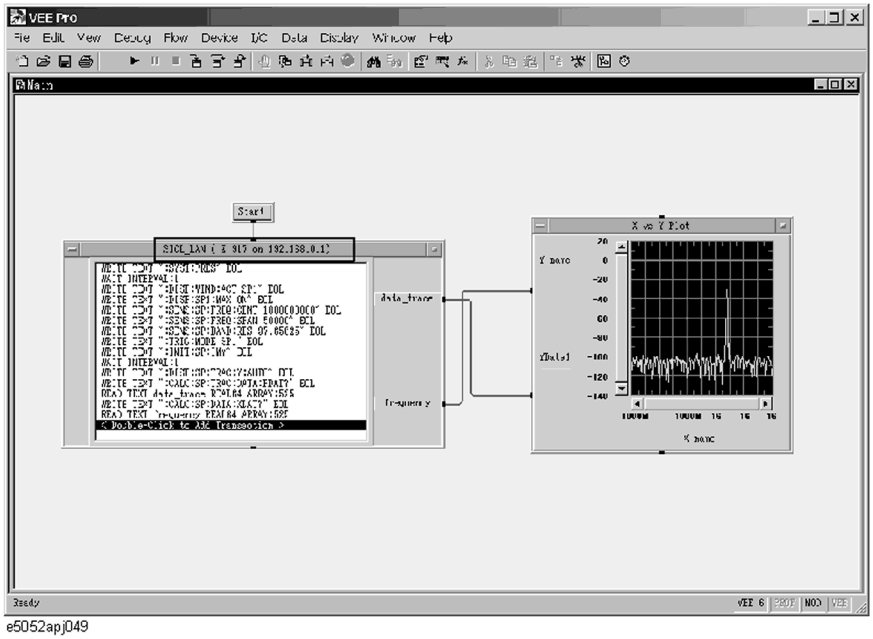


Figure 2-3 shows an example of control using the I/O interface set by the above procedure.

Figure 2-3 Example of control using Agilent VEE



Control over telnet server

In the control system over a telnet server, communications are performed through a connection between the network sockets, which is a path established between the external controller and the E5052A.

A socket is an endpoint for a network connection; on the E5052A, ports 5024 and 5025 are provided for the sockets. Port 5024 is used for conversational control using telnet (user interface program for TELNET protocol) and port 5025 is used for control from a program.

Preparing the E5052A

To communicate with the external controller, follow these steps to turn on the telnet server of the E5052A in advance.

[System] - Misc Setup - Network Setup - Telnet Server [ON]

Conversational control using telnet (using port 5024)

You can use telnet to perform conversational control by sending SCPI commands to the E5052A on a message-by-message basis. For telnet, the socket of port 5024 is used for communications.

In this example, in order to show the control procedure using telnet, the E5052A (IP address: 192.168.0.1; host name: e5052a) is controlled from the external controller in the Windows environment.

Step 1. Open the MS-DOS command prompt screen.

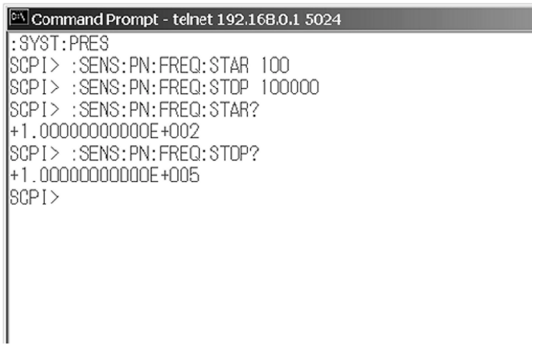
Step 2. At the MS-DOS prompt, type telnet 192.168.0.1 5024 and press the return key.

Step 3. The telnet screen opens.

Step 4. Type a command and press the return key; this command is sent to the E5052A and executed. If you enter a command that queries some data, the query response is displayed below the line you have entered the command.

Figure 2-4 shows the screen after using the :SYSTem:PRESet command on page 278 to reset, using the :SENSe:PN[1-1]:FREQuency:STARt command on page 243 and the :SENSe:PN[1-1]:FREQuency:STOP command on page 243 to set the sweep start value and stop value of the phase noise measurement to 100 Hz and 100 kHz, respectively, and checking the settings.

Figure 2-4 Example of control using telnet



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Step 5. Press] while holding down the control key on the telnet screen to display the telnet prompt. Then type “quit” and press the return key. The connection to the E5052A breaks and telnet finishes.

Control from a program (using port 5025)

When controlling the E5052A from a program on the external controller, use the socket of port 5025 for connection.

NOTE Some functions such as service requests that are available in the GPIB remote control system are not available in control over the telnet server.

Control using C or Visual Basic

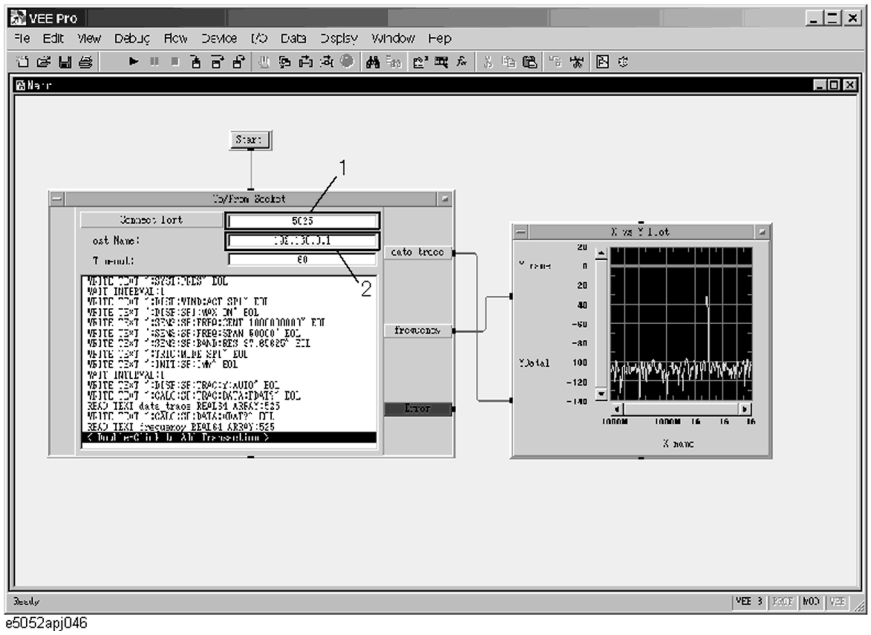
You can control the E5052A by socket programming using the C language in the UNIX environment, or Visual C++ or Visual Basic in the Windows environment.

For socket programming, the library for network connection on the TCP/IP protocol is required. For the UNIX environment, BSD (Berkeley Software Distribution) Sockets API is available; for the Windows environment, WinSock (WinSock1.1 and WinSock2.0), created by porting BSD Sockets to Windows and expanding it, is available.

Control using Agilent VEE

Agilent VEE allows you to control the E5052A through the connection to the socket of port 5025 by using the To/From Socket. Figure 2-5 shows an example (when the IP address of the E5052A is 192.168.0.1). Enter 5025 in the field to specify the port for connection (1 in Figure 2-5) and enter the IP address or host name of the E5052A in the field to specify the host name (2 in Figure 2-5).

Figure 2-5 **Example of control using Agilent VEE**



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Sending SCPI command messages

Types and structure of commands

The SCPI commands available for the E5052A are classified into two groups as follows.

E5052A commands

E5052A Commands specific to the E5052A. These cover all measurement functions of the E5052A as well as some general-purpose functions. The commands in this group are arranged in a hierarchical structure called the command tree. Each command consists of character strings (mnemonics) indicating the hierarchical levels and colon (:) separators between these levels.

IEEE common commands

Commands used to cover general-purpose functions defined in IEEE488.2 available to all instruments that support this standard. The commands in this group have an asterisk (*) at the beginning. These commands have no hierarchical structure.

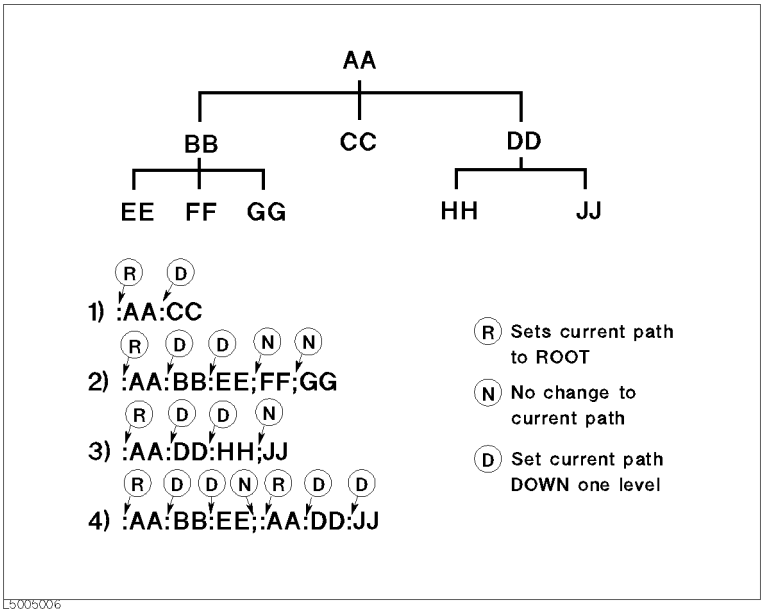
Concepts of the command tree

The command at the top of the command tree is called “root command” or simply “root.” To access lower level commands in the tree, you need to specify a specific path, like a directory path in the DOS file system. After power-on or reset, the current path is set as the root. Special characters in messages change the path setting as described below.

Message terminator	A message terminator such as the <new line> character sets the current path as the root.
Colon (:)	A colon between two command mnemonics lowers the level of the current path in the command tree. A colon used as the first character of a command specifies the command mnemonic that follows as the root-level command.
Semicolon (;)	A semicolon does not change the current path but separates two commands in the same message.

Figure 2-6 shows an example of how to use colons and semicolons to efficiently access commands in the command tree.

Figure 2-6 **Using colons and semicolons in command tree**



Grammar of messages

This section describes the grammar of program messages sent via GPIB. Program messages are messages that the user sends to the instrument from the external controller to control the instrument. A program message consists of one or more commands and their required parameters.

Upper/lower case sensitivity

Upper/lower case insensitive.

Program message terminator

A program message must be terminated with one of the three program message terminators: <new line>, <^END>, or <new line><^END>. <^END> indicates that EOI on the GPIB interface becomes active at the instant when the immediately previous data byte is sent. For example, the OUTPUT command of HTBasic automatically sends the message terminator after the last data byte.

Parameter

A space (ASCII code: 32) is required between a command and its first parameter. When sending several parameters in a single command, separate each parameter with a comma (,).

Message containing several commands

When sending two or more commands in a single message, separate each command with a semicolon (;). The following example shows how to send the ***CLS** command and the **:STATus:PRESet** command in a single message using HTBasic.

```
OUTPUT 717;"*CLS;:STAT:PRES"
```

Remote mode

The E5052A is not equipped for remote mode. Therefore, even if you send a GPIB command, it cannot enter into remote mode automatically. There is no local key to release remote mode.

If you need to prevent misoperation during remote control due to entry from the front panel or mouse, lock the input devices by using the following commands.

- :SYSTem:KLOCk:KBD on page 277
- :SYSTem:KLOCk:MOUSe on page 278

3 Making a Measurement

This chapter describes how to trigger the instrument to start a new measurement cycle and how to detect the end of a measurement cycle.

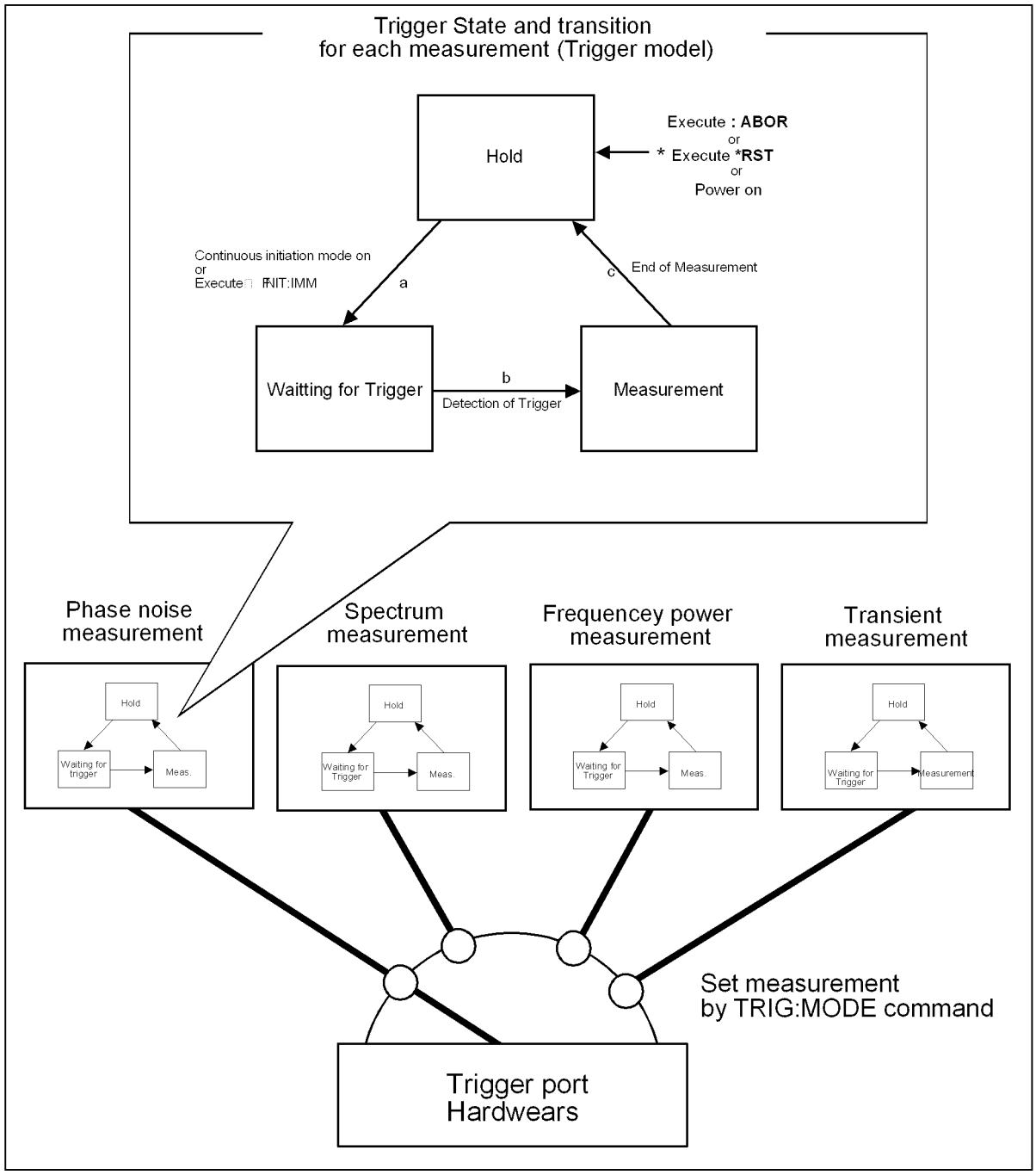
Trigger System

The trigger system is responsible for such tasks as detecting the start of a measurement cycle (triggering) and enabling/disabling measurement for each measurement. As shown in Figure 3-1, the trigger system has three states for each measurement: “Hold,” “Waiting for Trigger,” and “Measurement”. If any one of the measurements holds hardware and trigger port, other measurement will keep one of the states.

NOTE

The E5052A has a trigger model for each measurement (see Figure 3-1); however, only one triggered measurement can take place at a time. This is because the hardware and the trigger port are shared by four instruments. For example, even if the continuous initiation mode is enabled for all measurements and the trigger source is set to Internal, only one triggered measurement takes place.

Figure 3-1 Trigger system



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Trigger state and transition for each measurement

The following subsections describe the states for each measurement and how the trigger system switches among the states.

"Hold" State

When one of the following commands has been executed, the trigger system switches to "Hold" state, interrupting the measurement which is underway (arrow "e" in "d" on Figure 3-1). When the power is turned on, the phase noise measurement is triggered, while the continuous initiation mode is set to 'ON' for the phase noise measurement and the trigger source is set to "Internal".

- :ABORt on page 80
- *RST on page 222

During the "Hold" state, if either one of the following commands is executed or the measurement switches to the "Initiate" state by the front panel control, then the trigger system switches to the "Waiting for Trigger" state (arrow "f" in "a" in Figure 3-1). "xx" specifies the measurements (PN,SP,FP,TR) that are now waiting for trigger.

- :INITiate:xx:IMMediate
- :INITiate:xx:CONTinuous ON

"Waiting for Trigger" State

The instrument is triggered (i.e., a trigger is detected) during the "Waiting for Trigger" state, and then the trigger system switches to the "Measurement" state (arrow "B" in "b" in Figure 3-1).

As shown in the table below, how the instrument is triggered differs depending on which trigger source is specified.

Trigger Source	How instrument is triggered
Internal trigger	The instrument is automatically triggered itself.
External trigger	The instrument is triggered when a trigger signal is fed through the Ext Trig terminal.
Bus trigger	The instrument is triggered when the *TRG command on page 223 is issued.
Manual trigger	The instrument is triggered when you press [Trigger] - Trigger on the front panel. **[Trigger] - Manual Trigger**
Wide band trigger*1	In using the 'wideband mode' for the transient measurement, the instrument is triggered when the frequency of the measuring signal crosses the frequency value of the wideband trigger setting.
Narrow band trigger*1	In using the 'narrowband mode' for the transient measurement, the instrument is triggered when the frequency of the measuring signal crosses the frequency value of the narrowband trigger setting.

*1. This function is effective only for the transient measurement. This trigger source cannot be selected for other measurements. It is not displayed on the softkey either.

To set the trigger source, use the following command ("xx" specifies the measurements (PN,SP,FP,TR) that are now waiting for trigger):

- :TRIGger:xx:SOURce

"Measurement" State

In the "Measurement" state, the instrument starts the measurement that was in the "Initiate" state immediately before the transition to this state.

If the delay time of DC control voltage and DC power voltage are set (by :SOURce:VOLTage:CONTrol:DELay command on page 261, :SOURce:VOLTage:POWer:DELay command on page 263), the instrument waits for the elapse of the sweep delay time before starting a measurement.

When the instrument has finished measuring, the trigger system behaves in one of the following ways depending on the setting of the continuous initiation mode.

If continuous initiation mode is off:

The trigger system switches to the "Hold" state; "c" in Figure 3-1)

If continuous initiation mode is on:

The trigger system switches to the "Hold" state and then to the "Waiting for Trigger" state; "c" and "a" in Figure 3-1)

Staring a Measurement Cycle (triggering the instrument)

Configuring the Instrument to Automatically Perform Continuous Measurement

Step 1. Select a measurement to be triggered using the :TRIGger:MODE command on page 280.

Step 2. Set the trigger source of the triggered measurement to Internal using the :TRIGger:xx:SOURce command.

Step 3. Set the continuous initiation mode of the enabled triggered measurement using the :INITiate:xx:CONTinuous command.

Starting Measurement on Demand

Step 1. Select a measurement to be triggered using the :TRIGger:MODE command on page 280.

Step 2. Set the trigger source of the triggered measurement to Bus using the :TRIGger:xx:SOURce command.

Step 3. Set the continuous initiation mode of the enabled triggered measurement using the :INITiate:xx:CONTinuous command.

Step 4. Trigger the instrument when you want to perform measurement. An external controller can trigger the instrument by only a single command.

Command	**Applicable trigger source**
*TRG on page 223	Bus trigger only

Step 5. To start the next measurement cycle, repeat step 4.

Waiting for End of measurement

Using the Status Register

The status of the E5052A can be detected through the status registers. This section describes how to detect the end of measurement by using the status registers. For a complete description of the status report mechanism, including the specifications of each bit, see Appendix B, “Status Reporting System,”.

Measurement status is reported by the operation status condition register (see Table B-3 on page 363). An SRQ (service request) is useful when you create a program that uses the information reported by this register to detect the end of measurement.

To detect the end of measurement via an SRQ, use one of the following commands:

- *SRE on page 222
- :STATus:OPERation:ENABle on page 268
- :STATus:OPERation:PTRansition on page 269
- :STATus:OPERation:NTRansition on page 269

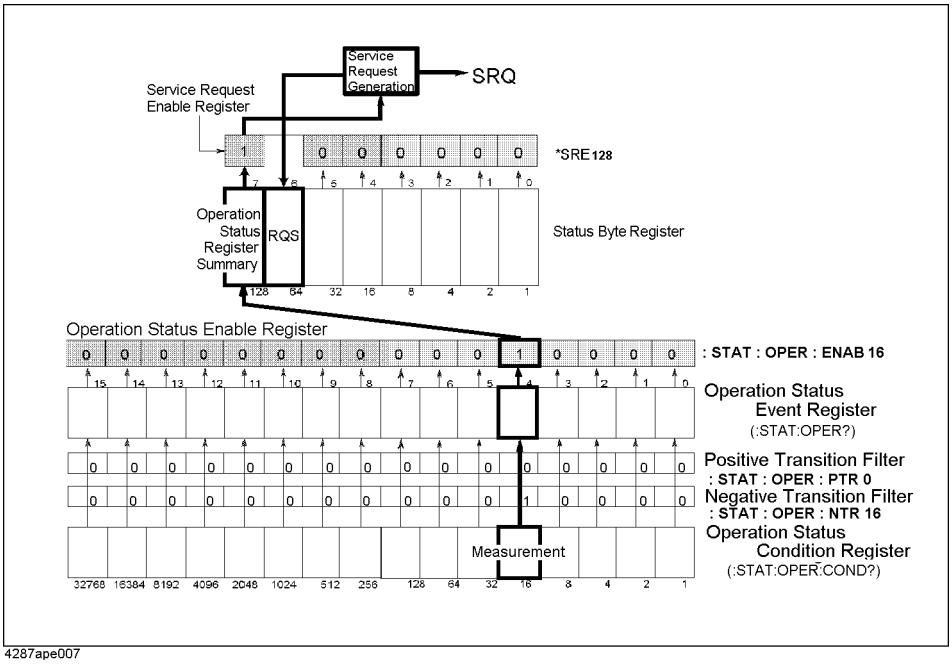
Follow these steps:

Step 1. Configure the E5052A so that it generates an SRQ when the operation status condition register's bit 4 (a bit that is set to 1 during measurement) is changed from 1 to 0.

Step 2. Trigger the instrument to start a measurement cycle.

Step 3. When an SRQ is generated, the program interrupts the measurement cycle.

Figure 3-2 **SRQ generation sequence (at end of measurement)**



Sample program

Example 3-1 is a sample program that demonstrates how to use an SRQ to interrupt the end of measurement.

This program triggers the spectrum measurement of E5052A and then terminates the program when the end signal is received.

Example 3-1 **Sample program showing how to interrupt the end of measurement**

```
110   DIM Buff$[9]
120   INTEGER A
130   ASSIGN @Agte5052 TO 717
140   OUTPUT @Agte5052;":ABOR"
150   OUTPUT @Agte5052;":TRIG:MODE SP1"
160   OUTPUT @Agte5052;":TRIG:SP:SOUR BUS"
170   OUTPUT @Agte5052;":INIT:SP:CONT ON"
180   OUTPUT @Agte5052;":STAT:OPER:PTR 0"
190   OUTPUT @Agte5052;":STAT:OPER:NTR 16"
200   OUTPUT @Agte5052;":STAT:OPER:ENAB 16"
210   OUTPUT @Agte5052;"*SRE 128"
220   OUTPUT @Agte5052;"*CLS"
230   OUTPUT @Agte5052;"*OPC?"
240   ENTER @Agte5052;Buff$
250   ON INTR 7 GOTO Meas_end
260   ENABLE INTR 7;2
270   OUTPUT @Agte5052;"*TRG"
280   PRINT "Waiting..."
290 Meas_wait:   WAIT .1
300   OUTPUT @Agte5052;"*STB?"
310   ENTER @Agte5052;A
320   PRINT "a=";A
330   GOTO Meas_wait
340 Meas_end: OFF INTR 7
350   PRINT "Measurement Complete"
360   END
```

Using Wait Time

Before creating your program, actually measure the time between the start and end of the measurement cycle. Then code your program so that the controller waits for the actually measured time by using the appropriate command (for example, the WAIT command for HTBasic). This is a straightforward method, but care must be taken: an incorrect wait time could result in unexpected error.

4 Reading/Writing Measurement Data

This chapter provides an overview of the Agilent E5052A's internal data transfer format and explains how to read and write measurement results (internal data array and marker position).

Data Types for Data Transfer

This section describes the data types that the E5052A uses for data transfer.

Array type

If you use any of the following commands, the data transfer will be executed using array-type data. Heree, you can choose from among ASCII transfer format, IEEE 64-bit floating point binary transfer format, and IEEE 32-bit floating point binary transfer format.

For phase noise measurement

- :CALC:PN[1-1]:DATA:CARR
- :CALC:PN[1-1]:DATA:RDAT
- :CALC:PN[1-1]:DATA:XDAT?
- :CALC:PN[1-1]:TRAC[1-1]:DATA:FDAT
- :CALC:PN[1-1]:TRAC[1-1]:DATA:FMEM
- :CALC:PN[1-1]:TRAC[1-1]:DATA:UDAT
- :CALC:PN[1-1]:TRAC[1-1]:DATA:UMEM

For spectrum measurement

- :CALC:SP[1-1]:DATA:RDAT
- :CALC:SP[1-1]:DATA:XDAT?
- :CALC:SP[1-1]:TRAC[1-1]:DATA:FDAT
- :CALC:SP[1-1]:TRAC[1-1]:DATA:FMEM
- :CALC:SP[1-1]:TRAC[1-1]:DATA:UDAT
- :CALC:SP[1-1]:TRAC[1-1]:DATA:UMEM

For frequency/power measurement

- :CALC:FP[1-1]:DATA:RDAT
- :CALC:FP[1-1]:DATA:TDAT
- :CALC:FP[1-1]:DATA:XDAT?
- :CALC:FP[1-1]:TRAC[1-3]:DATA:FDAT
- :CALC:FP[1-1]:TRAC[1-3]:DATA:FMEM
- :CALC:FP[1-1]:TRAC[1-3]:DATA:UDAT
- :CALC:FP[1-1]:TRAC[1-3]:DATA:UMEM

For transient measurement

- :CALC:TR[1-1]:NARR:DATA:RDAT
- :CALC:TR[1-1]:NARR:DATA:XDAT?
- :CALC:TR[1-1]:TRAC[1-4]:DATA:FDAT

- :CALC:TR[1-1]:TRAC[1-4]:DATA:FMEM
- :CALC:TR[1-1]:TRAC[1-4]:DATA:UDAT
- :CALC:TR[1-1]:TRAC[1-4]:DATA:UMEM
- :CALC:TR[1-1]:WIDE:DATA:RDAT
- :CALC:TR[1-1]:WIDE:DATA:XDAT?

For sending and receiving data to/from VBA program

- :PROG:VAR:ARR[1-10]:DATA

Block type

If you use any of the following commands, the data transfer will be executed using block-type data. Here, you can choose either IEEE 64-bit floating point binary transfer format or IEEE 32-bit floating point binary transfer format.

- :MMEM:DATA

NOTE The instrument always uses the ASCII transfer format when you transfer data without using array- or block-type commands.

Data Transfer Format

Set the data transfer format to transfer data of either array or block type. To set the data transfer format, use the following command:

- :FORMat:DATA on page 219

When you select the ASCII transfer format as the data transfer format, you can also specify the byte order. For more information, refer to “Binary Transfer Format” on page 54.

ASCII Transfer Format

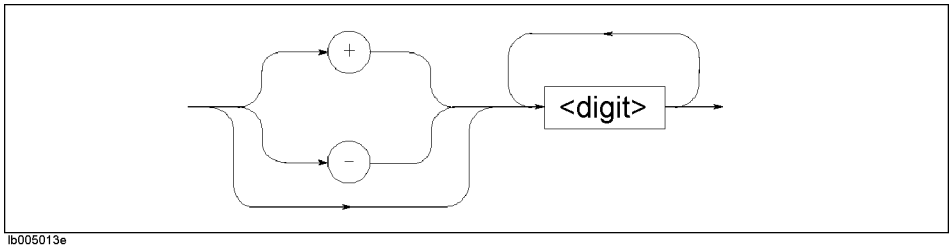
When you select the ASCII transfer format as the data transfer format, numbers are transferred as ASCII bytes, each of which corresponds to one of the formats shown below. Note that numbers are separated from one another with a comma (,) in accordance with the IEEE 488.2 specification.

NOTE Numeric data strings vary in length. Keep this in mind when you extract data from retrieved numeric data strings in your program.

- Integer format

  Figure 4-1 shows this format. Numbers are expressed as integers; for example, 201 is expressed as “+201” or “201.”

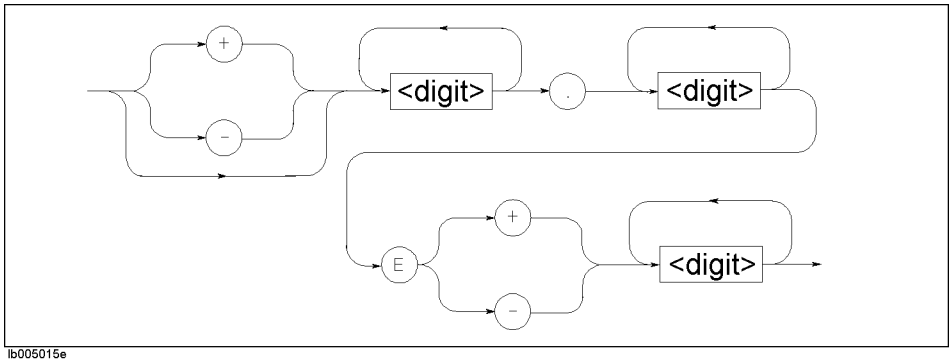
Figure 4-1 Integer format



- Floating-point number format

  Figure 4-2 shows this format. Numbers are expressed with floating points; for example, 1000 is expressed as “g+1.00000000000E+003”.

Figure 4-2 Floating-point number format



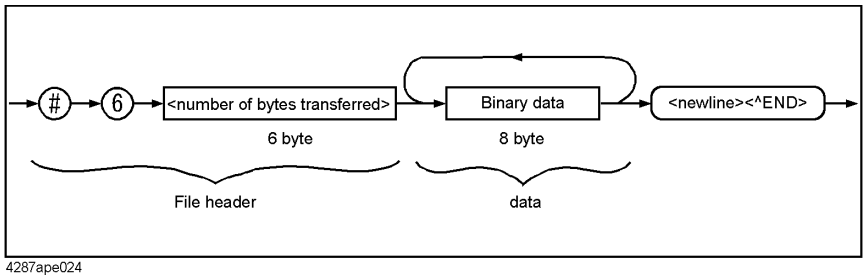
Binary Transfer Format

You can select the binary transfer format from the IEEE 64-bit floating point format or the IEEE 32-bit floating point format depending on the controller you use.

IEEE 64-bit floating point format

When you select the IEEE 64-bit floating point binary transfer format as the data transfer format, numbers are transferred in the format shown in Figure 4-3.

Figure 4-3 **IEEE 64-bit floating point binary transfer format**

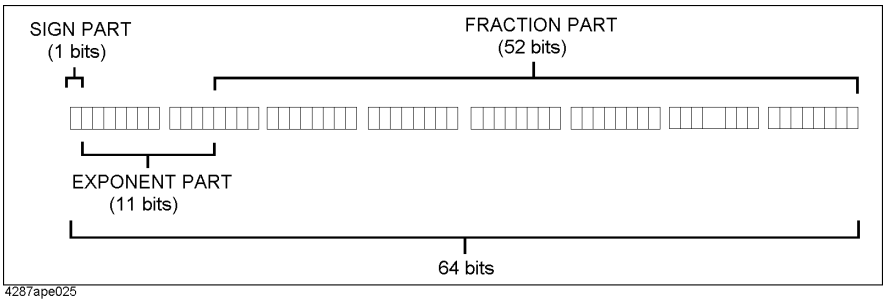


4287ape024

This data transfer format uses a header that consists of a sharp character (#), the number 6 (which indicates the byte size of the <number of bytes transferred> part), and the <number of bytes transferred> part in this order. The header is followed by the binary data (each number consists of 8 bytes, with the total being the byte size indicated by <number of bytes transferred>) and the message terminator <new line>^END.

The binary data is expressed in the IEEE 754 64-bit floating-point number format shown in Figure 4-4.

Figure 4-4 **64-bit floating point data**

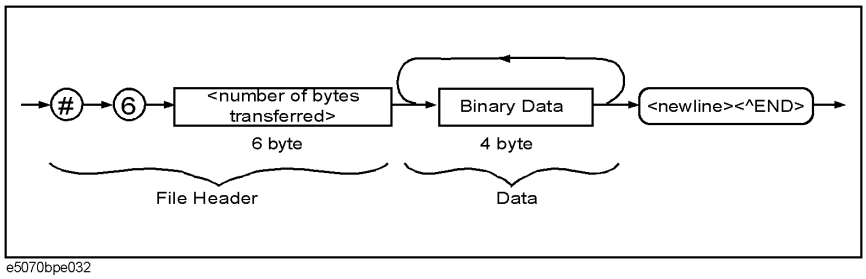


4287ape025

IEEE 32-bit floating point format

When you select the IEEE 32-bit floating point binary transfer format as the data transfer format, numbers are transferred in the format shown in Figure 4-5.

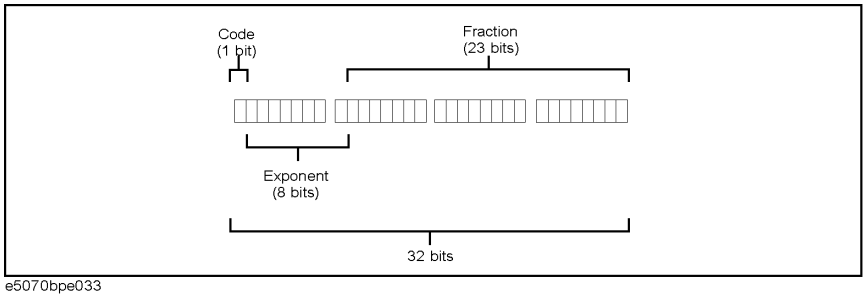
Figure 4-5 **IEEE 32-bit floating point binary transfer format**



This data transfer format uses a header that consists of a sharp character (#), the number 6 (which indicates the byte size of the <number of bytes transferred> part), and the <number of bytes transferred> part in this order. The header is followed by the binary data (each number consists of 4 bytes, with the total being the byte size indicated by <number of bytes transferred>) and the message terminator <new line>^END.

The binary data is expressed in the IEEE 754 32-bit floating-point number format shown in Figure 4-6.

Figure 4-6 **32-bit floating point data**



Byte order

When you choose to perform binary transfer, you can configure the instrument to transfer the bytes of the data in one of the following byte orders:

NORMal	Transfer begins with the byte that contains the MSB (most significant bit); that is, the leftmost byte in Figure 4-4 and Figure 4-6.
SWAPped	Transfer begins with the byte that contains the LSB (least significant bit); that is, the rightmost byte in Figure 4-4 and Figure 4-6.

To set the byte order, use the following command:

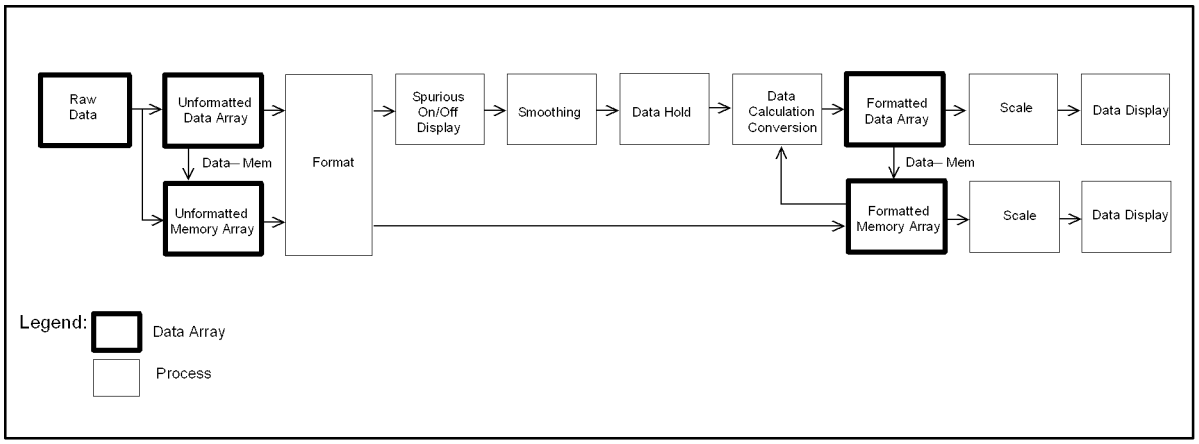
- :FORMat:BORDer on page 219

Internal data processing

Data flow

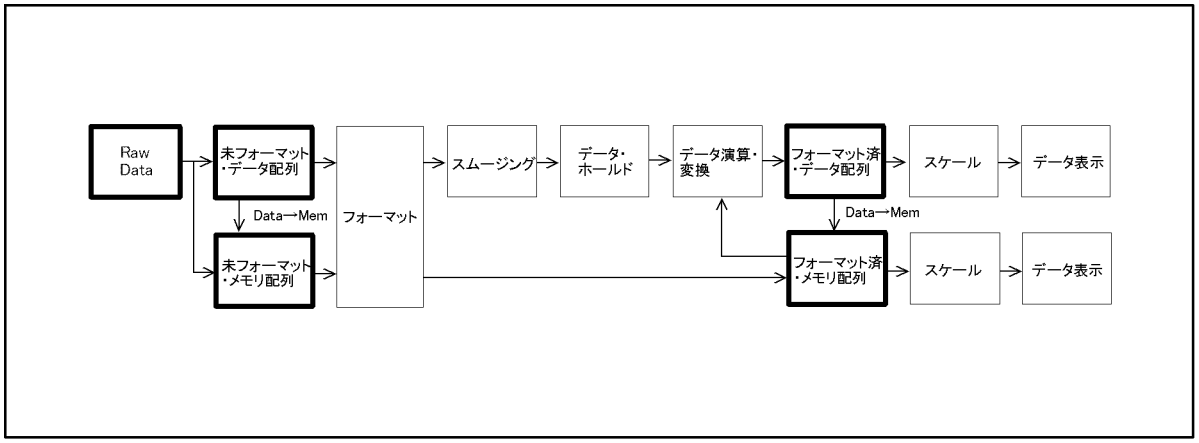
Figure 4-7, Figure 4-9, Figure 4-10 and Figure 4-11 provide overviews of the E5052A's internal data processing flows. For more information on each data processing flow, refer to the "*User's Guide*."

Figure 4-7 Data processing flow for phase noise measurement with E5052A



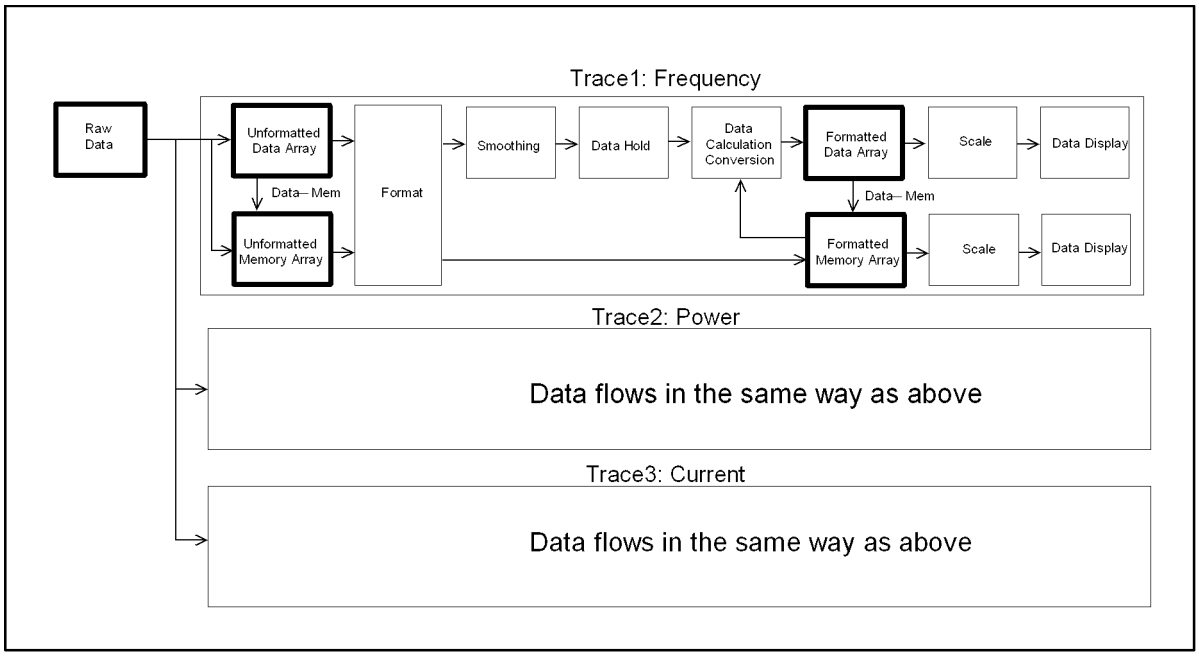
e5052ape501

Figure 4-8 Data processing flow for spectrum measurement with E5052A



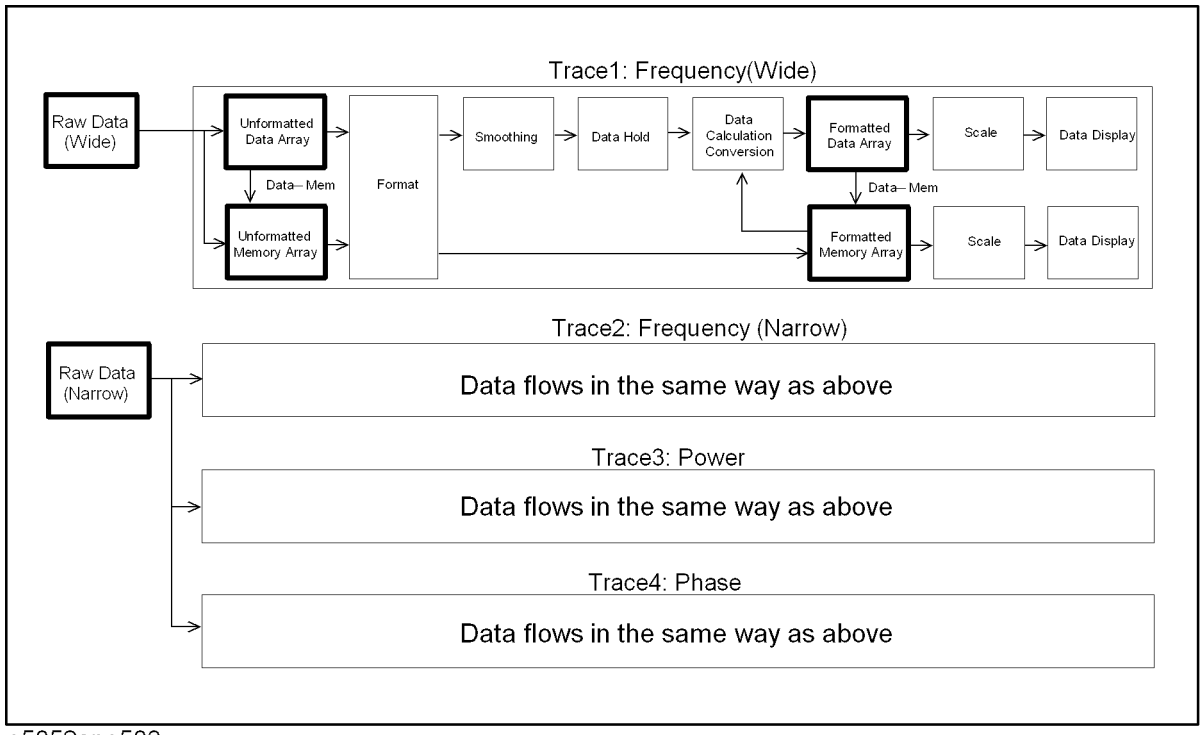
e5052apj505

Figure 4-9 Data processing flow for frequency/power measurement with E5052A



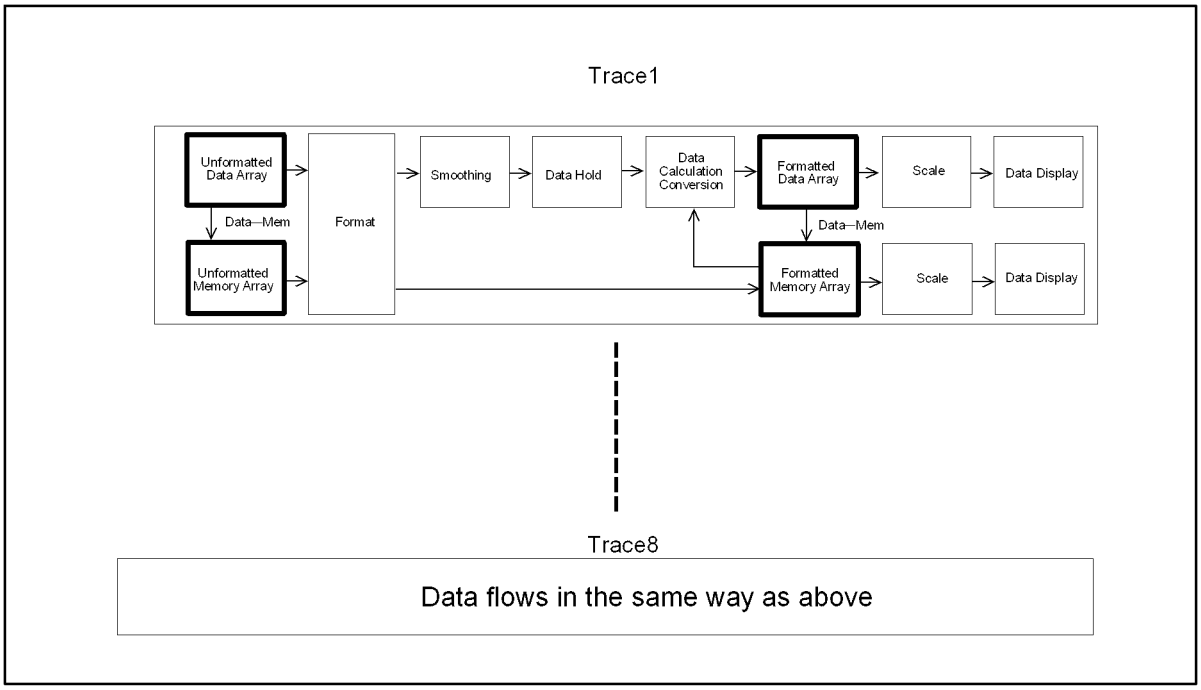
e5052ape502

Figure 4-10 Data processing flow for transient measurement with E5052A



e5052ape503

Figure 4-11 Data processing flow for user-defined function measurement with E5052A



e5052ape504

The enclosed part of the data processing flow represents the data array. By using SCPI commands, the data array can be read for processing and written for display on the E5052A's screen.

Internal data arrays

Unformatted data arrays

An unformatted array contains the raw data just as it was obtained through measurement and divided for each trace.

The instrument retains the unformatted data arrays which are associated with each trace of individual measurements. To read/write one of the unformatted data arrays, use the following command ("xx" specifies any one of the measurements (PN,SP,FP,TR,USER) while "y" specifies the number of the trace if the measurement has multiple traces.

- :CALC:xx[1-1]:TRAC[1-y]:DATA:UDAT

Unformatted memory arrays

When the :CALC:xx[1-1]:TRAC[1-y]:MATH:MEM command is executed on a particular unformatted memory array, a copy is stored in the corresponding unformatted data array.

The instrument retains the unformatted memory arrays associated with each trace of individual measurements. To read/write one of the unformatted memory arrays, use the following command:

- :CALC:xx[1-1]:TRAC[1-y]:DATA:UMEM

Formatted data array

A formatted data array contains the formatted data (values to be displayed) obtained by performing data math operations, measurement parameter conversion, and smoothing on a particular unformatted data array.

The instrument retains the formatted data arrays associated with each trace of individual measurements. To read/write one of the formatted data arrays, use the following command:

- :CALC:xx[1-1]:TRAC[1-y]:DATA:FDAT

Formatted memory arrays

A formatted memory array contains the formatted data (values to be displayed) obtained by performing data math operations, measurement parameter conversion, and smoothing on a particular unformatted memory array.

The instrument retains the formatted memory arrays associated with each trace of individual measurements. To read/write one of the formatted memory arrays, use the following command:

- :CALC:xx[1-1]:TRAC[1-y]:DATA:FMEM

X-axis Data Arrays

An x-axis data array contains the x-axis values for all measurement points.

The instrument retains the x-axis arrays associated with individual measurements (for the transient measurement, narrow/wide only). X-axis data arrays are read-only. To retrieve one of the x-axis data arrays, use the following command:

- :CALC:xx[1-1]:DATA:XDAT

For the transient measurement, you can use two types of command as follows.

- :CALCulate:TR[1-1]:NARRow:DATA:XDATa on page 138
- :CALCulate:TR[1-1]:WIDE:DATA:XDATa on page 155

Raw Data Arrays

A raw data array contains the measured values just as they were obtained, without any correction or format applied.

The instrument retains the raw data arrays associated with individual measurements (for the transient measurement, narrow/wide only). To read/write one of the raw data arrays, use the following command:

- :CALC:xx[1-1]:DATA:RDAT

For the transient measurement, you can use two types of command as follows:

- :CALCulate:TR[1-1]:NARRow:DATA:RDATa on page 138
- :CALCulate:TR[1-1]:WIDE:DATA:RDATa on page 154

Retrieving Measurement Results

Markers allow you to retrieve measurement results at your specified points only. “Internal data arrays” on page 59 allow you to retrieve all measurement results throughout a particular trace.

Retrieving measurement results at marker positions

In using markers to retrieve measurement results at specified points, you can use up to six markers for each measurement graph, and you can move them to any point on the trace. You can also set any as a reference marker.

Showing/hiding markers

To show or hide each marker, use the following command (“xx” specifies any one of the measurements (PN,SP,FP,TR,) while “y” specifies the number of the trace if the measurement has multiple traces.

- :CALC:xx[1-1]:TRAC[1-y]:MARK[1-6]:STAT

Turning On or Off Reference Marker Mode

Turning on Reference Marker Mode sets the specified marker number as the reference marker and makes other markers relative with respect to it. To specify the reference marker and turn on or off Reference Marker mode, use the following command:

- :CALC:xx[1-1]:ALLT:MARK:REF:NUMB
- :CALC:xx[1-1]:ALLT:MARK:REF:STAT

Changing along the frequency axis and retrieval of marker positions

To change along the frequency axis or retrieve the reference marker position, use the following command:

- :CALC:xx[1-1]:TRAC[1-y]:MARK[1-6]:X

NOTE When Reference Marker Mode is on, the x value at a regular marker is a relative value obtained by deducting its x value from the reference marker’s x value.

Retrieving measurement results at marker positions

To retrieve the measurement results (response values) at a particular marker or the reference marker, use the following command:

- :CALC:xx[1-1]:TRAC[1-y]:MARK[1-6]:Y?

Retrieving internal data arrays

You can chose between the ASCII and binary data transfer formats when you retrieve internal data arrays.
For more information, refer to “Data Types for Data Transfer” on page 50.

Example 4-1 and Example 4-2 show sample programs that demonstrate how to retrieve

formatted data arrays. The sample program in Example 4-1 uses the ASCII transfer format while the sample in Example 4-2 uses the binary transfer format.

These sample programs show how to retrieve the formatted data arrays of measured phase noise.

Example 4-1 **Sample: Using ASCII Transfer Format to Retrieve Internal Data Arrays**

```
110   REAL Fdata(1:1601),Freq(1:1601)
120   DIM Img$[30]
130   INTEGER Nop,I
140   ASSIGN @Agte5052 TO 717
150   OUTPUT @Agte5052;":SENS:PN:SWE:POIN?"
160   ENTER @Agte5052;Nop
170   PRINT "Number of Frequency points = ";Nop
180   REDIM Fdata(1:Nop),Freq(1:Nop)
190   OUTPUT @Agte5052;":FORM:DATA ASC"
200   OUTPUT @Agte5052;":CALC:PN1:TRAC1:DATA:FDAT?"
210   ENTER @Agte5052;Fdata(*)
220   OUTPUT @Agte5052;":CALC:PN1:DATA:XDAT?"
230   ENTER @Agte5052;Freq(*)
240   Img$="MD.4DE,2X,MD.6DE"
250   PRINT "Frequency      Data"
260   FOR I=1 TO Nop
270     PRINT USING Img$;Freq(I),Fdata(I)
280   NEXT I
290   END
```

Example 4-2 **Sample: Using Binary Transfer Format to Retrieve Internal Data Arrays**

```
110   REAL Fdata(1:1601),Freq(1:1601)
120   DIM Img$[30],Buff$[9]
130   INTEGER Nop,I
140   ASSIGN @Agte5052 TO 717
150   ASSIGN @Binary TO 717;FORMAT OFF
160   OUTPUT @Agte5052;":SENS:PN:SWE:POIN?"
170   ENTER @Agte5052;Nop
180   PRINT "Number of Frequency points = ";Nop
190   REDIM Fdata(1:Nop),Freq(1:Nop)
200   OUTPUT @Agte5052;":FORM:DATA REAL64"
210   OUTPUT @Agte5052;":CALC:PN1:TRAC1:DATA:FDAT?"
220   ENTER @Agte5052 USING "#,8A";Buff$
230   ENTER @Binary;Fdata(*)
240   ENTER @Agte5052 USING "#,1A";Buff$
250   OUTPUT @Agte5052;":CALC:PN1:DATA:XDAT?"
260   ENTER @Agte5052 USING "#,8A";Buff$
270   ENTER @Binary;Freq(*)
280   ENTER @Agte5052 USING "#,1A";Buff$
290   Img$="MD.4DE,2X,MD.6DE"
300   PRINT "Frequency      Data"
310   FOR I=1 TO Nop
320     PRINT USING Img$;Freq(I),Fdata(I)
330   NEXT I
340   END
```

Entering Data in a Trace

By using “Formatted data array” on page 59, you can change the data/memory trace on the LCD by writing the new data into the “Formatted memory arrays” on page 59.

When you write data into the formatted data/memory array, you can choose either the ASCII or binary transfer format (see “Data Types for Data Transfer” on page 50).

Example 4-3, Example 4-4, Example 4-3, and Example 4-4 show sample programs that demonstrate how to write data into formatted data arrays. The sample program in Example 4-3 uses the ASCII transfer format, while the sample in Example 4-4 uses the binary transfer format.

These sample programs write the trace data of phase noise measurements stored in a file on the formatted data arrays.

Example 4-3 **Sample: Using ASCII Transfer Format to Write Formatted Data Arrays (write_a.htb)**

```
110   REAL Fdata(1:1601),Freq(1:1601)
120   DIM Img$[30],File$[300]
130   INTEGER Nop,I
140   File$="a:pn_asc"
150   ASSIGN @Agte5052 TO 717
160   OUTPUT @Agte5052;":SENS:PN:SWE:POIN?"
170   ENTER @Agte5052;Nop
180   PRINT "Number of Frequency points = ";Nop
190   REDIM Fdata(1:Nop),Freq(1:Nop)
200   ASSIGN @File TO File$
210   Img$="MD.4DE,2X,MD.6DE"
220   FOR I=1 TO Nop
230     ENTER @File USING Img$;Freq(I),Fdata(I)
240   NEXT I
250   ASSIGN @File TO *
260   OUTPUT @Agte5052;":FORM:DATA ASC"
270   OUTPUT @Agte5052;":CALC:PN1:TRAC1:DATA:FDAT ";Fdata(*)
390   END
```

Example 4-4 **Sample: Using Binary Transfer Format to Write Formatted Data Arrays (write_a.htb)**

```
110   REAL Fdata(1:1601),Freq(1:1601)
120   DIM Img$[30],File$[300],Head$[10]
130   INTEGER Nop,I
140   File$="a:pn_asc"
150   ASSIGN @Agte5052 TO 717
160   ASSIGN @Binary TO 717;FORMAT OFF
170   OUTPUT @Agte5052;":SENS:PN:SWE:POIN?"
180   ENTER @Agte5052;Nop
190   PRINT "Number of Frequency points = ";Nop
200   REDIM Fdata(1:Nop),Freq(1:Nop)
210   ASSIGN @File TO File$
220   Img$="MD.4DE,2X,MD.6DE"
230   FOR I=1 TO Nop
240     ENTER @File USING Img$;Freq(I),Fdata(I)
250   NEXT I
```

```
260   ASSIGN @File TO *
270   OUTPUT @Agte5052;":FORM:DATA REAL64"
280   Head$="#6"&IVAL$(8*Nop,10)
290   OUTPUT @Agte5052;":CALC:PN1:TRAC1:DATA:FDAT ";Head$;
300   OUTPUT @Binary;Fdata(*),END
310   END
```

5 Saving and Recalling (File Management)

This chapter explains how to save and recall instrument status and measurement results onto/from the files. The chapter also discusses file management in general.

Saving/Recalling

Specifying a file

When running a command for saving, recalling, or managing files, use a file name with extension to specify a particular file. Specify “A:” at the beginning of the file name when specifying a file on the floppy disk. Also, when specifying a file name with a directory, use “/” (slash) or “\” (backslash) as a delimiter.

Saving and recalling instrument status

You can save the instrument state by using one of the following methods:

- Saving the entire instrument state (setting and data) into a file
- Saving only the instrument setting into a file

Options for saving and recalling instrument status

When saving the instrument status into a file, you have two options for selecting the content to be saved: entire instrument state (setting and data) and instrument setting only.

To select the content to be saved, use the following command:

- :MMEMory:STORe:STYPe on page 232

To save the instrument setting (or instrument setting and data), use the following command:

- :MMEMory:STORe:STATe on page 231

Recalling a file saved with the above command reproduces the file’s status when it was last saved. To recall the settings from a file, use the following command:

- :MMEMory:LOAD:STATe on page 228

Auto recall

The file saved with the name F:\autorec.sta or A:\autorec.sta will be automatically recalled when the E5052A is powered on.

Saving measurement data

Measurement data (in a formatted data array) can be saved in the file in CSV (Comma Separated Value) format. To save measurement data in a file, use the following command (“xx” specifies any one of the measurements (PN, SP, FP, TR, USER) while “y” specifies the number of the trace):

- :MMEMory:xx[1-1]:TRACe[1-y]:STORe

Executing the above command will save the specified trace data of the specified measurement. Note that the data saved using the above command cannot be recalled from the E5052A.

Saving images on LCD screen

Images displayed on the LCD screen can be saved in a file in the bitmap (.bmp) or portable network graphics (.png) format. To save a screen image in a file, use the following command:

- :MMEMory:STORe:IMAGe on page 230

Executing the above command will save the screen image displayed when the command is invoked.

NOTE Note that this gives a different result from the operation on the front panel used to save the screen image by pressing the **[Capture]** key.

Saving/loading (importing) the VBA program

Saving

Only a VBA project file can be saved using the command below.

To save the VBA project that is opened on the VBA editor in a file, use the following command:

- :MMEMory:STORe:PROGram on page 231

Loading (importing)

To load the VBA project in the VBA editor, or to import the module/form file, use the following command:

- :MMEMory:LOAD:PROGram on page 228

Executing the above command will load/import the file according to its extension as follows:

Extension	File type
vba	VBA Project
bas	Standard module
frm	User form
cls	Class Modules

Managing Files

Creating a directory (folder)

To create a directory (folder), use the following command:

- :MMEMory:MDIRectory on page 228

Deleting a file (directory)

To delete a file or directory, use the following command:

- :MMEMory:DELete on page 226

Copying a file

To copy a file, use the following command:

- :MMEMory:COPY on page 225

Transferring files

Files can be transferred from the external controller to the E5052A by reading data from a file on the controller and then writing them to a file on the E5052A, using the following command:

- :MMEMory:DATA on page 226

Also, file transfer from the E5052A to the external controller can be done by reading data from a file on the E5052A while using the commands as query and then writing them to the file on the controller.

Retrieving data from storage

To retrieve information from the E5052A's built-in storage (usage, properties of file located in a specified directory), use the following command:

- :MMEMory:CATalog on page 225

Sample program

Example 5-1 shows a sample program for transferring files between the external controller and the E5052A.

This program reads out data from a specified file on the E5052A and then writes them to a specified file on the external controller.

Example 5-1 **Sample of file transfer**

```
1000  DIM Src_file$[50],Dst_file$[50]
1010  DIM Buff$[9],Img$[32],Src_size_char$[10]
1020  INTEGER Max_bsize,Block_size
1030  REAL Src_size
1040  ASSIGN @Agte5052 TO 717
1050  Src_file$="f:\state01.sta"
1060  Dst_file$="a:state01.sta"
1070  CREATE Dst_file$,1
1080  ASSIGN @Dst_file TO Dst_file$
1090  Max_bsize=24576
1100  PRINT "Now Copying: "&Src_file$&"(@E5052) ->
"&Dst_file$&"(@Controller)"
1110  OUTPUT @Agte5052;":MMEM:DATA? """&Src_file$&""""
1120  WAIT .5
1130  ENTER @Agte5052 USING "#,A";Buff$
1140  ENTER @Agte5052 USING "#,A";Digit$
1150  Img$="#, "&Digit$&"A"
1160  ENTER @Agte5052 USING Img$;Src_size_char$
1170  Src_size=VAL(Src_size_char$)
1180  WHILE Src_size>0
1190    IF Src_size>Max_bsize THEN
1200      Block_size=Max_bsize
1210    ELSE
1220      Block_size=Src_size
1230    END IF
1240    ALLOCATE Dat$[Block_size]
1250    Img$="#, "&VAL$(Block_size)&"A"
1260    ENTER @Agte5052 USING Img$;Dat$
1270    OUTPUT @Dst_file USING Img$;Dat$
1280    DEALLOCATE Dat$
1290    Src_size=Src_size-Block_size
1300  END WHILE
1310  PRINT "Done"
1320  ENTER @Agte5052 USING "#,A";Buff$
1330  ASSIGN @Dst_file TO *
1340  END
```

6 Working with Automatic Test Systems

This chapter describes useful features that are available when the Agilent E5052A is integrated with an automatic test system.

Preventing Erroneous Key Operation on the Front Panel (Key Lock feature)

When no operation is required from the front panel controls, the mouse, or the keyboard, disabling these input devices can prevent erroneous operation that might occur due to accidental touching.

To turn on and off Key Locking, use the following commands:

Locking the front panel controls and the keyboard.	:SYSTem:KLOCk:KBD on page 277
Locking the mouse and the touch screen.	:SYSTem:KLOCk:MOUSe on page 278

Improving Command Processing Speed

SCPI commands should be processed quickly to improve throughput when the commands are frequently executed (for example, reading out the trace for each measurement).

With the E5052A, the processing time for SCPI commands can be improved by decreasing the refresh rate of the LCD display.

When measurement results (trace) do need not updating

When the measurement trace does not need to be updated, turn off the update function of the LCD display. This improves the processing speed of SCPI commands and eliminates the updating time needed by the screen.

To turn off the update function of the LCD display, use the following command:

- :DISPlay:ENABle on page 180

When measurement results (trace) need updating

When the measurement trace needs to be updated, the processing speed of SCPI commands can still be improved by controlling the update timing of the LCD display:

Step 1. Execute all SCPI commands that are required before measurement, including commands setting conditions.

Step 2. Turn Off the update function of the LCD display.

- :DISPlay:ENABle on page 180

Step 3. Perform the measurement.

Step 4. Execute the commands for reading out measurement result or analyzing the result. Note that reading out the result in binary format accelerates data transfer.

Step 5. Turn On the update function of the LCD display. The following command enables the update of the LCD display.

- :DISPlay:ENABle on page 180

Step 6. Return to Step 2.

Detecting Occurrence of an Error

Using the status reporting system

The status of the E5052A can be monitored through the status registers. This section describes how to detect an error using the status registers. For a complete description of the status report mechanism, including the specifications of each bit, see Appendix B, “Status Reporting System,”.

The occurrence of an error will be shown in the standard event status register. An SRQ (service request) is useful when you create a program that uses the information reported by this register to detect the occurrence of errors.

To detect the end of sweep via an SRQ, use one of the following commands:

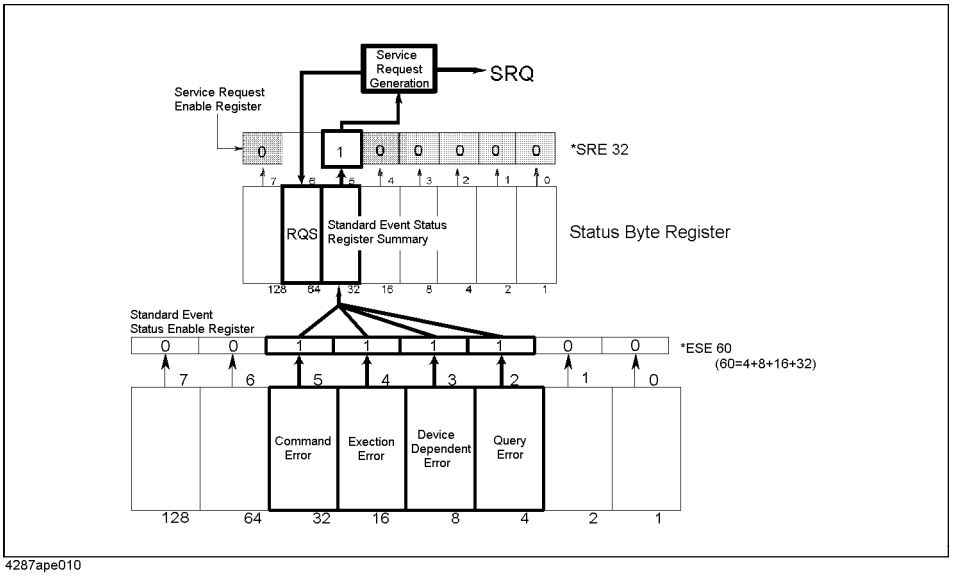
- *SRE on page 222
- *ESE on page 221

Follow these steps:

Step 1. Set the E5052A so that it generates an SRQ when any of the error occurrence bits is set to 1 in the standard event status register.

Step 2. When an SRQ is generated, the program interrupts the measurement cycle.

Figure 6-1 **SRQ Generation Sequence (when an error occurs)**



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Using the error queue

An error queue holds the number for the error and the error message. Reading the error queue allows the user to verify the error that has occurred. To retrieve the content of the error queue, use the following command:

- :SYSTem:ERRor[:NEXT] on page 277

The error queue can be used in the following ways:

1. It is used as a branch for error handling. When an error queue is retrieved, it returns 0 as the error number and &dlq;No error&drq; as the error message if no error is detected. This can be used for detecting an error and for branching the flow of a program. This is also useful for handling a specific error(s). Note that using this method prevents the user from performing any processing during the occurrence of an error.
2. When an error is detected using SRQ, the error queue is used to examine the error.

Example 6-1 is a sample program that demonstrates how to use an SRQ to detect the occurrence of an error.

This program sets the SRQs and then intentionally sets a wrong trigger to generate an error, which is handled by the program. In the error handling part, this program examines the error and then displays the error number and error message.

Example 6-1 **Example of error detection using an SRQ**

```
110   DIM Buff$[9],Err_msg$[100]
120   INTEGER Err_no
130 !
140   ASSIGN @Agte5052 TO 717
150 !
160   OUTPUT @Agte5052;"*ESE 60"
170   OUTPUT @Agte5052;"*SRE 32"
180   OUTPUT @Agte5052;"*CLS"
190   OUTPUT @Agte5052;"*OPC?"
200   ENTER @Agte5052;Buff$
210 !
220   ON INTR 7 GOTO Err_proc
230   ENABLE INTR 7;2
240   OUTPUT @Agte5052;":TRIG:MODE PN1"
250   OUTPUT @Agte5052;":TRIG:SP:SOUR BUS"
260   OUTPUT @Agte5052;":INIT:SP:CONT ON"
280   OUTPUT @Agte5052;"*TRG"
290   PRINT "Waiting..."
300   GOTO Skip_err
310 Err_proc: OFF INTR 7
320   OUTPUT @Agte5052;":SYST:ERR?"
330   ENTER @Agte5052;Err_no,Err_msg$
340   PRINT "Error occured."
350   PRINT "No:";Err_no,"Description: "&Err_msg$
360   PRINT "Program Interrupt."
370   GOTO Prog_end
380 Skip_err: PRINT "Program Done"
390 Prog_end:  END
```

7 SCPI Command Reference

This chapter describes the SCPI command reference for the Agilent E5052A. It describes the commands using their abbreviated format in alphabetical order. If you want to look up commands using their fully qualified format, refer to the index for the desired SCPI command. If you want to look up commands by their function, refer to SCPI command list by function.

Notational conventions in this command reference

This section describes the rules to read the description of the commands in this chapter.

Syntax

Part with heading “Syntax” describes the syntax to send a command from the external controller to the E5052A. A syntax consists of a command part and a parameter part. The separator between the command part and the parameter part is a space.

If there are several parameters, the separator between adjacent parameters is a comma (,). 3 points (…) between commas indicate that parameters in that part are omitted. For example, <numeric 1>,…,<numeric 4> indicates that 4 parameters, <numeric 1>,<numeric 2>, <numeric 3>,<numeric 4>, are required.

String-type parameters, <string>, <string 1>, and so on, must be enclosed in double quotation marks ("). <block> shows block format data.

You can omit the lowercase letters in syntax. For example, ":SENSe:ATTenuation:LEVel" can be shortened as ":SENS:ATT:LEV".

The definition of symbols used in the syntax is as follows:

<>	Characters enclosed in this pair of symbols are necessary parameters when sending the command.
[]	Part enclosed in this parenthesis pair can be omitted.
{}	Part enclosed in this parenthesis pair indicates that you must select one of the items in this part. Individual items are separated by a vertical bar (|).

For example, ":SOUR:VOLT:CONT:DEL 0.001"
":SOURCE:VOLTAGE:CONTROL:DELAY 1E-3" and so on are valid for the syntax given below.

Syntax

:SOURce:VOLTage:CONTrol:DELay <numeric>

Description

Part with heading “Description” describes how to use the command or the operation when executed.

Parameters

Part with heading “Parameters” describes necessary parameters when sending the command. When a parameter is a value type or a string type enclosed with <>, its description, allowable setup range, preset (factory-set) value, and so on are given; when a parameter is a selection type enclosed with {}, the description of each selection item is given.

Query response

Part with heading “Query response” describes the data format read out when query (reading out data) is available with the command.

Each readout parameter is enclosed with {}. If there are several items within {} separated by the pipe (|), only one of them is read out.

When several parameters are read out, they are separated with a comma (,). Note that, 3 points (…) between commas indicate that the data of that part is omitted. For example, {numeric 1},…,{numeric 4} indicates that 4 data items, {numeric 1}, {numeric 2}, {numeric 3}, and {numeric 4}, are read out.

<newline><^END> after the parameters is the program message terminator.

Related commands

Part with heading “Related commands” describes the commands related to this command.

Equivalent key

Part with heading “Equivalent key” shows the operational procedure of the front panel keys that has the same effect as this command.

[Key]	Indicates that you press the key named Key.
[Key] - Item	Indicates a series of key operation in which you press the **[Key]** key, select (highlight) the item called **Item** on the displayed menu using the **[↓]** key and so on, and then press the **[Enter]** key.

E5052A commands

This section describes the commands specific to the E5052A.

:ABORt

Syntax :ABORt

Description Abort measurement (No Query)

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

:CALCulate:FP[1-1]:ALLTrace:ACTive

Syntax :CALCulate:FP[1-1]:ALLTrace:ACTive <numeric>

:CALCulate:FP[1-1]:ALLTrace:ACTive?

Description Selects active trace

Parameter

	<Numeric>
Range	1 to 3
Preset value	1
Unit	-
Resolution	-

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

:CALCulate:FP[1-1]:ALLTrace:BDMarker:X:COUPle:STATe

Syntax :CALCulate:FP[1-1]:ALLTrace:BDMarker:X:COUPle:STATe {ON|OFF|1|0}

:CALCulate:FP[1-1]:ALLTrace:BDMarker:X:COUPle:STATe?

Description Turns on/off bandmarker coupling function

Parameter

	Description
ON or 1	Set bandmarker coupling function to 'ON'

	Description
OFF or 0(Preset value)	Set bandmarker coupling function to 'OFF'

Equivalent key FP Menu -> Marker Function -> Couple

:CALCulate:FP[1-1]:ALLTrace:MARKer:COUPle:STATe

Syntax :CALCulate:FP[1-1]:ALLTrace:MARKer:COUPle:STATe {ON|OFF|1|0}

:CALCulate:FP[1-1]:ALLTrace:MARKer:COUPle:STATe?

Description Turns on/of marker coupling function

Parameter

	Description
ON or 1	Enable marker coupling function
OFF or 0(Preset value)	Disable marker coupling function

Equivalent key FP Menu -> Marker -> Couple

:CALCulate:FP[1-1]:ALLTrace:MARKer:DISCrete:STATe

Syntax :CALCulate:FP[1-1]:ALLTrace:MARKer:DISCrete:STATe {ON|OFF|1|0}

:CALCulate:FP[1-1]:ALLTrace:MARKer:DISCrete:STATe?

Description Turns on/off marker discrete function

Parameter

	Description
ON or 1	Enable marker discrete function
OFF or 0(Preset value)	Disable marker discrete function

Equivalent key FP Menu -> Marker -> More Functions -> Discrete

:CALCulate:FP[1-1]:ALLTrace:MARKer:REFerence:NUMBer

Syntax :CALCulate:FP[1-1]:ALLTrace:MARKer:REFerence:NUMBer <numeric>

:CALCulate:FP[1-1]:ALLTrace:MARKer:REFerence:NUMBer?

Description Sets/reads marker reference number

Parameter

	<Numeric>
Range	1 to 6
Preset value	1
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker -> More Functions -> Ref Marker

:CALCulate:FP[1-1]:ALLTrace:MARKer:REFerence:STATe

Syntax :CALCulate:FP[1-1]:ALLTrace:MARKer:REFerence:STATe {ON|OFF|1|0}

:CALCulate:FP[1-1]:ALLTrace:MARKer:REFerence:STATe?

Description Turns on/off delta marker mode

Parameter

	Description
ON or 1	Set delta marker mode mode to 'ON'
OFF or 0(Preset value)	Set delta marker mode mode to 'OFF'

Equivalent key FP Menu -> Marker -> More Functions -> Ref Marker Mode

:CALCulate:FP[1-1]:DATA:RDATa

Syntax :CALCulate:FP[1-1]:DATA:RDATa <array>

:CALCulate:FP[1-1]:DATA:RDATa?

Description Sets/reads raw data

Parameter

	<Description>
Range	1...3003
Preset value	-
Unit	-

	<Description>
Resolution	-

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

:CALCulate:FP[1-1]:DATA:TDATa

Syntax :CALCulate:FP[1-1]:DATA:TDATa <array>

:CALCulate:FP[1-1]:DATA:TDATa?

Description Sets/reads tester mode data.

Parameter

	<Description>
Range	1...3
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:FP[1-1]:DATA:XDATa

Syntax :CALCulate:FP[1-1]:DATA:XDATa

Description Reads X-axis data (Query Only)

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

:CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:ACTive

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:ACTive <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:ACTive?

Description Selects active marker

Parameter

	<Numeric>
Range	1 to 6
Preset value	1

	<Numeric>
Unit	-
Resolution	-

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

:CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:SEARch:DOMain:X

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:SEARch:DOMain:X {FULLspan|BANDmarker}

:CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:SEARch:DOMain:X?

Description Sets/reads marker search range (X-axis)

Parameter

	Description
FULLspan(Preset value)	Set marker search range (X-axis) to 'FULLspan'
BANDmarker	Set marker search range (X-axis) to 'BANDmarker'

Equivalent key FP Menu -> Marker Search -> Search Range (X)

:CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:SEARch:DOMain:Y

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:SEARch:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:SEARch:DOMain:Y?

Description Sets/reads marker search range (Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set marker search range (Y-axis) to 'FULLscale'
BANDmarker	Set marker search range (Y-axis) to 'BANDmarker'

Equivalent key FP Menu -> Marker Search -> Search Range (Y)

:CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:SEARch:PEAK

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:ALLMarker:SEARch:PEAK

Description Execute marker search all (No Query)

Equivalent key FP Menu -> Marker Search -> Peak -> Search Peak All

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:CENTer

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:CENTer <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:CENTer?

Description Sets/reads the center value of bandmarker X

Parameter

	<Numeric>
Range	-
Preset value	50u
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Function -> Band Marker X -> Center

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:SPAN

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:SPAN <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:SPAN?

Description Sets/reads the span value of bandmarker X

Parameter

	<Numeric>
Range	0 to 9.8e+37
Preset value	100u
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Function -> Band Marker X -> Span

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STARt

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STARt <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STARt?

Description Sets/reads the start value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	0
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Function -> Band Marker X -> Start

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STATe

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STATe {ON|OFF|1|0}

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STATe?

Description Turns on/off bandmarker X

Parameter

	Description
ON or 1	Set bandmarker X mode to 'ON'
OFF or 0(Preset value)	Set bandmarker X mode to 'OFF'

Equivalent key FP Menu -> Marker Function -> Band Marker X -> Band Marker X

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STOP

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STOP <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:X:STOP?

Description Sets/reads the stop value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	100u
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Function -> Band Marker X -> Stop

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:CENTer

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:CENTer <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:CENTer?

Description Sets/reads the center value of bandmarker Y

Parameter

	<Numeric>
Range	-
Preset value	1.5G
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Function -> Band Marker Y -> Center

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:SPAN

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:SPAN <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:SPAN?

Description Sets/reads the span value of bandmarker Y

Parameter

	<Numeric>
Range	0 to 9.8e+37
Preset value	1G
Unit	-

	<Numeric>
Resolution	-

Equivalent key FP Menu -> Marker Function -> Band Marker Y -> Span

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STARt

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STARt <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STARt?

Description Sets/reads the start value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	1G
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Function -> Band Marker Y -> Start

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STATe

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STATe {ON|OFF|1|0}

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STATe?

Description Turns on/off bandmarker Y

Parameter

	Description
ON or 1	Set bandmarker Y mode to 'ON'
OFF or 0(Preset value)	Set bandmarker Y mode to 'OFF'

Equivalent key FP Menu -> Marker Function -> Band Marker Y -> Band Marker Y

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STOP

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STOP <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:BDMarker:Y:STOP?

Description Sets/reads the stop value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	2G
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Function -> Band Marker Y -> Stop

:CALCulate:FP[1-1]:TRACe[1-3]:DATA:FDATa

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:DATA:FDATa <array>

:CALCulate:FP[1-1]:TRACe[1-3]:DATA:FDATa?

Description Sets/readds formatted trace data

Parameter

	<Description>
Range	1...1001
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:FP[1-1]:TRACe[1-3]:DATA:FMEMory

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:DATA:FMEMory <array>

:CALCulate:FP[1-1]:TRACe[1-3]:DATA:FMEMory?

Description Sets/reads formatted memory data

Parameter

	<Description>
Range	1...1001
Preset value	-

	<Description>
Unit	-
Resolution	-

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

:CALCulate:FP[1-1]:TRACe[1-3]:DATA:UDATa

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:DATA:UDATa <array>

:CALCulate:FP[1-1]:TRACe[1-3]:DATA:UDATa?

Description Sets/reads unformatted trace data

Parameter

	<Description>
Range	1...1001
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:FP[1-1]:TRACe[1-3]:DATA:UMEMory

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:DATA:UMEMory <array>

:CALCulate:FP[1-1]:TRACe[1-3]:DATA:UMEMory?

Description Sets/reads unformatted memory data

Parameter

	<Description>
Range	1...1001
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:FP[1-1]:TRACe[1-3]:FORMat:FREQuency

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:FORMat:FREQuency {HZ|HZV}

:CALCulate:FP[1-1]:TRACe[1-3]:FORMat:FREQuency?

Description FP-frequency format

Parameter

	Description
HZ(Preset value)	Set FP-frequency format to 'HZ'
HZV	Set FP-frequency format to 'HZV'

Equivalent key FP Menu -> Format -> Frequency Format

:CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:DOMain:X

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:DOMain:X {FULLspan|BANDmarker}

:CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:DOMain:X?

Description Sets/reads analysis/search range (X-axis)

Parameter

	Description
FULLspan(Preset value)	Set analysis/search range (X-axis) to 'FULLspan'
BANDmarker	Set analysis/search range (X-axis) to 'BANDmarker'

Equivalent key FP Menu -> Marker Function -> Analysis Range (X)

:CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:DOMain:Y

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:DOMain:Y?

Description Sets/reads analysis/search range (Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set analysis/search range (Y-axis) to 'FULLscale'

	Description
BANDmarker	Set analysis/search range (Y-axis) to 'BANDmarker'

Equivalent key FP Menu -> Marker Function -> Analysis Range (Y)

:CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:STATistics:DATA

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:STATistics:DATA

Description Reads the results of statistical analysis for the data trace (Query Only)

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

:CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:STATistics:MEMory

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:STATistics:MEMory

Description Reads the results of statistical analysis for the memory trace (Query Only)

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

:CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:TYPE

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:TYPE {OFF|STATistics}

:CALCulate:FP[1-1]:TRACe[1-3]:FUNCtion:TYPE?

Description Sets/reads analysis type

Parameter

	Description
OFF(Preset value)	Set analysis type to 'OFF'
STATistics	Set analysis type to 'STATistics'

Equivalent key FP Menu -> Marker Function -> Analysis Type

:CALCulate:FP[1-1]:TRACe[1-3]:HOLD

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:HOLD {OFF|MAXimum|MINimum}

:CALCulate:FP[1-1]:TRACe[1-3]:HOLD?

Description Selects/reads trace data hold type

Parameter

	Description
OFF(Preset value)	Set data hold to 'OFF'
MAXimum	Set data hold to 'MAXimum'
MINimum	Set data hold to 'MINimum'

Equivalent key FP Menu -> Trace View -> Data Hold

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:LPEak

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:LPEak

Description Execute marker peak search left (No Query)

Equivalent key FP Menu -> Marker Search -> Peak -> Search Left

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:LTARget

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:LTARget

Description Execute marker target search left (No Query)

Equivalent key FP Menu -> Marker Search -> Target -> Search Left

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:MAXimum

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:MAXimum

Description Execute marker search maximum (No Query)

Equivalent key FP Menu -> Marker Search -> Search Max

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:MINimum

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:MINimum

Description Execute marker search minimum (No Query)

Equivalent key FP Menu -> Marker Search -> Search Min

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:PEAK

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:PEAK

Description Execute marker peak search (No Query)

Equivalent key FP Menu -> Marker Search -> Peak -> Search Peak

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:RPEak

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:RPEak

Description Execute marker peak search right (No Query)

Equivalent key FP Menu -> Marker Search -> Peak -> Search Right

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:RTARget

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:RTARget

Description Execute marker target search right (No Query)

Equivalent key FP Menu -> Marker Search -> Target -> Search Right

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:TARGet

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:EXECute:TARGet

Description Execute marker target search (No Query)

Equivalent key FP Menu -> Marker Search -> Target -> Search Target

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:PEAK:EXCursion

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:PEAK:EXCursion <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:PEAK:EXCursion?

Description Sets/reads the peak excursion value

Parameter

	<Numeric>
Range	0 to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Search -> Peak -> Peak Excursion

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:PEAK:POLarity

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:PEAK:POLarity {POSitive|NEGative|BOTH}

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:PEAK:POLarity?

Description Sets/reads the marker peak-search polarity

Parameter

	Description
POSitive(Preset value)	Set the marker peak-search polarity to 'POSitive'
NEGative	Set the marker peak-search polarity to 'NEGative'
BOTH	Set the marker peak-search polarity to 'BOTH'

Equivalent key FP Menu -> Marker Search -> Peak -> Peak Polarity

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TARGet:TRAnsition

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TARGet:TRAnsition {POSitive|NEGative|BOTH}

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TARGet:TRAnsition?

Description Sets/reads the target transition definition

Parameter

	Description
POSitive	Set the target transition definition to 'POSitive'

	Description
NEGative	Set the target transition definition to 'NEGative'
BOTH(Preset value)	Set the target transition definition to 'BOTH'

Equivalent key FP Menu -> Marker Search -> Target -> Search Transition

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TARGet:Y

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TARGet:Y <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TARGet:Y?

Description Sets/reads the marker target value

Parameter

	<Numeric>
Range	-10G to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key FP Menu -> Marker Search -> Target -> Search Value

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TRACking:TYPE

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TRACking:TYPE {OFF|MAXimum|MINimum|PEAK|TARGet}

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:SEARch:TRACking:TYPE?

Description Sets/reads the marker tracking type

Parameter

	Description
OFF(Preset value)	Set the marker tracking type to 'OFF'
MAXimum	Set the marker tracking type to 'MAXimum'
MINimum	Set the marker tracking type to 'MINimum'
PEAK	Set the marker tracking type to 'PEAK'

	Description
TARGet	Set the marker tracking type to 'TARGet'

Equivalent key FP Menu -> Marker Search -> Tracking

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:STATe

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:STATe {ON|OFF|1|0}

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:STATe?

Description Turns on/off markers

Parameter

	Description
ON or 1	Set markers mode 'ON'
OFF or 0(Preset value)	Set markers mode 'OFF'

Equivalent key FP Menu -> Marker -> Clear Marker Menu -> Marker 1

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:X

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:X <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:X?

Description Sets/reads the marker X value

Parameter

	<Numeric>
Range	-
Preset value	0
Unit	-
Resolution	-

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

:CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:Y

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MARKer[1-6]:Y

Description Reads the marker Y value (Query Only)

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

:CALCulate:FP[1-1]:TRACe[1-3]:MATH:FUNCtion

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MATH:FUNCtion {NORMal|SUBTract|DIVide|ADD|MULTiply}

:CALCulate:FP[1-1]:TRACe[1-3]:MATH:FUNCtion?

Description Sets/reads math operation type

Parameter

	Description
NORMal(Preset value)	Set math operation type to 'NORMal'
SUBTract	Set math operation type to 'SUBTract'
DIVide	Set math operation type to 'DIVide'
ADD	Set math operation type to 'ADD'
MULTiply	Set math operation type to 'MULTiply'

Equivalent key FP Menu -> Trace View -> Data Math

:CALCulate:FP[1-1]:TRACe[1-3]:MATH:MEMorize

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:MATH:MEMorize

Description Copy data to memory (No Query)

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

:CALCulate:FP[1-1]:TRACe[1-3]:SAPerture

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:SAPerture <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:SAPerture?

Description Sensitivity Aperture

Parameter

	<Numeric>
Range	100m to 20
Preset value	1
Unit	%

	<Numeric>
Resolution	100m

Equivalent key FP Menu -> Format -> Sensitivity Aperture

:CALCulate:FP[1-1]:TRACe[1-3]:SMOothing:APERture

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:SMOothing:APERture <numeric>

:CALCulate:FP[1-1]:TRACe[1-3]:SMOothing:APERture?

Description Sets/reads the smoothing aperture value

Parameter

	<Numeric>
Range	50m to 25
Preset value	1.5
Unit	%
Resolution	-

Equivalent key FP Menu -> Trace View -> Aperture

:CALCulate:FP[1-1]:TRACe[1-3]:SMOothing:STATe

Syntax :CALCulate:FP[1-1]:TRACe[1-3]:SMOothing:STATe {ON|OFF|1|0}

:CALCulate:FP[1-1]:TRACe[1-3]:SMOothing:STATe?

Description Turns on/off smoothing mode

Parameter

	Description
ON or 1	Set smoothing mode 'ON'
OFF or 0(Preset value)	Set smoothing mode 'OFF'

Equivalent key FP Menu -> Trace View -> Smoothing

:CALCulate:PN[1-1]:ALLTrace:MARKer:COUPle:STATe

Syntax :CALCulate:PN[1-1]:ALLTrace:MARKer:COUPle:STATe {ON|OFF|1|0}

:CALCulate:PN[1-1]:ALLTrace:MARKer:COUPle:STATe?

Description Turns on/off marker coupling function

Parameter

	Description
ON or 1	Set marker coupling function mode 'ON'
OFF or 0(Preset value)	Set marker coupling function mode 'OFF'

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

:CALCulate:PN[1-1]:ALLTrace:MARKer:DISCrete:STATe

Syntax :CALCulate:PN[1-1]:ALLTrace:MARKer:DISCrete:STATe {ON|OFF|1|0}

:CALCulate:PN[1-1]:ALLTrace:MARKer:DISCrete:STATe?

Description Sets/reads marker movement (Continuous/Discrete)

Parameter

	Description
ON or 1	Set marker movement (Continuous/Discrete) mode 'ON'
OFF or 0(Preset value)	Set marker movement (Continuous/Discrete) mode 'OFF'

Equivalent key PN Menu -> Marker -> More Functions -> Discrete

:CALCulate:PN[1-1]:ALLTrace:MARKer:REFerence:NUMBer

Syntax :CALCulate:PN[1-1]:ALLTrace:MARKer:REFerence:NUMBer <numeric>

:CALCulate:PN[1-1]:ALLTrace:MARKer:REFerence:NUMBer?

Description Sets/reads marker reference number

Parameter

	<Numeric>
Range	1 to 6
Preset value	1
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker -> More Functions -> Ref Marker

:CALCulate:PN[1-1]:ALLTrace:MARKer:REFerence:STATe

Syntax :CALCulate:PN[1-1]:ALLTrace:MARKer:REFerence:STATe {ON|OFF|1|0}

:CALCulate:PN[1-1]:ALLTrace:MARKer:REFerence:STATe?

Description Turns on/off delta marker mode

Parameter

	Description
ON or 1	Set delta marker mode mode 'ON'
OFF or 0(Preset value)	Set delta marker mode mode 'OFF'

Equivalent key PN Menu -> Marker -> More Functions -> Ref Marker Mode

:CALCulate:PN[1-1]:DATA:CARRier

Syntax :CALCulate:PN[1-1]:DATA:CARRier <array>

:CALCulate:PN[1-1]:DATA:CARRier?

Description Sets/reads the carrier frequency/power data in phase noise measurement

Parameter

	<Description>
Range	1...2
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:PN[1-1]:DATA:RDATa

Syntax :CALCulate:PN[1-1]:DATA:RDATa <array>

:CALCulate:PN[1-1]:DATA:RDATa?

Description Sets/reads the measurement raw data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:PN[1-1]:DATA:XDATa

Syntax :CALCulate:PN[1-1]:DATA:XDATa

Description Reads the X data (Query Only)

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

:CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:ACTive

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:ACTive <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:ACTive?

Description Selects active marker

Parameter

	<Numeric>
Range	1 to 6
Preset value	1
Unit	-
Resolution	-

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

:CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:X

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:X {FULLspan|BANDmarker}

:CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:X?

Description Sets/reads marker search range (X-axis)

Parameter

	Description
FULLspan(Preset value)	Set marker search range (X-axis) to 'FULLspan'
BANDmarker	Set marker search range (X-axis) to 'BANDmarker'

Equivalent key PN Menu -> Marker Search -> Search Range (X)

:CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:Y

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:Y?

Description Sets/reads marker search range (Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set marker search range (Y-axis) to 'FULLscale'
BANDmarker	Set marker search range (Y-axis) to 'BANDmarker'

Equivalent key PN Menu -> Marker Search -> Search Range (Y)

:CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:SEARch:PEAK

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:ALLMarker:SEARch:PEAK

Description Execute marker search all (No Query)

Equivalent key PN Menu -> Marker Search -> Peak -> Search Peak All

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:CENTer

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:CENTer <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:CENTer?

Description Sets/reads the center value of bandmarker X

Parameter

	<Numeric>
Range	-
Preset value	5.0005M
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Function -> Band Marker X -> Center

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:SPAN

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:SPAN <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:SPAN?

Description Sets/reads the span value of bandmarker X

Parameter

	<Numeric>
Range	0 to 9.8e+37
Preset value	9.999M
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Function -> Band Marker X -> Span

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STARt

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STARt <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STARt?

Description Sets/reads the start value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	1k
Unit	-

	<Numeric>
Resolution	-

Equivalent key PN Menu -> Marker Function -> Band Marker X -> Start

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STATe

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STATe {ON|OFF|1|0}

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STATe?

Description Turns on/off bandmarker X

Parameter

	Description
ON or 1	Set bandmarker X mode 'ON'
OFF or 0(Preset value)	Set bandmarker X mode 'OFF'

Equivalent key PN Menu -> Marker Function -> Band Marker X -> Band Marker X

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STOP

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STOP <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:X:STOP?

Description Sets/reads the stop value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	10M
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Function -> Band Marker X -> Stop

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:CENTer

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:CENTer <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:CENTer?

Description Sets/reads the center value of bandmarker Y

Parameter

	<Numeric>
Range	-
Preset value	-100
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Function -> Band Marker Y -> Center

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:SPAN

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:SPAN <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:SPAN?

Description Sets/reads the span value of bandmarker Y

Parameter

	<Numeric>
Range	0 to 9.8e+37
Preset value	160
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Function -> Band Marker Y -> Span

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STARt

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STARt <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STARt?

Description Sets/reads the start value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	-180

	<Numeric>
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Function -> Band Marker Y -> Start

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STATe

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STATe {ON|OFF|1|0}

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STATe?

Description Turns on/off bandmarker Y

Parameter

	Description
ON or 1	Set bandmarker Y mode 'ON'
OFF or 0(Preset value)	Set bandmarker Y mode 'OFF'

Equivalent key PN Menu -> Marker Function -> Band Marker Y -> Band Marker Y

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STOP

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STOP <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:BDMarker:Y:STOP?

Description Sets/reads the stop value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	-20
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Function -> Band Marker Y -> Stop

:CALCulate:PN[1-1]:TRACe[1-1]:DATA:FDATa

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:DATA:FDATa <array>

:CALCulate:PN[1-1]:TRACe[1-1]:DATA:FDATa?

Description Set/Get formatted trace data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:PN[1-1]:TRACe[1-1]:DATA:FMEMory

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:DATA:FMEMory <array>

:CALCulate:PN[1-1]:TRACe[1-1]:DATA:FMEMory?

Description Set/Get formatted memory data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:PN[1-1]:TRACe[1-1]:DATA:UDATa

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:DATA:UDATa <array>

:CALCulate:PN[1-1]:TRACe[1-1]:DATA:UDATa?

Description Set/Get unformatted trace data

Parameter

	<Description>
Range	1...1601

	<Description>
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:PN[1-1]:TRACe[1-1]:DATA:UMEMory

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:DATA:UMEMory <array>

:CALCulate:PN[1-1]:TRACe[1-1]:DATA:UMEMory?

Description Set/Get unformatted memory data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:DOMain:X

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:DOMain:X {FULLspan|BANDmarker}

:CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:DOMain:X?

Description Sets/reads analysis/search range (X-axis)

Parameter

	Description
FULLspan(Preset value)	Set analysis/search range (X-axis) to 'FULLspan'
BANDmarker	Set analysis/search range (X-axis) to 'BANDmarker'

Equivalent key PN Menu -> Marker Function -> Analysis Range (X)

:CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:DOMain:Y

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:DOMain:Y?

Description Sets/reads analysis/search range (Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set analysis/search range (Y-axis) to 'FULLscale'
BANDmarker	Set analysis/search range (Y-axis) to 'BANDmarker'

Equivalent key PN Menu -> Marker Function -> Analysis Range (Y)

:CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:STATistics:DATA

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:STATistics:DATA

Description Reads the results of statistical analysis for the data trace (Query Only)

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

:CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:STATistics:MEMory

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:STATistics:MEMory

Description Reads the results of statistical analysis for the memory trace (Query Only)

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

:CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:TYPE

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:TYPE {OFF|STATistics}

:CALCulate:PN[1-1]:TRACe[1-1]:FUNCtion:TYPE?

Description Sets/reads analysis type

Parameter

	Description
OFF(Preset value)	Set analysis type to 'OFF'

	Description
STATistics	Set analysis type to 'STATistics'

Equivalent key PN Menu -> Marker Function -> Analysis Type

:CALCulate:PN[1-1]:TRACe[1-1]:HOLD

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:HOLD {OFF|MAXimum|MINimum}

:CALCulate:PN[1-1]:TRACe[1-1]:HOLD?

Description Selects/reads trace data hold type

Parameter

	Description
OFF(Preset value)	Set data hold to 'OFF'
MAXimum	Set data hold to 'MAXimum'
MINimum	Set data hold to 'MINimum'

Equivalent key PN Menu -> Trace View -> Data Hold

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:LPEak

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:LPEak

Description Execute marker peak search left (No Query)

Equivalent key PN Menu -> Marker Search -> Peak -> Search Left

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:LTARget

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:LTARget

Description Execute marker target search left (No Query)

Equivalent key PN Menu -> Marker Search -> Target -> Search Left

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:MAXimum

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:MAXimum

Description Execute marker search maximum (No Query)

Equivalent key PN Menu -> Marker Search -> Search Max

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:MINimum

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:MINimum

Description Execute marker search minimum (No Query)

Equivalent key PN Menu -> Marker Search -> Search Min

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:PEAK

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:PEAK

Description Execute marker peak search (No Query)

Equivalent key PN Menu -> Marker Search -> Peak -> Search Peak

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:RPEak

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:RPEak

Description Execute marker peak search right (No Query)

Equivalent key PN Menu -> Marker Search -> Peak -> Search Right

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:RTARget

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:RTARget

Description Execute marker target search right (No Query)

Equivalent key PN Menu -> Marker Search -> Target -> Search Right

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:TARGet

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:TARGet

Description execute marker target search (No Query)

Equivalent key PN Menu -> Marker Search -> Target -> Search Target

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:EXCursion

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:EXCursion <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:EXCursion?

Description Sets/reads the peak excursion value

Parameter

	<Numeric>
Range	0 to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Search -> Peak -> Peak Excursion

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:POLarity

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:POLarity {POSitive|NEGative|BOTH}

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:POLarity?

Description Sets/reads the marker peak-search polarity

Parameter

	Description
POSitive(Preset value)	Set the marker peak-search polarity to 'POSitive'
NEGative	Set the marker peak-search polarity to 'NEGative'
BOTH	Set the marker peak-search polarity to 'BOTH'

Equivalent key PN Menu -> Marker Search -> Peak -> Peak Polarity

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:TRAnsition

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:TRAnsition {POSitive|NEGative|BOTH}

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:TRAnsition?

Description Sets/reads the target transition definition

Parameter

	Description
POSitive	Set the target transition definition to 'POSitive'
NEGative	Set the target transition definition to 'NEGative'
BOTH(Preset value)	Set the target transition definition to 'BOTH'

Equivalent key PN Menu -> Marker Search -> Target -> Search Transition

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:Y

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:Y <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:Y?

Description Sets/reads the marker target value

Parameter

	<Numeric>
Range	-10G to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key PN Menu -> Marker Search -> Target -> Search Value

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TRACking:TYPE

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TRACking:TYPE {OFF|MAXimum|MINimum|PEAK|TARGet}

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TRACking:TYPE?

Description Sets/reads marker tracking type

Parameter

	Description
OFF(Preset value)	Set marker tracking type to 'OFF'
MAXimum	Set marker tracking type to 'MAXimum'
MINimum	Set marker tracking type to 'MINimum'
PEAK	Set marker tracking type to 'PEAK'
TARGet	Set marker tracking type to 'TARGet'

Equivalent key PN Menu -> Marker Search -> Tracking

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:STATe

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:STATe {ON|OFF|1|0}

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:STATe?

Description Turns on/off markers

Parameter

	Description
ON or 1	Set markers mode 'ON'
OFF or 0(Preset value)	Set markers mode 'OFF'

Equivalent key PN Menu -> Marker -> Clear Marker Menu -> Marker 1

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:X

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:X <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:X?

Description Sets/reads the marker X value

Parameter

	<Numeric>
Range	-
Preset value	1k
Unit	-
Resolution	-

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

:CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:Y

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MARKer[1-6]:Y

Description Reads the marker Y value (Query Only)

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

:CALCulate:PN[1-1]:TRACe[1-1]:MATH:FUNCtion

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MATH:FUNCtion {NORMal|SUBTract|DIVide|ADD|MULTiply}

:CALCulate:PN[1-1]:TRACe[1-1]:MATH:FUNCtion?

Description Selects/reads math operation type

Parameter

	Description
NORMal(Preset value)	Set math operation type to 'NORMal'
SUBTract	Set math operation type to 'SUBTract'
DIVide	Set math operation type to 'DIVide'
ADD	Set math operation type to 'ADD'
MULTiply	Set math operation type to 'MULTiply'

Equivalent key PN Menu -> Trace View -> Data Math

:CALCulate:PN[1-1]:TRACe[1-1]:MATH:MEMorize

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:MATH:MEMorize

Description Copy data to memory (No Query)

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

:CALCulate:PN[1-1]:TRACe[1-1]:SMOothing:APERture

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:SMOothing:APERture <numeric>

:CALCulate:PN[1-1]:TRACe[1-1]:SMOothing:APERture?

Description Sets/reads the smoothing aperture value

Parameter

	<Numeric>
Range	50m to 25
Preset value	1.5
Unit	%
Resolution	-

Equivalent key PN Menu -> Trace View -> Aperture

:CALCulate:PN[1-1]:TRACe[1-1]:SMOothing:STATe

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:SMOothing:STATe {ON|OFF|1|0}

:CALCulate:PN[1-1]:TRACe[1-1]:SMOothing:STATe?

Description Turns on/off smoothing mode

Parameter

	Description
ON or 1	Set smoothing mode to 'ON'
OFF or 0(Preset value)	Set smoothing mode to 'OFF'

Equivalent key PN Menu -> Trace View -> Smoothing

:CALCulate:PN[1-1]:TRACe[1-1]:SPURious:OMISsion

Syntax :CALCulate:PN[1-1]:TRACe[1-1]:SPURious:OMISsion {ON|OFF|1|0}

:CALCulate:PN[1-1]:TRACe[1-1]:SPURious:OMISsion?

Description Turns on.off spurious omission mode

Parameter

	Description
ON or 1	Set spurious omission mode to 'ON'
OFF or 0(Preset value)	Set spurious omission mode to 'OFF'

Equivalent key PN Menu -> Trace View -> Omitting Spurious

:CALCulate:SP[1-1]:ALLTrace:MARKer:COUPle:STATe

Syntax :CALCulate:SP[1-1]:ALLTrace:MARKer:COUPle:STATe {ON|OFF|1|0}

:CALCulate:SP[1-1]:ALLTrace:MARKer:COUPle:STATe?

Description Turns on/off marker coupling function

Parameter

	Description
ON or 1	Set marker coupling function mode to 'ON'
OFF or 0(Preset value)	Set marker coupling function mode to 'OFF'

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

:CALCulate:SP[1-1]:ALLTrace:MARKer:DISCrete:STATe

Syntax :CALCulate:SP[1-1]:ALLTrace:MARKer:DISCrete:STATe {ON|OFF|1|0}

:CALCulate:SP[1-1]:ALLTrace:MARKer:DISCrete:STATe?

Description Sets/reads marker movement (Continuous/Discrete)

Parameter

	Description
ON or 1	Set marker movement (Continuous/Discrete) mode to 'ON'
OFF or 0(Preset value)	Set marker movement (Continuous/Discrete) mode to 'OFF'

Equivalent key SP Menu -> Marker -> More Functions -> Discrete

:CALCulate:SP[1-1]:ALLTrace:MARKer:REFerence:NUMBer

Syntax :CALCulate:SP[1-1]:ALLTrace:MARKer:REFerence:NUMBer <numeric>

:CALCulate:SP[1-1]:ALLTrace:MARKer:REFerence:NUMBer?

Description Sets/reads marker reference number

Parameter

	<Numeric>
Range	1 to 6

	<Numeric>
Preset value	1
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker -> More Functions -> Ref Marker

:CALCulate:SP[1-1]:ALLTrace:MARKer:REFerence:STATe

Syntax :CALCulate:SP[1-1]:ALLTrace:MARKer:REFerence:STATe {ON|OFF|1|0}

:CALCulate:SP[1-1]:ALLTrace:MARKer:REFerence:STATe?

Description Turns on/off delta marker mode

Parameter

	Description
ON or 1	Set delta marker mode mode to 'ON'
OFF or 0(Preset value)	Set delta marker mode mode to 'OFF'

Equivalent key SP Menu -> Marker -> More Functions -> Ref Marker Mode

:CALCulate:SP[1-1]:DATA:RDATa

Syntax :CALCulate:SP[1-1]:DATA:RDATa <array>

:CALCulate:SP[1-1]:DATA:RDATa?

Description Sets/reads the raw data

Parameter

	<Description>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:SP[1-1]:DATA:XDATa

Syntax :CALCulate:SP[1-1]:DATA:XDATa

Description Reads X-axis data (Query Only)

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

:CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:ACTive

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:ACTive <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:ACTive?

Description Selects active marker

Parameter

	<Numeric>
Range	1 to 6
Preset value	1
Unit	-
Resolution	-

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

:CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:X

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:X {FULLspan|BANDmarker}

:CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:X?

Description Sets/reads marker search range (X-axis)

Parameter

	Description
FULLspan(Preset value)	Set marker search range (X-axis) to 'FULLspan'
BANDmarker	Set marker search range (X-axis) to 'BANDmarker'

Equivalent key SP Menu -> Marker Search -> Search Range (X)

:CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:Y

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:SEARch:DOMain:Y?

Description Sets/reads marker search range (Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set marker search range (Y-axis) to 'FULLscale'
BANDmarker	Set marker search range (Y-axis) to 'BANDmarker'

Equivalent key SP Menu -> Marker Search -> Search Range (Y)

:CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:SEARch:PEAK

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:ALLMarker:SEARch:PEAK

Description Execute marker search all (No Query)

Equivalent key SP Menu -> Marker Search -> Peak -> Search Peak All

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:CENTer

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:CENTer <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:CENTer?

Description Sets/reads the center value of bandmarker X

Parameter

	<Numeric>
Range	-
Preset value	1G
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker X -> Center

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:SPAN

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:SPAN <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:SPAN?

Description Sets/reads the span value of bandmarker X

Parameter

	<Numeric>
Range	0 to 9.8e+37
Preset value	15M
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker X -> Span

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STARt

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STARt <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STARt?

Description Sets/reads the start value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	992.5M
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker X -> Start

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STATe

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STATe {ON|OFF|1|0}

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STATe?

Description Turns on/off bandmarker X

Parameter

	Description
ON or 1	Set bandmarker X mode to 'ON'
OFF or 0(Preset value)	Set bandmarker X mode to 'OFF'

Equivalent key SP Menu -> Marker Function -> Band Marker X -> Band Marker X

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STOP

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STOP <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:X:STOP?

Description Sets/reads the stop value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	1.0075G
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker X -> Stop

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:CENTer

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:CENTer <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:CENTer?

Description Sets/reads the center value of bandmarker Y

Parameter

	<Numeric>
Range	-
Preset value	-40
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker Y -> Center

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:SPAN

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:SPAN <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:SPAN?

Description Sets/reads the span value of bandmarker Y

Parameter

	<Numeric>
Range	0 to 9.8e+37
Preset value	100
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker Y -> Span

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STARt

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STARt <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STARt?

Description Sets/reads the start value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	-90
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker Y -> Start

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STATe

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STATe {ON|OFF|1|0}

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STATe?

Description Turns on/off bandmarker Y

Parameter

	Description
ON or 1	Set bandmarker Y mode to 'ON'
OFF or 0(Preset value)	Set bandmarker Y mode to 'OFF'

Equivalent key SP Menu -> Marker Function -> Band Marker Y -> Band Marker Y

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STOP

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STOP <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:BDMarker:Y:STOP?

Description Sets/reads the stop value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	10
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker Y -> Stop

:CALCulate:SP[1-1]:TRACe[1-1]:DATA:FDATa

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:DATA:FDATa <array>

:CALCulate:SP[1-1]:TRACe[1-1]:DATA:FDATa?

Description Sets/reads formatted trace data

Parameter

	<Description>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:SP[1-1]:TRACe[1-1]:DATA:FMEMory

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:DATA:FMEMory <array>

:CALCulate:SP[1-1]:TRACe[1-1]:DATA:FMEMory?

Description Sets/reads formatted memory data

Parameter

	<Description>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:SP[1-1]:TRACe[1-1]:DATA:UDATa

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:DATA:UDATa <array>

:CALCulate:SP[1-1]:TRACe[1-1]:DATA:UDATa?

Description Sets/reads unformatted trace data

Parameter

	<Description>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:SP[1-1]:TRACe[1-1]:DATA:UMEMory

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:DATA:UMEMory <array>

:CALCulate:SP[1-1]:TRACe[1-1]:DATA:UMEMory?

Description Sets/reads unformatted memory data

Parameter

	<Description>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:SP[1-1]:TRACe[1-1]:FORMat

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:FORMat {DBM|DBV|WATT|VOLT|DBMHz|DBVHz|WHZ|VHZ}

:CALCulate:SP[1-1]:TRACe[1-1]:FORMat?

Description Selects SP format

Parameter

	Description
DBM(Preset value)	Set SP format to 'DBM'
DBV	Set SP format to 'DBV'
WATT	Set SP format to 'WATT'
VOLT	Set SP format to 'VOLT'
DBMHz	Set SP format to 'DBMHz'
DBVHz	Set SP format to 'DBVHz'
WHZ	Set SP format to 'WHZ'
VHZ	Set SP format to 'VHZ'

Equivalent key SP Menu -> Format -> Format

:CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:DOMain:X

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:DOMain:X {FULLspan|BANDmarker}

:CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:DOMain:X?

Description Sets/reads analysis/search range (X-axis)

Parameter

	Description
FULLspan(Preset value)	Set analysis/search range (X-axis) to 'FULLspan'
BANDmarker	Set analysis/search range (X-axis) to 'BANDmarker'

Equivalent key SP Menu -> Marker Function -> Analysis Range (X)

:CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:DOMain:Y

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:DOMain:Y?

Description Sets/reads analysis/search range (Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set analysis/search range (Y-axis) to 'FULLscale'
BANDmarker	Set analysis/search range (Y-axis) to 'BANDmarker'

Equivalent key SP Menu -> Marker Function -> Analysis Range (Y)

:CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:STATistics:DATA

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:STATistics:DATA

Description Reads the results of statistical analysis for the data trace (Query Only)

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

:CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:STATistics:MEMory

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:STATistics:MEMory

Description Reads the results of statistical analysis for the memory trace (Query Only)

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

:CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:TYPE

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:TYPE {OFF|STATistics}

:CALCulate:SP[1-1]:TRACe[1-1]:FUNCtion:TYPE?

Description Sets/reads analysis type

Parameter

	Description
OFF(Preset value)	Set analysis type to 'OFF'
STATistics	Set analysis type to 'STATistics'

Equivalent key SP Menu -> Marker Function -> Analysis Type

:CALCulate:SP[1-1]:TRACe[1-1]:HOLD

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:HOLD {OFF|MAXimum|MINimum}

:CALCulate:SP[1-1]:TRACe[1-1]:HOLD?

Description Selects/reads trace data hold type

Parameter

	Description
OFF(Preset value)	Set data hold to 'OFF'
MAXimum	Set data hold to 'MAXimum'
MINimum	Set data hold to 'MINimum'

Equivalent key SP Menu -> Trace View -> Data Hold

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:LPEak

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:LPEak

Description Execute marker peak search left (No Query)

Equivalent key SP Menu -> Marker Search -> Peak -> Search Left

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:LTARget

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:LTARget

Description Execute marker target search left (No Query)

Equivalent key SP Menu -> Marker Search -> Target -> Search Left

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:MAXimum

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:MAXimum

Description Execute marker search maximum (No Query)

Equivalent key SP Menu -> Marker Search -> Search Max

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:MINimum

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:MINimum

Description Execute marker search minimum (No Query)

Equivalent key SP Menu -> Marker Search -> Search Min

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:PEAK

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:PEAK

Description execute marker peak search (No Query)

Equivalent key SP Menu -> Marker Search -> Peak -> Search Peak

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:RPEak

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:RPEak

Description Execute marker peak search right (No Query)

Equivalent key SP Menu -> Marker Search -> Peak -> Search Right

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:RTARget

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:RTARget

Description Execute marker target search right (No Query)

Equivalent key SP Menu -> Marker Search -> Target -> Search Right

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:TARGet

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:EXECute:TARGet

Description Execute marker target search (No Query)

Equivalent key SP Menu -> Marker Search -> Target -> Search Target

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:EXCursion

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:EXCursion <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:EXCursion?

Description Sets/reads the peak excursion value

Parameter

	<Numeric>
Range	0 to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Search -> Peak -> Peak Excursion

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:POLarity

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:POLarity {POSitive|NEGative|BOTH}

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:PEAK:POLarity?

Description Sets/reads marker peak-search polarity

Parameter

	Description
POSitive(Preset value)	Set marker peak-search polarity to 'POSitive'
NEGative	Set marker peak-search polarity to 'NEGative'
BOTH	Set marker peak-search polarity to 'BOTH'

Equivalent key SP Menu -> Marker Search -> Peak -> Peak Polarity

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:TRAnsition

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:TRAnsition {POSitive|NEGative|BOTH}

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:TRAnsition?

Description Sets/reads the target transition definition

Parameter

	Description
POSitive	Set the target transition definition to 'POSitive'
NEGative	Set the target transition definition to 'NEGative'
BOTH(Preset value)	Set the target transition definition to 'BOTH'

Equivalent key SP Menu -> Marker Search -> Target -> Search Transition

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:Y

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:Y <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TARGet:Y?

Description Sets/reads the marker target value

Parameter

	<Numeric>
Range	-10G to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Search -> Target -> Search Value

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TRACking:TYPE

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TRACking:TYPE

{OFF|MAXimum|MINimum|PEAK|TARGet}

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:SEARch:TRACking:TYPE?

Description Sets/reads the marker tracking type

Parameter

	Description
OFF(Preset value)	Set the marker tracking type to 'OFF'
MAXimum	Set the marker tracking type to 'MAXimum'
MINimum	Set the marker tracking type to 'MINimum'
PEAK	Set the marker tracking type to 'PEAK'
TARGet	Set the marker tracking type to 'TARGet'

Equivalent key SP Menu -> Marker Search -> Tracking

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:STATe

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:STATe {ON|OFF|1|0}

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:STATe?

Description Turns on/off markers

Parameter

	Description
ON or 1	Set markers to 'ON'
OFF or 0(Preset value)	Set markers to 'OFF'

Equivalent key SP Menu -> Marker -> Clear Marker Menu -> Marker 1

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:X

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:X <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:X?

Description Sets/reads the marker X value

Parameter

	<Numeric>
Range	-
Preset value	992.5M
Unit	-
Resolution	-

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

:CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:Y

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MARKer[1-6]:Y

Description Reads the marker Y value (Query Only)

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

:CALCulate:SP[1-1]:TRACe[1-1]:MATH:FUNCtion

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MATH:FUNCtion {NORMal|SUBTract|DIVide|ADD|MULTiply}

:CALCulate:SP[1-1]:TRACe[1-1]:MATH:FUNCtion?

Description Selects math operation type

Parameter

	Description
NORMal(Preset value)	Set math operation type to 'NORMal'
SUBTract	Set math operation type to 'SUBTract'
DIVide	Set math operation type to 'DIVide'
ADD	Set math operation type to 'ADD'
MULTiply	Set math operation type to 'MULTiply'

Equivalent key SP Menu -> Trace View -> Data Math

:CALCulate:SP[1-1]:TRACe[1-1]:MATH:MEMorize

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:MATH:MEMorize

Description Copy data to memory (No Query)

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

:CALCulate:SP[1-1]:TRACe[1-1]:SMOothing:APERture

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:SMOothing:APERture <numeric>

:CALCulate:SP[1-1]:TRACe[1-1]:SMOothing:APERture?

Description Smoothing aperture

Parameter

	<Numeric>
Range	50m to 25
Preset value	1.5
Unit	%
Resolution	-

Equivalent key SP Menu -> Trace View -> Aperture

:CALCulate:SP[1-1]:TRACe[1-1]:SMOothing:STATe

Syntax :CALCulate:SP[1-1]:TRACe[1-1]:SMOothing:STATe {ON|OFF|1|0}

:CALCulate:SP[1-1]:TRACe[1-1]:SMOothing:STATe?

Description Turns on/off smoothing mode

Parameter

	Description
ON or 1	Set smoothing mode to 'ON'
OFF or 0(Preset value)	Set smoothing mode to 'OFF'

Equivalent key SP Menu -> Trace View -> Smoothing

:CALCulate:TR[1-1]:ALLTrace:ACTive

Syntax :CALCulate:TR[1-1]:ALLTrace:ACTive <numeric>

:CALCulate:TR[1-1]:ALLTrace:ACTive?

Description Selects active trace

Parameter

	<Numeric>
Range	1 to 4
Preset value	1
Unit	-
Resolution	-

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

:CALCulate:TR[1-1]:ALLTrace:BDMarker:X:COUPle:STATe

Syntax :CALCulate:TR[1-1]:ALLTrace:BDMarker:X:COUPle:STATe {ON|OFF|1|0}

:CALCulate:TR[1-1]:ALLTrace:BDMarker:X:COUPle:STATe?

Description Turns on/off bandmarker coupling function

Parameter

	Description
ON or 1	Set bandmarker coupling function mode to 'ON'
OFF or 0(Preset value)	Set bandmarker coupling function mode to 'OFF'

Equivalent key TR Menu -> Marker Function -> Couple

:CALCulate:TR[1-1]:ALLTrace:MARKer:COUPle:STATe

Syntax :CALCulate:TR[1-1]:ALLTrace:MARKer:COUPle:STATe {ON|OFF|1|0}

:CALCulate:TR[1-1]:ALLTrace:MARKer:COUPle:STATe?

Description Turns on/off marker coupling function

Parameter

	Description
ON or 1	Set marker coupling function mode to 'ON'
OFF or 0(Preset value)	Set marker coupling function mode to 'OFF'

Equivalent key TR Menu -> Marker -> Couple

:CALCulate:TR[1-1]:ALLTrace:MARKer:DISCrete:STATe

Syntax :CALCulate:TR[1-1]:ALLTrace:MARKer:DISCrete:STATe {ON|OFF|1|0}

:CALCulate:TR[1-1]:ALLTrace:MARKer:DISCrete:STATe?

Description Sets/reads marker movement (Continuous/Discrete)

Parameter

	Description
ON or 1	Set marker movement (Continuous/Discrete) mode to 'ON'
OFF or 0(Preset value)	Set marker movement (Continuous/Discrete) mode to 'OFF'

Equivalent key TR Menu -> Marker -> More Functions -> Discrete

:CALCulate:TR[1-1]:ALLTrace:MARKer:REFerence:NUMBer

Syntax :CALCulate:TR[1-1]:ALLTrace:MARKer:REFerence:NUMBer <numeric>

:CALCulate:TR[1-1]:ALLTrace:MARKer:REFerence:NUMBer?

Description Sets/reads marker reference number

Parameter

	<Numeric>
Range	1 to 6
Preset value	1
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker -> More Functions -> Ref Marker

:CALCulate:TR[1-1]:ALLTrace:MARKer:REFerence:STATe

Syntax :CALCulate:TR[1-1]:ALLTrace:MARKer:REFerence:STATe {ON|OFF|1|0}

:CALCulate:TR[1-1]:ALLTrace:MARKer:REFerence:STATe?

Description Turns on/off delta marker mode

Parameter

	Description
ON or 1	Set delta marker mode mode to 'ON'
OFF or 0(Preset value)	Set delta marker mode mode to 'OFF'

Equivalent key TR Menu -> Marker -> More Functions -> Ref Marker Mode

:CALCulate:TR[1-1]:NARRow:DATA:RDATa

Syntax :CALCulate:TR[1-1]:NARRow:DATA:RDATa <array>

:CALCulate:TR[1-1]:NARRow:DATA:RDATa?

Description measurement raw data

Parameter

	<Description>
Range	1...3753
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:TR[1-1]:NARRow:DATA:XDATa

Syntax :CALCulate:TR[1-1]:NARRow:DATA:XDATa

Description X axis data (Query Only)

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

:CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:ACTive

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:ACTive <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:ACTive?

Description Selects active marker

Parameter

	<Numeric>
Range	1 to 6
Preset value	1
Unit	-
Resolution	-

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

:CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:SEARch:DOMain:X

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:SEARch:DOMain:X {FULLspan|BANDmarker}

:CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:SEARch:DOMain:X?

Description Sets/reads marker search range (X-axis)

Parameter

	Description
FULLspan(Preset value)	Set marker search range (X-axis) to 'FULLspan'
BANDmarker	Set marker search range (X-axis) to 'BANDmarker'

Equivalent key TR Menu -> Marker Search -> Search Range (X)

:CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:SEARch:DOMain:Y

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:SEARch:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:SEARch:DOMain:Y?

Description Sets/reads marker search range (Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set marker search range (Y-axis) to 'FULLscale'

	Description
BANDmarker	Set marker search range (Y-axis) to 'BANDmarker'

Equivalent key TR Menu -> Marker Search -> Search Range (Y)

:CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:SEARch:PEAK

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:ALLMarker:SEARch:PEAK

Description Execute marker search all (No Query)

Equivalent key TR Menu -> Marker Search -> Peak -> Search Peak All

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:CENTer

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:CENTer <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:CENTer?

Description Sets/reads the center value of bandmarker X

Parameter

	<Numeric>
Range	-
Preset value	25m
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker X -> Center

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:SPAN

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:SPAN <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:SPAN?

Description Sets/reads the span value of bandmarker X

Parameter

	<Numeric>
Range	0 to 9.8e+37

	<Numeric>
Preset value	50m
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker X -> Span

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STARt

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STARt <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STARt?

Description Sets/reads the start value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	-50m
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker X -> Start

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STATe

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STATe {ON|OFF|1|0}

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STATe?

Description Turn on/off bandmarker X

Parameter

	Description
ON or 1	Set bandmarker X mode to 'ON'
OFF or 0(Preset value)	Set bandmarker X mode to 'OFF'

Equivalent key TR Menu -> Marker Function -> Band Marker X -> Band Marker X

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STOP

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STOP <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:X:STOP?

Description Sets/reads the stop value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	50m
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker X -> Stop

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:CENTer

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:CENTer <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:CENTer?

Description Sets/reads the center value of bandmarker Y

Parameter

	<Numeric>
Range	-
Preset value	800M
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker Y -> Center

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:SPAN

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:SPAN <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:SPAN?

Description Sets/reads the span value of bandmarker Y

Parameter

	<Numeric>
Range	0 to 9.8e+37
Preset value	800M
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker Y -> Span

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STARt

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STARt <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STARt?

Description Sets/reads the start value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	400M
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker Y -> Start

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STATe

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STATe {ON|OFF|1|0}

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STATe?

Description Turn on/off bandmarker Y

Parameter

	Description
ON or 1	Set bandmarker Y mode to 'ON'
OFF or 0(Preset value)	Set bandmarker Y mode to 'OFF'

Equivalent key TR Menu -> Marker Function -> Band Marker Y -> Band Marker Y

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STOP

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STOP <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:BDMarker:Y:STOP?

Description Sets/reads the stop value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	1.2G
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker Y -> Stop

:CALCulate:TR[1-1]:TRACe[1-4]:DATA:FDATa

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:DATA:FDATa <array>

:CALCulate:TR[1-1]:TRACe[1-4]:DATA:FDATa?

Description Sets/reads formatted trace data

Parameter

	<Description>
Range	1...1001
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:TR[1-1]:TRACe[1-4]:DATA:FMEMory

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:DATA:FMEMory <array>

:CALCulate:TR[1-1]:TRACe[1-4]:DATA:FMEMory?

Description Sets/reads formatted memory data

Parameter

	<Description>
Range	1...1001
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:TR[1-1]:TRACe[1-4]:DATA:UDATa

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:DATA:UDATa <array>

:CALCulate:TR[1-1]:TRACe[1-4]:DATA:UDATa?

Description Sets/reads unformatted trace data

Parameter

	<Description>
Range	1...1001
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:TR[1-1]:TRACe[1-4]:DATA:UMEMory

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:DATA:UMEMory <array>

:CALCulate:TR[1-1]:TRACe[1-4]:DATA:UMEMory?

Description Sets/reads unformatted memory data

Parameter

	<Description>
Range	1...1001
Preset value	-
Unit	-

	<Description>
Resolution	-

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

:CALCulate:TR[1-1]:TRACe[1-4]:FORMat:PHASe:UNIT

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:FORMat:PHASe:UNIT {DEG|RAD|GRAD}

:CALCulate:TR[1-1]:TRACe[1-4]:FORMat:PHASe:UNIT?

Description Selects phase format on transient measurement

Parameter

	Description
DEG(Preset value)	Set phase format on transient measurement to 'DEG'
RAD	Set phase format on transient measurement to 'RAD'
GRAD	Set phase format on transient measurement to 'GRAD'

Equivalent key TR Menu -> Format -> Phase Unit

:CALCulate:TR[1-1]:TRACe[1-4]:FORMat:PHASe:WRAP

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:FORMat:PHASe:WRAP {ON|OFF|1|0}

:CALCulate:TR[1-1]:TRACe[1-4]:FORMat:PHASe:WRAP?

Description Turns on/off wrap-phase

Parameter

	Description
ON or 1(Preset value)	Set wrap-phase mode to 'ON'
OFF or 0	Set wrap-phase mode to 'OFF'

Equivalent key TR Menu -> Format -> Wrap Phase

:CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:DOMain:X

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:DOMain:X {FULLspan|BANDmarker}

:CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:DOMain:X?

Description Sets/reads analysis/search range (X-axis)

Parameter

	Description
FULLspan(Preset value)	Set analysis/search range (X-axis) to 'FULLspan'
BANDmarker	Set analysis/search range (X-axis) to 'BANDmarker'

Equivalent key TR Menu -> Marker Function -> Analysis Range (X)

:CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:DOMain:Y

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:DOMain:Y?

Description Sets/reads analysis/search range (Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set analysis/search range (Y-axis) to 'FULLscale'
BANDmarker	Set analysis/search range (Y-axis) to 'BANDmarker'

Equivalent key TR Menu -> Marker Function -> Analysis Range (Y)

:CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:STATistics:DATA

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:STATistics:DATA

Description Reads the result of statistical analysis for the data trace (Query Only)

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

:CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:STATistics:MEMory

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:STATistics:MEMory

Description Reads the result of statistical analysis for the memory trace (Query Only)

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

:CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:TYPE

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:TYPE {OFF|STATistics}

:CALCulate:TR[1-1]:TRACe[1-4]:FUNCtion:TYPE?

Description Sets/reads analysis type

Parameter

	Description
OFF(Preset value)	Set analysis type to 'OFF'
STATistics	Set analysis type to 'STATistics'

Equivalent key TR Menu -> Marker Function -> Analysis Type

:CALCulate:TR[1-1]:TRACe[1-4]:HOLD

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:HOLD {OFF|MAXimum|MINimum}

:CALCulate:TR[1-1]:TRACe[1-4]:HOLD?

Description Sets/reads trace data hold type

Parameter

	Description
OFF(Preset value)	Set data hold to 'OFF'
MAXimum	Set data hold to 'MAXimum'
MINimum	Set data hold to 'MINimum'

Equivalent key TR Menu -> Trace View -> Data Hold

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:LPEak

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:LPEak

Description Execute marker peak search left (No Query)

Equivalent key TR Menu -> Marker Search -> Peak -> Search Left

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:LTARget

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:LTARget

Description Execute marker target search left (No Query)

Equivalent key TR Menu -> Marker Search -> Target -> Search Left

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:MAXimum

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:MAXimum

Description Execute marker search maximum (No Query)

Equivalent key TR Menu -> Marker Search -> Search Max

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:MINimum

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:MINimum

Description Execute marker search minimum (No Query)

Equivalent key TR Menu -> Marker Search -> Search Min

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:PEAK

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:PEAK

Description Execute marker peak search (No Query)

Equivalent key TR Menu -> Marker Search -> Peak -> Search Peak

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:RPEak

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:RPEak

Description Execute marker peak search right (No Query)

Equivalent key TR Menu -> Marker Search -> Peak -> Search Right

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:RTARget

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:RTARget

Description Execute marker target search right (No Query)

Equivalent key TR Menu -> Marker Search -> Target -> Search Right

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:TARGet

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:EXECute:TARGet

Description Execute marker target search (No Query)

Equivalent key TR Menu -> Marker Search -> Target -> Search Target

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:PEAK:EXCursion

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:PEAK:EXCursion <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:PEAK:EXCursion?

Description Sets/reads the peak excursion value

Parameter

	<Numeric>
Range	0 to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Search -> Peak -> Peak Excursion

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:PEAK:POLarity

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:PEAK:POLarity {POSitive|NEGative|BOTH}

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:PEAK:POLarity?

Description Sets/reads the marker peak-search polarity

Parameter

	Description
POSitive(Preset value)	Set the marker peak-search polarity to 'POSitive'
NEGative	Set the marker peak-search polarity to 'NEGative'
BOTH	Set the marker peak-search polarity to 'BOTH'

Equivalent key TR Menu -> Marker Search -> Peak -> Peak Polarity

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TARGet:TRAnsition

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TARGet:TRAnsition {POSitive|NEGative|BOTH}

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TARGet:TRAnsition?

Description Sets/reads the target transition definition

Parameter

	Description
POSitive	Set the target transition definition to 'POSitive'
NEGative	Set the target transition definition to 'NEGative'
BOTH(Preset value)	Set the target transition definition to 'BOTH'

Equivalent key TR Menu -> Marker Search -> Target -> Search Transition

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TARGet:Y

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TARGet:Y <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TARGet:Y?

Description Sets/reads the marker target value

Parameter

	<Numeric>
Range	-10G to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Search -> Target -> Search Value

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TRACking:TYPE

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TRACking:TYPE

{OFF|MAXimum|MINimum|PEAK|TARGet}

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:SEARch:TRACking:TYPE?

Description Sets/reads the marker tracking type

Parameter

	Description
OFF(Preset value)	Set the marker tracking type to 'OFF'
MAXimum	Set the marker tracking type to 'MAXimum'
MINimum	Set the marker tracking type to 'MINimum'
PEAK	Set the marker tracking type to 'PEAK'
TARGet	Set the marker tracking type to 'TARGet'

Equivalent key TR Menu -> Marker Search -> Tracking

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:STATe

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:STATe {ON|OFF|1|0}

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:STATe?

Description Turns on/off markers

Parameter

	Description
ON or 1	Set markers mode to 'ON'
OFF or 0(Preset value)	Set markers mode to 'OFF'

Equivalent key TR Menu -> Marker -> Clear Marker Menu -> Marker 1

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:X

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:X <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:X?

Description Sets/reads the marker X value

Parameter

	<Numeric>
Range	-
Preset value	-50m
Unit	-
Resolution	-

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

:CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:Y

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MARKer[1-6]:Y

Description Reads the marker Y value (Query Only)

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

:CALCulate:TR[1-1]:TRACe[1-4]:MATH:FUNCtion

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MATH:FUNCtion {NORMal|SUBTract|DIVide|ADD|MULTiply}

:CALCulate:TR[1-1]:TRACe[1-4]:MATH:FUNCtion?

Description Selects math operation type

Parameter

	Description
NORMal(Preset value)	Set math operation type to 'NORMal'
SUBTract	Set math operation type to 'SUBTract'
DIVide	Set math operation type to 'DIVide'
ADD	Set math operation type to 'ADD'
MULTiply	Set math operation type to 'MULTiply'

Equivalent key TR Menu -> Trace View -> Data Math

:CALCulate:TR[1-1]:TRACe[1-4]:MATH:MEMorize

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:MATH:MEMorize

Description Copy data to memory (No Query)

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

:CALCulate:TR[1-1]:TRACe[1-4]:SMOothing:APERture

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:SMOothing:APERture <numeric>

:CALCulate:TR[1-1]:TRACe[1-4]:SMOothing:APERture?

Description Smoothing aperture

Parameter

	<Numeric>
Range	50m to 25
Preset value	1.5
Unit	%
Resolution	-

Equivalent key TR Menu -> Trace View -> Aperture

:CALCulate:TR[1-1]:TRACe[1-4]:SMOothing:STATe

Syntax :CALCulate:TR[1-1]:TRACe[1-4]:SMOothing:STATe {ON|OFF|1|0}

:CALCulate:TR[1-1]:TRACe[1-4]:SMOothing:STATe?

Description Turns on/off smoothing mode

Parameter

	Description
ON or 1	Set smoothing mode to 'ON'
OFF or 0(Preset value)	Set smoothing mode to 'OFF'

Equivalent key TR Menu -> Trace View -> Smoothing

:CALCulate:TR[1-1]:WIDE:DATA:RDATa

Syntax :CALCulate:TR[1-1]:WIDE:DATA:RDATa <array>

:CALCulate:TR[1-1]:WIDE:DATA:RDATa?

Description Sets/reads the measurement raw data

Parameter

	<Description>
Range	1...1001
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:TR[1-1]:WIDE:DATA:XDATa

Syntax :CALCulate:TR[1-1]:WIDE:DATA:XDATa

Description Reads the X-axis data (Query Only)

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

:CALCulate:USER[1-1]:ALLTrace:ACTive

Syntax :CALCulate:USER[1-1]:ALLTrace:ACTive <numeric>

:CALCulate:USER[1-1]:ALLTrace:ACTive?

Description Selects active trace

Parameter

	<Numeric>
Range	1 to 8
Preset value	1
Unit	-
Resolution	-

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

:CALCulate:USER[1-1]:ALLTrace:BDMarker:X:COUPle:STATe

Syntax :CALCulate:USER[1-1]:ALLTrace:BDMarker:X:COUPle:STATe {ON|OFF|1|0}

:CALCulate:USER[1-1]:ALLTrace:BDMarker:X:COUPle:STATe?

Description Turns on/off bandmarker coupling function

Parameter

	Description
ON or 1	Set bandmarker coupling function mode to 'ON'
OFF or 0(Preset value)	Set bandmarker coupling function mode to 'OFF'

Equivalent key USER Menu -> Marker Function -> Couple

:CALCulate:USER[1-1]:ALLTrace:MARKer:COUPle:STATe

Syntax :CALCulate:USER[1-1]:ALLTrace:MARKer:COUPle:STATe {ON|OFF|1|0}

:CALCulate:USER[1-1]:ALLTrace:MARKer:COUPle:STATe?

Description Turns on/off marker coupling function

Parameter

	Description
ON or 1	Set marker coupling function mode to 'ON'
OFF or 0(Preset value)	Set marker coupling function mode to 'OFF'

Equivalent key USER Menu -> Marker -> Couple

:CALCulate:USER[1-1]:ALLTrace:MARKer:DISCrete:STATe

Syntax :CALCulate:USER[1-1]:ALLTrace:MARKer:DISCrete:STATe {ON|OFF|1|0}

:CALCulate:USER[1-1]:ALLTrace:MARKer:DISCrete:STATe?

Description Sets/reads marker discrete mode

Parameter

	Description
ON or 1	Set marker discrete mode to 'ON'
OFF or 0(Preset value)	Set marker discrete mode to 'OFF'

Equivalent key USER Menu -> Marker -> More Functions -> Discrete

:CALCulate:USER[1-1]:ALLTrace:MARKer:REFerence:NUMBer

Syntax :CALCulate:USER[1-1]:ALLTrace:MARKer:REFerence:NUMBer <numeric>

:CALCulate:USER[1-1]:ALLTrace:MARKer:REFerence:NUMBer?

Description Sets/reads marker reference number

Parameter

	<Numeric>
Range	1 to 6
Preset value	1
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker -> More Functions -> Ref Marker

:CALCulate:USER[1-1]:ALLTrace:MARKer:REFerence:STATe

Syntax :CALCulate:USER[1-1]:ALLTrace:MARKer:REFerence:STATe {ON|OFF|1|0}

:CALCulate:USER[1-1]:ALLTrace:MARKer:REFerence:STATe?

Description Turns on/off delta marker mode

Parameter

	Description
ON or 1	Set delta marker mode mode to 'ON'
OFF or 0(Preset value)	Set delta marker mode mode to 'OFF'

Equivalent key USER Menu -> Marker -> More Functions -> Ref Marker Mode

:CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:ACTive

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:ACTive <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:ACTive?

Description Selects active marker

Parameter

	<Numeric>
Range	1 to 6
Preset value	1
Unit	-
Resolution	-

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

:CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:SEARch:DOMain:X

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:SEARch:DOMain:X {FULLspan|BANDmarker}

:CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:SEARch:DOMain:X?

Description Sets/reads marker search X range

Parameter

	Description
FULLspan(Preset value)	Set marker search X range to 'FULLspan'
BANDmarker	Set marker search X range to 'BANDmarker'

Equivalent key USER Menu -> Marker Search -> Search Range (X)

:CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:SEARch:DOMain:Y

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:SEARch:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:SEARch:DOMain:Y?

Description Sets/reads marker search Y range

Parameter

	Description
FULLscale(Preset value)	Set marker search Y range to 'FULLscale'

	Description
BANDmarker	Set marker search Y range to 'BANDmarker'

Equivalent key USER Menu -> Marker Search -> Search Range (Y)

:CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:SEARch:PEAK

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:ALLMarker:SEARch:PEAK

Description Execute mearker search peak all (No Query)

Equivalent key USER Menu -> Marker Search -> Peak -> Search Peak All

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:CENTer

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:CENTer <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:CENTer?

Description Sets/reads the center value of bandmarker X

Parameter

	<Numeric>
Range	-
Preset value	50
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Center

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:SPAN

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:SPAN <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:SPAN?

Description Sets/reads the span value of bandmarker X

Parameter

	<Numeric>
Range	0 to 9.8e+37

	<Numeric>
Preset value	100
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Span

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STARt

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STARt <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STARt?

Description Sets/readsa the start value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	0
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Start

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STATe

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STATe {ON|OFF|1|0}

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STATe?

Description Turns on/off bandmarker X

Parameter

	Description
ON or 1	Set bandmarker mode to 'ON'
OFF or 0(Preset value)	Set bandmarker mode to 'OFF'

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Band Marker X

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STOP

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STOP <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:X:STOP?

Description Sets/reads the stop value of bandmarker X

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	100
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Stop

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:CENTer

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:CENTer <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:CENTer?

Description Sets/reads the center value of bandmarker Y

Parameter

	<Numeric>
Range	-
Preset value	-40
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker Y -> Center

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:SPAN

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:SPAN <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:SPAN?

Description Sets/reads the span value of bandmarker Y

Parameter

	<Numeric>
Range	0 to 9.8e+37
Preset value	100
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker Y -> Span

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STARt

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STARt <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STARt?

Description Sets/reads the start value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	-90
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker Y -> Start

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STATe

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STATe {ON|OFF|1|0}

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STATe?

Description Turns on/off bandmarker Y

Parameter

	Description
ON or 1	Set bandmarker mode to 'ON'
OFF or 0(Preset value)	Set bandmarker mode to 'OFF'

Equivalent key USER Menu -> Marker Function -> Band Marker Y -> Band Marker Y

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STOP

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STOP <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:BDMarker:Y:STOP?

Description Sets/reads the stop value of bandmarker Y

Parameter

	<Numeric>
Range	-1T to 1T
Preset value	10
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker Y -> Stop

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:FDATa

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:DATA:FDATa <array>

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:FDATa?

Description Sets/reads formatted trace data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:FMEMory

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:DATA:FMEMory <array>

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:FMEMory?

Description Sets/reads formatted memory data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:POINts

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:DATA:POINts

Description reads the number of measurement points (Query Only)

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

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:RDATa

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:DATA:RDATa <array>

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:RDATa?

Description Sets/reads raw data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:STARt

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:DATA:STARt

Description start frequency (Query Only)

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

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:STOP

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:DATA:STOP

Description stop frequency (Query Only)

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

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:UDATa

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:DATA:UDATa <array>

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:UDATa?

Description Sets/reads unformatted trace data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:UMEMory

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:DATA:UMEMory <array>

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:UMEMory?

Description Sets/reads unformatted memory data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:XDATa

Syntax

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:XDATa <array>

:CALCulate:USER[1-1]:TRACe[1-8]:DATA:XDATa?

Description

Sets/reads the X data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:DOMain:X

Syntax

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:DOMain:X {FULLspan|BANDmarker}

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:DOMain:X?

Description

Sets/reads analysis/search range(X-axis)

Parameter

	Description
FULLspan(Preset value)	Set marker search MINimum to 'FULLspan'
BANDmarker	Set marker search MINimum to 'BANDmarker'

Equivalent key

USER Menu -> Marker Function -> Analysis Range (X)

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:DOMain:Y

Syntax

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:DOMain:Y {FULLscale|BANDmarker}

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:DOMain:Y?

Description

Sets/reads analysis/search range(Y-axis)

Parameter

	Description
FULLscale(Preset value)	Set marker search PEAK to 'FULLscale'
BANDmarker	Set marker search PEAK to 'BANDmarker'

Equivalent key USER Menu -> Marker Function -> Analysis Range (Y)

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:STATistics:DATA

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:STATistics:DATA

Description trace data statistics (Query Only)

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

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:STATistics:MEMory

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:STATistics:MEMory

Description memory data statistics (Query Only)

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

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:TYPE

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:TYPE {OFF|STATistics}

:CALCulate:USER[1-1]:TRACe[1-8]:FUNCtion:TYPE?

Description Analysis type

Parameter

	Description
OFF(Preset value)	Set marker search TARGet to 'OFF'
STATistics	Set marker search TARGet to 'STATistics'

Equivalent key USER Menu -> Marker Function -> Analysis Type

:CALCulate:USER[1-1]:TRACe[1-8]:HOLD

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:HOLD {OFF|MAXimum|MINimum}

:CALCulate:USER[1-1]:TRACe[1-8]:HOLD?

Description Data hold

Parameter

	Description
OFF(Preset value)	Set marker-search-peak excursion value to 'OFF'
MAXimum	Set marker-search-peak excursion value to 'MAXimum'
MINimum	Set marker-search-peak excursion value to 'MINimum'

Equivalent key USER Menu -> Trace View -> Data Hold

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:LPEak

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:LPEak

Description Execute marker peak search left (No Query)

Equivalent key USER Menu -> Marker Search -> Peak -> Search Left

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:LTARget

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:LTARget

Description Execute marker targetsearch left (No Query)

Equivalent key USER Menu -> Marker Search -> Target -> Search Left

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:MAXimum

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:MAXimum

Description Execute marker search maximum (No Query)

Equivalent key USER Menu -> Marker Search -> Search Max

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:MINimum

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:MINimum

Description Execute marker search minimum (No Query)

Equivalent key USER Menu -> Marker Search -> Search Min

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:PEAK

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:PEAK

Description Execute marker peak search (No Query)

Equivalent key USER Menu -> Marker Search -> Peak -> Search Peak

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:RPEak

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:RPEak

Description Execute marker peak search right (No Query)

Equivalent key USER Menu -> Marker Search -> Peak -> Search Right

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:RTARget

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:RTARget

Description Execute marker target search right (No Query)

Equivalent key USER Menu -> Marker Search -> Target -> Search Right

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:TARGet

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:EXECute:TARGet

Description Execute marker target search (No Query)

Equivalent key USER Menu -> Marker Search -> Target -> Search Target

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:PEAK:EXCursion

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:PEAK:EXCursion <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:PEAK:EXCursion?

Description Sets/reads the peak excursion value

Parameter

	<Numeric>
Range	0 to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Search -> Peak -> Peak Excursion

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:PEAK:POLarity

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:PEAK:POLarity {POSitive|NEGative|BOTH}

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:PEAK:POLarity?

Description Sets/reads the marker peak-search polality

Parameter

	Description
POSitive(Preset value)	Set marker-search-peak polality type to 'POSitive'
NEGative	Set marker-search-peak polality type to 'NEGative'
BOTH	Set marker-search-peak polality type to 'BOTH'

Equivalent key USER Menu -> Marker Search -> Peak -> Peak Polarity

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TARGet:TRAnsition

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TARGet:TRAnsition {POSitive|NEGative|BOTH}

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TARGet:TRAnsition?

Description marker-target transition type

Parameter

	Description
POSitive	Set marker-target transition type to 'POSitive'

	Description
NEGative	Set marker-target transition type to 'NEGative'
BOTH(Preset value)	Set marker-target transition type to 'BOTH'

Equivalent key USER Menu -> Marker Search -> Target -> Search Transition

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TARGet:Y

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TARGet:Y <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TARGet:Y?

Description Sets/reads the marker target value

Parameter

	<Numeric>
Range	-10G to 10G
Preset value	0
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Search -> Target -> Search Value

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TRACking:TYPE

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TRACking:TYPE {OFF|MAXimum|MINimum|PEAK|TARGet}

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:SEARch:TRACking:TYPE?

Description Sets/reads the marker tracking type

Parameter

	Description
OFF(Preset value)	Set search tracking type to 'OFF'
MAXimum	Set search tracking type to 'MAXimum'
MINimum	Set search tracking type to 'MINimum'
PEAK	Set search tracking type to 'PEAK'

	Description
TARGet	Set search tracking type to 'TARGet'

Equivalent key USER Menu -> Marker Search -> Tracking

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:STATe

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:STATe {ON|OFF|1|0}

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:STATe?

Description Turns on/off markers

Parameter

	Description
ON or 1	Set marker to 'ON'
OFF or 0(Preset value)	Set marker to 'OFF'

Equivalent key USER Menu -> Marker -> Clear Marker Menu -> Marker 1

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:X

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:X <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:X?

Description Sets/reads the marker x position

Parameter

	<Numeric>
Range	-
Preset value	0
Unit	-
Resolution	-

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

:CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:Y

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MARKer[1-6]:Y

Description Reads the marker y position (Query Only)

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

:CALCulate:USER[1-1]:TRACe[1-8]:MATH:FUNCtion

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MATH:FUNCtion {NORMal|SUBTract|DIVide|ADD|MULTiply}

:CALCulate:USER[1-1]:TRACe[1-8]:MATH:FUNCtion?

Description Selects math operation type

Parameter

	Description
NORMal(Preset value)	Set math operation type to 'NORMal'
SUBTract	Set math operation type to 'SUBTract'
DIVide	Set math operation type to 'DIVide'
ADD	Set math operation type to 'ADD'
MULTiply	Set math operation type to 'MULTiply'

Equivalent key USER Menu -> Trace View -> Data Math

:CALCulate:USER[1-1]:TRACe[1-8]:MATH:MEMorize

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:MATH:MEMorize

Description Copy data to memory (No Query)

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

:CALCulate:USER[1-1]:TRACe[1-8]:SMOothing:APERture

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:SMOothing:APERture <numeric>

:CALCulate:USER[1-1]:TRACe[1-8]:SMOothing:APERture?

Description Sets/reads the smoothing aperture value

Parameter

	<Numeric>
Range	50m to 25
Preset value	1.5

	<Numeric>
Unit	%
Resolution	-

Equivalent key USER Menu -> Trace View -> Aperture

:CALCulate:USER[1-1]:TRACe[1-8]:SMOothing:STATe

Syntax :CALCulate:USER[1-1]:TRACe[1-8]:SMOothing:STATe {ON|OFF|1|0}

:CALCulate:USER[1-1]:TRACe[1-8]:SMOothing:STATe?

Description Turns on/off smoothing mode

Parameter

	Description
ON or 1	Set smoothing mode to 'ON'
OFF or 0(Preset value)	Set smoothing mode to 'OFF'

Equivalent key USER Menu -> Trace View -> Smoothing

:CONTrol:HANDler:A[:DATA]

Syntax :CONTrol:HANDler:A[:DATA] <numeric>

Description Outputs data using port A (No Query)

Parameter

	<Numeric>
Range	0 to 255
Preset value	-
Unit	-
Resolution	-

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

:CONTrol:HANDler:B[:DATA]

Syntax :CONTrol:HANDler:B[:DATA] <numeric>

Description Outputs data using port B (No Query)

Parameter

	<Numeric>
Range	0 to 255
Preset value	-
Unit	-
Resolution	-

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

:CONTrol:HANDler:C[:DATA]

Syntax :CONTrol:HANDler:C[:DATA] <numeric>

:CONTrol:HANDler:C[:DATA]?

Description Inputs/Outputs data using port C

Parameter

	<Numeric>
Range	0 to 15
Preset value	-
Unit	-
Resolution	-

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

:CONTrol:HANDler:C:MODE

Syntax :CONTrol:HANDler:C:MODE {INPut|OUTPut}

:CONTrol:HANDler:C:MODE?

Description Selects input/output mode on port C

Parameter

	Description
INPut(Preset value)	Set input/output mode on port C to 'INPut'
OUTPut	Set input/output mode on port C to 'OUTPut'

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

:CONTrol:HANDler:D[:DATA]

Syntax :CONTrol:HANDler:D[:DATA] <numeric>

:CONTrol:HANDler:D[:DATA]?

Description Inputs/Outputs data using port D

Parameter

	<Numeric>
Range	0 to 15
Preset value	-
Unit	-
Resolution	-

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

:CONTrol:HANDler:D:MODE

Syntax :CONTrol:HANDler:D:MODE {INPut|OUTPut}

:CONTrol:HANDler:D:MODE?

Description Selects input/output mode on port D

Parameter

	Description
INPut(Preset value)	Set input/output mode on port D to 'INPut'
OUTPut	Set input/output mode on port D to 'OUTPut'

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

:CONTrol:HANDler:E[:DATA]

Syntax :CONTrol:HANDler:E[:DATA] <numeric>

:CONTrol:HANDler:E[:DATA]?

Description Inputs/outputs data using port E(port C + port D; 16 bits)

Parameter

	<Numeric>
Range	0 to 255
Preset value	-
Unit	-
Resolution	-

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

:CONTrol:HANDler:F[:DATA]

Syntax :CONTrol:HANDler:F[:DATA] <numeric>

Description Inputs/outputs data using port F(port A + port C; 16 bits) (No Query)

Parameter

	<Numeric>
Range	0 to 65535
Preset value	-
Unit	-
Resolution	-

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

:CONTrol:HANDler:OUTPut[1-2][:DATA]

Syntax :CONTrol:HANDler:OUTPut[1-2][:DATA] <numeric>

:CONTrol:HANDler:OUTPut[1-2][:DATA]?

Description Sets/Reads OUTPUT1 and/or OUTPUT2

Parameter

	<Numeric>
Range	0 to 1
Preset value	-
Unit	-
Resolution	-

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

:DISPlay:CLOCk

Syntax :DISPlay:CLOCk {ON|OFF|1|0}

:DISPlay:CLOCk?

Description Turns on/off internal clock display

Parameter

	Description
ON or 1(Preset value)	Set internal clock display mode to 'ON'
OFF or 0	Set internal clock display mode to 'OFF'

Equivalent key PN Menu -> System -> Misc Setup -> Clock Setup -> Show Clock

SP Menu -> System -> Misc Setup -> Clock Setup -> Show Clock

FP Menu -> System -> Misc Setup -> Clock Setup -> Show Clock

TR Menu -> System -> Misc Setup -> Clock Setup -> Show Clock

USER Menu -> System -> Misc Setup -> Clock Setup -> Show Clock

:DISPlay:ECHO:ADD

Syntax :DISPlay:ECHO:ADD <String>

Description Adds texts in echo window (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:DISPlay:ECHO:CLEar

Syntax :DISPlay:ECHO:CLEar

Description Clears echo window (No Query)

Equivalent key

PN Menu -> Macro Setup -> Echo Window Menu -> Clear Echo

SP Menu -> Macro Setup -> Echo Window Menu -> Clear Echo

FP Menu -> Macro Setup -> Echo Window Menu -> Clear Echo

TR Menu -> Macro Setup -> Echo Window Menu -> Clear Echo

USER Menu -> Macro Setup -> Echo Window Menu -> Clear Echo

:DISPlay:ECHO:DATA

Syntax

:DISPlay:ECHO:DATA <String>

:DISPlay:ECHO:DATA?

Description

Sets.readsa the texts in echo window

Parameter

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

:DISPlay:ECHO:FSIZe

Syntax

:DISPlay:ECHO:FSIZe <numeric>

:DISPlay:ECHO:FSIZe?

Description

Sets/reads the font size in echo window

Parameter

	<Numeric>
Range	8|9|10|11|12|14|16|18|20|22|24|26|28|36|48|72
Preset value	11
Unit	-
Resolution	-

Equivalent key

PN Menu -> Macro Setup -> Echo Window Menu -> Echo Font Size

SP Menu -> Macro Setup -> Echo Window Menu -> Echo Font Size

FP Menu -> Macro Setup -> Echo Window Menu -> Echo Font Size

TR Menu -> Macro Setup -> Echo Window Menu -> Echo Font Size

USER Menu -> Macro Setup -> Echo Window Menu -> Echo Font Size

:DISPlay:ECHO:STATe

Syntax

:DISPlay:ECHO:STATe {ON|OFF|1|0}

:DISPlay:ECHO:STATe?

Description

Show/Hide echo window

Parameter

	Description
ON or 1	Set echo window mode to 'ON'
OFF or 0(Preset value)	Set echo window mode to 'OFF'

Equivalent key

PN Menu -> Macro Setup -> Echo Window Menu -> Echo Window

SP Menu -> Macro Setup -> Echo Window Menu -> Echo Window

FP Menu -> Macro Setup -> Echo Window Menu -> Echo Window

TR Menu -> Macro Setup -> Echo Window Menu -> Echo Window

USER Menu -> Macro Setup -> Echo Window Menu -> Echo Window

:DISPlay:ENABle

Syntax

:DISPlay:ENABle {ON|OFF|1|0}

:DISPlay:ENABle?

Description

Enable/disable trace update

Parameter

	Description
ON or 1(Preset value)	Set trace update mode to 'ON'
OFF or 0	Set trace update mode to 'OFF'

Equivalent key

PN Menu -> Display -> Update

SP Menu -> Display -> Update

FP Menu -> Display -> Update

TR Menu -> Display -> Update

USER Menu -> Display -> Update

:DISPlay:FP[1-1]:ALLTrace:PERSistence:CLEar

Syntax :DISPlay:FP[1-1]:ALLTrace:PERSistence:CLEar

Description clear all stored traces (No Query)

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

:DISPlay:FP[1-1]:ALLTrace:Y:SCALe:AUTO

Syntax :DISPlay:FP[1-1]:ALLTrace:Y:SCALe:AUTO

Description auto scale all (No Query)

Equivalent key FP Menu -> Scale -> Auto Scale All

:DISPlay:FP[1-1]:ANNotation:MARKer:POSition

Syntax :DISPlay:FP[1-1]:ANNotation:MARKer:POSition {LEFT|RIGHt}

:DISPlay:FP[1-1]:ANNotation:MARKer:POSition?

Description Sets/reads the marker information position

Parameter

	Description
LEFT(Preset value)	Set the marker information position to 'LEFT'
RIGHt	Set the marker information position to 'RIGHt'

Equivalent key FP Menu -> Display -> Marker Information

:DISPlay:FP[1-1]:ANNotation:MEASurement:STATe

Syntax :DISPlay:FP[1-1]:ANNotation:MEASurement:STATe {ON|OFF|1|0}

:DISPlay:FP[1-1]:ANNotation:MEASurement:STATe?

Description Turns on/off measurement conditions

Parameter

	Description
ON or 1(Preset value)	Set measurement conditions mode to 'ON'
OFF or 0	Set measurement conditions mode to 'OFF'

Equivalent key FP Menu -> Display -> Meas Condition

:DISPlay:FP[1-1]:GRATicule:AXIS:Y:RELative

Syntax :DISPlay:FP[1-1]:GRATicule:AXIS:Y:RELative {ON|OFF|1|0}

:DISPlay:FP[1-1]:GRATicule:AXIS:Y:RELative?

Description Turns on/off relative Y-scale

Parameter

	Description
ON or 1	Set relative Y-scale mode to 'ON'
OFF or 0(Preset value)	Set relative Y-scale mode to 'OFF'

Equivalent key FP Menu -> Display -> Relative Y-Scale

:DISPlay:FP[1-1]:GRATicule:AXIS:Y:STATe

Syntax :DISPlay:FP[1-1]:GRATicule:AXIS:Y:STATe {OFF|SHORt|LONG}

:DISPlay:FP[1-1]:GRATicule:AXIS:Y:STATe?

Description Show/Hide Y graticule label

Parameter

	Description
OFF	Set Y graticule label to 'OFF'
SHORt(Preset value)	Set Y graticule label to 'SHORt'
LONG	Set Y graticule label to 'LONG'

Equivalent key FP Menu -> Display -> Y # of Digits

:DISPlay:FP[1-1]:LABel:DATA

Syntax :DISPlay:FP[1-1]:LABel:DATA <String>

:DISPlay:FP[1-1]:LABel:DATA?

Description Window title label

Parameter

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key FP Menu -> Display -> Edit Title Label

:DISPlay:FP[1-1]:LABel:STATe

Syntax :DISPlay:FP[1-1]:LABel:STATe {ON|OFF|1|0}

:DISPlay:FP[1-1]:LABel:STATe?

Description Show/Hide Window Title Label

Parameter

	Description
ON or 1	Set Window Title Label mode to 'ON'
OFF or 0(Preset value)	Set Window Title Label mode to 'OFF'

Equivalent key FP Menu -> Display -> Title Label

:DISPlay:FP[1-1]:MAXimize

Syntax :DISPlay:FP[1-1]:MAXimize {ON|OFF|1|0}

:DISPlay:FP[1-1]:MAXimize?

Description maximize active trace

Parameter

	Description
ON or 1	Set maximize active trace mode to 'ON'
OFF or 0(Preset value)	Set maximize active trace mode to 'OFF'

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

:DISPlay:FP[1-1]:STATe

Syntax :DISPlay:FP[1-1]:STATe {ON|OFF|1|0}

:DISPlay:FP[1-1]:STATe?

Description measurement display on/off. At least one meas window must be turned on.

Parameter

	Description
ON or 1(Preset value)	Set measurement display to 'ON'
OFF or 0	Set measurement display to 'OFF'

Equivalent key PN Menu -> Measurement View -> Show Window -> Freq & Power

SP Menu -> Measurement View -> Show Window -> Freq & Power

FP Menu -> Measurement View -> Show Window -> Freq & Power

TR Menu -> Measurement View -> Show Window -> Freq & Power

USER Menu -> Measurement View -> Show Window -> Freq & Power

:DISPlay:FP[1-1]:TABLe[:STATe]

Syntax :DISPlay:FP[1-1]:TABLe[:STATe] {ON|OFF|1|0}

:DISPlay:FP[1-1]:TABLe[:STATe]?

Description Turns on/off the marker list

Parameter

	Description
ON or 1	Set the marker list mode to 'ON'
OFF or 0(Preset value)	Set the marker list mode to 'OFF'

Equivalent key FP Menu -> Marker -> Marker List

:DISPlay:FP[1-1]:TRACe[1-3]:LABel:DATA

Syntax :DISPlay:FP[1-1]:TRACe[1-3]:LABel:DATA <String>

:DISPlay:FP[1-1]:TRACe[1-3]:LABel:DATA?

Description Edits trace title label

Parameter

	<String>
Range	-
Preset value	"Freq"
Unit	-
Resolution	-

Equivalent key FP Menu -> Trace View -> Trace Label

:DISPlay:FP[1-1]:TRACe[1-3]:MODE

Syntax :DISPlay:FP[1-1]:TRACe[1-3]:MODE {OFF|DATA|MEMory|BOTH}

:DISPlay:FP[1-1]:TRACe[1-3]:MODE?

Description Shows data and/or memory trace

Parameter

	Description
OFF	Set trace to 'OFF'
DATA(Preset value)	Set trace to 'DATA'
MEMory	Set trace to 'MEMory'
BOTH	Set trace to 'BOTH' (trace and memory)

Equivalent key FP Menu -> Trace View -> Display Trace

:DISPlay:FP[1-1]:TRACe[1-3]:PERSistence:CLEar

Syntax :DISPlay:FP[1-1]:TRACe[1-3]:PERSistence:CLEar

Description Cleasr persistence mode (No Query)

Equivalent key FP Menu -> Trace View -> Clear Persistent Data

:DISPlay:FP[1-1]:TRACe[1-3]:PERSistence:STATe

Syntax :DISPlay:FP[1-1]:TRACe[1-3]:PERSistence:STATe {ON|OFF|1|0}

:DISPlay:FP[1-1]:TRACe[1-3]:PERSistence:STATe?

Description Sets/reads persistence mode

Parameter

	Description
ON or 1	Set persistence mode mode to 'ON'
OFF or 0(Preset value)	Set persistence mode mode to 'OFF'

Equivalent key FP Menu -> Trace View -> Persistence Mode

:DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:AUTO

Syntax :DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:AUTO

Description auto scale (No Query)

Equivalent key FP Menu -> Scale -> Auto Scale

:DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:PDIVision

Syntax :DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:PDIVision <numeric>

:DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:PDIVision?

Description scale per division

Parameter

	<Numeric>
Range	1a to 10G
Preset value	100M
Unit	-
Resolution	-

Equivalent key FP Menu -> Scale -> Scale/Div

:DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:RLEVel

Syntax :DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:RLEVel <numeric>

:DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:RLEVel?

Description scale reference level

Parameter

	<Numeric>
Range	-50G to 50G
Preset value	1.5G
Unit	-
Resolution	-

Equivalent key FP Menu -> Scale -> Reference Value

FP Menu -> Scale -> Marker -> Reference

:DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:RPOSition

Syntax :DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:RPOSition <numeric>

:DISPlay:FP[1-1]:TRACe[1-3]:Y[:SCALe]:RPOSition?

Description scale reference position

Parameter

	<Numeric>
Range	0 to 30
Preset value	5
Unit	Div
Resolution	-

Equivalent key FP Menu -> Scale -> Reference Position

:DISPlay:FP[1-1]:Y[:SCALe]:DIVisions

Syntax :DISPlay:FP[1-1]:Y[:SCALe]:DIVisions <numeric>

:DISPlay:FP[1-1]:Y[:SCALe]:DIVisions?

Description # of Y division

Parameter

	<Numeric>
Range	4 to 30
Preset value	10

	<Numeric>
Unit	-
Resolution	2

Equivalent key FP Menu -> Scale -> Divisions

:DISPlay:MAXimize

Syntax :DISPlay:MAXimize {ON|OFF|1|0}

:DISPlay:MAXimize?

Description maximize active instrument window

Parameter

	Description
ON or 1(Preset value)	Maximize active instrument window mode to 'ON'
OFF or 0	Maximize active instrument window mode to 'OFF'

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

:DISPlay:MESSage:CLEar

Syntax :DISPlay:MESSage:CLEar

Description Clear caution/message (No Query)

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

:DISPlay:PN[1-1]:ALLTrace:PERSistence:CLEar

Syntax :DISPlay:PN[1-1]:ALLTrace:PERSistence:CLEar

Description Clears all persistent traces (No Query)

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

:DISPlay:PN[1-1]:ANNotation:MARKer:POSition

Syntax :DISPlay:PN[1-1]:ANNotation:MARKer:POSition {LEFT|RIGHt}

:DISPlay:PN[1-1]:ANNotation:MARKer:POSition?

Description Sets/reads the marker information position

Parameter

	Description
LEFT	Set the marker information position to 'LEFT'
RIGHt(Preset value)	Set the marker information position to 'RIGHt'

Equivalent key PN Menu -> Display -> Marker Information

:DISPlay:PN[1-1]:ANNotation:MEASurement:STATe

Syntax :DISPlay:PN[1-1]:ANNotation:MEASurement:STATe {ON|OFF|1|0}

:DISPlay:PN[1-1]:ANNotation:MEASurement:STATe?

Description Turns on/off measurement conditions

Parameter

	Description
ON or 1(Preset value)	Set measurement conditions mode to 'ON'
OFF or 0	Set measurement conditions mode to 'OFF'

Equivalent key PN Menu -> Display -> Meas Condition

:DISPlay:PN[1-1]:GRATicule:AXIS:Y:RELative

Syntax :DISPlay:PN[1-1]:GRATicule:AXIS:Y:RELative {ON|OFF|1|0}

:DISPlay:PN[1-1]:GRATicule:AXIS:Y:RELative?

Description Sets/reads ralative Y-scale

Parameter

	Description
ON or 1	Set relative Y-sclae mode to 'ON'
OFF or 0(Preset value)	Set relative Y-scale mode to 'OFF'

Equivalent key PN Menu -> Display -> Relative Y-Scale

:DISPlay:PN[1-1]:GRATicule:AXIS:Y:STATe

Syntax :DISPlay:PN[1-1]:GRATicule:AXIS:Y:STATe {OFF|SHORt|LONG}

:DISPlay:PN[1-1]:GRATicule:AXIS:Y:STATe?

Description Show/Hide Y graticule label

Parameter

	Description
OFF	Set Y graticule label mode to 'OFF'
SHORt(Preset value)	Set Y graticule label mode to 'SHORt'
LONG	Set Y graticule label mode to 'LONG'

Equivalent key PN Menu -> Display -> Y # of Digits

:DISPlay:PN[1-1]:LABel:DATA

Syntax :DISPlay:PN[1-1]:LABel:DATA <String>

:DISPlay:PN[1-1]:LABel:DATA?

Description Edits window title label

Parameter

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key PN Menu -> Display -> Edit Title Label

:DISPlay:PN[1-1]:LABel:STATe

Syntax :DISPlay:PN[1-1]:LABel:STATe {ON|OFF|1|0}

:DISPlay:PN[1-1]:LABel:STATe?

Description Show/Hide window title label

Parameter

	Description
ON or 1	Show window title label

	Description
OFF or 0(Preset value)	Hide window title label

Equivalent key PN Menu -> Display -> Title Label

:DISPlay:PN[1-1]:MAXimize

Syntax :DISPlay:PN[1-1]:MAXimize {ON|OFF|1|0}

:DISPlay:PN[1-1]:MAXimize?

Description maximize active trace

Parameter

	Description
ON or 1	Set maximize active trace mode to 'ON'
OFF or 0(Preset value)	Set maximize active trace mode to 'OFF'

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

:DISPlay:PN[1-1]:STATe

Syntax :DISPlay:PN[1-1]:STATe {ON|OFF|1|0}

:DISPlay:PN[1-1]:STATe?

Description Turns on/off phase noise measurement mode

Parameter

	Description
ON or 1(Preset value)	Set phase noise measurement mode mode to 'ON'
OFF or 0	Set phase noise measurement mode mode to 'OFF'

Equivalent key PN Menu -> Measurement View -> Show Window -> Phase Noise

SP Menu -> Measurement View -> Show Window -> Phase Noise

FP Menu -> Measurement View -> Show Window -> Phase Noise

TR Menu -> Measurement View -> Show Window -> Phase Noise

USER Menu -> Measurement View -> Show Window -> Phase Noise

:DISPlay:PN[1-1]:TABLe[:STATe]

Syntax :DISPlay:PN[1-1]:TABLe[:STATe] {ON|OFF|1|0}

:DISPlay:PN[1-1]:TABLe[:STATe]?

Description Turns on/off the marker list

Parameter

	Description
ON or 1	Enable the marker list
OFF or 0(Preset value)	Disable the marker list

Equivalent key PN Menu -> Marker -> Marker List

:DISPlay:PN[1-1]:TRACe[1-1]:LABel:DATA

Syntax :DISPlay:PN[1-1]:TRACe[1-1]:LABel:DATA <String>

:DISPlay:PN[1-1]:TRACe[1-1]:LABel:DATA?

Description Edits trace title lable on phase noise measurement

Parameter

	<String>
Range	-
Preset value	"Phase Noise"
Unit	-
Resolution	-

Equivalent key PN Menu -> Trace View -> Trace Label

:DISPlay:PN[1-1]:TRACe[1-1]:MODE

Syntax :DISPlay:PN[1-1]:TRACe[1-1]:MODE {OFF|DATA|MEMory|BOTH}

:DISPlay:PN[1-1]:TRACe[1-1]:MODE?

Description Selects data and/or memory trace

Parameter

	Description
OFF	Set trace to 'OFF'
DATA(Preset value)	Set trace to 'DATA'
MEMory	Set trace to 'MEMory'
BOTH	Set trace to 'BOTH' (trace and memory)

Equivalent key PN Menu -> Trace View -> Display Trace

:DISPlay:PN[1-1]:TRACe[1-1]:PERSistence:CLEar

Syntax :DISPlay:PN[1-1]:TRACe[1-1]:PERSistence:CLEar

Description Clears persistent data (No Query)

Equivalent key PN Menu -> Trace View -> Clear Persistent Data

:DISPlay:PN[1-1]:TRACe[1-1]:PERSistence:STATe

Syntax :DISPlay:PN[1-1]:TRACe[1-1]:PERSistence:STATe {ON|OFF|1|0}

:DISPlay:PN[1-1]:TRACe[1-1]:PERSistence:STATe?

Description Sets/reads persistence mode

Parameter

	Description
ON or 1	Set persistence mode to 'ON'
OFF or 0(Preset value)	Set persistence mode to 'OFF'

Equivalent key PN Menu -> Trace View -> Persistence Mode

:DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:AUTO

Syntax :DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:AUTO

Description Execute autoscale (No Query)

Equivalent key PN Menu -> Scale -> Auto Scale

:DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:PDIVision

Syntax :DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:PDIVision <numeric>

:DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:PDIVision?

Description scale per division

Parameter

	<Numeric>
Range	1a to 10G
Preset value	10
Unit	-
Resolution	-

Equivalent key PN Menu -> Scale -> Scale/Div

:DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:RLEVel

Syntax :DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:RLEVel <numeric>

:DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:RLEVel?

Description scale reference level

Parameter

	<Numeric>
Range	-50G to 50G
Preset value	-20
Unit	-
Resolution	-

Equivalent key PN Menu -> Scale -> Reference Value

PN Menu -> Scale -> Marker -> Reference

:DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:RPOSition

Syntax :DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:RPOSition <numeric>

:DISPlay:PN[1-1]:TRACe[1-1]:Y[:SCALe]:RPOSition?

Description scale reference position

Parameter

	<Numeric>
Range	0 to 30
Preset value	16
Unit	Div
Resolution	-

Equivalent key PN Menu -> Scale -> Reference Position

:DISPlay:PN[1-1]:Y[:SCALe]:DIVisions

Syntax :DISPlay:PN[1-1]:Y[:SCALe]:DIVisions <numeric>

:DISPlay:PN[1-1]:Y[:SCALe]:DIVisions?

Description # of Y division

Parameter

	<Numeric>
Range	4 to 30
Preset value	16
Unit	-
Resolution	2

Equivalent key PN Menu -> Scale -> Divisions

:DISPlay:SKEY:STATe

Syntax :DISPlay:SKEY:STATe {ON|OFF|1|0}

:DISPlay:SKEY:STATe?

Description Show/Hide soft key

Parameter

	Description
ON or 1(Preset value)	Show softkey
OFF or 0	Hide softkey

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

:DISPlay:SP[1-1]:ALLTrace:PERSistence:CLEar

Syntax :DISPlay:SP[1-1]:ALLTrace:PERSistence:CLEar

Description Clears all persistent traces (No Query)

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

:DISPlay:SP[1-1]:ANNotation:MARKer:POSition

Syntax :DISPlay:SP[1-1]:ANNotation:MARKer:POSition {LEFT|RIGHt}

:DISPlay:SP[1-1]:ANNotation:MARKer:POSition?

Description Sets/reads the marker information position

Parameter

	Description
LEFT(Preset value)	Set the marker information position to 'LEFT'
RIGHt	Set the marker information position to 'RIGHt'

Equivalent key SP Menu -> Display -> Marker Information

:DISPlay:SP[1-1]:ANNotation:MEASurement:STATe

Syntax :DISPlay:SP[1-1]:ANNotation:MEASurement:STATe {ON|OFF|1|0}

:DISPlay:SP[1-1]:ANNotation:MEASurement:STATe?

Description Turns on/off measurement conditions

Parameter

	Description
ON or 1(Preset value)	Set measurement conditions mode to 'ON'
OFF or 0	Set measurement conditions mode to 'OFF'

Equivalent key SP Menu -> Display -> Meas Condition

:DISPlay:SP[1-1]:GRATicule:AXIS:Y:RELative

Syntax :DISPlay:SP[1-1]:GRATicule:AXIS:Y:RELative {ON|OFF|1|0}

:DISPlay:SP[1-1]:GRATicule:AXIS:Y:RELative?

Description Turns on/off relative Y-scale

Parameter

	Description
ON or 1	Set relative Y-scale mode to 'ON'
OFF or 0(Preset value)	Set relative Y-scale mode to 'OFF'

Equivalent key SP Menu -> Display -> Relative Y-Scale

:DISPlay:SP[1-1]:GRATicule:AXIS:Y:STATe

Syntax :DISPlay:SP[1-1]:GRATicule:AXIS:Y:STATe {OFF|SHORt|LONG}

:DISPlay:SP[1-1]:GRATicule:AXIS:Y:STATe?

Description Show/Hide Y graticule label

Parameter

	Description
OFF	Set Y graticule label mode to 'OFF'
SHORt(Preset value)	Set Y graticule label mode to 'SHORt'
LONG	Set Y graticule label mode to 'LONG'

Equivalent key SP Menu -> Display -> Y # of Digits

:DISPlay:SP[1-1]:LABel:DATA

Syntax :DISPlay:SP[1-1]:LABel:DATA <String>

:DISPlay:SP[1-1]:LABel:DATA?

Description Edits window title label

Parameter

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key SP Menu -> Display -> Edit Title Label

:DISPlay:SP[1-1]:LABel:STATe

Syntax :DISPlay:SP[1-1]:LABel:STATe {ON|OFF|1|0}

:DISPlay:SP[1-1]:LABel:STATe?

Description Show/hide window title label

Parameter

	Description
ON or 1	Show window title label
OFF or 0(Preset value)	Hide window title label

Equivalent key SP Menu -> Display -> Title Label

:DISPlay:SP[1-1]:MAXimize

Syntax :DISPlay:SP[1-1]:MAXimize {ON|OFF|1|0}

:DISPlay:SP[1-1]:MAXimize?

Description maximize active trace

Parameter

	Description
ON or 1	Set maximize active trace mode to 'ON'
OFF or 0(Preset value)	Set maximize active trace mode to 'OFF'

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

:DISPlay:SP[1-1]:STATe

Syntax :DISPlay:SP[1-1]:STATe {ON|OFF|1|0}

:DISPlay:SP[1-1]:STATe?

Description Turns on/off spectrum monitor mode

Parameter

	Description
ON or 1(Preset value)	Show spectrum monitor mode
OFF or 0	Hide spectrum monitor mode

Equivalent key

PN Menu -> Measurement View -> Show Window -> Spectrum Monitor

SP Menu -> Measurement View -> Show Window -> Spectrum Monitor

FP Menu -> Measurement View -> Show Window -> Spectrum Monitor

TR Menu -> Measurement View -> Show Window -> Spectrum Monitor

USER Menu -> Measurement View -> Show Window -> Spectrum Monitor

:DISPlay:SP[1-1]:TABLe[:STATe]

Syntax

:DISPlay:SP[1-1]:TABLe[:STATe] {ON|OFF|1|0}

:DISPlay:SP[1-1]:TABLe[:STATe]?

Description

Turns on/off the marker list

Parameter

	Description
ON or 1	Enable the marker list
OFF or 0(Preset value)	Disable the marker list

Equivalent key

SP Menu -> Marker -> Marker List

:DISPlay:SP[1-1]:TRACe[1-1]:LABel:DATA

Syntax

:DISPlay:SP[1-1]:TRACe[1-1]:LABel:DATA <String>

:DISPlay:SP[1-1]:TRACe[1-1]:LABel:DATA?

Description

Sets/reads trace title lable on spectrum monitor mode

Parameter

	<String>
Range	-
Preset value	"Spectrum"
Unit	-

	<String>
Resolution	-

Equivalent key SP Menu -> Trace View -> Trace Label

:DISPlay:SP[1-1]:TRACe[1-1]:MODE

Syntax :DISPlay:SP[1-1]:TRACe[1-1]:MODE {OFF|DATA|MEMory|BOTH}

:DISPlay:SP[1-1]:TRACe[1-1]:MODE?

Description show data and/or memory trace

Parameter

	Description
OFF	Set trace to 'OFF'
DATA(Preset value)	Set trace to 'DATA'
MEMory	Set trace to 'MEMory'
BOTH	Set trace to 'BOTH' (trace and memorry)

Equivalent key SP Menu -> Trace View -> Display Trace

:DISPlay:SP[1-1]:TRACe[1-1]:PERSistence:CLEar

Syntax :DISPlay:SP[1-1]:TRACe[1-1]:PERSistence:CLEar

Description Clears persistent data (No Query)

Equivalent key SP Menu -> Trace View -> Clear Persistent Data

:DISPlay:SP[1-1]:TRACe[1-1]:PERSistence:STATe

Syntax :DISPlay:SP[1-1]:TRACe[1-1]:PERSistence:STATe {ON|OFF|1|0}

:DISPlay:SP[1-1]:TRACe[1-1]:PERSistence:STATe?

Description Sets/reads persistence mode

Parameter

	Description
ON or 1	Set persistence mode to 'ON'

	Description
OFF or 0(Preset value)	Set persistence mode to 'OFF'

Equivalent key SP Menu -> Trace View -> Persistence Mode

:DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:AUTO

Syntax :DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:AUTO

Description Execute autoscale (No Query)

Equivalent key SP Menu -> Scale -> Auto Scale

:DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:PDIVision

Syntax :DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:PDIVision <numeric>

:DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:PDIVision?

Description scale per division

Parameter

	<Numeric>
Range	1a to 10G
Preset value	10
Unit	-
Resolution	-

Equivalent key SP Menu -> Scale -> Scale/Div

:DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:RLEVel

Syntax :DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:RLEVel <numeric>

:DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:RLEVel?

Description scale reference level

Parameter

	<Numeric>
Range	-50G to 50G
Preset value	10

	<Numeric>
Unit	-
Resolution	-

Equivalent key SP Menu -> Scale -> Reference Value

SP Menu -> Scale -> Marker -> Reference

:DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:RPOSition

Syntax :DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:RPOSition <numeric>

:DISPlay:SP[1-1]:TRACe[1-1]:Y[:SCALe]:RPOSition?

Description scale reference position

Parameter

	<Numeric>
Range	0 to 30
Preset value	10
Unit	Div
Resolution	-

Equivalent key SP Menu -> Scale -> Reference Position

:DISPlay:SP[1-1]:Y[:SCALe]:DIVisions

Syntax :DISPlay:SP[1-1]:Y[:SCALe]:DIVisions <numeric>

:DISPlay:SP[1-1]:Y[:SCALe]:DIVisions?

Description # of Y division

Parameter

	<Numeric>
Range	4 to 30
Preset value	10
Unit	-
Resolution	2

Equivalent key SP Menu -> Scale -> Divisions

:DISPlay:TR[1-1]:ALLTrace:PERSistence:CLEar

Syntax :DISPlay:TR[1-1]:ALLTrace:PERSistence:CLEar

Description clear all stored traces (No Query)

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

:DISPlay:TR[1-1]:ALLTrace:Y:SCALe:AUTO

Syntax :DISPlay:TR[1-1]:ALLTrace:Y:SCALe:AUTO

Description auto scale all (No Query)

Equivalent key TR Menu -> Scale -> Auto Scale All

:DISPlay:TR[1-1]:ANNotation:MARKer:POSition

Syntax :DISPlay:TR[1-1]:ANNotation:MARKer:POSition {LEFT|RIGHt}

:DISPlay:TR[1-1]:ANNotation:MARKer:POSition?

Description Sets/reads the marker information position

Parameter

	Description
LEFT(Preset value)	Set the marker information position to 'LEFT'
RIGHt	Set the marker information position to 'RIGHt'

Equivalent key TR Menu -> Display -> Marker Information

:DISPlay:TR[1-1]:ANNotation:MEASurement:STATe

Syntax :DISPlay:TR[1-1]:ANNotation:MEASurement:STATe {ON|OFF|1|0}

:DISPlay:TR[1-1]:ANNotation:MEASurement:STATe?

Description Turns on/off measurement conditions

Parameter

	Description
ON or 1(Preset value)	Set measurement conditions mode to 'ON'
OFF or 0	Set measurement conditions mode to 'OFF'

Equivalent key TR Menu -> Display -> Meas Condition

:DISPlay:TR[1-1]:GRATicule:AXIS:Y:RELative

Syntax :DISPlay:TR[1-1]:GRATicule:AXIS:Y:RELative {ON|OFF|1|0}

:DISPlay:TR[1-1]:GRATicule:AXIS:Y:RELative?

Description Sets/reads relative Y-scale

Parameter

	Description
ON or 1	Set relative Y-scale mode to 'ON'
OFF or 0(Preset value)	Set relative Y-scale mode to 'OFF'

Equivalent key TR Menu -> Display -> Relative Y-Scale

:DISPlay:TR[1-1]:GRATicule:AXIS:Y:STATe

Syntax :DISPlay:TR[1-1]:GRATicule:AXIS:Y:STATe {OFF|SHORt|LONG}

:DISPlay:TR[1-1]:GRATicule:AXIS:Y:STATe?

Description Sets/reads the number of Y-digits

Parameter

	Description
OFF	Set the number of Y-digits to 'OFF'
SHORt(Preset value)	Set the number of Y-digits to 'SHORt'
LONG	Set the number of Y-digits to 'LONG'

Equivalent key TR Menu -> Display -> Y # of Digits

:DISPlay:TR[1-1]:LABel:DATA

Syntax :DISPlay:TR[1-1]:LABel:DATA <String>

:DISPlay:TR[1-1]:LABel:DATA?

Description Edits window title label

Parameter

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key TR Menu -> Display -> Edit Title Label

:DISPlay:TR[1-1]:LABel:STATe

Syntax :DISPlay:TR[1-1]:LABel:STATe {ON|OFF|1|0}

:DISPlay:TR[1-1]:LABel:STATe?

Description Turns on/off window title lable

Parameter

	Description
ON or 1	Show window title lable mode
OFF or 0(Preset value)	Hide window title lable

Equivalent key TR Menu -> Display -> Title Label

:DISPlay:TR[1-1]:MAXimize

Syntax :DISPlay:TR[1-1]:MAXimize {ON|OFF|1|0}

:DISPlay:TR[1-1]:MAXimize?

Description maximize active trace

Parameter

	Description
ON or 1	Set maximize active trace mode to 'ON'
OFF or 0(Preset value)	Set maximize active trace mode to 'OFF'

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

:DISPlay:TR[1-1]:STATe

Syntax :DISPlay:TR[1-1]:STATe {ON|OFF|1|0}

:DISPlay:TR[1-1]:STATe?

Description Turns on/off transient measurement mode

Parameter

	Description
ON or 1(Preset value)	Show transient measurement window
OFF or 0	Hide transient measurement window

Equivalent key PN Menu -> Measurement View -> Show Window -> Transient

SP Menu -> Measurement View -> Show Window -> Transient

FP Menu -> Measurement View -> Show Window -> Transient

TR Menu -> Measurement View -> Show Window -> Transient

USER Menu -> Measurement View -> Show Window -> Transient

:DISPlay:TR[1-1]:TABLe[:STATe]

Syntax :DISPlay:TR[1-1]:TABLe[:STATe] {ON|OFF|1|0}

:DISPlay:TR[1-1]:TABLe[:STATe]?

Description Turns on/off the marker list

Parameter

	Description
ON or 1	Enable the marker list
OFF or 0(Preset value)	Disable the marker list

Equivalent key TR Menu -> Marker -> Marker List

:DISPlay:TR[1-1]:TRACe[1-4]:LABel:DATA

Syntax :DISPlay:TR[1-1]:TRACe[1-4]:LABel:DATA <String>

:DISPlay:TR[1-1]:TRACe[1-4]:LABel:DATA?

Description Sets/reads trace title lable on transient measurement

Parameter

	<String>
Range	-
Preset value	"WB Freq"
Unit	-
Resolution	-

Equivalent key TR Menu -> Trace View -> Trace Label

:DISPlay:TR[1-1]:TRACe[1-4]:MODE

Syntax :DISPlay:TR[1-1]:TRACe[1-4]:MODE {OFF|DATA|MEMory|BOTH}

:DISPlay:TR[1-1]:TRACe[1-4]:MODE?

Description show data and/or memory trace

Parameter

	Description
OFF	Set trace to 'OFF'
DATA(Preset value)	Set trace to 'DATA'
MEMory	Set trace to 'MEMory'
BOTH	Set trace to 'BOTH' (trace and memory)

Equivalent key TR Menu -> Trace View -> Display Trace

:DISPlay:TR[1-1]:TRACe[1-4]:PERSistence:CLEar

Syntax :DISPlay:TR[1-1]:TRACe[1-4]:PERSistence:CLEar

Description Clears persistent data (No Query)

Equivalent key TR Menu -> Trace View -> Clear Persistent Data

:DISPlay:TR[1-1]:TRACe[1-4]:PERSistence:STATe

Syntax :DISPlay:TR[1-1]:TRACe[1-4]:PERSistence:STATe {ON|OFF|1|0}

:DISPlay:TR[1-1]:TRACe[1-4]:PERSistence:STATe?

Description Sets/reads persistence mode

Parameter

	Description
ON or 1	Set persistence mode to 'ON'
OFF or 0(Preset value)	Set persistence mode to 'OFF'

Equivalent key TR Menu -> Trace View -> Persistence Mode

:DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:AUTO

Syntax :DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:AUTO

Description Execute autoscale (No Query)

Equivalent key TR Menu -> Scale -> Auto Scale

:DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:PDIVision

Syntax :DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:PDIVision <numeric>

:DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:PDIVision?

Description scale per division

Parameter

	<Numeric>
Range	1a to 10G
Preset value	80M
Unit	-
Resolution	-

Equivalent key TR Menu -> Scale -> Scale/Div

:DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:RLEVel

Syntax :DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:RLEVel <numeric>

:DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:RLEVel?

Description scale reference level

Parameter

	<Numeric>
Range	-50G to 50G
Preset value	800M
Unit	-
Resolution	-

Equivalent key TR Menu -> Scale -> Reference Value

TR Menu -> Scale -> Marker -> Reference

:DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:RPOSition

Syntax :DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:RPOSition <numeric>

:DISPlay:TR[1-1]:TRACe[1-4]:Y[:SCALe]:RPOSition?

Description scale reference position

Parameter

	<Numeric>
Range	0 to 30
Preset value	5
Unit	Div
Resolution	-

Equivalent key TR Menu -> Scale -> Reference Position

:DISPlay:TR[1-1]:Y[:SCALe]:DIVisions

Syntax :DISPlay:TR[1-1]:Y[:SCALe]:DIVisions <numeric>

:DISPlay:TR[1-1]:Y[:SCALe]:DIVisions?

Description # of Y division

Parameter

	<Numeric>
Range	4 to 30
Preset value	10

	<Numeric>
Unit	-
Resolution	2

Equivalent key TR Menu -> Scale -> Divisions

:DISPlay:UPDate:IMMediate

Syntax :DISPlay:UPDate:IMMediate

Description Update display force (No Query)

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

:DISPlay:USER[1-1]:ALLTrace:PERSistence:CLEar

Syntax :DISPlay:USER[1-1]:ALLTrace:PERSistence:CLEar

Description clear all stored traces (No Query)

Equivalent key USER Menu -> Trace View -> Clear All Persistent Data

:DISPlay:USER[1-1]:ALLTrace:Y:SCALe:AUTO

Syntax :DISPlay:USER[1-1]:ALLTrace:Y:SCALe:AUTO

Description auto scale all (No Query)

Equivalent key USER Menu -> Scale -> Auto Scale All

:DISPlay:USER[1-1]:ANNotation:MARKer:POSition

Syntax :DISPlay:USER[1-1]:ANNotation:MARKer:POSition {LEFT|RIGHt}

:DISPlay:USER[1-1]:ANNotation:MARKer:POSition?

Description Sets/reads the marker information position

Parameter

	Description
LEFT(Preset value)	Set the marker information position to 'LEFT'
RIGHt	Set the marker information position to 'RIGHt'

Equivalent key USER Menu -> Display -> Marker Information

:DISPlay:USER[1-1]:ANNotation:MEASurement:STATe

Syntax :DISPlay:USER[1-1]:ANNotation:MEASurement:STATe {ON|OFF|1|0}

:DISPlay:USER[1-1]:ANNotation:MEASurement:STATe?

Description Turns on/off measurement conditions

Parameter

	Description
ON or 1(Preset value)	Set measurement conditions mode to 'ON'
OFF or 0	Set measurement conditions mode to 'OFF'

Equivalent key USER Menu -> Display -> Meas Condition

:DISPlay:USER[1-1]:GRATicule:AXIS:Y:RELative

Syntax :DISPlay:USER[1-1]:GRATicule:AXIS:Y:RELative {ON|OFF|1|0}

:DISPlay:USER[1-1]:GRATicule:AXIS:Y:RELative?

Description Turns on/off relative Y-scale

Parameter

	Description
ON or 1	Set relative Y-scale mode to 'ON'
OFF or 0(Preset value)	Set relative Y-scale mode to 'OFF'

Equivalent key USER Menu -> Display -> Relative Y-Scale

:DISPlay:USER[1-1]:GRATicule:AXIS:Y:STATe

Syntax :DISPlay:USER[1-1]:GRATicule:AXIS:Y:STATe {OFF|SHORt|LONG}

:DISPlay:USER[1-1]:GRATicule:AXIS:Y:STATe?

Description Show/Hide Y graticule label

Parameter

	Description
OFF	Set Y graticule label to 'OFF'

	Description
SHORt(Preset value)	Set Y graticule label to 'SHORt'
LONG	Set Y graticule label to 'LONG'

Equivalent key USER Menu -> Display -> Y # of Digits

:DISPlay:USER[1-1]:LABel:DATA

Syntax :DISPlay:USER[1-1]:LABel:DATA <String>

:DISPlay:USER[1-1]:LABel:DATA?

Description Edits window title label

Parameter

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key USER Menu -> Display -> Edit Title Label

:DISPlay:USER[1-1]:LABel:STATe

Syntax :DISPlay:USER[1-1]:LABel:STATe {ON|OFF|1|0}

:DISPlay:USER[1-1]:LABel:STATe?

Description Show/Hide Window Title Label

Parameter

	Description
ON or 1	Show window title label
OFF or 0(Preset value)	Hide window title label

Equivalent key USER Menu -> Display -> Title Label

:DISPlay:USER[1-1]:MAXimize

Syntax :DISPlay:USER[1-1]:MAXimize {ON|OFF|1|0}

:DISPlay:USER[1-1]:MAXimize?

Description maximize active trace

Parameter

	Description
ON or 1	Set maximize active trace mode to 'ON'
OFF or 0(Preset value)	Set maximize active trace mode to 'OFF'

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

:DISPlay:USER[1-1]:STATe

Syntax :DISPlay:USER[1-1]:STATe {ON|OFF|1|0}

:DISPlay:USER[1-1]:STATe?

Description Turns on/off user defined window

Parameter

	Description
ON or 1	Show user defined window
OFF or 0(Preset value)	hide user defined window

Equivalent key PN Menu -> Measurement View -> Show Window -> User

SP Menu -> Measurement View -> Show Window -> User

FP Menu -> Measurement View -> Show Window -> User

TR Menu -> Measurement View -> Show Window -> User

USER Menu -> Measurement View -> Show Window -> User

:DISPlay:USER[1-1]:TABLe[:STATe]

Syntax :DISPlay:USER[1-1]:TABLe[:STATe] {ON|OFF|1|0}

:DISPlay:USER[1-1]:TABLe[:STATe]?

Description Turns on/off the marker list

Parameter

	Description
ON or 1	Enable the marker list
OFF or 0(Preset value)	Disable the marker list

Equivalent key USER Menu -> Marker -> Marker List

:DISPlay:USER[1-1]:TRACe[1-8]:LABel:DATA

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:LABel:DATA <String>

:DISPlay:USER[1-1]:TRACe[1-8]:LABel:DATA?

Description Edits trace title label

Parameter

	<String>
Range	-
Preset value	"Tr1"
Unit	-
Resolution	-

Equivalent key USER Menu -> Trace View -> Trace Label

:DISPlay:USER[1-1]:TRACe[1-8]:MODE

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:MODE {OFF|DATA|MEMory|BOTH}

:DISPlay:USER[1-1]:TRACe[1-8]:MODE?

Description show data and/or memory trace

Parameter

	Description
OFF	Set trace to 'OFF'
DATA(Preset value)	Set trace to 'DATA'
MEMory	Set trace to 'MEMory'
BOTH	Set trace to 'BOTH' (trace and memory)

Equivalent key USER Menu -> Trace View -> Display Trace

:DISPlay:USER[1-1]:TRACe[1-8]:PERSistence:STATe

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:PERSistence:STATe {ON|OFF|1|0}

:DISPlay:USER[1-1]:TRACe[1-8]:PERSistence:STATe?

Description Clears persistent data

Parameter

	Description
ON or 1	Clears persistent data
OFF or 0(Preset value)	Does not clear persistent data

Equivalent key USER Menu -> Trace View -> Persistence Mode

:DISPlay:USER[1-1]:TRACe[1-8]:STATe

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:STATe {ON|OFF|1|0}

:DISPlay:USER[1-1]:TRACe[1-8]:STATe?

Description Sets/reads persistence mode

Parameter

	Description
ON or 1(Preset value)	Set persistence mode to 'ON'
OFF or 0	Set persistence mode to 'OFF'

Equivalent key USER Menu -> Trace View -> Enable Trace -> Trace 1

:DISPlay:USER[1-1]:TRACe[1-8]:X:UNIT

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:X:UNIT <String>

:DISPlay:USER[1-1]:TRACe[1-8]:X:UNIT?

Description X axis unit

Parameter

	<String>
Range	-
Preset value	"U"
Unit	-
Resolution	-

Equivalent key USER Menu -> Scale -> X Unit

:DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:AUTO

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:AUTO

Description Execute autoscale (No Query)

Equivalent key USER Menu -> Scale -> Auto Scale

:DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:PDIVision

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:PDIVision <numeric>

:DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:PDIVision?

Description scale per division

Parameter

	<Numeric>
Range	1a to 10G
Preset value	10
Unit	-
Resolution	-

Equivalent key USER Menu -> Scale -> Scale/Div

:DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:RLEVel

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:RLEVel <numeric>

:DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:RLEVel?

Description scale reference level

Parameter

	<Numeric>
Range	-50G to 50G
Preset value	-40
Unit	-
Resolution	-

Equivalent key USER Menu -> Scale -> Reference Value

USER Menu -> Scale -> Marker -> Reference

:DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:RPOSition

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:RPOSition <numeric>

:DISPlay:USER[1-1]:TRACe[1-8]:Y[:SCALe]:RPOSition?

Description scale reference position

Parameter

	<Numeric>
Range	0 to 30
Preset value	5
Unit	Div
Resolution	-

Equivalent key USER Menu -> Scale -> Reference Position

:DISPlay:USER[1-1]:TRACe[1-8]:Y:UNIT

Syntax :DISPlay:USER[1-1]:TRACe[1-8]:Y:UNIT <String>

:DISPlay:USER[1-1]:TRACe[1-8]:Y:UNIT?

Description Y axis unit

Parameter

	<String>
Range	-
Preset value	"U"

	<String>
Unit	-
Resolution	-

Equivalent key USER Menu -> Scale -> Y Unit

:DISPlay:USER[1-1]:Y[:SCALe]:DIVisions

Syntax :DISPlay:USER[1-1]:Y[:SCALe]:DIVisions <numeric>

:DISPlay:USER[1-1]:Y[:SCALe]:DIVisions?

Description # of Y division

Parameter

	<Numeric>
Range	4 to 30
Preset value	10
Unit	-
Resolution	2

Equivalent key USER Menu -> Scale -> Divisions

:DISPlay:WINDow:ACTive

Syntax :DISPlay:WINDow:ACTive {PN1|SP1|FP1|TR1|USER1}

:DISPlay:WINDow:ACTive?

Description Sets/reads active instrument window

Parameter

	Description
PN1(Preset value)	Set active instrument window to 'PN1'
SP1	Set active instrument window to 'SP1'
FP1	Set active instrument window to 'FP1'
TR1	Set active instrument window to 'TR1'
USER1	Set active instrument window to 'USER1'

Equivalent key PN Menu -> Measurement View -> Phase Noise

PN Menu -> Measurement View -> Spectrum Monitor

PN Menu -> Measurement View -> Freq & Power

PN Menu -> Measurement View -> Transient

PN Menu -> Measurement View -> User

SP Menu -> Measurement View -> Phase Noise

:FORMat:BORDer

Syntax :FORMat:BORDer {NORMal|SWAPped}

:FORMat:BORDer?

Description Sets/reads byte order setting for binary transfer

Parameter

	Description
NORMal(Preset value)	Set byte order setting for binary transfer to 'NORMal'
SWAPped	Set byte order setting for binary transfer to 'SWAPped'

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

:FORMat:DATA

Syntax :FORMat:DATA {ASCii|REAL32|REAL64}

:FORMat:DATA?

Description Sets/reads data transfer mode

Parameter

	Description
ASCii(Preset value)	Set data transfer mode to 'ASCii'
REAL32	Set data transfer mode to 'REAL32'
REAL64	Set data transfer mode to 'REAL64'

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

:HCOPy:ABORt

Syntax :HCOPy:ABORt

Description Aborts printing (No Query)

Equivalent key PN Menu -> System -> Abort Printing

SP Menu -> System -> Abort Printing

FP Menu -> System -> Abort Printing

TR Menu -> System -> Abort Printing

USER Menu -> System -> Abort Printing

:HCOPy:IMAGe

Syntax :HCOPy:IMAGe {NORMal|INVert}

:HCOPy:IMAGe?

Description Selects print mode

Parameter

	Description
NORMal(Preset value)	Set print mode to 'NORMal'
INVert	Set print mode to 'INVert'

Equivalent key PN Menu -> System -> Invert Image

SP Menu -> System -> Invert Image

FP Menu -> System -> Invert Image

TR Menu -> System -> Invert Image

USER Menu -> System -> Invert Image

:HCOPy:IMMediate

Syntax :HCOPy:IMMediate

Description Outputs print (No Query)

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

*CLS

Syntax *CLS

Description Clears registers (No Query)

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

*ESE

Syntax

*ESE <numeric>

*ESE?

Description

Sets/reads standard event status enable register

Parameter

	<Numeric>
Range	0 to 255
Preset value	0
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

*ESR

Syntax

*ESR

Description

Reads standard event status register value (Query Only)

Equivalent key

No equivalent key is available on the front panel.

*IDN

Syntax

*IDN

Description

Reads product model information (Query Only)

Equivalent key

No equivalent key is available on the front panel.

*OPC

Syntax

*OPC <numeric>

*OPC?

Description

Sets OPC bit on operation termination

Parameter

	<Numeric>
Range	-

	<Numeric>
Preset value	1
Unit	-
Resolution	-

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

*OPT

Syntax *OPT

Description Reads option information (Query Only)

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

*RST

Syntax *RST

Description Preset (No Query)

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

*SRE

Syntax *SRE <numeric>

*SRE?

Description Sets service request enable register

Parameter

	<Numeric>
Range	0 to 255
Preset value	0
Unit	-
Resolution	-

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

*STB

Syntax *STB

Description Reads status byte register (Query Only)

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

*TRG

Syntax *TRG

Description BUS Trigger (No Query)

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

:INITiate:FP[1-1]:CONTinuous

Syntax :INITiate:FP[1-1]:CONTinuous {ON|OFF|1|0}

:INITiate:FP[1-1]:CONTinuous?

Description Sets/reads the trigger continuous mode

Parameter

	Description
ON or 1	Set trigger continuous mode to 'ON'
OFF or 0(Preset value)	Set trigger continuous mode to 'OFF'

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

:INITiate:FP[1-1]:IMMediate

Syntax :INITiate:FP[1-1]:IMMediate

Description Triggers once to frequency and power mode (No Query)

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

:INITiate:PN[1-1]:CONTinuous

Syntax :INITiate:PN[1-1]:CONTinuous {ON|OFF|1|0}

:INITiate:PN[1-1]:CONTinuous?

Description Sets/readsa the trigger continuous mode

Parameter

	Description
ON or 1	Set trigger continuous mode to 'ON'
OFF or 0(Preset value)	Set trigger continuous mode to 'OFF'

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

:INITiate:PN[1-1]:IMMediate

Syntax :INITiate:PN[1-1]:IMMediate

Description Trigger once to phase noise measurement mode (No Query)

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

:INITiate:SP[1-1]:CONTinuous

Syntax :INITiate:SP[1-1]:CONTinuous {ON|OFF|1|0}

:INITiate:SP[1-1]:CONTinuous?

Description Sets/reads trigger continuous mode

Parameter

	Description
ON or 1	Set trigger continuous mode to 'ON'
OFF or 0(Preset value)	Set trigger continuous mode to 'OFF'

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

:INITiate:SP[1-1]:IMMediate

Syntax :INITiate:SP[1-1]:IMMediate

Description Trigger once to spectrum monitor mode (No Query)

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

:INITiate:TR[1-1]:CONTinuous

Syntax :INITiate:TR[1-1]:CONTinuous {ON|OFF|1|0}

:INITiate:TR[1-1]:CONTinuous?

Description Sets/reads trigger continuous mode

Parameter

	Description
ON or 1	Set trigger continuous mode to 'ON'
OFF or 0(Preset value)	Set trigger continuous mode to 'OFF'

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

:INITiate:TR[1-1]:IMMediate

Syntax :INITiate:TR[1-1]:IMMediate

Description Trigger once to transient measurement (No Query)

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

:MMEMory:CATalog

Syntax :MMEMory:CATalog

Description List file.folder name of the current directory (Query Only)

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

:MMEMory:COPY

Syntax :MMEMory:COPY <String 1>,<String 2>

Description Copy file (No Query)

Parameter

	<String 1>
Range	-
Preset value	-
Unit	-
Resolution	-

	<String 2>
Range	-

	<String 2>
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:DATA

Syntax :MMEMory:DATA <String 1>,<block>

:MMEMory:DATA?

Description File transfer through SCPI

Parameter

	<String 1>
Range	-
Preset value	-
Unit	-
Resolution	-

	block
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:DELete

Syntax :MMEMory:DELete <String>

Description Delete file/directory (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:FP[1-1]:TRACe[1-3]:STORe[:DATA]

Syntax :MMEMory:FP[1-1]:TRACe[1-3]:STORe[:DATA] <String>

Description Saves trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:FP[1-1]:TRACe[1-3]:STORe:MEMory

Syntax :MMEMory:FP[1-1]:TRACe[1-3]:STORe:MEMory <String>

Description Saves memory trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:LOAD:PROGram

Syntax :MMEMory:LOAD:PROGram <String>

Description Loads program (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:LOAD:STATe

Syntax :MMEMory:LOAD:STATe <String>

Description Recalls settings (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:MDIRectory

Syntax :MMEMory:MDIRectory <String>

Description Creates a directory (No Query)

Parameter

	<String>
Range	-

	<String>
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:PN[1-1]:TRACe[1-1]:STORe[:DATA]

Syntax :MMEMory:PN[1-1]:TRACe[1-1]:STORe[:DATA] <String>

Description Saves trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:PN[1-1]:TRACe[1-1]:STORe:MEMory

Syntax :MMEMory:PN[1-1]:TRACe[1-1]:STORe:MEMory <String>

Description Saves memory trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:SP[1-1]:TRACe[1-1]:STORe[:DATA]

Syntax :MMEMory:SP[1-1]:TRACe[1-1]:STORe[:DATA] <String>

Description Saves trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:SP[1-1]:TRACe[1-1]:STORe:MEMory

Syntax :MMEMory:SP[1-1]:TRACe[1-1]:STORe:MEMory <String>

Description Saves memory trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:STORe:IMAGe

Syntax :MMEMory:STORe:IMAGe <String>

Description Save screen image (No Query)

Parameter

	<String>
Range	-

	<String>
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:STORe:PROGram

Syntax :MMEMory:STORe:PROGram <String>

Description Save VBA project (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:STORe:STATe

Syntax :MMEMory:STORe:STATe <String>

Description Save settings (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:STORe:STYPe

Syntax :MMEMory:STORe:STYPe {STAT|DST}

:MMEMory:STORe:STYPe?

Description Select save state type

Parameter

	Description
STAT(Preset value)	Set save state type to 'STAT'
DST	Set save state type to 'DST'

Equivalent key PN Menu -> Save/Recall -> Save State -> Save Type

SP Menu -> Save/Recall -> Save State -> Save Type

FP Menu -> Save/Recall -> Save State -> Save Type

TR Menu -> Save/Recall -> Save State -> Save Type

USER Menu -> Save/Recall -> Save State -> Save Type

:MMEMory:TR[1-1]:TRACe[1-4]:STORe[:DATA]

Syntax :MMEMory:TR[1-1]:TRACe[1-4]:STORe[:DATA] <String>

Description Saves trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:TR[1-1]:TRACe[1-4]:STORe:MEMory

Syntax :MMEMory:TR[1-1]:TRACe[1-4]:STORe:MEMory <String>

Description Saves memory trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:USER[1-1]:TRACe[1-8]:STORe[:DATA]

Syntax :MMEMory:USER[1-1]:TRACe[1-8]:STORe[:DATA] <String>

Description Saves selected trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:MMEMory:USER[1-1]:TRACe[1-8]:STORe:MEMory

Syntax :MMEMory:USER[1-1]:TRACe[1-8]:STORe:MEMory <String>

Description Saves selected memory trace data (No Query)

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:PROGram:CATalog

Syntax :PROGram:CATalog

Description List all the executable macro (Query Only)

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

:PROGram:COM:EVENt

Syntax :PROGram:COM:EVENt {ON|OFF|1|0}

:PROGram:COM:EVENt?

Description Turns on/off the E5052 VBA event callback function

Parameter

	Description
ON or 1	Enable E5052 VBA event callback function
OFF or 0(Preset value)	Disable E5052 VBA event callback function

Equivalent key PN Menu -> Macro Setup -> E5052 Event

SP Menu -> Macro Setup -> E5052 Event

FP Menu -> Macro Setup -> E5052 Event

TR Menu -> Macro Setup -> E5052 Event

USER Menu -> Macro Setup -> E5052 Event

:PROGram:SELected:NAME

Syntax :PROGram:SELected:NAME <String>

:PROGram:SELected:NAME?

Description Sets/reads the name of the program to be selected

Parameter

	<String>
Range	-
Preset value	"E5052.Module1.Main"
Unit	-
Resolution	-

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

:PROGram:SELected:STATe

Syntax :PROGram:SELected:STATe {STOP|RUN}

:PROGram:SELected:STATe?

Description Set/reads the state of the selected program

Parameter

	Description
STOP(Preset value)	Set the state of the selected program to 'STOP'
RUN	Set the state of the selected program to 'RUN'

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

:PROGram:SKEY:ITEM[1-8]:ENABle

Syntax :PROGram:SKEY:ITEM[1-8]:ENABle {ON|OFF|1|0}

:PROGram:SKEY:ITEM[1-8]:ENABle?

Description Turns on/off user defined softkey function

Parameter

	Description
ON or 1	Enable user defined softkey function
OFF or 0(Preset value)	Disable user defined softkey function

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

:PROGram:SKEY:ITEM[1-8]:IMMediate

Syntax :PROGram:SKEY:ITEM[1-8]:IMMediate

Description Execute the macro assigned under the user defined softkey (No Query)

Equivalent key PN Menu -> Macro Setup -> User Menu -> User Label 1

SP Menu -> Macro Setup -> User Menu -> User Label 1

FP Menu -> Macro Setup -> User Menu -> User Label 1

TR Menu -> Macro Setup -> User Menu -> User Label 1

USER Menu -> Macro Setup -> User Menu -> User Label 1

:PROGram:SKEY:ITEM[1-8]:LABel

Syntax :PROGram:SKEY:ITEM[1-8]:LABel <String>

:PROGram:SKEY:ITEM[1-8]:LABel?

Description Sets/reads the user defined softkey label

Parameter

	<String>
Range	30 chars
Preset value	"User Label 1"
Unit	-
Resolution	-

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

:PROGram:VARiable:ARRay[1-10]:DATA

Syntax :PROGram:VARiable:ARRay[1-10]:DATA <array>

:PROGram:VARiable:ARRay[1-10]:DATA?

Description User defined array data

Parameter

	<Description>
Range	1...1601
Preset value	-
Unit	-
Resolution	-

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

:PROGram:VARiable:ARRay[1-10]:POINts

Syntax :PROGram:VARiable:ARRay[1-10]:POINts <numeric>

:PROGram:VARiable:ARRay[1-10]:POINts?

Description # of points of user defined array

Parameter

	<Numeric>
Range	2 to 1601
Preset value	1601
Unit	-
Resolution	-

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

:PROGram:VARiable:DOUBle[1-10]

Syntax :PROGram:VARiable:DOUBle[1-10] <numeric>

:PROGram:VARiable:DOUBle[1-10]?

Description User defined 64bit floating variable

Parameter

	<Numeric>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:PROGram:VARiable:INTeger[1-10]

Syntax :PROGram:VARiable:INTeger[1-10] <numeric>

:PROGram:VARiable:INTeger[1-10]?

Description User defined integer variable

Parameter

	<Numeric>
Range	-
Preset value	-
Unit	-

	<Numeric>
Resolution	-

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

:PROGram:VARiable:STRing[1-10]

Syntax :PROGram:VARiable:STRing[1-10] <String>

:PROGram:VARiable:STRing[1-10]?

Description User defined string

Parameter

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:SENSe:ATTenuation:LEVel

Syntax :SENSe:ATTenuation:LEVel <numeric>

:SENSe:ATTenuation:LEVel?

Description Input Attenuator level on 5dB Step

Parameter

	<Numeric>
Range	0 to 35
Preset value	5
Unit	dB
Resolution	5

Equivalent key PN Menu -> Attenuator -> Input Attenuator

SP Menu -> Attenuator -> Input Attenuator

FP Menu -> Attenuator -> Input Attenuator

TR Menu -> Attenuator -> Input Attenuator

USER Menu -> Attenuator -> Input Attenuator

:SENSe:FP[1-1]:AVERage:CLEar

Syntax :SENSe:FP[1-1]:AVERage:CLEar

Description Restart averaging (No Query)

Equivalent key FP Menu -> Average -> Averaging Restart

:SENSe:FP[1-1]:AVERage:COUNt

Syntax :SENSe:FP[1-1]:AVERage:COUNt <numeric>

:SENSe:FP[1-1]:AVERage:COUNt?

Description Sets/reads averaging count

Parameter

	<Numeric>
Range	1 to 999
Preset value	16
Unit	-
Resolution	-

Equivalent key FP Menu -> Average -> Avg Factor

:SENSe:FP[1-1]:AVERage:STATe

Syntax :SENSe:FP[1-1]:AVERage:STATe {ON|OFF|1|0}

:SENSe:FP[1-1]:AVERage:STATe?

Description Tunrs on/off averaging function

Parameter

	Description
ON or 1	Enable averaging function
OFF or 0(Preset value)	Disable averaging function

Equivalent key FP Menu -> Average -> Averaging

:SENSe:FP[1-1]:FBANd

Syntax :SENSe:FP[1-1]:FBANd {LOW|HIGH}

:SENSe:FP[1-1]:FBANd?

Description Selects frequency band

Parameter

	Description
LOW	Set frequency band to 'LOW'
HIGH(Preset value)	Set frequency band to 'HIGH'

Equivalent key FP Menu -> Setup -> Frequency Band

:SENSe:FP[1-1]:FREQuency:RESolution

Syntax :SENSe:FP[1-1]:FREQuency:RESolution {NARRow|MIDDle|WIDE}

:SENSe:FP[1-1]:FREQuency:RESolution?

Description Sets/reads frequency resolution

Parameter

	Description
NARRow	Set frequency resolution to 'NARRow'
MIDDle	Set frequency resolution to 'MIDDle'
WIDE(Preset value)	Set frequency resolution to 'WIDE'

Equivalent key FP Menu -> Setup -> Freq Resolution

:SENSe:FP[1-1]:SWEep:DWELl

Syntax :SENSe:FP[1-1]:SWEep:DWELl <numeric>

:SENSe:FP[1-1]:SWEep:DWELl?

Description Sets/reads the point delay value

Parameter

	<Numeric>
Range	0 to 1
Preset value	0
Unit	s
Resolution	100u

Equivalent key FP Menu -> Setup -> Point Delay

:SENSe:FP[1-1]:SWEep:TIME:DATA

Syntax :SENSe:FP[1-1]:SWEep:TIME:DATA

Description Reads the measurement time (Query Only)

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

:SENSe:PN[1-1]:AVERage:CLEar

Syntax :SENSe:PN[1-1]:AVERage:CLEar

Description Averaging restart (No Query)

Equivalent key PN Menu -> Average -> Averaging Restart

:SENSe:PN[1-1]:AVERage:COUNt

Syntax :SENSe:PN[1-1]:AVERage:COUNt <numeric>

:SENSe:PN[1-1]:AVERage:COUNt?

Description average count

Parameter

	<Numeric>
Range	1 to 999
Preset value	16
Unit	-
Resolution	-

Equivalent key PN Menu -> Average -> Avg Factor

:SENSe:PN[1-1]:AVERage:STATe

Syntax :SENSe:PN[1-1]:AVERage:STATe {ON|OFF|1|0}

:SENSe:PN[1-1]:AVERage:STATe?

Description Turns on/off averaging mode

Parameter

	Description
ON or 1	Enable averaging function
OFF or 0(Preset value)	Disable averaging function

Equivalent key PN Menu -> Average -> Averaging

:SENSe:PN[1-1]:CORRelation:COUNt

Syntax :SENSe:PN[1-1]:CORRelation:COUNt <numeric>

:SENSe:PN[1-1]:CORRelation:COUNt?

Description Sets/reads the number of correlation

Parameter

	<Numeric>
Range	1 to 10000
Preset value	1
Unit	-
Resolution	-

Equivalent key PN Menu -> Average -> Correlation

:SENSe:PN[1-1]:FBANd

Syntax :SENSe:PN[1-1]:FBANd {BAND1|BAND2|BAND3|BAND4}

:SENSe:PN[1-1]:FBANd?

Description Sets/reads frequency band

Parameter

	Description
BAND1	Set frequency band to 'BAND1'
BAND2	Set frequency band to 'BAND2'
BAND3	Set frequency band to 'BAND3'
BAND4(Preset value)	Set frequency band to 'BAND4'

Equivalent key PN Menu -> Setup -> Frequency Band

:SENSe:PN[1-1]:FREQuency:STARt

Syntax :SENSe:PN[1-1]:FREQuency:STARt <numeric>

:SENSe:PN[1-1]:FREQuency:STARt?

Description start frequency

Parameter

	<Numeric>
Range	1|10|100|1k
Preset value	1k
Unit	Hz
Resolution	-

Equivalent key PN Menu -> Start -> 1Hz

PN Menu -> Start -> 10Hz

PN Menu -> Start -> 100Hz

PN Menu -> Start -> 1kHz

PN Menu -> Marker To -> Marker -> Start

:SENSe:PN[1-1]:FREQuency:STOP

Syntax :SENSe:PN[1-1]:FREQuency:STOP <numeric>

:SENSe:PN[1-1]:FREQuency:STOP?

Description stop frequency

Parameter

	<Numeric>
Range	100k|1M|5M|10M|40M
Preset value	10M
Unit	Hz
Resolution	-

Equivalent key

PN Menu -> Stop -> 100kHz

PN Menu -> Stop -> 1MHz

PN Menu -> Stop -> 5MHz

PN Menu -> Stop -> 10MHz

PN Menu -> Stop -> 40MHz

PN Menu -> Marker To -> Marker -> Stop

:SENSe:PN[1-1]:IFGain

Syntax

:SENSe:PN[1-1]:IFGain <numeric>

:SENSe:PN[1-1]:IFGain?

Description

Sets/reads IF Gain at 10dB steps

Parameter

	<Numeric>
Range	0 to 50
Preset value	20
Unit	dB
Resolution	10

Equivalent key

PN Menu -> Setup -> IF Gain

:SENSe:PN[1-1]:LOBandwidth

Syntax

:SENSe:PN[1-1]:LOBandwidth {NARRow|WIDE}

:SENSe:PN[1-1]:LOBandwidth?

Description

Sets/readst phase noise Local bandwidth optimization.

Parameter

	Description
NARRow	Set phase noise Local bandwidth optimization to 'NARRow'
WIDE(Preset value)	Set phase noise Local bandwidth optimization to 'WIDE'

Equivalent key PN Menu -> Setup -> LO PhNoise Optimize

:SENSe:PN[1-1]:SWEep:POINts

Syntax :SENSe:PN[1-1]:SWEep:POINts

Description Reads the number of measurement points (Query Only)

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

:SENSe:ROSCillator:SOURce

Syntax :SENSe:ROSCillator:SOURce

Description Reads source of reference oscillator (Query Only)

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

:SENSe:SP[1-1]:AVERage:CLEar

Syntax :SENSe:SP[1-1]:AVERage:CLEar

Description Restart averaging (No Query)

Equivalent key SP Menu -> Average/BW -> Averaging Restart

:SENSe:SP[1-1]:AVERage:COUNt

Syntax :SENSe:SP[1-1]:AVERage:COUNt <numeric>

:SENSe:SP[1-1]:AVERage:COUNt?

Description Sets/reads the averagiong count

Parameter

	<Numeric>
Range	1 to 999
Preset value	16

	<Numeric>
Unit	-
Resolution	-

Equivalent key SP Menu -> Average/BW -> Avg Factor

:SENSe:SP[1-1]:AVERage:STATe

Syntax :SENSe:SP[1-1]:AVERage:STATe {ON|OFF|1|0}

:SENSe:SP[1-1]:AVERage:STATe?

Description Turns on/off averaging function

Parameter

	Description
ON or 1	Enable averaging function
OFF or 0(Preset value)	Disable averaging function

Equivalent key SP Menu -> Average/BW -> Averaging

:SENSe:SP[1-1]:AVERage:TYPE

Syntax :SENSe:SP[1-1]:AVERage:TYPE {RMS|LOGarithmic}

:SENSe:SP[1-1]:AVERage:TYPE?

Description Sets/reads averaging type

Parameter

	Description
RMS	Set averaging type to 'RMS'
LOGarithmic(Preset value)	Set averaging type to 'LOGarithmic'

Equivalent key SP Menu -> Average/BW -> Averaging Type

:SENSe:SP[1-1]:BANDwidth:RESolution

Syntax :SENSe:SP[1-1]:BANDwidth:RESolution <numeric>

:SENSe:SP[1-1]:BANDwidth:RESolution?

Description Sets/reads RBW value

Parameter

	<Numeric>
Range	1.53 to 400k
Preset value	25k
Unit	Hz
Resolution	-

Equivalent key SP Menu -> Average/BW -> RBW

:SENSe:SP[1-1]:DETector:FUNCtion

Syntax :SENSe:SP[1-1]:DETector:FUNCtion {POSitive|SAMPle}

:SENSe:SP[1-1]:DETector:FUNCtion?

Description Sets/reads detector mode

Parameter

	Description
POSitive(Preset value)	Set detector mode to 'POSitive'
SAMPle	Set detector mode to 'SAMPle'

Equivalent key SP Menu -> Format -> Detector Mode

:SENSe:SP[1-1]:FREQuency:CENTer

Syntax :SENSe:SP[1-1]:FREQuency:CENTer <numeric>

:SENSe:SP[1-1]:FREQuency:CENTer?

Description Sets/reads the center value of frequency span

Parameter

	<Numeric>
Range	10M to 7G
Preset value	1G
Unit	Hz
Resolution	100m

Equivalent key

SP Menu -> Start/Center -> Center

SP Menu -> Stop/Span -> Center

SP Menu -> Marker To -> Marker -> Center

:SENSe:SP[1-1]:FREQuency:SPAN

Syntax

:SENSe:SP[1-1]:FREQuency:SPAN <numeric>

:SENSe:SP[1-1]:FREQuency:SPAN?

Description

Sets/reads the span value of frequency span

Parameter

	<Numeric>
Range	100 to 15M
Preset value	15M
Unit	Hz
Resolution	200m

Equivalent key

SP Menu -> Start/Center -> Span

SP Menu -> Stop/Span -> Span

:SENSe:SP[1-1]:FREQuency:STARt

Syntax

:SENSe:SP[1-1]:FREQuency:STARt <numeric>

:SENSe:SP[1-1]:FREQuency:STARt?

Description

Sets/reads the start value of frequency span

Parameter

	<Numeric>
Range	9M to 6.99999995G
Preset value	992.5M
Unit	Hz
Resolution	100m

Equivalent key

SP Menu -> Start/Center -> Start

SP Menu -> Stop/Span -> Start

SP Menu -> Marker To -> Marker -> Start

:SENSe:SP[1-1]:FREQuency:STOP

Syntax :SENSe:SP[1-1]:FREQuency:STOP <numeric>

:SENSe:SP[1-1]:FREQuency:STOP?

Description Sets/reads the stop value of frequency span

Parameter

	<Numeric>
Range	10.00005M to 7.0075G
Preset value	1.0075G
Unit	Hz
Resolution	100m

Equivalent key SP Menu -> Start/Center -> Stop

SP Menu -> Stop/Span -> Stop

SP Menu -> Marker To -> Marker -> Stop

:SENSe:SP[1-1]:POWer:RLEVel

Syntax :SENSe:SP[1-1]:POWer:RLEVel <numeric>

:SENSe:SP[1-1]:POWer:RLEVel?

Description Sets/reads the reference level of frequency span

Parameter

	<Numeric>
Range	-45 to 30
Preset value	5
Unit	dBm
Resolution	5

Equivalent key SP Menu -> Setup -> Reference Level

:SENSe:SP[1-1]:SWEep:POINts

Syntax :SENSe:SP[1-1]:SWEep:POINts

Description Reads the number of measurement points (Query Only)

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

:SENSe:TR[1-1]:AVERage:CLEar

Syntax :SENSe:TR[1-1]:AVERage:CLEar

Description Clears averaging (No Query)

Equivalent key TR Menu -> Average -> Averaging Restart

:SENSe:TR[1-1]:AVERage:COUNt

Syntax :SENSe:TR[1-1]:AVERage:COUNt <numeric>

:SENSe:TR[1-1]:AVERage:COUNt?

Description Sets/reads averaging count

Parameter

	<Numeric>
Range	1 to 999
Preset value	16
Unit	-
Resolution	-

Equivalent key TR Menu -> Average -> Avg Factor

:SENSe:TR[1-1]:AVERage:STATe

Syntax :SENSe:TR[1-1]:AVERage:STATe {ON|OFF|1|0}

:SENSe:TR[1-1]:AVERage:STATe?

Description Turns on/off averaging function

Parameter

	Description
ON or 1	Enable averaging function
OFF or 0(Preset value)	Disable averaging function

Equivalent key TR Menu -> Average -> Averaging

:SENSe:TR[1-1]:NARRow:FREQuency:PREFerence

Syntax :SENSe:TR[1-1]:NARRow:FREQuency:PREFerence <numeric>

:SENSe:TR[1-1]:NARRow:FREQuency:PREFerence?

Description Sets/reads phase reference freuency

Parameter

	<Numeric>
Range	9.2M to 7.0128G
Preset value	1G
Unit	Hz
Resolution	-

Equivalent key TR Menu -> Setup -> Phase Reference

TR Menu -> Marker To -> Marker -> Phase Reference

:SENSe:TR[1-1]:NARRow:FREQuency:RANGe

Syntax :SENSe:TR[1-1]:NARRow:FREQuency:RANGe {R25_6|R1_6}

:SENSe:TR[1-1]:NARRow:FREQuency:RANGe?

Description Sets/reads frequency transient range in narrowband mode

Parameter

	Description
R25_6(Preset value)	Set frequency span to 'R25_6'
R1_6	Set frequency span to 'R1_6'

Equivalent key TR Menu -> Setup -> Freq Range

:SENSe:TR[1-1]:NARRow:FREQuency:TARGet

Syntax :SENSe:TR[1-1]:NARRow:FREQuency:TARGet <numeric>

:SENSe:TR[1-1]:NARRow:FREQuency:TARGet?

Description Sets/reads the target frequency for transient measurement

Parameter

	<Numeric>
Range	10M to 7G
Preset value	1G
Unit	Hz
Resolution	-

Equivalent key

TR Menu -> Setup -> Target Freq

TR Menu -> Marker To -> Marker -> Target Freq

:SENSe:TR[1-1]:NARRow:SWEep:POINts

Syntax

:SENSe:TR[1-1]:NARRow:SWEep:POINts

Description

Reads the number of measurement points in the narrowband mode for transient measurement (Query Only)

Equivalent key

No equivalent key is available on the front panel.

:SENSe:TR[1-1]:NARRow:TIME:OFFSet

Syntax

:SENSe:TR[1-1]:NARRow:TIME:OFFSet <numeric>

:SENSe:TR[1-1]:NARRow:TIME:OFFSet?

Description

Sets/reads time offset(delay)

Parameter

	<Numeric>
Range	-80m to 1.1
Preset value	0
Unit	s
Resolution	10n

Equivalent key

TR Menu -> Time Offset -> Narrow Time Offset

TR Menu -> Span -> Narrow Time Offset

:SENSe:TR[1-1]:NARRow:TIME:REFerence

Syntax

:SENSe:TR[1-1]:NARRow:TIME:REFerence {LEFT|CENTer|RIGHt}

:SENSe:TR[1-1]:NARRow:TIME:REFerence?

Description Selects reference position for time span of transient measurement

Parameter

	Description
LEFT	Set reference position to 'LEFT'
CENTer(Preset value)	Set reference position to 'CENTer'
RIGHt	Set reference position to 'RIGHt'

Equivalent key TR Menu -> Time Offset -> Narrow Ref Position

TR Menu -> Span -> Narrow Ref Position

:SENSe:TR[1-1]:NARRow:TIME:SPAN

Syntax :SENSe:TR[1-1]:NARRow:TIME:SPAN <numeric>

:SENSe:TR[1-1]:NARRow:TIME:SPAN?

Description Sets/reads time span

Parameter

	<Numeric>
Range	0 to 100m
Preset value	100m
Unit	s
Resolution	10n

Equivalent key TR Menu -> Time Offset -> Narrow Span

TR Menu -> Span -> Narrow Span

:SENSe:TR[1-1]:POWer:INPut:LEVel:MAXimum

Syntax :SENSe:TR[1-1]:POWer:INPut:LEVel:MAXimum <numeric>

:SENSe:TR[1-1]:POWer:INPut:LEVel:MAXimum?

Description Sets/reads the maximum input level for transient measurement

Parameter

	<Numeric>
Range	-45 to 30

	<Numeric>
Preset value	0
Unit	dBm
Resolution	100m

Equivalent key TR Menu -> Setup -> Max Input Level

:SENSe:TR[1-1]:WIDE:FREQuency:MAXimum

Syntax :SENSe:TR[1-1]:WIDE:FREQuency:MAXimum <numeric>

:SENSe:TR[1-1]:WIDE:FREQuency:MAXimum?

Description Set/get transient frequency range in the wideband mode

Parameter

	<Numeric>
Range	150M|300M|600M|900M|1.2G|1.5G|1.8G|2.4G|3G|3.6G|4.2G|4.8G|5.4G|6G|6.6G|7.2G
Preset value	1.2G
Unit	Hz
Resolution	-

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

:SENSe:TR[1-1]:WIDE:SWEep:POINts

Syntax :SENSe:TR[1-1]:WIDE:SWEep:POINts

Description Reads the number of measurement points in the wideband mode for transient measurement (Query Only)

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

:SENSe:TR[1-1]:WIDE:TIME:OFFSet

Syntax :SENSe:TR[1-1]:WIDE:TIME:OFFSet <numeric>

:SENSe:TR[1-1]:WIDE:TIME:OFFSet?

Description offset for reference point

Parameter

	<Numeric>
Range	-80m to 1.1
Preset value	0
Unit	s
Resolution	10n

Equivalent key TR Menu -> Time Offset -> Wide Time Offset

TR Menu -> Span -> Wide Time Offset

:SENSe:TR[1-1]:WIDE:TIME:REFerence

Syntax :SENSe:TR[1-1]:WIDE:TIME:REFerence {LEFT|CENTer|RIGHt}

:SENSe:TR[1-1]:WIDE:TIME:REFerence?

Description Selects reference position for time span

Parameter

	Description
LEFT	Set reference position to 'LEFT'
CENTer(Preset value)	Set reference position to 'CENTer'
RIGHt	Set reference position to 'RIGHt'

Equivalent key TR Menu -> Time Offset -> Wide Ref Position

TR Menu -> Span -> Wide Ref Position

:SENSe:TR[1-1]:WIDE:TIME:SPAN

Syntax :SENSe:TR[1-1]:WIDE:TIME:SPAN <numeric>

:SENSe:TR[1-1]:WIDE:TIME:SPAN?

Description Sets/reads time span

Parameter

	<Numeric>
Range	0 to 100m
Preset value	100m

	<Numeric>
Unit	s
Resolution	10n

Equivalent key TR Menu -> Time Offset -> Wide Span

TR Menu -> Span -> Wide Span

:SOURce:FP[1-1]:SWEep:PARameter

Syntax :SOURce:FP[1-1]:SWEep:PARameter {CONTrol|POWer}

:SOURce:FP[1-1]:SWEep:PARameter?

Description Sets/reads sweep parameter

Parameter

	Description
CONTrol(Preset value)	Set sweep parameter to 'CONTrol'
POWer	Set sweep parameter to 'POWer'

Equivalent key FP Menu -> Setup -> Sweep Parameter

:SOURce:FP[1-1]:SWEep:POINts

Syntax :SOURce:FP[1-1]:SWEep:POINts <numeric>

:SOURce:FP[1-1]:SWEep:POINts?

Description Sets/reads the number of measurement points

Parameter

	<Numeric>
Range	2 to 1001
Preset value	201
Unit	-
Resolution	-

Equivalent key FP Menu -> Setup -> Points

:SOURce:FP[1-1]:VOLTage:CONTrol:CENTer

Syntax :SOURce:FP[1-1]:VOLTage:CONTrol:CENTer <numeric>

:SOURce:FP[1-1]:VOLTage:CONTrol:CENTer?

Description Vcontrol center

Parameter

	<Numeric>
Range	-15 to 35
Preset value	50u
Unit	V
Resolution	50u

Equivalent key FP Menu -> Start/Center -> DC Control Center

FP Menu -> Stop/Span -> DC Control Center

:SOURce:FP[1-1]:VOLTage:CONTrol:SPAN

Syntax :SOURce:FP[1-1]:VOLTage:CONTrol:SPAN <numeric>

:SOURce:FP[1-1]:VOLTage:CONTrol:SPAN?

Description Vcontrol span

Parameter

	<Numeric>
Range	0 to 50
Preset value	100u
Unit	V
Resolution	100u

Equivalent key FP Menu -> Start/Center -> DC Control Span

FP Menu -> Stop/Span -> DC Control Span

:SOURce:FP[1-1]:VOLTage:CONTrol:STARt

Syntax :SOURce:FP[1-1]:VOLTage:CONTrol:STARt <numeric>

:SOURce:FP[1-1]:VOLTage:CONTrol:STARt?

Description Vcontrol start

Parameter

	<Numeric>
Range	-15 to 35
Preset value	0
Unit	V
Resolution	100u

Equivalent key FP Menu -> Start/Center -> DC Control Start

FP Menu -> Stop/Span -> DC Control Start

:SOURce:FP[1-1]:VOLTage:CONTrol:STOP

Syntax :SOURce:FP[1-1]:VOLTage:CONTrol:STOP <numeric>

:SOURce:FP[1-1]:VOLTage:CONTrol:STOP?

Description Vcontrol stop

Parameter

	<Numeric>
Range	-15 to 35
Preset value	100u
Unit	V
Resolution	100u

Equivalent key FP Menu -> Start/Center -> DC Control Stop

FP Menu -> Stop/Span -> DC Control Stop

:SOURce:FP[1-1]:VOLTage:POWer:CENTer

Syntax :SOURce:FP[1-1]:VOLTage:POWer:CENTer <numeric>

:SOURce:FP[1-1]:VOLTage:POWer:CENTer?

Description Vpower center

Parameter

	<Numeric>
Range	0 to 16
Preset value	500u

	<Numeric>
Unit	V
Resolution	500u

Equivalent key FP Menu -> Start/Center -> DC Power Center

FP Menu -> Stop/Span -> DC Power Center

:SOURce:FP[1-1]:VOLTage:POWer:SPAN

Syntax :SOURce:FP[1-1]:VOLTage:POWer:SPAN <numeric>

:SOURce:FP[1-1]:VOLTage:POWer:SPAN?

Description Vpower span

Parameter

	<Numeric>
Range	0 to 16
Preset value	1m
Unit	V
Resolution	1m

Equivalent key FP Menu -> Start/Center -> DC Power Span

FP Menu -> Stop/Span -> DC Power Span

:SOURce:FP[1-1]:VOLTage:POWer:STARt

Syntax :SOURce:FP[1-1]:VOLTage:POWer:STARt <numeric>

:SOURce:FP[1-1]:VOLTage:POWer:STARt?

Description Vpower start

Parameter

	<Numeric>
Range	0 to 16
Preset value	0
Unit	V
Resolution	1m

Equivalent key FP Menu -> Start/Center -> DC Power Start

FP Menu -> Stop/Span -> DC Power Start

:SOURce:FP[1-1]:VOLTage:POWer:STOP

Syntax :SOURce:FP[1-1]:VOLTage:POWer:STOP <numeric>

:SOURce:FP[1-1]:VOLTage:POWer:STOP?

Description Vpower stop

Parameter

	<Numeric>
Range	0 to 16
Preset value	1m
Unit	V
Resolution	1m

Equivalent key FP Menu -> Start/Center -> DC Power Stop

FP Menu -> Stop/Span -> DC Power Stop

:SOURce:VOLTage:CONTrol:CORRection:COLLect:ACQuire

Syntax :SOURce:VOLTage:CONTrol:CORRection:COLLect:ACQuire

Description Execute DC CTRL DRIFT CAL (No Query)

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

:SOURce:VOLTage:CONTrol:CORRection[:STATe]

Syntax :SOURce:VOLTage:CONTrol:CORRection[:STATe] {ON|OFF|1|0}

:SOURce:VOLTage:CONTrol:CORRection[:STATe]?

Description Sets/reads DC CTRL DRIFT CAL state

Parameter

	Description
ON or 1	Set DC CTRL DRIFT CAL state mode to 'ON'
OFF or 0(Preset value)	Set DC CTRL DRIFT CAL state mode to 'OFF'

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

:SOURce:VOLTage:CONTrol:DELay

Syntax :SOURce:VOLTage:CONTrol:DELay <numeric>

:SOURce:VOLTage:CONTrol:DELay?

Description Sets/reads DC Control delay setting(sec)

Parameter

	<Numeric>
Range	0 to 1
Preset value	100m
Unit	s
Resolution	1m

Equivalent key PN Menu -> DC Control Voltage -> DC Control Delay

SP Menu -> DC Control Voltage -> DC Control Delay

FP Menu -> DC Control Voltage -> DC Control Delay

TR Menu -> DC Control Voltage -> DC Control Delay

USER Menu -> DC Control Voltage -> DC Control Delay

:SOURce:VOLTage:CONTrol:LEVel:AMPLitude

Syntax :SOURce:VOLTage:CONTrol:LEVel:AMPLitude <numeric>

:SOURce:VOLTage:CONTrol:LEVel:AMPLitude?

Description Sets/reads the fixed voltage for DC Control

Parameter

	<Numeric>
Range	-15 to 35
Preset value	0
Unit	V
Resolution	100u

Equivalent key PN Menu -> DC Control Voltage -> DC Control Voltage

SP Menu -> DC Control Voltage -> DC Control Voltage

FP Menu -> DC Control Voltage -> DC Control Voltage

TR Menu -> DC Control Voltage -> DC Control Voltage

USER Menu -> DC Control Voltage -> DC Control Voltage

:SOURce:VOLTage:CONTrol:LEVel:STATe

Syntax

:SOURce:VOLTage:CONTrol:LEVel:STATe {ON|OFF|1|0}

:SOURce:VOLTage:CONTrol:LEVel:STATe?

Description

Turns on/off DC Control voltage

Parameter

	Description
ON or 1	Set DC Control voltage output to 'ON'
OFF or 0(Preset value)	Set DC Control voltage output to 'OFF'

Equivalent key

PN Menu -> DC Control Voltage -> DC Control Output

SP Menu -> DC Control Voltage -> DC Control Output

FP Menu -> DC Control Voltage -> DC Control Output

TR Menu -> DC Control Voltage -> DC Control Output

USER Menu -> DC Control Voltage -> DC Control Output

:SOURce:VOLTage:CONTrol:LIMit:HIGH

Syntax

:SOURce:VOLTage:CONTrol:LIMit:HIGH <numeric>

:SOURce:VOLTage:CONTrol:LIMit:HIGH?

Description

Sets/reads the maximum voltage limit for DC Control

Parameter

	<Numeric>
Range	-15 to 35
Preset value	35
Unit	V
Resolution	100u

Equivalent key

PN Menu -> DC Control Voltage -> Max Ctrl Voltage Limit

SP Menu -> DC Control Voltage -> Max Ctrl Voltage Limit

FP Menu -> DC Control Voltage -> Max Ctrl Voltage Limit

TR Menu -> DC Control Voltage -> Max Ctrl Voltage Limit

USER Menu -> DC Control Voltage -> Max Ctrl Voltage Limit

:SOURce:VOLTage:CONTrol:LIMit:LOW

Syntax

:SOURce:VOLTage:CONTrol:LIMit:LOW <numeric>

:SOURce:VOLTage:CONTrol:LIMit:LOW?

Description

Sets/reads the minimum voltage limit for DC Control

Parameter

	<Numeric>
Range	-15 to 35
Preset value	-15
Unit	V
Resolution	100u

Equivalent key

PN Menu -> DC Control Voltage -> Min Ctrl Voltage Limit

SP Menu -> DC Control Voltage -> Min Ctrl Voltage Limit

FP Menu -> DC Control Voltage -> Min Ctrl Voltage Limit

TR Menu -> DC Control Voltage -> Min Ctrl Voltage Limit

USER Menu -> DC Control Voltage -> Min Ctrl Voltage Limit

:SOURce:VOLTage:POWer:DELay

Syntax

:SOURce:VOLTage:POWer:DELay <numeric>

:SOURce:VOLTage:POWer:DELay?

Description

Sets/reads the DC Power delay setting(sec)

Parameter

	<Numeric>
Range	0 to 1
Preset value	100m
Unit	s
Resolution	1m

Equivalent key

PN Menu -> DC Power Voltage -> DC Power Delay

SP Menu -> DC Power Voltage -> DC Power Delay

FP Menu -> DC Power Voltage -> DC Power Delay

TR Menu -> DC Power Voltage -> DC Power Delay

USER Menu -> DC Power Voltage -> DC Power Delay

:SOURce:VOLTage:POWer:LEVel:AMPLitude

Syntax

:SOURce:VOLTage:POWer:LEVel:AMPLitude <numeric>

:SOURce:VOLTage:POWer:LEVel:AMPLitude?

Description

Sets/reads voltage for DC Power

Parameter

	<Numeric>
Range	0 to 16
Preset value	0
Unit	V
Resolution	1m

Equivalent key

PN Menu -> DC Power Voltage -> DC Power Voltage

SP Menu -> DC Power Voltage -> DC Power Voltage

FP Menu -> DC Power Voltage -> DC Power Voltage

TR Menu -> DC Power Voltage -> DC Power Voltage

USER Menu -> DC Power Voltage -> DC Power Voltage

:SOURce:VOLTage:POWer:LEVel:STATe

Syntax

:SOURce:VOLTage:POWer:LEVel:STATe {ON|OFF|1|0}

:SOURce:VOLTage:POWer:LEVel:STATe?

Description

Truns on/off the DC Power output voltage

Parameter

	Description
ON or 1	Set DC Power voltage output to 'ON'
OFF or 0(Preset value)	Set DC Power volage output to 'OFF'

Equivalent key

PN Menu -> DC Power Voltage -> DC Power Output

SP Menu -> DC Power Voltage -> DC Power Output

FP Menu -> DC Power Voltage -> DC Power Output

TR Menu -> DC Power Voltage -> DC Power Output

USER Menu -> DC Power Voltage -> DC Power Output

:SOURce:VOLTage:POWer:LIMit:HIGH

Syntax :SOURce:VOLTage:POWer:LIMit:HIGH <numeric>

:SOURce:VOLTage:POWer:LIMit:HIGH?

Description Sets/reads maximum voltage limit for DC Power

Parameter

	<Numeric>
Range	0 to 16
Preset value	16
Unit	V
Resolution	1m

Equivalent key PN Menu -> DC Power Voltage -> Max Pwr Voltage Limit

SP Menu -> DC Power Voltage -> Max Pwr Voltage Limit

FP Menu -> DC Power Voltage -> Max Pwr Voltage Limit

TR Menu -> DC Power Voltage -> Max Pwr Voltage Limit

USER Menu -> DC Power Voltage -> Max Pwr Voltage Limit

:SOURce:VOLTage:POWer:LIMit:LOW

Syntax :SOURce:VOLTage:POWer:LIMit:LOW <numeric>

:SOURce:VOLTage:POWer:LIMit:LOW?

Description Sets/reads minimum voltage limit for DC Power

Parameter

	<Numeric>
Range	0 to 16
Preset value	0
Unit	V
Resolution	1m

Equivalent key PN Menu -> DC Power Voltage -> Min Pwr Voltage Limit

SP Menu -> DC Power Voltage -> Min Pwr Voltage Limit

FP Menu -> DC Power Voltage -> Min Pwr Voltage Limit

TR Menu -> DC Power Voltage -> Min Pwr Voltage Limit

USER Menu -> DC Power Voltage -> Min Pwr Voltage Limit

:STATus:OPERation:BIT12:CLEar

Syntax :STATus:OPERation:BIT12:CLEar <numeric>

Description Clears operation-program status condition register (No Query)

Parameter

	<Numeric>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:STATus:OPERation:BIT12:CONDition

Syntax :STATus:OPERation:BIT12:CONDition

Description Reads operation-program status register (Query Only)

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

:STATus:OPERation:BIT12:ENABle

Syntax :STATus:OPERation:BIT12:ENABle <numeric>

:STATus:OPERation:BIT12:ENABle?

Description Seta/reads operation-program status enable register

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-

	<Numeric>
Resolution	-

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

:STATus:OPERation:BIT12[:EVENt]

Syntax :STATus:OPERation:BIT12[:EVENt]

Description Reads operation-program status event register (Query Only)

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

:STATus:OPERation:BIT12:NTRansition

Syntax :STATus:OPERation:BIT12:NTRansition <numeric>

:STATus:OPERation:BIT12:NTRansition?

Description Sets/reads operation-program status negative transition filter value

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:OPERation:BIT12:PTRansition

Syntax :STATus:OPERation:BIT12:PTRansition <numeric>

:STATus:OPERation:BIT12:PTRansition?

Description Sets/reads operation-program status positive transition filter value

Parameter

	<Numeric>
Range	0 to 65535
Preset value	32767

	<Numeric>
Unit	-
Resolution	-

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

:STATus:OPERation:BIT12:SET

Syntax :STATus:OPERation:BIT12:SET <numeric>

Description Sets operation-program status condition register (No Query)

Parameter

	<Numeric>
Range	-
Preset value	-
Unit	-
Resolution	-

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

:STATus:OPERation:CONDition

Syntax :STATus:OPERation:CONDition

Description Reads operation status conditional register value (Query Only)

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

:STATus:OPERation:ENABle

Syntax :STATus:OPERation:ENABle <numeric>

:STATus:OPERation:ENABle?

Description Set/reads operation status enable register

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0

	<Numeric>
Unit	-
Resolution	-

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

:STATus:OPERation[:EVENt]

Syntax :STATus:OPERation[:EVENt]

Description Reads operation status event register (Query Only)

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

:STATus:OPERation:NTRansition

Syntax :STATus:OPERation:NTRansition <numeric>

:STATus:OPERation:NTRansition?

Description Sets/reads operation status negative transition filter value

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:OPERation:PTRansition

Syntax :STATus:OPERation:PTRansition <numeric>

:STATus:OPERation:PTRansition?

Description Sets/reads operation status positive transition filter value

Parameter

	<Numeric>
Range	0 to 65535

	<Numeric>
Preset value	32767
Unit	-
Resolution	-

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

:STATus:PRESet

Syntax :STATus:PRESet

Description Reset status registers (No Query)

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

:STATus:QUEStionable:CONDition

Syntax :STATus:QUEStionable:CONDition

Description Reads questionable status conditional register value (Query Only)

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

:STATus:QUEStionable:CURRent:ENABle

Syntax :STATus:QUEStionable:CURRent:ENABle <numeric>

:STATus:QUEStionable:CURRent:ENABle?

Description Sets/reads questionable-current status enable register

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:QUEStionable:CURRent[:EVENt]

Syntax :STATus:QUEStionable:CURRent[:EVENt]

Description Reads questionable-current status event register value (Query Only)

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

:STATus:QUEStionable:ENABle

Syntax :STATus:QUEStionable:ENABle <numeric>

:STATus:QUEStionable:ENABle?

Description Sets/reads questionable status enable register

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:QUEStionable[:EVENt]

Syntax :STATus:QUEStionable[:EVENt]

Description Reads questionable status event register value (Query Only)

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

:STATus:QUEStionable:MISC:ENABle

Syntax :STATus:QUEStionable:MISC:ENABle <numeric>

:STATus:QUEStionable:MISC:ENABle?

Description Sets/reads questionable-misc status enable register

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:QUEStionable:MISC[:EVENt]

Syntax :STATus:QUEStionable:MISC[:EVENt]

Description Reads questionable-misc status event register value (Query Only)

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

:STATus:QUEStionable:NTRansition

Syntax :STATus:QUEStionable:NTRansition <numeric>

:STATus:QUEStionable:NTRansition?

Description Sets/reads questionable status negative transition filter value

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:QUEStionable:PHASe:ENABle

Syntax :STATus:QUEStionable:PHASe:ENABle <numeric>

:STATus:QUEStionable:PHASe:ENABle?

Description Sets/reads questionable-phase status enable register

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:QUEStionable:PHASe[:EVENt]

Syntax :STATus:QUEStionable:PHASe[:EVENt]

Description Reads questionable-phase status event register (Query Only)

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

:STATus:QUEStionable:POWer:ENABle

Syntax :STATus:QUEStionable:POWer:ENABle <numeric>

:STATus:QUEStionable:POWer:ENABle?

Description Sets/reads questionable-power status enable register

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:QUEStionable:POWer[:EVENt]

Syntax :STATus:QUEStionable:POWer[:EVENt]

Description Reads questionable-power status event register value (Query Only)

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

:STATus:QUEStionable:PTRansition

Syntax :STATus:QUEStionable:PTRansition <numeric>

:STATus:QUEStionable:PTRansition?

Description Sets/reads questionable status positive transition filter value

Parameter

	<Numeric>
Range	0 to 65535

	<Numeric>
Preset value	32767
Unit	-
Resolution	-

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

:STATus:QUEStionable:REFerence:ENABle

Syntax :STATus:QUEStionable:REFerence:ENABle <numeric>

:STATus:QUEStionable:REFerence:ENABle?

Description Sets/reads questionable-reference signal status enable register

Parameter

	<Numeric>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

:STATus:QUEStionable:REFerence[:EVENt]

Syntax :STATus:QUEStionable:REFerence[:EVENt]

Description Reads questionable-reference signal status event register value (Query Only)

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

:SYSTem:BACKlight:STATe

Syntax :SYSTem:BACKlight:STATe {ON|OFF|1|0}

:SYSTem:BACKlight:STATe?

Description Turns on/off backlight

Parameter

	Description
ON or 1(Preset value)	Turn backlight 'ON'
OFF or 0	Turn backlight 'OFF'

Equivalent key

PN Menu -> System -> Backlight

SP Menu -> System -> Backlight

FP Menu -> System -> Backlight

TR Menu -> System -> Backlight

USER Menu -> System -> Backlight

:SYSTem:BEEPer:COMPlete:IMMediate

Syntax

:SYSTem:BEEPer:COMPlete:IMMediate

Description

Makes beep sound for operation completion (No Query)

Equivalent key

PN Menu -> System -> Misc Setup -> Beeper -> Test Beep Complete

SP Menu -> System -> Misc Setup -> Beeper -> Test Beep Complete

FP Menu -> System -> Misc Setup -> Beeper -> Test Beep Complete

TR Menu -> System -> Misc Setup -> Beeper -> Test Beep Complete

:SYSTem:BEEPer:COMPlete:STATe

Syntax

:SYSTem:BEEPer:COMPlete:STATe {ON|OFF|1|0}

:SYSTem:BEEPer:COMPlete:STATe?

Description

Turns on/off the beep for operation completion

Parameter

	Description
ON or 1(Preset value)	Set the beep for operation completion mode to 'ON'
OFF or 0	Set the beep for operation completion mode to 'OFF'

Equivalent key

PN Menu -> System -> Misc Setup -> Beeper -> Beep Complete

SP Menu -> System -> Misc Setup -> Beeper -> Beep Complete

FP Menu -> System -> Misc Setup -> Beeper -> Beep Complete

TR Menu -> System -> Misc Setup -> Beeper -> Beep Complete

USER Menu -> System -> Misc Setup -> Beeper -> Beep Complete

:SYSTem:BEEPer:WARNing:IMMediate

Syntax :SYSTem:BEEPer:WARNing:IMMediate

Description Makes beep sound for warning (No Query)

Equivalent key PN Menu -> System -> Misc Setup -> Beeper -> Test Beep Warning

SP Menu -> System -> Misc Setup -> Beeper -> Test Beep Warning

FP Menu -> System -> Misc Setup -> Beeper -> Test Beep Warning

TR Menu -> System -> Misc Setup -> Beeper -> Test Beep Warning

USER Menu -> System -> Misc Setup -> Beeper -> Test Beep Warning

:SYSTem:BEEPer:WARNing:STATe

Syntax :SYSTem:BEEPer:WARNing:STATe {ON|OFF|1|0}

:SYSTem:BEEPer:WARNing:STATe?

Description Turns on/off the beep for warning

Parameter

	Description
ON or 1	Set the beep for warning mode to 'ON'
OFF or 0(Preset value)	Set the beep for warning mode to 'OFF'

Equivalent key PN Menu -> System -> Misc Setup -> Beeper -> Beep Warning

SP Menu -> System -> Misc Setup -> Beeper -> Beep Warning

FP Menu -> System -> Misc Setup -> Beeper -> Beep Warning

TR Menu -> System -> Misc Setup -> Beeper -> Beep Warning

USER Menu -> System -> Misc Setup -> Beeper -> Beep Warning

:SYSTem:DATE

Syntax :SYSTem:DATE <numeric 1>,<numeric 2>,<numeric 3>

:SYSTem:DATE?

Description Set/Get system date

Parameter

	<Numeric 1>
Range	1980 to 2030
Preset value	-
Unit	-
Resolution	-

	<Numeric 2>
Range	1 to 12
Preset value	-
Unit	-
Resolution	-

	<Numeric 3>
Range	1 to 31
Preset value	-
Unit	-
Resolution	-

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

:SYSTem:ERRor[:NEXT]

Syntax :SYSTem:ERRor[:NEXT]

Description Get error code & description (Query Only)

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

:SYSTem:KLOCk:KBD

Syntax :SYSTem:KLOCk:KBD {ON|OFF|1|0}

:SYSTem:KLOCk:KBD?

Description Set/Get front panel and keyboard lock state

Parameter

	Description
ON or 1	Set front panel and keyboard lock state mode to 'ON'
OFF or 0(Preset value)	Set front panel and keyboard lock state mode to 'OFF'

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

:SYSTem:KLOCk:MOUSe

Syntax :SYSTem:KLOCk:MOUSe {ON|OFF|1|0}

:SYSTem:KLOCk:MOUSe?

Description Set/Get touch screen and mouse lock state

Parameter

	Description
ON or 1	Set touch screen and mouse lock state mode to 'ON'
OFF or 0(Preset value)	Set touch screen and mouse lock state mode to 'OFF'

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

:SYSTem:POFF

Syntax :SYSTem:POFF

Description Power off the instrument (No Query)

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

:SYSTem:PRESet

Syntax :SYSTem:PRESet

Description Preset instrument (No Query)

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

:SYSTem:TIME

Syntax :SYSTem:TIME <numeric 1>,<numeric 2>,<numeric 3>

:SYSTem:TIME?

Description Set/Get system time

Parameter

	<Numeric 1>
Range	0 to 23
Preset value	-
Unit	-
Resolution	-

	<Numeric 2>
Range	0 to 59
Preset value	-
Unit	-
Resolution	-

	<Numeric 3>
Range	0 to 59
Preset value	-
Unit	-
Resolution	-

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

:TRIGger:EXTernal:SLOPe

Syntax :TRIGger:EXTernal:SLOPe {NEGative|POSitive}

:TRIGger:EXTernal:SLOPe?

Description External trigger polarity

Parameter

	Description
NEGative(Preset value)	Set External trigger polarity to 'NEGative'
POSitive	Set External trigger polarity to 'POSitive'

Equivalent key PN Menu -> Trigger -> Ext Trig Polarity

SP Menu -> Trigger -> Ext Trig Polarity

FP Menu -> Trigger -> Ext Trig Polarity

TR Menu -> Trigger -> Ext Trig Polarity

:TRIGger:FP[1-1]:MODE

Syntax :TRIGger:FP[1-1]:MODE {ANALyzer|TESTer}

:TRIGger:FP[1-1]:MODE?

Description Select analyzer mode in the Frequency. power and DC currnet measurement mode

Parameter

	Description
ANALyzer(Preset value)	Set trigger mode to 'ANALyzer'
TESTer	Set trigger mode to 'TESTer'

Equivalent key FP Menu -> Trigger -> Mode

:TRIGger:FP[1-1]:SOURce

Syntax :TRIGger:FP[1-1]:SOURce {INTernal|EXTernal|MANual|BUS}

:TRIGger:FP[1-1]:SOURce?

Description Selects trigger source

Parameter

	Description
INTernal(Preset value)	Set trigger source to 'INTernal'
EXTernal	Set trigger source to 'EXTernal'
MANual	Set trigger source to 'MANual'
BUS	Set trigger source to 'BUS'

Equivalent key FP Menu -> Trigger -> Source

:TRIGger:MODE

Syntax :TRIGger:MODE {PN1|SP1|FP1|TR1}

:TRIGger:MODE?

Description Selects active measurement mode

Parameter

	Description
PN1(Preset value)	Set measurement mode to 'PN1'
SP1	Set measurement mode to 'SP1'
FP1	Set measurement mode to 'FP1'
TR1	Set measurement mode to 'TR1'

Equivalent key PN Menu -> Trigger -> Trigger to Phase Noise

SP Menu -> Trigger -> Trigger to Spectrum Monitor

FP Menu -> Trigger -> Trigger to Freq & Power

TR Menu -> Trigger -> Trigger to Transient

:TRIGger:PN[1-1]:SOURce

Syntax :TRIGger:PN[1-1]:SOURce {INTernal|EXTernal|MANual|BUS}

:TRIGger:PN[1-1]:SOURce?

Description Selects trigger source

Parameter

	Description
INTernal(Preset value)	Set trigger source to 'INTernal'
EXTernal	Set trigger source to 'EXTernal'
MANual	Set trigger source to 'MANual'
BUS	Set trigger source to 'BUS'

Equivalent key PN Menu -> Trigger -> Source

:TRIGger:SP[1-1]:SOURce

Syntax :TRIGger:SP[1-1]:SOURce {INTernal|EXTernal|MANual|BUS}

:TRIGger:SP[1-1]:SOURce?

Description Selects trigger source

Parameter

	Description
INTernal(Preset value)	Set trigger source to 'INTernal'
EXTernal	Set trigger source to 'EXTernal'
MANual	Set trigger source to 'MANual'
BUS	Set trigger source to 'BUS'

Equivalent key SP Menu -> Trigger -> Source

:TRIGger:TR[1-1]:NARRow:VIDeo:FREQuency:CENTer

Syntax :TRIGger:TR[1-1]:NARRow:VIDeo:FREQuency:CENTer <numeric>

:TRIGger:TR[1-1]:NARRow:VIDeo:FREQuency:CENTer?

Description Sets/reads the video trigger frequency value for narrowband mode in the transient measurement

Parameter

	<Numeric>
Range	9.2M to 7.0128G
Preset value	1G
Unit	Hz
Resolution	-

Equivalent key TR Menu -> Setup -> Video Trigger -> Narrow Freq

:TRIGger:TR[1-1]:NARRow:VIDeo:THReshold

Syntax :TRIGger:TR[1-1]:NARRow:VIDeo:THReshold <numeric>

:TRIGger:TR[1-1]:NARRow:VIDeo:THReshold?

Description Sets/reads the video trigger threshold level relative to maximum input level

Parameter

	<Numeric>
Range	-100 to 0
Preset value	-20

	<Numeric>
Unit	dB
Resolution	1

Equivalent key TR Menu -> Setup -> Video Trigger -> Minimum Power Level

:TRIGger:TR[1-1]:SOURce

Syntax :TRIGger:TR[1-1]:SOURce {INTernal|EXTernal|MANual|BUS|WVIDeo|NVIDeo}

:TRIGger:TR[1-1]:SOURce?

Description Selects trigger source

Parameter

	Description
INTernal(Preset value)	Set trigger source to 'INTernal'
EXTernal	Set trigger source to 'EXTernal'
MANual	Set trigger source to 'MANual'
BUS	Set trigger source to 'BUS'
WVIDeo	Set trigger source to 'WVIDeo'
NVIDeo	Set trigger source to 'NVIDeo'

Equivalent key TR Menu -> Trigger -> Source

:TRIGger:TR[1-1]:WIDE:VIDeo:FREQuency:CENTer

Syntax :TRIGger:TR[1-1]:WIDE:VIDeo:FREQuency:CENTer <numeric>

:TRIGger:TR[1-1]:WIDE:VIDeo:FREQuency:CENTer?

Description Sets/reads the video trigger frequency value for wideband mode in the transient measurement

Parameter

	<Numeric>
Range	50M to 7.2G
Preset value	1G
Unit	Hz

	<Numeric>
Resolution	-

Equivalent key TR Menu -> Setup -> Video Trigger -> Wide Freq

Command list

List by function

Bellow table shows the SCPI command list by function.

Function	Setting/Execution item	Command
24Bit I/O control	Outputs data using port A	:CONT:HAND:A[:DATA]
	Outputs data using port B	:CONT:HAND:B[:DATA]
	Inputs/Outputs data using port C	:CONT:HAND:C[:DATA]
	Selects input/output mode on port C	:CONT:HAND:C:MODE
	Inputs/Outputs data using port D	:CONT:HAND:D[:DATA]
	Selects input/output mode on port D	:CONT:HAND:D:MODE
	Inputs/outputs data using port E(port C + port D; 16 bits)	:CONT:HAND:E[:DATA]
	Inputs/outputs data using port F(port A + port C; 16 bits)	:CONT:HAND:F[:DATA]
	Sets/Reads OUTPUT1 and/or OUTPUT2	:CONT:HAND:OUTP[1-2][:DATA]
Beeper	Makes beep sound for operation completion	:SYST:BEEP:COMP:IMM
	Turns on/off the beep for operation completion	:SYST:BEEP:COMP:STAT
	Makes beep sound for warning	:SYST:BEEP:WARN:IMM
	Turns on/off the beep for warning	:SYST:BEEP:WARN:STAT
DC sources	Execute DC CTRL DRIFT CAL	:SOUR:VOLT:CONT:CORR:COLL:ACQ
	DC CTRL DRIFT CAL state	:SOUR:VOLT:CONT:CORR[:STAT]
	DC Control delay setting(sec)	:SOUR:VOLT:CONT:DEL
	Sets/reads DC Control voltage	:SOUR:VOLT:CONT:LEV:AMPL
	Turns on/off DC Control voltage output	:SOUR:VOLT:CONT:LEV:STAT
	Sets/reads maximum voltage limit for DC Control	:SOUR:VOLT:CONT:LIM:HIGH
	Sets/reads minimum voltage limit for DC Control	:SOUR:VOLT:CONT:LIM:LOW
	DC Power delay setting(sec)	:SOUR:VOLT:POW:DEL
	Sets/reads DC Power voltage	:SOUR:VOLT:POW:LEV:AMPL
	Truns on/off DC power voltage output	:SOUR:VOLT:POW:LEV:STAT
	Sets/reads maximum voltage limit for DC Power	:SOUR:VOLT:POW:LIM:HIGH
	Sets/reads minimum voltage limit for DC Power	:SOUR:VOLT:POW:LIM:LOW

Function	Setting/Execution item	Command
Display	Turns on/off internal clock display	:DISP:CLOC
	Adds texts in echo window	:DISP:ECHO:ADD
	Clears echo window	:DISP:ECHO:CLE
	Edits texts in echo window.	:DISP:ECHO:DATA
	font size in echo window	:DISP:ECHO:FSIZ
	Show/Hide echo window	:DISP:ECHO:STAT
	Enable/disable trce update	:DISP:ENAB
	Maximize active instrument window	:DISP:MAX
	Show/Hide softkey	:DISP:SKEY:STAT
	Update display force	:DISP:UPD:IMM
	Selects active instrument window	:DISP:WIND:ACT
File operation	Catalog directory	:MMEM:CAT
	Copy file	:MMEM:COPY
	File transfer through SCPI	:MMEM:DATA
	Delete file/directory	:MMEM:DEL
	Loads program	:MMEM:LOAD:PROG
	Recalls settings	:MMEM:LOAD:STAT
	Creates a directory	:MMEM:MDIR
	Save screen image	:MMEM:STOR:IMAG
	Save VBA project	:MMEM:STOR:PROG
	Save settings	:MMEM:STOR:STAT
	Select save state type	:MMEM:STOR:STYP
Frequency, RF power and DC current measurement - Display	Selects active trace	:CALC:FP[1-1]:ALLT:ACT
	Sets/reads data hold type	:CALC:FP[1-1]:TRAC[1-3]:HOLD
	Sets/reads math operation type	:CALC:FP[1-1]:TRAC[1-3]:MATH:FUNC
	Copy data to memory	:CALC:FP[1-1]:TRAC[1-3]:MATH:MEM
	Sensitivity Aperture	:CALC:FP[1-1]:TRAC[1-3]:SAP
	Smoothing aperture	:CALC:FP[1-1]:TRAC[1-3]:SMO:APER
	Smoothing on/off	:CALC:FP[1-1]:TRAC[1-3]:SMO:STAT
	Clears persistent mode	:DISP:FP[1-1]:ALLT:PERS:CLE
	Execute autoscale for all traces	:DISP:FP[1-1]:ALLT:Y:SCAL:AUTO

Function	Setting/Execution item	Command
Frequency, RF power and DC current measurement - Display(Continued)	Turns on/off measurement conditions	:DISP:FP[1-1]:ANN:MEAS:STAT
	Turns on/off relative Y-scale	:DISP:FP[1-1]:GRAT:AXIS:Y:REL
	Show/Hide Y graticule label	:DISP:FP[1-1]:GRAT:AXIS:Y:STAT
	Window title label	:DISP:FP[1-1]:LAB:DATA
	Show/Hide Window Title Label	:DISP:FP[1-1]:LAB:STAT
	Maximize active trace	:DISP:FP[1-1]:MAX
	Turns on.off measurement display	:DISP:FP[1-1]:STAT
	Edits trace title label	:DISP:FP[1-1]:TRAC[1-3]:LAB:DATA
	Shows data and/or memory trace	:DISP:FP[1-1]:TRAC[1-3]:MODE
	Cleasr persistence mode	:DISP:FP[1-1]:TRAC[1-3]:PERS:CLE
	Sets/reads persistence mode	:DISP:FP[1-1]:TRAC[1-3]:PERS:STAT
	Execute autoscale	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:AUTO
	Sets/reads sclae per division	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:PDIV
	Sets/reads scale reference level	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:RLEV
	Sets/reads scale reference position	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:RPOS
	# of Y division	:DISP:FP[1-1]:Y[:SCAL]:DIV
Frequency, RF power and DC current measurement - File operation	Saves trace data	:MMEM:FP[1-1]:TRAC[1-3]:STOR[:DATA]
	Saves memory trace data	:MMEM:FP[1-1]:TRAC[1-3]:STOR:MEM
Frequency, RF power and DC current measurement - Marker/analysis	Turns on/off bandmarker coupling function	:CALC:FP[1-1]:ALLT:BDM:X:COUP:STAT
	Turns on/of marker coupling function	:CALC:FP[1-1]:ALLT:MARK:COUP:STAT
	Sets/reads marker movement (Continuous/Discrete)	:CALC:FP[1-1]:ALLT:MARK:DISC:STAT
	Sets/reads marker reference number	:CALC:FP[1-1]:ALLT:MARK:REF:NUMB
	Turns on/off delta marker mode	:CALC:FP[1-1]:ALLT:MARK:REF:STAT
	Selects active marker	:CALC:FP[1-1]:TRAC[1-3]:ALLM:ACT
	Sets/reads marker search range (X-axis)	:CALC:FP[1-1]:TRAC[1-3]:ALLM:SEAR:DOM:X
	Sets/reads marker search range (Y-axis)	:CALC:FP[1-1]:TRAC[1-3]:ALLM:SEAR:DOM:Y
	Execute marker search all	:CALC:FP[1-1]:TRAC[1-3]:ALLM:SEAR:PEAK
	Sets/reads the center value of bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM:X:CENT
	Sets/reads the span value of bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM:X:SPAN
	Sets/reads the start value of bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM:X:STAR
	Turns on/off bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM:X:STAT

Function	Setting/Execution item	Command
Frequency, RF power and DC current measurement - Marker/analysis(Continued)	Sets/reads the stop value of bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM:X:STOP
	Sets/reads the center value of bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM:Y:CENT
	Sets/reads the span value of bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM:Y:SPAN
	Sets/reads the start value of bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM:Y:STAR
	Turns on/off bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM:Y:STAT
	Sets/reads the stop value of bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM:Y:STOP
	Sets/reads analysis/search range (X-axis)	:CALC:FP[1-1]:TRAC[1-3]:FUNC:DOM:X
	Sets/reads analysis/search range (Y-axis)	:CALC:FP[1-1]:TRAC[1-3]:FUNC:DOM:Y
	Reads the results of statistical analysis for the data trace	:CALC:FP[1-1]:TRAC[1-3]:FUNC:STAT:DATA
	Reads the results of statistical analysis for the memory trace	:CALC:FP[1-1]:TRAC[1-3]:FUNC:STAT:MEM
	Sets/reads analysis type	:CALC:FP[1-1]:TRAC[1-3]:FUNC:TYPE
	Execute marker peak search left	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:LPE
	Execute marker target search left	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:LTAR
	Execute marker search maximum	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:MAX
	Execute marker search minimum	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:MIN
	Execute marker peak search	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:PEAK
	Execute marker peak search right	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:RPE
	Execute marker target search right	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:RTAR
	Execute marker target search	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:TARG
	Sets/reads the peak excursion value	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:PEAK:EXC
	Sets/reads the marker peak-search polarity	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:PEAK:POL
	Sets/reads the target transition definition	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:TARG:TRAN
	Sets/reads the marker target value	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:TARG:Y

Function	Setting/Execution item	Command
Frequency, RF power and DC current measurement - Marker/analysis(Continued)	Sets/reads the marker tracking type	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:TRAC:TYPE
	Turns on/off markers	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
	Sets/reads the marker X value	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:X
	Reads the marker Y value	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:Y
	Sets/reads the marker information position	:DISP:FP[1-1]:ANN:MARK:POS
	Turns on/off the marker list	:DISP:FP[1-1]:TABL[:STAT]
Frequency, RF power and DC current measurement - Measurement	Trigger continuous mode	:INIT:FP[1-1]:CONT
	Trigger once	:INIT:FP[1-1]:IMM
	Selects analyzer/tester mode	:TRIG:FP[1-1]:MODE
	Selects Trigger source	:TRIG:FP[1-1]:SOUR
Frequency, RF power and DC current measurement - Measurement conditions	Restart averaging	:SENS:FP[1-1]:AVER:CLE
	Sets/reads averaging count	:SENS:FP[1-1]:AVER:COUN
	Tunrs on/off averaging function	:SENS:FP[1-1]:AVER:STAT
	Selects frequency band	:SENS:FP[1-1]:FBAN
	Sets/reads frequency resolution	:SENS:FP[1-1]:FREQ:RES
	Sets/reads the point delay value	:SENS:FP[1-1]:SWE:DWEL
	Sets/reads sweep parameter	:SOUR:FP[1-1]:SWE:PAR
	Sets/reads the number of measurement points	:SOUR:FP[1-1]:SWE:POIN
	Sets/reads the center value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:CENT
	Sets/reads the span value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:SPAN
	Sets/reads the start value of DC Control volage	:SOUR:FP[1-1]:VOLT:CONT:STAR
	Sets/reads the stop value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:STOP
	Sets/reads the center value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:CENT
	Sets/reads the span value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:SPAN
	Sets/reads the start value of DC power voltage	:SOUR:FP[1-1]:VOLT:POW:STAR
	Sets/reads the stop value of DC power voltage	:SOUR:FP[1-1]:VOLT:POW:STOP
Frequency, RF power and DC current measurement - Reads/writes the dataconditions	Sets/reads raw data	:CALC:FP[1-1]:DATA:RDAT
	Sets/reads tester mode data	:CALC:FP[1-1]:DATA:TDAT
	Reads X-axis data	:CALC:FP[1-1]:DATA:XDAT
	Set/Get formatted trace data	:CALC:FP[1-1]:TRAC[1-3]:DATA:FDAT

Function	Setting/Execution item	Command
Frequency, RF power and DC current measurement - Reads/writes the dataconditions(Continued)	Set/Get formatted memory data	:CALC:FP[1-1]:TRAC[1-3]:DATA:FMEM
	Set/Get unformatted trace data	:CALC:FP[1-1]:TRAC[1-3]:DATA:UDAT
	Set/Get unformatted memory data	:CALC:FP[1-1]:TRAC[1-3]:DATA:UMEM
	FP-frequency format	:CALC:FP[1-1]:TRAC[1-3]:FORM:FREQ
	Reads the measurement time	:SENS:FP[1-1]:SWE:TIME:DATA
Internal clock	Set/Get system date	:SYST:DATE
	Set/Get system time	:SYST:TIME
Measurement	Abort measurement	:ABOR
	BUS Trigger	*TRG
	Input Attenuator level on 5dB Step	:SENS:ATT:LEV
	External trigger polarity	:TRIG:EXT:SLOP
	Selects measurement mode	:TRIG:MODE
Operations	Set/Get front panel and keyboard lock state	:SYST:KLOC:KBD
	Set/Get touch screen and mouse lock state	:SYST:KLOC:MOUS
Others	Clear caution/message	:DISP:MESS:CLE
	Reads product model information	*IDN
	Reads option information	*OPT
	Preset	*RST
	Get source of reference oscillator	:SENS:ROSC:SOUR
	Turns on/off backlight	:SYST:BACK:STAT
	Get error code & description	:SYST:ERR[:NEXT]
	Power off the instrument	:SYST:POFF
	Preset instrument	:SYST:PRES
Phase noise measurement - Display	Sets/reads data hold type	:CALC:PN[1-1]:TRAC[1-1]:HOLD
	Selects math operation type	:CALC:PN[1-1]:TRAC[1-1]:MATH:FUNC
	Copy data to memory	:CALC:PN[1-1]:TRAC[1-1]:MATH:MEM
	Sets/reads the smoothing aperture value	:CALC:PN[1-1]:TRAC[1-1]:SMO:APER
	Turns on/off smoothing	:CALC:PN[1-1]:TRAC[1-1]:SMO:STAT
	Turns on/off spurious omission mode	:CALC:PN[1-1]:TRAC[1-1]:SPUR:OMIS
	Clears all persistent traces	:DISP:PN[1-1]:ALLT:PERS:CLE
	Turns on/off measurement conditions	:DISP:PN[1-1]:ANN:MEAS:STAT
	Sets/reads the relative Y-axis label	:DISP:PN[1-1]:GRAT:AXIS:Y:REL

Function	Setting/Execution item	Command
Phase noise measurement - Display(Continued)	Show/Hide Y graticule label	:DISP:PN[1-1]:GRAT:AXIS:Y:STAT
	Edits window title label	:DISP:PN[1-1]:LAB:DATA
	Show/Hide Window Title Label	:DISP:PN[1-1]:LAB:STAT
	Maximize active trace	:DISP:PN[1-1]:MAX
	Turns on/off phase noise measurement mode	:DISP:PN[1-1]:STAT
	Trace Title Label	:DISP:PN[1-1]:TRAC[1-1]:LAB:DATA
	Show data and/or memory trace	:DISP:PN[1-1]:TRAC[1-1]:MODE
	Clears persistent data	:DISP:PN[1-1]:TRAC[1-1]:PERS:CLE
	Sets/reads persistence mode	:DISP:PN[1-1]:TRAC[1-1]:PERS:STAT
	Execute autoscale	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:AUTO
	Sets/reads scale per division	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:PDIV
	Sets/reads scale reference level	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:RLEV
	Sets/reads scale reference position	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:RPOS
	# of Y division	:DISP:PN[1-1]:Y[:SCAL]:DIV
Phase noise measurement - File operation	Saves trace data	:MMEM:PN[1-1]:TRAC[1-1]:STOR[:DATA]
	Saves memory trace data	:MMEM:PN[1-1]:TRAC[1-1]:STOR:MEM
Phase noise measurement - Marker/analysis	Turns on/off marker coupling function	:CALC:PN[1-1]:ALLT:MARK:COUP:STAT
	Sets/reads marker movement (Continuous/Discrete)	:CALC:PN[1-1]:ALLT:MARK:DISC:STAT
	Sets/reads marker reference number	:CALC:PN[1-1]:ALLT:MARK:REF:NUMB
	Turns on/off delta marker mode	:CALC:PN[1-1]:ALLT:MARK:REF:STAT
	Selects active marker	:CALC:PN[1-1]:TRAC[1-1]:ALLM:ACT
	Sets/reads marker search range (X-axis)	:CALC:PN[1-1]:TRAC[1-1]:ALLM:SEAR:DOM:X
	Sets/reads marker search range (Y-axis)	:CALC:PN[1-1]:TRAC[1-1]:ALLM:SEAR:DOM:Y
	Execute marker search all	:CALC:PN[1-1]:TRAC[1-1]:ALLM:SEAR:PEAK
	Sets/reads the center value of bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:CENT
	Sets/reads the span value of bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:SPAN
	Sets/reads the start value of bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:STAR
	Turns on/off bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:STAT
	Sets/reads the stop value of bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:STOP
	Sets/reads the center value of bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:CENT
	Sets/reads the span value of bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:SPAN
	Sets/reads the start value of bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:STAR

Function	Setting/Execution item	Command
Phase noise measurement - Marker/analysis(Continued)	Turns on/off bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:STAT
	Sets/reads the stop value of bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:STOP
	Sets/reads analysis/search range (X-axis)	:CALC:PN[1-1]:TRAC[1-1]:FUNC:DOM:X
	Sets/reads analysis/search range (Y-axis)	:CALC:PN[1-1]:TRAC[1-1]:FUNC:DOM:Y
	Reads the results of statistical analysis for the data trace	:CALC:PN[1-1]:TRAC[1-1]:FUNC:STAT:DATA
	Reads the results of statistical analysis for the memory trace	:CALC:PN[1-1]:TRAC[1-1]:FUNC:STAT:MEM
	Sets/reads analysis type	:CALC:PN[1-1]:TRAC[1-1]:FUNC:TYPE
	Execute marker peak search left	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:LPE
	Execute marker target search left	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:LTAR
	Execute marker search maximum	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:MAX
	Execute marker search minimum	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:MIN
	Execute marker peak search	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:PEAK
	Execute marker peak search right	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:RPE
	Execute marker target search right	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:RTAR
	execute marker target search	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:TARG
	Sets/reads the peak excursion value	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:PEAK:EXC
	Sets/reads the marker peak-search polarity	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:PEAK:POL
	Sets/reads the target transition definition	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TARG:TRAN
	Sets/reads the marker target value	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TARG:Y
	Sets/reads the marker tracking type	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TRAC:TYPE
	Turns on/off markers	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
	Sets/reads the marker X value	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:X
	Reads the marker Y value	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:Y
	Sets/reads the marker information position	:DISP:PN[1-1]:ANN:MARK:POS
	Turns on/off the marker list	:DISP:PN[1-1]:TABL[:STAT]

Function	Setting/Execution item	Command
Phase noise measurement - Measurement	Trigger continuous	:INIT:PN[1-1]:CONT
	Trigger once	:INIT:PN[1-1]:IMM
	Selects trigger source	:TRIG:PN[1-1]:SOUR
Phase noise measurement - Measurement conditions	Averaging restart	:SENS:PN[1-1]:AVER:CLE
	Sets/reads averaging count	:SENS:PN[1-1]:AVER:COUN
	Turns on./off averaging function	:SENS:PN[1-1]:AVER:STAT
	Sets/reads the number of correlation	:SENS:PN[1-1]:CORR:COUN
	Sets/reads frequency band	:SENS:PN[1-1]:FBAN
	start frequency	:SENS:PN[1-1]:FREQ:STAR
	stop frequency	:SENS:PN[1-1]:FREQ:STOP
	Sets/reads IF Gain at 10dB steps	:SENS:PN[1-1]:IFG
	Sets/readst phase noise Local bandwidth optimization.	:SENS:PN[1-1]:LOB
	Reads the number of measurement points	:SENS:PN[1-1]:SWE:POIN
Phase noise measurement - Reads/writes the data	Sets/reads the carrier frequency/power data in phase noise measurement	:CALC:PN[1-1]:DATA:CARR
	Sets/reads the measurement raw data	:CALC:PN[1-1]:DATA:RDAT
	Reads the X data	:CALC:PN[1-1]:DATA:XDAT
	Set/Get formatted trace data	:CALC:PN[1-1]:TRAC[1-1]:DATA:FDAT
	Set/Get formatted memory data	:CALC:PN[1-1]:TRAC[1-1]:DATA:FMEM
	Set/Get unformatted trace data	:CALC:PN[1-1]:TRAC[1-1]:DATA:UDAT
	Set/Get unformatted memory data	:CALC:PN[1-1]:TRAC[1-1]:DATA:UMEM
Print	Aborts printing	:HCOP:ABOR
	Selects print mode	:HCOP:IMAG
	Outputs print	:HCOP:IMM
Reads/writes the data	Sets/reads byte order setting for binary transfer	:FORM:BORD
	Sets/reads data transfer mode	:FORM:DATA
	User defined array data	:PROG:VAR:ARR[1-10]:DATA
	# of points of user defined array	:PROG:VAR:ARR[1-10]:POIN
	User defined 64bit floating variable	:PROG:VAR:DOUB[1-10]
	User defined integer variable	:PROG:VAR:INT[1-10]
	User defined string	:PROG:VAR:STR[1-10]

Function	Setting/Execution item	Command
Spectrum monitor - Display	Selects spectrum monior Y-axis format	:CALC:SP[1-1]:TRAC[1-1]:FORM
	Sets/reads data hold type	:CALC:SP[1-1]:TRAC[1-1]:HOLD
	Selects math operation type	:CALC:SP[1-1]:TRAC[1-1]:MATH:FUNC
	Copy data to memory	:CALC:SP[1-1]:TRAC[1-1]:MATH:MEM
	Sets/reads the smoothing aperture value	:CALC:SP[1-1]:TRAC[1-1]:SMO:APER
	Turns on/off smoothing function	:CALC:SP[1-1]:TRAC[1-1]:SMO:STAT
	Clears all persistent traces	:DISP:SP[1-1]:ALLT:PERS:CLE
	Turns on/off measurement conditions	:DISP:SP[1-1]:ANN:MEAS:STAT
	Turns on/off relative Y-scale	:DISP:SP[1-1]:GRAT:AXIS:Y:REL
	Show/Hide Y graticule label	:DISP:SP[1-1]:GRAT:AXIS:Y:STAT
	Edits window title label	:DISP:SP[1-1]:LAB:DATA
	Show/Hide Window Title Label	:DISP:SP[1-1]:LAB:STAT
	Maximize active trace	:DISP:SP[1-1]:MAX
	Turns on/off spectrum monitor mode	:DISP:SP[1-1]:STAT
	Edits trance title label	:DISP:SP[1-1]:TRAC[1-1]:LAB:DATA
	Sets/reads data and/or memory trace	:DISP:SP[1-1]:TRAC[1-1]:MODE
	Clears persistent data	:DISP:SP[1-1]:TRAC[1-1]:PERS:CLE
	Sets/reads persistence mode	:DISP:SP[1-1]:TRAC[1-1]:PERS:STAT
	Execute autoscale	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:AUTO
	Sets/reads scale per division	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:PDIV
	Sets/reads scale reference level	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:RLEV
	Sets/reads scale reference position	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:RPOS
	Sets/reads # of Y division	:DISP:SP[1-1]:Y[:SCAL]:DIV
Spectrum monitor - File operation	Saves trace data	:MMEM:SP[1-1]:TRAC[1-1]:STOR[:DATA]
	Saves memory trace data	:MMEM:SP[1-1]:TRAC[1-1]:STOR:MEM
Spectrum monitor - Marker/Analysis	Turns on/off marker coupling function	:CALC:SP[1-1]:ALLT:MARK:COUP:STAT
	Sets/reads marker movement (Continuous/Discrete)	:CALC:SP[1-1]:ALLT:MARK:DISC:STAT
	Sets/reads marker reference number	:CALC:SP[1-1]:ALLT:MARK:REF:NUMB
	Turns on/off delta marker mode	:CALC:SP[1-1]:ALLT:MARK:REF:STAT
	Selects active marker	:CALC:SP[1-1]:TRAC[1-1]:ALLM:ACT
	Sets/reads marker search range (X-axis)	:CALC:SP[1-1]:TRAC[1-1]:ALLM:SEAR:DOM:X
	Sets/reads marker search range (Y-axis)	:CALC:SP[1-1]:TRAC[1-1]:ALLM:SEAR:DOM:Y
	Execute marker search all	:CALC:SP[1-1]:TRAC[1-1]:ALLM:SEAR:PEAK
	Sets/reads the center value of bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM:X:CENT

Function	Setting/Execution item	Command
Spectrum monitor - Marker/Analysis(Continued)	Sets/reads the span value of bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM:X:SPAN
	Sets/reads the start value of bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM:X:STAR
	Turns on/off bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM:X:STAT
	Sets/reads the stop value of bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM:X:STOP
	Sets/reads the center value of bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM:Y:CENT
	Sets/reads the span value of bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM:Y:SPAN
	Sets/reads the start value of bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM:Y:STAR
	Turns on/off bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM:Y:STAT
	Sets/reads the stop value of bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM:Y:STOP
	Sets/reads analysis/search range (X-axis)	:CALC:SP[1-1]:TRAC[1-1]:FUNC:DOM:X
	Sets/reads analysis/search range (Y-axis)	:CALC:SP[1-1]:TRAC[1-1]:FUNC:DOM:Y
	Reads the results of statistical analysis for the data trace	:CALC:SP[1-1]:TRAC[1-1]:FUNC:STAT:DATA
	Reads the results of statistical analysis for the memory trace	:CALC:SP[1-1]:TRAC[1-1]:FUNC:STAT:MEM
	Sets/reads analysis type	:CALC:SP[1-1]:TRAC[1-1]:FUNC:TYPE
	Execute marker peak search left	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:LPE
	Execute marker target search left	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:LTAR
	Execute marker search maximum	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:MAX
	Execute marker search minimum	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:MIN
	Execute marker peak search	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:PEAK
	Execute marker peak search right	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:RPE
	Execute marker target search right	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:RTAR
	Execute marker target search	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:TARG
	Sets/reads the peak excursion value	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:PEAK:EXC
	Sets/reads the marker peak-search polarity	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:PEAK:POL
	Sets/reads the target transition definition	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TARG:TRAN
	Sets/reads the marker target value	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TARG:Y

Function	Setting/Execution item	Command
Spectrum monitor - Marker/Analysis(Continued)	Sets/reads the marker tracking type	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TRAC:TYPE
	Turns on/off markers	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
	Sets/reads the marker X value	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:X
	Reads the marker Y value	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:Y
	Sets/reads the marker information position	:DISP:SP[1-1]:ANN:MARK:POS
	Turns on/off the marker list	:DISP:SP[1-1]:TABL[:STAT]
Spectrum monitor - Measurement	Trigger continnuous	:INIT:SP[1-1]:CONT
	Trigger once	:INIT:SP[1-1]:IMM
	Selects trigger source	:TRIG:SP[1-1]:SOUR
Spectrum monitor - Measurement conditions	Restart averaging	:SENS:SP[1-1]:AVER:CLE
	Sets/reads the averagiong count	:SENS:SP[1-1]:AVER:COUN
	Turns on/off averaging function	:SENS:SP[1-1]:AVER:STAT
	Sets/reads averaging type	:SENS:SP[1-1]:AVER:TYPE
	Sets/reads RBW value	:SENS:SP[1-1]:BAND:RES
	Sets/reads detector mode	:SENS:SP[1-1]:DET:FUNC
	Sets/reads the center value of frequency span	:SENS:SP[1-1]:FREQ:CENT
	Sets/reads the span value of frequency span	:SENS:SP[1-1]:FREQ:SPAN
	Sets/reads the start value of frequency span	:SENS:SP[1-1]:FREQ:STAR
	Sets/reads the stop value of frequency span	:SENS:SP[1-1]:FREQ:STOP
	Sets/reads the reference level of frequency span	:SENS:SP[1-1]:POW:RLEV
Spectrum monitor - Reads/writes the data	Sets/reads the raw data	:CALC:SP[1-1]:DATA:RDAT
	Reads X-axis data	:CALC:SP[1-1]:DATA:XDAT
	Sets/reads formatted trace data	:CALC:SP[1-1]:TRAC[1-1]:DATA:FDAT
	Sets/reads formatted memory data	:CALC:SP[1-1]:TRAC[1-1]:DATA:FMEM
	Sets/reads unformatted trace data	:CALC:SP[1-1]:TRAC[1-1]:DATA:UDAT
	Sets/reads unformatted memory data	:CALC:SP[1-1]:TRAC[1-1]:DATA:UMEM
	Reads the number of measurement points	:SENS:SP[1-1]:SWE:POIN

Function	Setting/Execution item	Command
Status report system	Clears registers	*CLS
	Sets/reads standard event status enable register	*ESE
	Reads standard event status register value	*ESR
	Sets OPC bit on operation termination	*OPC
	Sets service request enable register	*SRE
	Reads status byte register	*STB
	Clears operation-program status condition register	:STAT:OPER:BIT12:CLE
	Reads operation-program status register	:STAT:OPER:BIT12:COND
	Seta/reads operation-program status enable register	:STAT:OPER:BIT12:ENAB
	Reads operation-program status event register	:STAT:OPER:BIT12[:EVEN]
	Sets/reads operation-program status negative transition filter value	:STAT:OPER:BIT12:NTR
	Sets/reads operation-program status positive transition filter value	:STAT:OPER:BIT12:PTR
	Sets operation-program status condition register	:STAT:OPER:BIT12:SET
	Reads operation status conditional register value	:STAT:OPER:COND
	Set/reads operation status enable register	:STAT:OPER:ENAB
	Reads operation status event register	:STAT:OPER[:EVEN]
	Sets/reads operation status negative transition filter value	:STAT:OPER:NTR
	Sets/reads operation status positive transition filter value	:STAT:OPER:PTR
	Reset status registers	:STAT:PRES
	Reads questionable status conditional register value	:STAT:QUES:COND
	Sets/reads questionable-current status enable register	:STAT:QUES:CURR:ENAB
	Reads questionable-current status event register value	:STAT:QUES:CURR[:EVEN]
	Sets/reads questionable status enable register	:STAT:QUES:ENAB
	Reads questionable status event register value	:STAT:QUES[:EVEN]
	Sets/reads questionable-misc status enable register	:STAT:QUES:MISC:ENAB
	Reads questionable-misc status event register value	:STAT:QUES:MISC[:EVEN]
	Sets/reads questionable status negative transition filter value	:STAT:QUES:NTR
	Sets/reads questionable-phase status enable register	:STAT:QUES:PHAS:ENAB
	Reads questionable-phase status event register	:STAT:QUES:PHAS[:EVEN]

Function	Setting/Execution item	Command
Status report system(Continued)	Sets/reads questionable-power status enable register	:STAT:QUES:POW:ENAB
	Reads questionable-power status event register value	:STAT:QUES:POW[:EVEN]
	Sets/reads questionable status positive transition filter value	:STAT:QUES:PTR
	Sets/reads questionable-reference signal status enable register	:STAT:QUES:REF:ENAB
	Reads questionable-reference signal status event register value	:STAT:QUES:REF[:EVEN]
Transient measurement - Display	Selects active trace	:CALC:TR[1-1]:ALLT:ACT
	Selects phase format on transient measurement	:CALC:TR[1-1]:TRAC[1-4]:FORM:PHAS:UNIT
	Turns on/off wrap-phase	:CALC:TR[1-1]:TRAC[1-4]:FORM:PHAS:WRAP
	Sets/reads data hold	:CALC:TR[1-1]:TRAC[1-4]:HOLD
	Selects math operation type	:CALC:TR[1-1]:TRAC[1-4]:MATH:FUNC
	Copy data to memory	:CALC:TR[1-1]:TRAC[1-4]:MATH:MEM
	Sets/reads the smoothing aperture value	:CALC:TR[1-1]:TRAC[1-4]:SMO:APER
	Turns on/off smoothing function	:CALC:TR[1-1]:TRAC[1-4]:SMO:STAT
	clear all stored traces	:DISP:TR[1-1]:ALLT:PERS:CLE
	Execute autoscale all	:DISP:TR[1-1]:ALLT:Y:SCAL:AUTO
	Turns on/off measurement conditions	:DISP:TR[1-1]:ANN:MEAS:STAT
	Sets/reads relative Y-scale	:DISP:TR[1-1]:GRAT:AXIS:Y:REL
	Sets/reads the number of Y-digits	:DISP:TR[1-1]:GRAT:AXIS:Y:STAT
	Edits window title label	:DISP:TR[1-1]:LAB:DATA
	Turns on/off window title lable	:DISP:TR[1-1]:LAB:STAT
	Maximize active trace	:DISP:TR[1-1]:MAX
	Turns on/off transient measurement mode	:DISP:TR[1-1]:STAT
	Trace Title Label	:DISP:TR[1-1]:TRAC[1-4]:LAB:DATA
	Sets/readds data and/or memory trace	:DISP:TR[1-1]:TRAC[1-4]:MODE
	Clears persistent data	:DISP:TR[1-1]:TRAC[1-4]:PERS:CLE
	Sets/reads persistence mode	:DISP:TR[1-1]:TRAC[1-4]:PERS:STAT
	Execute autoscale	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:AUTO
	Sets/reads scale per division	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:PDIV
	Sets/reads scale reference level	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:RLEV
	Sets/reads scale reference position	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:RPOS
	Sets/reads # of Y division	:DISP:TR[1-1]:Y[:SCAL]:DIV

Function	Setting/Execution item	Command
Transient measurement - File operation	Saves trace data	:MMEM:TR[1-1]:TRAC[1-4]:STOR[:DATA]
	Saves memory trace data	:MMEM:TR[1-1]:TRAC[1-4]:STOR:MEM
Transient measurement - Marker/analysis	Turns on/off bandmarker coupling function	:CALC:TR[1-1]:ALLT:BDM:X:COUP:STAT
	Turns on/off marker coupling function	:CALC:TR[1-1]:ALLT:MARK:COUP:STAT
	Sets/reads marker movement (Continuous/Discrete)	:CALC:TR[1-1]:ALLT:MARK:DISC:STAT
	Sets/reads marker reference number	:CALC:TR[1-1]:ALLT:MARK:REF:NUMB
	Turns on/off delta marker mode	:CALC:TR[1-1]:ALLT:MARK:REF:STAT
	Selects active marker	:CALC:TR[1-1]:TRAC[1-4]:ALLM:ACT
	Sets/reads marker search range (X-axis)	:CALC:TR[1-1]:TRAC[1-4]:ALLM:SEAR:DOM:X
	Sets/reads marker search range (Y-axis)	:CALC:TR[1-1]:TRAC[1-4]:ALLM:SEAR:DOM:Y
	Execute marker search all	:CALC:TR[1-1]:TRAC[1-4]:ALLM:SEAR:PEAK
	Sets/reads the center value of bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:CENT
	Sets/reads the span value of bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:SPAN
	Sets/reads the start value of bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:STAR
	Turn on/off bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:STAT
	Sets/reads the stop value of bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:STOP
	Sets/reads the center value of bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:CENT
	Sets/reads the span value of bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:SPAN
	Sets/reads the start value of bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:STAR
	Turn on/off bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:STAT
	Sets/reads the stop value of bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:STOP
	Sets/reads analysis/search range (X-axis)	:CALC:TR[1-1]:TRAC[1-4]:FUNC:DOM:X
	Sets/reads analysis/search range (Y-axis)	:CALC:TR[1-1]:TRAC[1-4]:FUNC:DOM:Y
	Reads the result of statistical analysis for the data trace	:CALC:TR[1-1]:TRAC[1-4]:FUNC:STAT:DATA
	Reads the result of statistical analysis for the memory trace	:CALC:TR[1-1]:TRAC[1-4]:FUNC:STAT:MEM
	Sets/reads analysis type	:CALC:TR[1-1]:TRAC[1-4]:FUNC:TYPE
	Execute marker peak search left	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:LPE
	Execute marker target search left	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:LTAR
	Execute marker search maximum	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:MAX
	Execute marker search minimum	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:MIN

Function	Setting/Execution item	Command
Transient measurement - Marker/analysis(Continued)	Execute marker peak search	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:PEAK
	Execute marker peak search right	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:RPE
	Execute marker target search right	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:RTAR
	Execute marker target search	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:TARG
	Sets/reads the peak excursion value	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:PEAK:EXC
	Sets/reads the marker peak-search polarity	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:PEAK:POL
	Sets/reads the target transition definition	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:TARG:TRAN
	Sets/reads the marker target value	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:TARG:Y
	Sets/reads the marker tracking type	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:TRAC:TYPE
	Turns on/off markers	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
	Sets/reads the marker X value	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:X
	Reads the marker Y value	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:Y
	Sets/reads the marker information position	:DISP:TR[1-1]:ANN:MARK:POS
	Turns on/off the marker list	:DISP:TR[1-1]:TABL[:STAT]
Transient measurement - Measurement	Trigger continuous	:INIT:TR[1-1]:CONT
	Trigger once	:INIT:TR[1-1]:IMM
Transient measurement - Measurement conditions	Clears averaging	:SENS:TR[1-1]:AVER:CLE
	Sets/reads averaging count	:SENS:TR[1-1]:AVER:COUN
	Turns on/off averaging function	:SENS:TR[1-1]:AVER:STAT
	Sets/reads phase reference freuency	:SENS:TR[1-1]:NARR:FREQ:PREF
	Sets/reads frequency transient span (narrowband)	:SENS:TR[1-1]:NARR:FREQ:RANG
	Sets/reads target frequency value	:SENS:TR[1-1]:NARR:FREQ:TARG
	Sets/reads time offset(delay) for reference point	:SENS:TR[1-1]:NARR:TIME:OFFS
	Sets/reads reference position for time span	:SENS:TR[1-1]:NARR:TIME:REF
	Sets/reads time span	:SENS:TR[1-1]:NARR:TIME:SPAN
	Sets/reads Max Input Level	:SENS:TR[1-1]:POW:INP:LEV:MAX
	Set/get transient frequency range in the wideband mode	:SENS:TR[1-1]:WIDE:FREQ:MAX

Function	Setting/Execution item	Command
Transient measurement - Measurement conditions(Continued)	Sets/reads time offset(delay) for reference point	:SENS:TR[1-1]:WIDE:TIME:OFFS
	Sets/reads reference position for time span	:SENS:TR[1-1]:WIDE:TIME:REF
	Sets/reads time span	:SENS:TR[1-1]:WIDE:TIME:SPAN
	Sets/reads video trigger frequency value (narrowband)	:TRIG:TR[1-1]:NARR:VID:FREQ:CENT
	Sets/reads the video trigger threshold level relative to max input leve (narrowband)	:TRIG:TR[1-1]:NARR:VID:THR
	Selects trigger source	:TRIG:TR[1-1]:SOUR
	Sets/reads video trigger frequency value (wideband)	:TRIG:TR[1-1]:WIDE:VID:FREQ:CENT
Transient measurement - Reads/writes the data	Sets/reads measurement raw data (narrowband)	:CALC:TR[1-1]:NARR:DATA:RDAT
	Sets/reads X axis data	:CALC:TR[1-1]:NARR:DATA:XDAT
	Sets/reads formatted trace data	:CALC:TR[1-1]:TRAC[1-4]:DATA:FDAT
	Sets/reads formatted memory data	:CALC:TR[1-1]:TRAC[1-4]:DATA:FMEM
	Sets/reads unformatted trace data	:CALC:TR[1-1]:TRAC[1-4]:DATA:UDAT
	Sets/reads unformatted memory data	:CALC:TR[1-1]:TRAC[1-4]:DATA:UMEM
	Sets/reads measurement raw data (wideband)	:CALC:TR[1-1]:WIDE:DATA:RDAT
	Sets/reads X axis data	:CALC:TR[1-1]:WIDE:DATA:XDAT
	Reads the number of measurement points	:SENS:TR[1-1]:NARR:SWE:POIN
	Reads the nnumber of measurement points	:SENS:TR[1-1]:WIDE:SWE:POIN
User defined window - Display	Selects active trace	:CALC:USER[1-1]:ALLT:ACT
	Selects math operation type	:CALC:USER[1-1]:TRAC[1-8]:MATH:FUNC
	Copy data to memory	:CALC:USER[1-1]:TRAC[1-8]:MATH:MEM
	Smoothing aperture	:CALC:USER[1-1]:TRAC[1-8]:SMO:APER
	Smoothing on/off	:CALC:USER[1-1]:TRAC[1-8]:SMO:STAT
	Clear all persistent mode	:DISP:USER[1-1]:ALLT:PERS:CLE
	Execute autoscale all	:DISP:USER[1-1]:ALLT:Y:SCAL:AUTO
	Turns on/off measurement conditions	:DISP:USER[1-1]:ANN:MEAS:STAT
	Sets/reads relative Y-scale	:DISP:USER[1-1]:GRAT:AXIS:Y:REL
	Show/Hide Y graticule label	:DISP:USER[1-1]:GRAT:AXIS:Y:STAT
	Edits Window Title Label	:DISP:USER[1-1]:LAB:DATA
	Show/Hide Window Title Label	:DISP:USER[1-1]:LAB:STAT
	Maximize active trace	:DISP:USER[1-1]:MAX
	Turns on/off user defined window	:DISP:USER[1-1]:STAT
	Trace Title Label	:DISP:USER[1-1]:TRAC[1-8]:LAB:DATA
	Sets/reads data and/or memory trace	:DISP:USER[1-1]:TRAC[1-8]:MODE

Function	Setting/Execution item	Command
User defined window - Display(Continued)	Clears persistent data	:DISP:USER[1-1]:TRAC[1-8]:PERS:STAT
	Sets/reads persistence mode	:DISP:USER[1-1]:TRAC[1-8]:STAT
	Sets/reads X axis unit	:DISP:USER[1-1]:TRAC[1-8]:X:UNIT
	Execute autoscale	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:AUTO
	Sets/reads scale per division	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:PDIV
	Sets/reads scale reference level	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:RLEV
	Sets/reads scale reference position	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:RPOS
	Sets/reads Y axis unit	:DISP:USER[1-1]:TRAC[1-8]:Y:UNIT
	Sets/reads # of Y division	:DISP:USER[1-1]:Y[:SCAL]:DIV
User defined window - File operation	Saves selected trace data	:MMEM:USER[1-1]:TRAC[1-8]:STOR[:DATA]
	Saves selected memory trace data	:MMEM:USER[1-1]:TRAC[1-8]:STOR:MEM
User defined window - Marker/analysis	Turns on/off bandmarker coupling function	:CALC:USER[1-1]:ALLT:BDM:X:COUP:STAT
	Turns on/off marker coupling function	:CALC:USER[1-1]:ALLT:MARK:COUP:STAT
	Sets/reads marker movement (Continuous/Discrete)	:CALC:USER[1-1]:ALLT:MARK:DISC:STAT
	Sets/reads marker reference number	:CALC:USER[1-1]:ALLT:MARK:REF:NUMB
	Turns on/off delta marker mode	:CALC:USER[1-1]:ALLT:MARK:REF:STAT
	Selects active marker	:CALC:USER[1-1]:TRAC[1-8]:ALLM:ACT
	marker search X range	:CALC:USER[1-1]:TRAC[1-8]:ALLM:SEAR:DOM:X
	marker search Y rangece	:CALC:USER[1-1]:TRAC[1-8]:ALLM:SEAR:DOM:Y
	search peak all	:CALC:USER[1-1]:TRAC[1-8]:ALLM:SEAR:PEAK
	bandmarker X center	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:CENT
	bandmarker X span	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:SPAN
	bandmarker X start	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:STAR
	Turns on/off bandmarker X	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:STAT
	bandmarker X stop	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:STOP
	bandmarker Y center	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:CENT
	bandmarker Y span	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:SPAN
	bandmarker Y start	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:STAR
	Turns on/off bandmarker Y	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:STAT
	bandmarker Y stop	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:STOP
	Sets/reads analysis range (X-axis)	:CALC:USER[1-1]:TRAC[1-8]:FUNC:DOM:X
	Sets/reads analysis range(Y-axis)	:CALC:USER[1-1]:TRAC[1-8]:FUNC:DOM:Y
	trace data statistics	:CALC:USER[1-1]:TRAC[1-8]:FUNC:STAT:DATA

Function	Setting/Execution item	Command
User defined window - Marker/analysis(Continued)	memory data statistics	:CALC:USER[1-1]:TRAC[1-8]:FUNC:STAT:MEM
	analysis type	:CALC:USER[1-1]:TRAC[1-8]:FUNC:TYPE
	data hold	:CALC:USER[1-1]:TRAC[1-8]:HOLD
	Execute marker peak search left	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:LPE
	Execute marker target search left	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:LTAR
	Execute marker search maximum	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:MAX
	Execute marker search minimum	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:MIN
	Execute marker peak search	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:PEAK
	Execute marker pead search right	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:RPE
	Execute marker target search right	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:RTAR
	Execute marker target search	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:TARG
	Sets/reads the peak excusion value	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:PEAK:EXC
	Sets/reads the marker peak search polality	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:PEAK:POL
	marker-target transition type	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:TARG:TRAN
	marker target value	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:TARG:Y
	search tracking type	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:TRAC:TYPE
	marker visible on/off	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
	marker x position	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:X
	marker y position	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:Y
	Sets/reads the marker information position	:DISP:USER[1-1]:ANN:MARK:POS
	Turns on/off the marker list	:DISP:USER[1-1]:TABL[:STAT]

Function	Setting/Execution item	Command
User defined window - Reads/writes the data	Sets/reads formatted trace data	:CALC:USER[1-1]:TRAC[1-8]:DATA:FDAT
	Sets/read formatted momory data	:CALC:USER[1-1]:TRAC[1-8]:DATA:FMEM
	Reads the number of measurement points	:CALC:USER[1-1]:TRAC[1-8]:DATA:POIN
	Sets/reads row data	:CALC:USER[1-1]:TRAC[1-8]:DATA:RDAT
	start frequency	:CALC:USER[1-1]:TRAC[1-8]:DATA:STAR
	stop frequency	:CALC:USER[1-1]:TRAC[1-8]:DATA:STOP
	Sets/reads unformatted trace data	:CALC:USER[1-1]:TRAC[1-8]:DATA:UDAT
	Set/reads unformatted memory data	:CALC:USER[1-1]:TRAC[1-8]:DATA:UMEM
	Sets/reads the X data	:CALC:USER[1-1]:TRAC[1-8]:DATA:XDAT
VBA Macro	List all the executable macro	:PROG:CAT
	Turns on/off the E5052 VBA event callback function	:PROG:COM:EVEN
	Sets/reads the name of the program to be selected	:PROG:SEL:NAME
	Set/reads the state of the selected program	:PROG:SEL:STAT
	Turns on/off user defined softkey function	:PROG:SKEY:ITEM[1-8]:ENAB
	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
	Sets/reads the user defined softkey label	:PROG:SKEY:ITEM[1-8]:LAB

Softkey Functions

Bellow table shows the SCPI command list by measurement window and softkey.

FP Menu

Key Operation	Function	SCPI Command
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level on 5dB Step	:SENS:ATT:LEV
Average		
Averaging	Tunrs on/off averaging function	:SENS:FP[1-1]:AVER:STAT
Averaging Restart	Restart averaging	:SENS:FP[1-1]:AVER:CLE
Avg Factor	Sets/reads averaging count	:SENS:FP[1-1]:AVER:COUN
DC Control Voltage		
Control Voltage Cal	Enables DC Control voltage calibration	:SOUR:VOLT:CONT:CORR[:STAT]
DC Control Delay	Sets/reads DC Control delay (sec)	:SOUR:VOLT:CONT:DEL
DC Control Output	Turns on/off DC Control voltage	:SOUR:VOLT:CONT:LEV:STAT
DC Control Voltage	Sets/reads DC Control voltage	:SOUR:VOLT:CONT:LEV:AMPL
Execute Control Voltage Cal	Execute DC Control voltage calibration	:SOUR:VOLT:CONT:CORR:COLL:ACQ
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	:SOUR:VOLT:CONT:LIM:HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	:SOUR:VOLT:CONT:LIM:LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	:SOUR:VOLT:POW:DEL
DC Power Output	Turns on/off DC Power voltage	:SOUR:VOLT:POW:LEV:STAT
DC Power Voltage	Sets/reads DC Power voltage	:SOUR:VOLT:POW:LEV:AMPL
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	:SOUR:VOLT:POW:LIM:HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	:SOUR:VOLT:POW:LIM:LOW
Display		
Edit Title Label	Edit the measurement windown title label	:DISP:FP[1-1]:LAB:DATA
Marker Information	Sets/reads the marker information position	:DISP:FP[1-1]:ANN:MARK:POS
Meas Condition	Turns on/off measurement conditions	:DISP:FP[1-1]:ANN:MEAS:STAT
Relative Y-Scale	Turns on/off relative Y-scale	:DISP:FP[1-1]:GRAT:AXIS:Y:REL

Key Operation	Function	SCPI Command
Title Label	Turns on/off the measurement window title label	:DISP:FP[1-1]:LAB:STAT
Update	Turns on/off the trace updates	:DISP:ENAB
Y # of Digits	Selects the number of digits (Y-axis)	:DISP:FP[1-1]:GRAT:AXIS:Y:STAT
Format		
Frequency Format	Selects frequency format (Hz ot Hz/V)	:CALC:FP[1-1]:TRAC[1-3]:FORM:FREQ
Sensitivity Aperture	Sets/reads the sensitivity aperture	:CALC:FP[1-1]:TRAC[1-3]:SAP
Macro Setup		
E5052 Event	Turns on/off the E5052 VBA event callback function	:PROG:COM:EVEN
Echo Window Menu		
Clear Echo	Clears Echo window	:DISP:ECHO:CLE
Echo Font Size	Sets/reads the font size on Echo window	:DISP:ECHO:FSIZ
Echo Window	Turns on/off the Echo window	:DISP:ECHO:STAT
Select Macro	Sets/reads the name of the program to be selected	:PROG:SEL:NAME
Stop	Sest/reads the state of the selected program	:PROG:SEL:STAT
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 2	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 3	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 4	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 5	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 6	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 7	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 8	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Load program	:MMEM:LOAD:PROG
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	:MMEM:STOR:PROG
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	

Key Operation	Function	SCPI Command
Marker 1	Turns on/off marker 1	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 2	Turns on/off marker 2	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Couple	Turns on/of marker coupling function	:CALC:FP[1-1]:ALLT:MARK:COUP:STAT
Marker 1	Turns on/off marker 1	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 2	Turns on/off marker 2	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:STAT
Marker List	Turns on/off the marker list	:DISP:FP[1-1]:TABL[:STAT]
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	:CALC:FP[1-1]:ALLT:MARK:DISC:STAT
Ref Marker	Sets/reads marker reference number	:CALC:FP[1-1]:ALLT:MARK:REF:NUMB
Ref Marker Mode	Turns on/off delta marker mode	:CALC:FP[1-1]:ALLT:MARK:REF:STAT
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	:CALC:FP[1-1]:TRAC[1-3]:FUNC:DOM:X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	:CALC:FP[1-1]:TRAC[1-3]:FUNC:DOM:Y
Analysis Type	Sets/reads analysis type	:CALC:FP[1-1]:TRAC[1-3]:FUNC:TYPE
Band Marker X		

Key Operation	Function	SCPI Command
Band Marker X	Turns on/off bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM :X:STAT
Center	Sets/reads the center value of bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM :X:CENT
Span	Sets/reads the span value of bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM :X:SPAN
Start	Sets/reads the start value of bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM :X:STAR
Stop	Sets/reads the stop value of bandmarker X	:CALC:FP[1-1]:TRAC[1-3]:BDM :X:STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM :Y:STAT
Center	Sets/reads the center value of bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM :Y:CENT
Span	Sets/reads the span value of bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM :Y:SPAN
Start	Sets/reads the start value of bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM :Y:STAR
Stop	Sets/reads the stop value of bandmarker Y	:CALC:FP[1-1]:TRAC[1-3]:BDM :Y:STOP
Couple	Turns on/off bandmarker coupling function	:CALC:FP[1-1]:ALLT:BDM:X:C OUP:STAT
Marker Search		
Peak		
Peak Excursion	Sets/reads the peak excursion value	:CALC:FP[1-1]:TRAC[1-3]:MAR K[1-6]:SEAR:PEAK:EXC
Peak Polarity	Sets/reads the marker peak-search polarity	:CALC:FP[1-1]:TRAC[1-3]:MAR K[1-6]:SEAR:PEAK:POL
Search Left	Execute marker peak search left	:CALC:FP[1-1]:TRAC[1-3]:MAR K[1-6]:SEAR:EXEC:LPE
Search Peak	Execute marker peak search	:CALC:FP[1-1]:TRAC[1-3]:MAR K[1-6]:SEAR:EXEC:PEAK
Search Peak All	Execute marker search all	:CALC:FP[1-1]:TRAC[1-3]:ALL M:SEAR:PEAK
Search Right	Execute marker peak search right	:CALC:FP[1-1]:TRAC[1-3]:MAR K[1-6]:SEAR:EXEC:RPE
Search Max	Execute marker search maximum	:CALC:FP[1-1]:TRAC[1-3]:MAR K[1-6]:SEAR:EXEC:MAX
Search Min	Execute marker search minimum	:CALC:FP[1-1]:TRAC[1-3]:MAR K[1-6]:SEAR:EXEC:MIN
Search Range (X)	Sets/reads marker search range (X-axis)	:CALC:FP[1-1]:TRAC[1-3]:ALL M:SEAR:DOM:X

Key Operation	Function	SCPI Command
Search Range (Y)	Sets/reads marker search range (Y-axis)	:CALC:FP[1-1]:TRAC[1-3]:ALLM:SEAR:DOM:Y
Target		
Search Left	Execute marker target search left	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:LTAR
Search Right	Execute marker target search right	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:RTAR
Search Target	Execute marker target search	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:EXEC:TARG
Target Transition	Sets/reads the target transition definition	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:TARG:TRAN
Target Value	Sets/reads the marker target value	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:TARG:Y
Tracking	Sets/reads the marker tracking type	:CALC:FP[1-1]:TRAC[1-3]:MARK[1-6]:SEAR:TRAC:TYPE
Marker To		
Marker -> Center	Sets the marker value to the center value of DC Control voltage Sets the marker value to the center value of DC Power voltage	:SOUR:FP[1-1]:VOLT:CONT:CENT :SOUR:FP[1-1]:VOLT:POW:CENT
Marker -> Start	Sets the marker value to the start value of DC Control voltage Sets the marker value to the start value of DC Power voltage	:SOUR:FP[1-1]:VOLT:CONT:STAR :SOUR:FP[1-1]:VOLT:POW:STAR
Marker -> Stop	Sets the marker value to the stop value of DC Control voltage Sets the marker value to the stop value of DC Power voltage	:SOUR:FP[1-1]:VOLT:CONT:STOP :SOUR:FP[1-1]:VOLT:POW:STOP
Measurement View		
Freq & Power	Selects frequency, power & DC current measurement window	:DISP:WIND:ACT
Phase Noise	Selects phase noise measurement window	:DISP:WIND:ACT
Show Window		
Freq & Power	Turns on/off frequency, power and DC current measurement mode	:DISP:FP[1-1]:STAT
Phase Noise	Turns on/off phase noise measurement mode	:DISP:PN[1-1]:STAT
Spectrum Monitor	Turns on/off spectrum monitor mode	:DISP:SP[1-1]:STAT
Transient	Turns on/off transient measurement mode	:DISP:TR[1-1]:STAT
User	Turns on/off user defined window	:DISP:USER[1-1]:STAT
Spectrum Monitor	Selects spectrum monitor mode	:DISP:WIND:ACT
Transient	Selects transient measurement mode	:DISP:WIND:ACT

Key Operation	Function	SCPI Command
User	Selects user difined window	:DISP:WIND:ACT
Preset		
OK	Preset instrument	:SYST:PRES
Save/Recall		
Explorer...	Open windows explorer	
Recall State		
Autorec	Recalls settings	:MMEM:LOAD:STAT
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	:MMEM:LOAD:STAT
State02	Recalls state file from register 2	:MMEM:LOAD:STAT
State03	Recalls state file from register 3	:MMEM:LOAD:STAT
State04	Recalls state file from register 4	:MMEM:LOAD:STAT
State05	Recalls state file from register 5	:MMEM:LOAD:STAT
State06	Recalls state file from register 6	:MMEM:LOAD:STAT
Save Data Trace	Saves trace data	:MMEM:FP[1-1]:TRAC[1-3]:STOR[:DATA]
Save Memory Trace	Saves memory trace data	:MMEM:FP[1-1]:TRAC[1-3]:STOR:MEM
Save State		
Autorec	Save settings	:MMEM:STOR:STAT
File Dialog...	Open file dialog	
Save Type	Selects instrument state type (Entire or instrument state only)	:MMEM:STOR:STYP
State01	Save state file to register 1	:MMEM:STOR:STAT
State02	Save state file to register 2	:MMEM:STOR:STAT
State03	Save state file to register 3	:MMEM:STOR:STAT
State04	Save state file to register 4	:MMEM:STOR:STAT
State05	Save state file to register 5	:MMEM:STOR:STAT
State06	Save state file to register 6	:MMEM:STOR:STAT
Scale		
Auto Scale	Execute autoscale	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:AUTO
Auto Scale All	Execute autoscale for all traces on frequency, power and DC current measurement window	:DISP:FP[1-1]:ALLT:Y:SCAL:AUTO
Divisions	Sets/reads Y-scale divisions	:DISP:FP[1-1]:Y[:SCAL]:DIV
Marker -> Reference	Sets the marker value to the reference level	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:RLEV

Key Operation	Function	SCPI Command
Reference Position	Sets/reads reference position	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:RPOS
Reference Value	Sets/reads the reference level value	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:RLEV
Scale/Div	Sets/reads scale per division	:DISP:FP[1-1]:TRAC[1-3]:Y[:SCAL]:PDIV
Setup		
Freq Resolution	Sets/reads frequency resolution	:SENS:FP[1-1]:FREQ:RES
Frequency Band	Selects frequency band	:SENS:FP[1-1]:FBAN
Point Delay	Sets/reads the point delay value	:SENS:FP[1-1]:SWE:DWEL
Points	Sets/reads the number of measurement points	:SOUR:FP[1-1]:SWE:POIN
Sweep Parameter	Sets/reads sweep parameter	:SOUR:FP[1-1]:SWE:PAR
Start/Center		
DC Control Center	Sets/reads the center value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:CENT
DC Control Span	Sets/reads the span value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:SPAN
DC Control Start	Sets/reads the start value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:STAR
DC Control Stop	Sets/reads the stop value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:STOP
DC Power Center	Sets/reads the center value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:CENT
DC Power Span	Sets/reads the span value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:SPAN
DC Power Start	Sets/reads the start value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:STAR
DC Power Stop	Sets/reads the stop value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:STOP
Stop/Span		
DC Control Center	Sets/reads the center value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:CENT
DC Control Span	Sets/reads the span value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:SPAN
DC Control Start	Sets/reads the start value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:STAR
DC Control Stop	Sets/reads the stop value of DC Control voltage	:SOUR:FP[1-1]:VOLT:CONT:STOP
DC Power Center	Sets/reads the center value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:CENT

Key Operation	Function	SCPI Command
DC Power Span	Sets/reads the span vallue of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:SPAN
DC Power Start	Sets/reads the start value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:STAR
DC Power Stop	Sets/reads the stop value of DC Power voltage	:SOUR:FP[1-1]:VOLT:POW:STOP
System		
Abort Printing	Aborts printing	:HCOP:ABOR
Backlight	Turns on/off backlight	:SYST:BACK:STAT
Dump Screen Image	Save screen image	:MMEM:STOR:IMAG
Invert Image	Selects print mode	:HCOP:IMAG
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	:SYST:BEEP:COMP:STAT
Beep Warning	Turns on/off the beep for warning	:SYST:BEEP:WARN:STAT
Test Beep Complete	Makes beep sound for operation completion	:SYST:BEEP:COMP:IMM
Test Beep Warning	Makes beep sound for warning	:SYST:BEEP:WARN:IMM
Clock Setup		
Set Date and Time	Sets/reads system time Sets/reads system date	:SYST:TIME :SYST:DATE
Show Clock	Turns on/off internal clock display	:DISP:CLOC
Control Panel ...	Open control panel	
GPIB Setup		
System Controller Configuration	Turns on/off system controller mode	
Talker/Listener Address	Sets the address for controlling the analyzer from a controller via GPIB	
Key Lock		
Front Panel & Keyboard Lock	Disables from panelkeyboard operations	:SYST:KLOC:KBD
Touch Screen & Mouse Lock	Disables from mouse/touch screen operations	:SYST:KLOC:MOUS
Network Setup		
MAC Address	Sets MAC address	

Key Operation	Function	SCPI Command
Network Configuration	Enables/disables network connections	
Network Identification	Sets network ID of the instrument	
SICL-LAN Address	Sets SICL-LAN address	
SICL-LAN Server	Enables/disables SICL-LAN server	
Socket Server	Enables/disables Socket server	
Telnet Server	Enablees/disables telnet server	
Print	Outputs print	:HCOP:IMM
Printer Setup ...	Execute priter setup	
Product Information	Reads product information	
Trace View		
Aperture	Smoothing aperture	:CALC:FP[1-1]:TRAC[1-3]:SMO :APER
Clear Persistent Data	Cleasr persistence mode	:DISP:FP[1-1]:TRAC[1-3]:PERS: CLE
Data -> Mem	Copy data to memory	:CALC:FP[1-1]:TRAC[1-3]:MAT H:MEM
Data Hold	Data hold	:CALC:FP[1-1]:TRAC[1-3]:HOL D
Data Math	Sets/reads math operation type	:CALC:FP[1-1]:TRAC[1-3]:MAT H:FUNC
Display Trace	Shows data and/or memory trace	:DISP:FP[1-1]:TRAC[1-3]:MOD E
Persistence Mode	Sets/reads persistence mode	:DISP:FP[1-1]:TRAC[1-3]:PERS: STAT
Smoothing	Smoothing on/off	:CALC:FP[1-1]:TRAC[1-3]:SMO :STAT
Trace Label	Edits trace title label	:DISP:FP[1-1]:TRAC[1-3]:LAB: DATA
Trigger		
Continuous	Sets/reads trigger continuous mode	:INIT:FP[1-1]:CONT :INIT:FP[1-1]:IMM
Ext Trig Polarity	External trigger polarity	:TRIG:EXT:SLOP
Hold	Sets trigger mode to waiting-for-trigger state	:INIT:FP[1-1]:IMM
Manual Trigger	Manual trigger	:INIT:FP[1-1]:IMM
Mode	trigger mode	:TRIG:FP[1-1]:MODE
Restart	move once to waiting-for-trigger state	:INIT:FP[1-1]:IMM

Key Operation	Function	SCPI Command
Single	always move to waiting-for-trigger state after measuring move once to waiting-for-trigger state	:INIT:FP[1-1]:CONT :INIT:FP[1-1]:IMM
Source	trigger source	:TRIG:FP[1-1]:SOUR
Trigger to Freq & Power	select measurement mode	:TRIG:MODE

PN Menu

Key Operation	Function	SCPI Command
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level on 5dB Step	:SENS:ATT:LEV
Average		
Averaging	Turns on/off averaging function	:SENS:PN[1-1]:AVER:STAT
Averaging Restart	Restart averaging	:SENS:PN[1-1]:AVER:CLE
Avg Factor	Sets/reads average count	:SENS:PN[1-1]:AVER:COUN
Correlation	Sets/reads the number of correlation	:SENS:PN[1-1]:CORR:COUN
DC Control Voltage		
Control Voltage Cal	Enables DC Control voltage calibration	:SOUR:VOLT:CONT:CORR[:STAT]
DC Control Delay	Sets/reads DC Control delay (sec)	:SOUR:VOLT:CONT:DEL
DC Control Output	Turns on/off DC Control voltage	:SOUR:VOLT:CONT:LEV:STAT
DC Control Voltage	Sets/reads DC Control voltage	:SOUR:VOLT:CONT:LEV:AMPL
Execute Control Voltage Cal	Execute DC control voltage calibration	:SOUR:VOLT:CONT:CORR:COLL:ACQ
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	:SOUR:VOLT:CONT:LIM:HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	:SOUR:VOLT:CONT:LIM:LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	:SOUR:VOLT:POW:DEL
DC Power Output	Turns on/off DC Power voltage	:SOUR:VOLT:POW:LEV:STAT
DC Power Voltage	Sets/reads DC Power voltage	:SOUR:VOLT:POW:LEV:AMPL
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	:SOUR:VOLT:POW:LIM:HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	:SOUR:VOLT:POW:LIM:LOW
Display		
Edit Title Label	Edit the measurement window title label	:DISP:PN[1-1]:LAB:DATA
Marker Information	Sets/reads the marker information position	:DISP:PN[1-1]:ANN:MARK:POS
Meas Condition	Turns on/off measurement conditions	:DISP:PN[1-1]:ANN:MEAS:STAT
Relative Y-Scale	Turns on/off relative Y-scale	:DISP:PN[1-1]:GRAT:AXIS:Y:REL
Title Label	Turns on/off the measurement window title label	:DISP:PN[1-1]:LAB:STAT
Update	Turns on/off the trace updates	:DISP:ENAB

Key Operation	Function	SCPI Command
Y # of Digits	Selects the number of digits (Y-axis)	:DISP:PN[1-1]:GRAT:AXIS:Y:STAT
Macro Setup		
E5052 Event	Turns on/off the E5052 VBA event callback function	:PROG:COM:EVEN
Echo Window Menu		
Clear Echo	Clears echo window	:DISP:ECHO:CLE
Echo Font Size	Sets/reads the font size on Echo window	:DISP:ECHO:FSIZ
Echo Window	Turns on./off the Echo window	:DISP:ECHO:STAT
Select Macro	Sets/reads the name of the program to be selected	:PROG:SEL:NAME
Stop	Set/reads the state of the selected program	:PROG:SEL:STAT
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 2	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 3	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 4	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 5	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 6	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 7	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 8	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	:MMEM:LOAD:PROG
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	:MMEM:STOR:PROG
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off marker 1	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 2	Turns on/off marker 2	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT

Key Operation	Function	SCPI Command
Marker 5	Turns on/off marker 5	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 1	Turns on/off marker 1	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 2	Turns on/off marker 2	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker List	Turns on/off the marker list	:DISP:PN[1-1]:TABL[:STAT]
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	:CALC:PN[1-1]:ALLT:MARK:DISC:STAT
Ref Marker	Sets/reads marker reference number	:CALC:PN[1-1]:ALLT:MARK:REF:NUMB
Ref Marker Mode	Turns on/off delta marker mode	:CALC:PN[1-1]:ALLT:MARK:REF:STAT
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	:CALC:PN[1-1]:TRAC[1-1]:FUNC:DOM:X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	:CALC:PN[1-1]:TRAC[1-1]:FUNC:DOM:Y
Analysis Type	Sets/reads analysis type	:CALC:PN[1-1]:TRAC[1-1]:FUNC:TYPE
Band Marker X		
Band Marker X	Turns on/off bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:STAT
Center	Sets/reads the center value of bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:CENT
Span	Sets/reads the span value of bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:SPAN
Start	Sets/reads the start value of bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:STAR
Stop	Sets/reads the stop value of bandmarker X	:CALC:PN[1-1]:TRAC[1-1]:BDM:X:STOP

Key Operation	Function	SCPI Command
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:STAT
Center	Sets/reads the center value of bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:CENT
Span	Sets/reads the span value of bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:SPAN
Start	Sets/reads the start value of bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:STAR
Stop	Sets/reads the stop value of bandmarker Y	:CALC:PN[1-1]:TRAC[1-1]:BDM:Y:STOP
Marker Search		
Peak		
Peak Excursion	Sets/reads the peak excursion value	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:PEAK:EXC
Peak Polarity	Sets/reads the marker peak-search polarity	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:PEAK:POL
Search Left	Execute marker peak search left	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:LPE
Search Peak	Execute marker peak search	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:PEAK
Search Peak All	Execute marker search all	:CALC:PN[1-1]:TRAC[1-1]:ALLM:SEAR:PEAK
Search Right	Execute marker peak search right	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:RPE
Search Max	Execute marker search maximum	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:MAX
Search Min	Execute marker search minimum	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:MIN
Search Range (X)	Sets/reads marker search range (X-axis)	:CALC:PN[1-1]:TRAC[1-1]:ALLM:SEAR:DOM:X
Search Range (Y)	Sets/reads marker search range (Y-axis)	:CALC:PN[1-1]:TRAC[1-1]:ALLM:SEAR:DOM:Y
Target		
Search Left	Execute marker target search left	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:LTAR
Search Right	Execute marker target search right	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:RTAR
Search Target	Execute marker target search	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:TARG
Target Transition	Sets/reads the target transition definition	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TARG:TRAN

Key Operation	Function	SCPI Command
Target Value	Sets/reads the marker target value	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TARG:Y
Tracking	Sets/reads the marker tracking type	:CALC:PN[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TRAC:TYPE
Marker To		
Marker -> Start	Sets/reads the marker value to the start value	:SENS:PN[1-1]:FREQ:STAR
Marker -> Stop	Sets/reads the marker value to the stop value	:SENS:PN[1-1]:FREQ:STOP
Measurement View		
Freq & Power	Selects frequency, power and DC current measurement window	:DISP:WIND:ACT
Phase Noise	Selects phase noise measurement window	:DISP:WIND:ACT
Show Window		
Freq & Power	Turns on/off frequency, power and DC current measurement mode	:DISP:FP[1-1]:STAT
Phase Noise	Turns on/off phase noise measurement mode	:DISP:PN[1-1]:STAT
Spectrum Monitor	Turns on/off spectrum monitor mode	:DISP:SP[1-1]:STAT
Transient	Turns on/off transient measurement mode	:DISP:TR[1-1]:STAT
User	Turns on/off user defined window	:DISP:USER[1-1]:STAT
Spectrum Monitor	Selects spectrum monitor mode	:DISP:WIND:ACT
Transient	Selects transient measurement mode	:DISP:WIND:ACT
User	Selects user defined window	:DISP:WIND:ACT
Preset		
OK	Preset instrument	:SYST:PRES
Save/Recall		
Explorer...	Open windows explorer	
Recall State		
Autorec	Recalls settings	:MMEM:LOAD:STAT
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	:MMEM:LOAD:STAT
State02	Recalls state file from register 2	:MMEM:LOAD:STAT
State03	Recalls state file from register 3	:MMEM:LOAD:STAT
State04	Recalls state file from register 4	:MMEM:LOAD:STAT
State05	Recalls state file from register 5	:MMEM:LOAD:STAT
State06	Recalls state file from register 6	:MMEM:LOAD:STAT
Save Data Trace	Saves trace data	:MMEM:PN[1-1]:TRAC[1-1]:STOR[:DATA]

Key Operation	Function	SCPI Command
Save Memory Trace	Saves memory trace data	:MMEM:PN[1-1]:TRAC[1-1]:STOR:MEM
Save State		
Autorec	Save settings	:MMEM:STOR:STAT
File Dialog...	Open file dialog	
Save Type	Select instrument state type (Entire or instrument state only)	:MMEM:STOR:STYP
State01	Save state file to register 1	:MMEM:STOR:STAT
State02	Save state file to register 2	:MMEM:STOR:STAT
State03	Save state file to register 3	:MMEM:STOR:STAT
State04	Save state file to register 4	:MMEM:STOR:STAT
State05	Save state file to register 5	:MMEM:STOR:STAT
State06	Save state file to register 6	:MMEM:STOR:STAT
Scale		
Auto Scale	Execute autoscale	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:AUTO
Divisions	Sets/reads Y-scale divisions	:DISP:PN[1-1]:Y[:SCAL]:DIV
Marker -> Reference	Sets the marker value to the reference level	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:RLEV
Reference Position	Sets/reads reference position	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:RPOS
Reference Value	Sets/reads the reference level value	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:RLEV
Scale/Div	Sets/reads scale per division	:DISP:PN[1-1]:TRAC[1-1]:Y[:SCAL]:PDIV
Setup		
Frequency Band	Selects frequency band	:SENS:PN[1-1]:FBAN
IF Gain	Sets/reads the IF Gain	:SENS:PN[1-1]:IFG
LO PhNoise Optimize	Sets/reads phase noise Local bandwidth optimization.	:SENS:PN[1-1]:LOB
Start		
100Hz	Sets 100Hz to the start frequency	:SENS:PN[1-1]:FREQ:STAR
10Hz	Sets 10Hz to the start frequency	:SENS:PN[1-1]:FREQ:STAR
1Hz	Sets 1Hz to the start frequency	:SENS:PN[1-1]:FREQ:STAR
1kHz	Sets 1kHz to the start frequency	:SENS:PN[1-1]:FREQ:STAR
Stop		
100kHz	Sets 100kHz to the stop frequency	:SENS:PN[1-1]:FREQ:STOP
10MHz	Sets 10MHz to the stop frequency	:SENS:PN[1-1]:FREQ:STOP

Key Operation	Function	SCPI Command
1MHz	Sets 1MHz to the stop frequency	:SENS:PN[1-1]:FREQ:STOP
40MHz	Sets 40MHz to the stop frequency	:SENS:PN[1-1]:FREQ:STOP
5MHz	Sets 5MHz to the stop frequency	:SENS:PN[1-1]:FREQ:STOP
System		
Abort Printing	Aborts printing	:HCOP:ABOR
Backlight	Turns on/off backlight	:SYST:BACK:STAT
Dump Screen Image	Save screen image	:MMEM:STOR:IMAG
Invert Image	Selects print mode	:HCOP:IMAG
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	:SYST:BEEP:COMP:STAT
Beep Warning	Turns on/off the beep for warning	:SYST:BEEP:WARN:STAT
Test Beep Complete	Makes beep sound for operation completion	:SYST:BEEP:COMP:IMM
Test Beep Warning	Makes beep sound for warning	:SYST:BEEP:WARN:IMM
Clock Setup		
Set Date and Time	Set/reads system time Set/reads system date	:SYST:TIME :SYST:DATE
Show Clock	Turns on/off internal clock display	:DISP:CLOC
Control Panel ...	Open control panel	
GPIB Setup		
System Controller Configuration	Turns on/off system controller mode	
Talker/Listener Address	Sets/the address for controlling the analyzer from a controller via GPIB	
Key Lock		
Front Panel & Keyboard Lock	Disables from panel/keyboard operations	:SYST:KLOC:KBD
Touch Screen & Mouse Lock	Disables from touch screen/mouse operations	:SYST:KLOC:MOUS
Network Setup		
MAC Address	Sets MAC address	
Network Configuration ...	Enables/disables network connections	

Key Operation	Function	SCPI Command
Network Identification ...	Sets network ID of the instrument	
SICL-LAN Address	Sets SICL-LAN address	
SICL-LAN Server	Enables/disables SICL-LAN server	
Socket Server	Enables/disables Socket server	
Telnet Server	Enables/disables Telnet server	
Print	Outputs print	:HCOP:IMM
Printer Setup ...	Executes printer setup	
Product Information	Reads product information	
Trace View		
Aperture	Smoothing aperture	:CALC:PN[1-1]:TRAC[1-1]:SMO:APER
Clear Persistent Data	Clears persistence mode	:DISP:PN[1-1]:TRAC[1-1]:PERS:CLE
Data -> Mem	Copy data to memory	:CALC:PN[1-1]:TRAC[1-1]:MATH:MEM
Data Hold	Data hold	:CALC:PN[1-1]:TRAC[1-1]:HOLD
Data Math	Sets/reads math operation type	:CALC:PN[1-1]:TRAC[1-1]:MATH:FUNC
Display Trace	Shows data and/or memory trace	:DISP:PN[1-1]:TRAC[1-1]:MODE
Omitting Spurious	Spurious display omission ON/OFF	:CALC:PN[1-1]:TRAC[1-1]:SPUR:OMIS
Persistence Mode	Sets/reads persistence mode	:DISP:PN[1-1]:TRAC[1-1]:PERS:STAT
Smoothing	Smoothing on/off	:CALC:PN[1-1]:TRAC[1-1]:SMO:STAT
Trace Label	Edit trace title label	:DISP:PN[1-1]:TRAC[1-1]:LAB:DATA
Trigger		
Continuous	Sets/reads trigger continuous mode	:INIT:PN[1-1]:CONT :INIT:PN[1-1]:IMM
Ext Trig Polarity	External trigger polarity	:TRIG:EXT:SLOP
Hold	Sets trigger mode to waiting-for-trigger state	:INIT:PN[1-1]:IMM
Manual Trigger		:INIT:PN[1-1]:IMM
Restart	move once to waiting-for-trigger state	:INIT:PN[1-1]:IMM

Key Operation	Function	SCPI Command
Single	always move to waiting-for-trigger state after measuring move once to waiting-for-trigger state	:INIT:PN[1-1]:CONT :INIT:PN[1-1]:IMM
Source	trigger source	:TRIG:PN[1-1]:SOUR
Trigger to Phase Noise	select measurement mode	:TRIG:MODE

SP Menu

Key Operation	Function	SCPI Command
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level on 5dB Step	:SENS:ATT:LEV
Average/BW		
Averaging	Turns on/off averaging function	:SENS:SP[1-1]:AVER:STAT
Averaging Restart	Restart averaging	:SENS:SP[1-1]:AVER:CLE
Averaging Type	Sets/reads averaging type	:SENS:SP[1-1]:AVER:TYPE
Avg Factor	Sets/reads the averaging count	:SENS:SP[1-1]:AVER:COUN
RBW	Sets/reads RBW value	:SENS:SP[1-1]:BAND:RES
DC Control Voltage		
Control Voltage Cal	Enables DC Control voltage calibration	:SOUR:VOLT:CONT:CORR[:STAT]
DC Control Delay	Sets/reads DC Control delay (sec)	:SOUR:VOLT:CONT:DEL
DC Control Output	Turns on/off DC Control voltage	:SOUR:VOLT:CONT:LEV:STAT
DC Control Voltage	Sets/reads DC Control voltage	:SOUR:VOLT:CONT:LEV:AMPL
Execute Control Voltage Cal	Execute DC Control voltage calibration	:SOUR:VOLT:CONT:CORR:COLL:ACQ
Max Ctrl Voltage Limit	Sets/reads the maximum DC Control voltage limit	:SOUR:VOLT:CONT:LIM:HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC Control voltage limit	:SOUR:VOLT:CONT:LIM:LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	:SOUR:VOLT:POW:DEL
DC Power Output	Turns on/off DC Power voltage	:SOUR:VOLT:POW:LEV:STAT
DC Power Voltage	Sets/reads DC Power voltage	:SOUR:VOLT:POW:LEV:AMPL
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	:SOUR:VOLT:POW:LIM:HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	:SOUR:VOLT:POW:LIM:LOW
Display		
Edit Title Label	Edits the measurement window title label	:DISP:SP[1-1]:LAB:DATA
Marker Information	Sets/reads the marker information position	:DISP:SP[1-1]:ANN:MARK:POS
Meas Condition	Turns on/off measurement conditions	:DISP:SP[1-1]:ANN:MEAS:STAT
Relative Y-Scale	Turns on/off relative Y-scale	:DISP:SP[1-1]:GRAT:AXIS:Y:REL
Title Label	Turns on/off measurement window title label	:DISP:SP[1-1]:LAB:STAT

Key Operation	Function	SCPI Command
Update	Turns on/off trace updates	:DISP:ENAB
Y # of Digits	Selects the number of digits (Y-axis)	:DISP:SP[1-1]:GRAT:AXIS:Y:STAT
Format		
Detector Mode	Sets/reads the detector mode	:SENS:SP[1-1]:DET:FUNC
Format	SP format	:CALC:SP[1-1]:TRAC[1-1]:FORM
Macro Setup		
E5052 Event	Turns on/off the E5052 VBA event callback function	:PROG:COM:EVEN
Echo Window Menu		
Clear Echo	Clears Echo window	:DISP:ECHO:CLE
Echo Font Size	Sets/reads the font size on Echo window	:DISP:ECHO:FSIZ
Echo Window	Turns on/off the Echo window	:DISP:ECHO:STAT
Select Macro	Sets/reads the name of the program to be selected	:PROG:SEL:NAME
Stop	Set/reads the state of the selected program	:PROG:SEL:STAT
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 2	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 3	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 4	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 5	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 6	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 7	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 8	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	:MMEM:LOAD:PROG
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	:MMEM:STOR:PROG
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off marker 1	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT

Key Operation	Function	SCPI Command
Marker 2	Turns on/off marker 2	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 1	Turns on/off marker 1	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 2	Turns on/off marker 2	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:STAT
Marker List	Turns on/off the marker list	:DISP:SP[1-1]:TABL[:STAT]
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	:CALC:SP[1-1]:ALLT:MARK:DISC:STAT
Ref Marker	Sets/reads marker reference number	:CALC:SP[1-1]:ALLT:MARK:REF:NUMB
Ref Marker Mode	Turns on/off delta marker mode	:CALC:SP[1-1]:ALLT:MARK:REF:STAT
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	:CALC:SP[1-1]:TRAC[1-1]:FUNC:DOM:X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	:CALC:SP[1-1]:TRAC[1-1]:FUNC:DOM:Y
Analysis Type	Sets/reads analysis type	:CALC:SP[1-1]:TRAC[1-1]:FUNC:TYPE
Band Marker X		
Band Marker X	Turns on/off bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM:X:STAT
Center	Sets/reads the center value of bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM:X:CENT

Key Operation	Function	SCPI Command
Span	Sets/reads the span value of bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM :X:SPAN
Start	Sets/reads the start value of bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM :X:STAR
Stop	Sets/reads the stop value of bandmarker X	:CALC:SP[1-1]:TRAC[1-1]:BDM :X:STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM :Y:STAT
Center	Sets/reads the center value of bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM :Y:CENT
Span	Sets/reads the span value of bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM :Y:SPAN
Start	Sets/reads the start value of bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM :Y:STAR
Stop	Sets/reads the stop value of bandmarker Y	:CALC:SP[1-1]:TRAC[1-1]:BDM :Y:STOP
Marker Search		
Peak		
Peak Excursion	Sets/reads the peak excursion value	:CALC:SP[1-1]:TRAC[1-1]:MAR K[1-6]:SEAR:PEAK:EXC
Peak Polarity	Sets/reads the marker peak-search polarity	:CALC:SP[1-1]:TRAC[1-1]:MAR K[1-6]:SEAR:PEAK:POL
Search Left	Execute marker peak search left	:CALC:SP[1-1]:TRAC[1-1]:MAR K[1-6]:SEAR:EXEC:LPE
Search Peak	Execute marker peak search	:CALC:SP[1-1]:TRAC[1-1]:MAR K[1-6]:SEAR:EXEC:PEAK
Search Peak All	Execute marker search all	:CALC:SP[1-1]:TRAC[1-1]:ALL M:SEAR:PEAK
Search Right	Execute marker peak search right	:CALC:SP[1-1]:TRAC[1-1]:MAR K[1-6]:SEAR:EXEC:RPE
Search Max	Execute marker search maximum	:CALC:SP[1-1]:TRAC[1-1]:MAR K[1-6]:SEAR:EXEC:MAX
Search Min	Execute marker search minimum	:CALC:SP[1-1]:TRAC[1-1]:MAR K[1-6]:SEAR:EXEC:MIN
Search Range (X)	Sets/reads marker search range (X-axis)	:CALC:SP[1-1]:TRAC[1-1]:ALL M:SEAR:DOM:X
Search Range (Y)	Sets/reads marker search range (Y-axis)	:CALC:SP[1-1]:TRAC[1-1]:ALL M:SEAR:DOM:Y
Target		
Search Left	Execute marker target search left	:CALC:SP[1-1]:TRAC[1-1]:MAR K[1-6]:SEAR:EXEC:LTAR

Key Operation	Function	SCPI Command
Search Right	Execute marker target search right	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:RTAR
Search Target	Execute marker target search	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:EXEC:TARG
Target Transition	Sets/reads the target transition definition	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TARG:TRAN
Target Value	Sets/reads the marker target value	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TARG:Y
Tracking	Sets/reads the marker tracking type	:CALC:SP[1-1]:TRAC[1-1]:MARK[1-6]:SEAR:TRAC:TYPE
Marker To		
Marker -> Center	Sets/reads the center value of frequency span	:SENS:SP[1-1]:FREQ:CENT
Marker -> Start	Sets/reads the start value of frequency span	:SENS:SP[1-1]:FREQ:STAR
Marker -> Stop	Sets/reads the stop value of frequency span	:SENS:SP[1-1]:FREQ:STOP
Measurement View		
Freq & Power	Selects frequency, power and DC current measurement window	:DISP:WIND:ACT
Phase Noise	Selects phase noise measurement window	:DISP:WIND:ACT
Show Window		
Freq & Power	Turn on/off frequency, power and DC current measurement mode	:DISP:FP[1-1]:STAT
Phase Noise	Turns on/off phase noise measurement mode	:DISP:PN[1-1]:STAT
Spectrum Monitor	Turns on/off spectrum monitor mode	:DISP:SP[1-1]:STAT
Transient	Turns on/off transient measurement mode	:DISP:TR[1-1]:STAT
User	Turns on/off user defined window	:DISP:USER[1-1]:STAT
Spectrum Monitor	Selects spectrum monitor mode	:DISP:WIND:ACT
Transient	Selects transient measurement mode	:DISP:WIND:ACT
User	Selects user defined window	:DISP:WIND:ACT
Preset		
OK	Preset instrument	:SYST:PRES
Save/Recall		
Explorer...	Open windows explorer	
Recall State		
Autorec	Recalls settings	:MMEM:LOAD:STAT
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	:MMEM:LOAD:STAT
State02	Recalls state file from register 2	:MMEM:LOAD:STAT
State03	Recalls state file from register 3	:MMEM:LOAD:STAT

Key Operation	Function	SCPI Command
State04	Recalls state file from register 4	:MMEM:LOAD:STAT
State05	Recalls state file from register 5	:MMEM:LOAD:STAT
State06	Recalls state file from register 6	:MMEM:LOAD:STAT
Save Data Trace	Saves trace data	:MMEM:SP[1-1]:TRAC[1-1]:STOR[:DATA]
Save Memory Trace	Saves memory trace data	:MMEM:SP[1-1]:TRAC[1-1]:STOR:MEM
Save State		
Autorec	Save settings	:MMEM:STOR:STAT
File Dialog...	Open file dialog	
Save Type	Select instrument state type (Entire or instrument state only)	:MMEM:STOR:STYP
State01	Save state file to register 1	:MMEM:STOR:STAT
State02	Save state file to register 2	:MMEM:STOR:STAT
State03	Save state file to register 3	:MMEM:STOR:STAT
State04	Save state file to register 4	:MMEM:STOR:STAT
State05	Save state file to register 5	:MMEM:STOR:STAT
State06	Save state file to register 6	:MMEM:STOR:STAT
Scale		
Auto Scale	Execute autoscale	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:AUTO
Divisions	Sets/reads Y-scale divisions	:DISP:SP[1-1]:Y[:SCAL]:DIV
Marker -> Reference	Sets the marker value to the reference level	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:RLEV
Reference Position	Sets/reads the reference position	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:RPOS
Reference Value	Sets/reads the reference level value	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:RLEV
Scale/Div	Sets/reads scale per division	:DISP:SP[1-1]:TRAC[1-1]:Y[:SCAL]:PDIV
Setup		
Reference Level	Sets/reads the reference level of frequency span	:SENS:SP[1-1]:POW:RLEV
Start/Center		
Center	Sets/reads the center value of frequency span	:SENS:SP[1-1]:FREQ:CENT
Span	Sets/reads the span value of frequency span	:SENS:SP[1-1]:FREQ:SPAN
Start	Sets/reads the start value of frequency span	:SENS:SP[1-1]:FREQ:STAR
Stop	Sets/reads the stop value of frequency span	:SENS:SP[1-1]:FREQ:STOP
Stop/Span		

Key Operation	Function	SCPI Command
Center	Sets/reads the center value of frequency span	:SENS:SP[1-1]:FREQ:CENT
Span	Sets/reads the span value of frequency span	:SENS:SP[1-1]:FREQ:SPAN
Start	Sets/reads the start value of frequency span	:SENS:SP[1-1]:FREQ:STAR
Stop	Sets/reads the stop value of frequency span	:SENS:SP[1-1]:FREQ:STOP
System		
Abort Printing	Aborts printing	:HCOP:ABOR
Backlight	Turns on/off backlight	:SYST:BACK:STAT
Dump Screen Image	Save screen image	:MMEM:STOR:IMAG
Invert Image	Selects print mode	:HCOP:IMAG
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	:SYST:BEEP:COMP:STAT
Beep Warning	Turns on/off the beep for warning	:SYST:BEEP:WARN:STAT
Test Beep Complete	Makes beep sound for operation completion	:SYST:BEEP:COMP:IMM
Test Beep Warning	Makes beep sound for warning	:SYST:BEEP:WARN:IMM
Clock Setup		
Set Date and Time	Set/reads system time Set/reads system date	:SYST:TIME :SYST:DATE
Show Clock	Turns on/off internal clock display	:DISP:CLOC
Control Panel ...	Open control panel	
GPIB Setup		
System Controller Configuration	Turns on/off system controller mode	
Talker/Listener Address	Sets the address for controlling the analyzer from a controller via GPIB.	
Key Lock		
Front Panel & Keyboard Lock	Disables from panel / keyboard operations	:SYST:KLOC:KBD
Touch Screen & Mouse Lock	Disables from touch screen / mouse operations	:SYST:KLOC:MOUS
Network Setup		
MAC Address	Sets MAC address	

Key Operation	Function	SCPI Command
Network Configuration ...	Enables/disables network connections	
Network Identification ...	Sets network ID of the instrument	
SICL-LAN Address	Sets SICL-LAN address	
SICL-LAN Server	Enables/disables SICL-LAN server	
Socket Server	Enables/disables Socket server	
Telnet Server	Enables/disables Telnet server	
Print	Outputs print	:HCOP:IMM
Printer Setup ...	Execute printer setup	
Product Information	Reads product information	
Trace View		
Aperture	Smoothing aperture	:CALC:SP[1-1]:TRAC[1-1]:SMO :APER
Clear Persistent Data	Clears persistence mode	:DISP:SP[1-1]:TRAC[1-1]:PERS: CLE
Data -> Mem	Copy data to memory	:CALC:SP[1-1]:TRAC[1-1]:MAT H:MEM
Data Hold	Data hold	:CALC:SP[1-1]:TRAC[1-1]:HOL D
Data Math	Sets/reads math operation type	:CALC:SP[1-1]:TRAC[1-1]:MAT H:FUNC
Display Trace	Shows data and/or memory trace	:DISP:SP[1-1]:TRAC[1-1]:MOD E
Persistence Mode	Sets/reads persistence mode	:DISP:SP[1-1]:TRAC[1-1]:PERS: STAT
Smoothing	Smoothing on/off	:CALC:SP[1-1]:TRAC[1-1]:SMO :STAT
Trace Label	Edits trace title label	:DISP:SP[1-1]:TRAC[1-1]:LAB: DATA
Trigger		
Continuous	Sets/reads trigger continuous mode	:INIT:SP[1-1]:CONT :INIT:SP[1-1]:IMM
Ext Trig Polarity	External trigger polarity	:TRIG:EXT:SLOP
Hold	Sets trigger mode to waiting-for-trigger state	:INIT:SP[1-1]:IMM
Manual Trigger		:INIT:SP[1-1]:IMM
Restart	move once to waiting-for-trigger state	:INIT:SP[1-1]:IMM

Key Operation	Function	SCPI Command
Single	always move to waiting-for-trigger state after measuring move once to waiting-for-trigger state	:INIT:SP[1-1]:CONT :INIT:SP[1-1]:IMM
Source	trigger source	:TRIG:SP[1-1]:SOUR
Trigger to Spectrum Monitor	select measurement mode	:TRIG:MODE

TR Menu

Key Operation	Function	SCPI Command
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level on 5dB Step	:SENS:ATT:LEV
Average		
Averaging	Turn on/off averaging function	:SENS:TR[1-1]:AVER:STAT
Averaging Restart	Restart averaging	:SENS:TR[1-1]:AVER:CLE
Avg Factor	Sets/reads averaging count	:SENS:TR[1-1]:AVER:COUN
DC Control Voltage		
Control Voltage Cal	Enables DC Control voltage calibration	:SOUR:VOLT:CONT:CORR[:STAT]
DC Control Delay	Sets/reads DC Control delay (sec)	:SOUR:VOLT:CONT:DEL
DC Control Output	Turns on/off DC Control voltage	:SOUR:VOLT:CONT:LEV:STAT
DC Control Voltage	Sets/reads DC Control voltage	:SOUR:VOLT:CONT:LEV:AMPL
Execute Control Voltage Cal	Execute DC Control voltage calibration	:SOUR:VOLT:CONT:CORR:COLL:ACQ
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	:SOUR:VOLT:CONT:LIM:HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	:SOUR:VOLT:CONT:LIM:LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	:SOUR:VOLT:POW:DEL
DC Power Output	Turns on/off DC Power voltage	:SOUR:VOLT:POW:LEV:STAT
DC Power Voltage	Sets/reads DC Power voltage	:SOUR:VOLT:POW:LEV:AMPL
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	:SOUR:VOLT:POW:LIM:HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	:SOUR:VOLT:POW:LIM:LOW
Display		
Edit Title Label	Edits the measurement window title label	:DISP:TR[1-1]:LAB:DATA
Marker Information	Sets/reads the marker information position	:DISP:TR[1-1]:ANN:MARK:POS
Meas Condition	Turns on/off measurement conditions	:DISP:TR[1-1]:ANN:MEAS:STAT
Relative Y-Scale	Turns on/off relative Y-scale	:DISP:TR[1-1]:GRAT:AXIS:Y:REL
Title Label	Turns on/off the measurement window title lable	:DISP:TR[1-1]:LAB:STAT
Update	Turns on/off trace updates	:DISP:ENAB

Key Operation	Function	SCPI Command
Y # of Digits	Selects the number of digits (Y-axis)	:DISP:TR[1-1]:GRAT:AXIS:Y:STAT
Format		
Phase Unit	Selects phase format on transient measurement	:CALC:TR[1-1]:TRAC[1-4]:FORM:PHAS:UNIT
Wrap Phase	Turns on/off wrap-phase	:CALC:TR[1-1]:TRAC[1-4]:FORM:PHAS:WRAP
Macro Setup		
E5052 Event	Turns on/off the E5052 VBA event callback function	:PROG:COM:EVEN
Echo Window Menu		
Clear Echo	Clears Echo window	:DISP:ECHO:CLE
Echo Font Size	Sets/reads the font size on Echo window	:DISP:ECHO:FSIZ
Echo Window	Turns on/off the Echo window	:DISP:ECHO:STAT
Select Macro	Sets/reads the name of the program to be selected	:PROG:SEL:NAME
Stop	Set/reads the state of the selected program	:PROG:SEL:STAT
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 2	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 3	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 4	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 5	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 6	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 7	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 8	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	:MMEM:LOAD:PROG
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	:MMEM:STOR:PROG
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off marker 1	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT

Key Operation	Function	SCPI Command
Marker 2	Turns on/off marker 2	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Couple	Turns on/off marker coupling function	:CALC:TR[1-1]:ALLT:MARK:COUP:STAT
Marker 1	Turns on/off marker 1	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 2	Turns on/off marker 2	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:STAT
Marker List	Turns on/off the marker list	:DISP:TR[1-1]:TABL[:STAT]
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	:CALC:TR[1-1]:ALLT:MARK:DISC:STAT
Ref Marker	Sets/reads marker reference number	:CALC:TR[1-1]:ALLT:MARK:REF:NUMB
Ref Marker Mode	Turns on/off delta marker mode	:CALC:TR[1-1]:ALLT:MARK:REF:STAT
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	:CALC:TR[1-1]:TRAC[1-4]:FUNC:DOM:X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	:CALC:TR[1-1]:TRAC[1-4]:FUNC:DOM:Y
Analysis Type	Sets/reads analysis type	:CALC:TR[1-1]:TRAC[1-4]:FUNC:TYPE
Band Marker X		
Band Marker X	Turn on/off bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:STAT

Key Operation	Function	SCPI Command
Center	Sets/reads the center value of bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:CENT
Span	Sets/reads the span value of bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:SPAN
Start	Sets/reads the start value of bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:STAR
Stop	Sets/reads the stop value of bandmarker X	:CALC:TR[1-1]:TRAC[1-4]:BDM:X:STOP
Band Marker Y		
Band Marker Y	Turn on/off bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:STAT
Center	Sets/reads the center value of bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:CENT
Span	Sets/reads the span value of bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:SPAN
Start	Sets/reads the start value of bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:STAR
Stop	Sets/reads the stop value of bandmarker Y	:CALC:TR[1-1]:TRAC[1-4]:BDM:Y:STOP
Couple	Turns on/off bandmarker coupling function	:CALC:TR[1-1]:ALLT:BDM:X:COUP:STAT
Marker Search		
Peak		
Peak Excursion	Sets/reads the peak excursion value	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:PEAK:EXC
Peak Polarity	Sets/reads the marker peak-search polarity	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:PEAK:POL
Search Left	Execute marker peak search left	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:LPE
Search Peak	Execute marker peak search	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:PEAK
Search Peak All	Execute marker search all	:CALC:TR[1-1]:TRAC[1-4]:ALLM:SEAR:PEAK
Search Right	Execute marker peak search right	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:RPE
Search Max	Execute marker search maximum	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:MAX
Search Min	Execute marker search minimum	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:MIN
Search Range (X)	Sets/reads marker search range (X-axis)	:CALC:TR[1-1]:TRAC[1-4]:ALLM:SEAR:DOM:X
Search Range (Y)	Sets/reads marker search range (Y-axis)	:CALC:TR[1-1]:TRAC[1-4]:ALLM:SEAR:DOM:Y

Key Operation	Function	SCPI Command
Target		
Search Left	Execute marker target search left	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:LTAR
Search Right	Execute marker target search right	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:RTAR
Search Target	Execute marker target search	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:EXEC:TARG
Target Transition	Sets/reads the target transition definition	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:TARG:TRAN
Target Value	Sets/reads the marker target value	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:TARG:Y
Tracking	Sets/reads the marker tracking type	:CALC:TR[1-1]:TRAC[1-4]:MARK[1-6]:SEAR:TRAC:TYPE
Marker To		
Marker -> Phase Reference	phase reference freuency	:SENS:TR[1-1]:NARR:FREQ:PREF
Marker -> Target Freq	target frequency	:SENS:TR[1-1]:NARR:FREQ:TARG
Measurement View		
Freq & Power	Selects frequency, power and DC current measurement window	:DISP:WIND:ACT
Phase Noise	Selects phase noise measurement window	:DISP:WIND:ACT
Show Window		
Freq & Power	Turns on/off frequency, power and DC current measurement mode	:DISP:FP[1-1]:STAT
Phase Noise	Turns on/off phase noise measurement mode	:DISP:PN[1-1]:STAT
Spectrum Monitor	Turns on/off spectrum monitor mode	:DISP:SP[1-1]:STAT
Transient	Turns on/off transient measurement mode	:DISP:TR[1-1]:STAT
User	Turns on/off user defined window	:DISP:USER[1-1]:STAT
Spectrum Monitor	Selects spectrum monitor mode	:DISP:WIND:ACT
Transient	Selects transient measurement mode	:DISP:WIND:ACT
User	Selects user defined window	:DISP:WIND:ACT
Preset		
OK	Preset instrument	:SYST:PRES
Save/Recall		
Explorer...	Open windows explorer	
Recall State		
Autorec	Recalls settings	:MMEM:LOAD:STAT
File Dialog...	Open file dialog	

Key Operation	Function	SCPI Command
State01	Recalls state file from register 1	:MMEM:LOAD:STAT
State02	Recalls state file from register 2	:MMEM:LOAD:STAT
State03	Recalls state file from register 3	:MMEM:LOAD:STAT
State04	Recalls state file from register 4	:MMEM:LOAD:STAT
State05	Recalls state file from register 5	:MMEM:LOAD:STAT
State06	Recalls state file from register 6	:MMEM:LOAD:STAT
Save Data Trace	Saves trace data	:MMEM:TR[1-1]:TRAC[1-4]:STOR[:DATA]
Save Memory Trace	Saves memory trace data	:MMEM:TR[1-1]:TRAC[1-4]:STOR:MEM
Save State		
Autorec	Save settings	:MMEM:STOR:STAT
File Dialog...	Open file dialog	
Save Type	Selects instrument state type (Entire or instrument state only)	:MMEM:STOR:STYP
State01	Save state file to register 1	:MMEM:STOR:STAT
State02	Save state file to register 2	:MMEM:STOR:STAT
State03	Save state file to register 3	:MMEM:STOR:STAT
State04	Save state file to register 4	:MMEM:STOR:STAT
State05	Save state file to register 5	:MMEM:STOR:STAT
State06	Save state file to register 6	:MMEM:STOR:STAT
Scale		
Auto Scale	Execute autoscale	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:AUTO
Auto Scale All	Execute autoscale for all traces on transient measurement window	:DISP:TR[1-1]:ALLT:Y:SCAL:AUTO
Divisions	Sets/reads Y-scale divisions	:DISP:TR[1-1]:Y[:SCAL]:DIV
Marker -> Reference	Sets the marker value to the reference level	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:RLEV
Reference Position	Sets/reads reference position	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:RPOS
Reference Value	Sets/reads reference level value	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:RLEV
Scale/Div	Sets/reads scale per division	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:PDIV
Trigger Freq -> Reference	Sets the trigger frequency to the reference level	:DISP:TR[1-1]:TRAC[1-4]:Y[:SCAL]:RLEV
Setup		

Key Operation	Function	SCPI Command
Freq Range	Sets/reads frequency transient range (Narrowband)	:SENS:TR[1-1]:NARR:FREQ:RANG
Max Input Level	Sets/reads maximum input level	:SENS:TR[1-1]:POW:INP:LEV:MAX
Phase Reference	Sets/reads phase reference freuency	:SENS:TR[1-1]:NARR:FREQ:PREF
Target Freq	Sets/reads target frequency	:SENS:TR[1-1]:NARR:FREQ:TARG
Video Trigger		
Minimum Power Level	Sets/reads video trigger threshold level relative to max input level	:TRIG:TR[1-1]:NARR:VID:THR
Narrow Freq	Sets/reads video trigger frequency value (Narrowband)	:TRIG:TR[1-1]:NARR:VID:FREQ:CENT
Wide Freq	Sets/reads video trigger frequency value (Wideband)	:TRIG:TR[1-1]:WIDE:VID:FREQ:CENT
Wide Freq Range	Set/reads transient frequency range (Wideband)	:SENS:TR[1-1]:WIDE:FREQ:MAX
Span		
Narrow Ref Position	Sets/reads reference position for time span	:SENS:TR[1-1]:NARR:TIME:REF
Narrow Settings -> Wide	Sets narrowband mode settings to wideband mode settings	
Narrow Span	Sets/reads time span (Narrowband)	:SENS:TR[1-1]:NARR:TIME:SPAN
Narrow Time Offset	Sets/reads time offset (delay) relative to the reference point	:SENS:TR[1-1]:NARR:TIME:OFFS
Wide Ref Position	Sets/reads reference position	:SENS:TR[1-1]:WIDE:TIME:REF
Wide Settings -> Narrow	Sets wideband mode settings to narrowband mode settings	
Wide Span	Sets/reads time span (Wideband)	:SENS:TR[1-1]:WIDE:TIME:SPAN
Wide Time Offset	Sets/reads time offset (delay) relative to the reference point	:SENS:TR[1-1]:WIDE:TIME:OFFS
System		
Abort Printing	Aborts printing	:HCOP:ABOR
Backlight	Turns on/off backlight	:SYST:BACK:STAT
Dump Screen Image	Save screen image	:MMEM:STOR:IMAG
Invert Image	Selects print mode	:HCOP:IMAG
Misc Setup		
Beeper		

Key Operation	Function	SCPI Command
Beep Complete	Turns on/off the beep for operation completion	:SYST:BEEP:COMP:STAT
Beep Warning	Turns on/off the beep for warning	:SYST:BEEP:WARN:STAT
Test Beep Complete	Makes beep sound for operation completion	:SYST:BEEP:COMP:IMM
Test Beep Warning	Makes beep sound for warning	:SYST:BEEP:WARN:IMM
Clock Setup		
Set Date and Time	Set/reads system time Set/reads system date	:SYST:TIME :SYST:DATE
Show Clock	Turns on/off internal clock display	:DISP:CLOC
Control Panel ...	Open control panel	
GPIB Setup		
System Controller Configuration	Turns on/off system controller mode	
Talker/Listener Address	Sets the address for controlling the analyzer from a controller via GPIB	
Key Lock		
Front Panel & Keyboard Lock	Disables from panel / keyboard operations	:SYST:KLOC:KBD
Touch Screen & Mouse Lock	Disables touch screen / mouse operations	:SYST:KLOC:MOUS
Network Setup		
MAC Address	Sets MAC address	
Network Configuration ...	Enables/disables network connections	
Network Identification ...	Sets network ID of the instrument	
SICL-LAN Address	Sets SICL-LAN address	
SICL-LAN Server	Enables/disables SICL-LAN server	
Socket Server	Enables/disables Socket server	
Telnet Server	Enables/disables Telnet server	
Print	Outputs print	:HCOP:IMM
Printer Setup ...	Execute printer setup	
Product Information	Reads product information	

Key Operation	Function	SCPI Command
Time Offset		
Narrow Ref Position	Sets/reads reference position for time span	:SENS:TR[1-1]:NARR:TIME:REF
Narrow Settings -> Wide	Sets narrowband mode settings to wideband mode settings	
Narrow Span	Sets/reads time span (Narrowband)	:SENS:TR[1-1]:NARR:TIME:SPAN
Narrow Time Offset	Sets/reads time offset (delay) relative to the reference point	:SENS:TR[1-1]:NARR:TIME:OFFS
Wide Ref Position	Sets/reads reference position	:SENS:TR[1-1]:WIDE:TIME:REF
Wide Settings -> Narrow	Sets wideband mode settings to narrowband mode settings	
Wide Span	Sets/reads time span (Wideband)	:SENS:TR[1-1]:WIDE:TIME:SPAN
Wide Time Offset	Sets/reads time offset (delay) relative to the reference point	:SENS:TR[1-1]:WIDE:TIME:OFFS
Trace View		
Aperture	Sets/reads smoothing aperture value	:CALC:TR[1-1]:TRAC[1-4]:SMO:APER
Clear Persistent Data	Clears persistence mode	:DISP:TR[1-1]:TRAC[1-4]:PERS:CLE
Data -> Mem	Copy data to memory	:CALC:TR[1-1]:TRAC[1-4]:MATH:MEM
Data Hold	Data hold	:CALC:TR[1-1]:TRAC[1-4]:HOLD
Data Math	Sets/reads math operation type	:CALC:TR[1-1]:TRAC[1-4]:MATH:FUNC
Display Trace	Shows data and/or memory trace	:DISP:TR[1-1]:TRAC[1-4]:MODE
Persistence Mode	Sets/reads persistence mode	:DISP:TR[1-1]:TRAC[1-4]:PERS:STAT
Smoothing	Turn on/off smoothing function	:CALC:TR[1-1]:TRAC[1-4]:SMO:STAT
Trace Label	Edit trace title label	:DISP:TR[1-1]:TRAC[1-4]:LAB:DATA
Trigger		
Continuous	Sets/reads trigger continuous mode	:INIT:TR[1-1]:CONT :INIT:TR[1-1]:IMM
Ext Trig Polarity	External trigger polarity	:TRIG:EXT:SLOP
Hold	Sets trigger mode to waiting-for-trigger state	:INIT:TR[1-1]:IMM
Manual Trigger	Manual trigger	:INIT:TR[1-1]:IMM

Key Operation	Function	SCPI Command
Restart	move once to waiting-for-trigger state	:INIT:TR[1-1]:IMM
Single	always move to waiting-for-trigger state after measuring move once to waiting-for-trigger state	:INIT:TR[1-1]:CONT :INIT:TR[1-1]:IMM
Source	trigger source	:TRIG:TR[1-1]:SOUR
Trigger to Transient	select measurement mode	:TRIG:MODE

USER Menu

Key Operation	Function	SCPI Command
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level on 5dB Step	:SENS:ATT:LEV
DC Control Voltage		
Control Voltage Cal	Enables DC Control voltage calibration	:SOUR:VOLT:CONT:CORR[:STAT]
DC Control Delay	Sets/reads DC Control delay (sec)	:SOUR:VOLT:CONT:DEL
DC Control Output	Turns on/off DC Control voltage	:SOUR:VOLT:CONT:LEV:STAT
DC Control Voltage	Sets/reads DC Control voltage	:SOUR:VOLT:CONT:LEV:AMPL
Execute Control Voltage Cal	Execute DC Control voltage calibration	:SOUR:VOLT:CONT:CORR:COLL:ACQ
Max Ctrl Voltage Limit	Sets/reads the maximum DC Control voltage limit	:SOUR:VOLT:CONT:LIM:HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC Control voltage limit	:SOUR:VOLT:CONT:LIM:LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	:SOUR:VOLT:POW:DEL
DC Power Output	Turns on/off DC Power voltage	:SOUR:VOLT:POW:LEV:STAT
DC Power Voltage	Sets/reads DC Power voltage	:SOUR:VOLT:POW:LEV:AMPL
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	:SOUR:VOLT:POW:LIM:HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	:SOUR:VOLT:POW:LIM:LOW
Display		
Edit Title Label	Edit the measurement window title label	:DISP:USER[1-1]:LAB:DATA
Marker Information	Sets/reads the marker information position	:DISP:USER[1-1]:ANN:MARK:POS
Meas Condition	Turns on/off measurement conditions	:DISP:USER[1-1]:ANN:MEAS:STAT
Relative Y-Scale	Turns on/off relative Y-scale	:DISP:USER[1-1]:GRAT:AXIS:Y:REL
Title Label	Turns on/off the measurement window title label	:DISP:USER[1-1]:LAB:STAT
Update	Turns on/off the trace updates	:DISP:ENAB
Y # of Digits	Selects the number of digits (Y-axis)	:DISP:USER[1-1]:GRAT:AXIS:Y:STAT
Macro Setup		
E5052 Event	Turns on/off the E5052 VBA event callback function	:PROG:COM:EVEN
Echo Window Menu		

Key Operation	Function	SCPI Command
Clear Echo	Clears Echo window	:DISP:ECHO:CLE
Echo Font Size	Sets/reads the font size on Echo window	:DISP:ECHO:FSIZ
Echo Window	Turn on/off the Echo window	:DISP:ECHO:STAT
Select Macro	Sets/reads the name of the program to be selected	:PROG:SEL:NAME
Stop	Sets/reads the state of the selected program	:PROG:SEL:STAT
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 2	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 3	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 4	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 5	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 6	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 7	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
User Label 8	Execute the macro assigned under the user defined softkey	:PROG:SKEY:ITEM[1-8]:IMM
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	:MMEM:LOAD:PROG
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	:MMEM:STOR:PROG
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off marker 1	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 2	Turns on/off marker 2	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Couple	Turns on/off marker coupling function	:CALC:USER[1-1]:ALLT:MARK:COUP:STAT

Key Operation	Function	SCPI Command
Marker 1	Turns on/off marker 1	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 2	Turns on/off marker 2	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 3	Turns on/off marker 3	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 4	Turns on/off marker 4	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 5	Turns on/off marker 5	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker 6	Turns on/off marker 6	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:STAT
Marker List	Turns on/off the marker list	:DISP:USER[1-1]:TABL[:STAT]
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	:CALC:USER[1-1]:ALLT:MARK:DISC:STAT
Ref Marker	Sets/reads marker reference number	:CALC:USER[1-1]:ALLT:MARK:REF:NUMB
Ref Marker Mode	Turns on/off delta marker mode	:CALC:USER[1-1]:ALLT:MARK:REF:STAT
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	:CALC:USER[1-1]:TRAC[1-8]:FUNC:DOM:X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	:CALC:USER[1-1]:TRAC[1-8]:FUNC:DOM:Y
Analysis Type	Sets/reads analysis type	:CALC:USER[1-1]:TRAC[1-8]:FUNC:TYPE
Band Marker X		
Band Marker X	Turns on/off bandmarker X	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:STAT
Center	Sets/reads the center value of bandmarker X	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:CENT
Span	Sets/reads the span value of bandmarker X	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:SPAN
Start	Sets/reads the start value of bandmarker X	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:STAR
Stop	Sets/reads the stop value of bandmarker X	:CALC:USER[1-1]:TRAC[1-8]:BDM:X:STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:STAT

Key Operation	Function	SCPI Command
Center	Sets/reads the center value of bandmarker Y	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:CENT
Span	Sets/reads the span value of bandmarker Y	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:SPAN
Start	Sets/reads the start value of bandmarker Y	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:STAR
Stop	Sets/reads the stop value of bandmarker Y	:CALC:USER[1-1]:TRAC[1-8]:BDM:Y:STOP
Couple	Turns on/off bandmarker coupling function	:CALC:USER[1-1]:ALLT:BDM:X:COUP:STAT
Marker Search		
Peak		
Peak Excursion	Sets/reads the peak excursion value	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:PEAK:EXC
Peak Polarity	Sets/reads the marker peak-search polality	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:PEAK:POL
Search Left	Execute marker peak search left	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:LPE
Search Peak	Execute marker peak search	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:PEAK
Search Peak All	Execute marker search all	:CALC:USER[1-1]:TRAC[1-8]:ALLM:SEAR:PEAK
Search Right	Execute marker peak search right	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:RPE
Search Max	Execute marker search maximum	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:MAX
Search Min	Execute marker search minimum	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:MIN
Search Range (X)	Sets/reads marker search range (X-axis)	:CALC:USER[1-1]:TRAC[1-8]:ALLM:SEAR:DOM:X
Search Range (Y)	Sets/reads marker search range (Y-axis)	:CALC:USER[1-1]:TRAC[1-8]:ALLM:SEAR:DOM:Y
Target		
Search Left	Execute marker target search left	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:LTAR
Search Right	Execute marker target search right	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:RTAR
Search Target	Execute marker target search	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:EXEC:TARG
Target Transition	Sets/reads the target transition definition	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:TARG:TRAN
Target Value	Sets/reads the marker target value	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:TARG:Y

Key Operation	Function	SCPI Command
Tracking	Sets/reads the marker tracking type	:CALC:USER[1-1]:TRAC[1-8]:MARK[1-6]:SEAR:TRAC:TYPE
Measurement View		
Freq & Power	Selects frequency, power and DC current measurement window	:DISP:WIND:ACT
Phase Noise	Selects phase noise measurement window	:DISP:WIND:ACT
Show Window		
Freq & Power	Turns on/off frequency, power and DC current measurement mode	:DISP:FP[1-1]:STAT
Phase Noise	Turns on/off phase noise measurement mode	:DISP:PN[1-1]:STAT
Spectrum Monitor	Turns on/off spectrum monitor mode	:DISP:SP[1-1]:STAT
Transient	Turns on/off transient measurement mode	:DISP:TR[1-1]:STAT
User	Turns on/off user defined window	:DISP:USER[1-1]:STAT
Spectrum Monitor	Selects spectrum monitor mode	:DISP:WIND:ACT
Transient	Selects transient measurement mode	:DISP:WIND:ACT
User	Selects user defined window	:DISP:WIND:ACT
Preset		
OK	Preset instrument	:SYST:PRES
Save/Recall		
Explorer...	Open windows explorer	
Recall State		
Autorec	Recalls settings	:MMEM:LOAD:STAT
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	:MMEM:LOAD:STAT
State02	Recalls state file from register 2	:MMEM:LOAD:STAT
State03	Recalls state file from register 3	:MMEM:LOAD:STAT
State04	Recalls state file from register 4	:MMEM:LOAD:STAT
State05	Recalls state file from register 5	:MMEM:LOAD:STAT
State06	Recalls state file from register 6	:MMEM:LOAD:STAT
Save Data Trace	Saves trace data	:MMEM:USER[1-1]:TRAC[1-8]:STOR[:DATA]
Save Memory Trace	Saves memory trace data	:MMEM:USER[1-1]:TRAC[1-8]:STOR:MEM
Save State		
Autorec	Save settings	:MMEM:STOR:STAT
File Dialog...	Open file dialog	
Save Type	Selects instrument state type (Entire or instrument state only)	:MMEM:STOR:STYP

Key Operation	Function	SCPI Command
State01	Save state file to register 1	:MMEM:STOR:STAT
State02	Save state file to register 2	:MMEM:STOR:STAT
State03	Save state file to register 3	:MMEM:STOR:STAT
State04	Save state file to register 4	:MMEM:STOR:STAT
State05	Save state file to register 5	:MMEM:STOR:STAT
State06	Save state file to register 6	:MMEM:STOR:STAT
Scale		
Auto Scale	Execute autoscale	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:AUTO
Auto Scale All	Execute autoscale for all traces on user defined window	:DISP:USER[1-1]:ALLT:Y:SCAL:AUTO
Divisions	Sets/reads Y-scale divisions	:DISP:USER[1-1]:Y[:SCAL]:DIV
Marker -> Reference	Sets the marker value to the reference level	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:RLEV
Reference Position	Sets/reads reference position	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:RPOS
Reference Value	Sets/reads the reference level value	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:RLEV
Scale/Div	Sets/reads scale per division	:DISP:USER[1-1]:TRAC[1-8]:Y[:SCAL]:PDIV
X Unit	Sets/reads X-axis unit	:DISP:USER[1-1]:TRAC[1-8]:X:UNIT
Y Unit	Sets/reads Y-axis unit	:DISP:USER[1-1]:TRAC[1-8]:Y:UNIT
System		
Abort Printing	Aborts printing	:HCOP:ABOR
Backlight	Turns on/off backlight	:SYST:BACK:STAT
Dump Screen Image	Save screen image	:MMEM:STOR:IMAG
Invert Image	Selects print mode	:HCOP:IMAG
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	:SYST:BEEP:COMP:STAT
Beep Warning	Turns on/off the beep for warning	:SYST:BEEP:WARN:STAT
Test Beep Complete	Makes beep sound for operation completion	:SYST:BEEP:COMP:IMM
Test Beep Warning	Makes beep sound for warning	:SYST:BEEP:WARN:IMM
Clock Setup		

Key Operation	Function	SCPI Command
Set Date and Time	Set/reads system time Set/reads system date	:SYST:TIME :SYST:DATE
Show Clock	Turns on/off internal clock display	:DISP:CLOC
Control Panel ...	Open control panel	
GPIB Setup		
System Controller Configuration	Turns on/off system controller mode	
Talker/Listener Address	Sets the address for controlling the analyzer from a controller via GPIB	
Key Lock		
Front Panel & Keyboard Lock	Disables from panel / keyboard operations	:SYST:KLOC:KBD
Touch Screen & Mouse Lock	Disables touch screen / mouse operations	:SYST:KLOC:MOUS
Network Setup		
MAC Address	Sets MAC address	
Network Configuration	Enables/disables network connections	
Network Identification	Sets network ID of the instrument	
SICL-LAN Address	Sets SICL-LAN address	
SICL-LAN Server	Enables/disables SICL-LAN server	
Socket Server	Enables/disables Socket server	
Telnet Server	Enables/disables Telnet server	
Print	Outputs print	:HCOP:IMM
Printer Setup ...	Execute printer setup	
Product Information	Reads product information	
Trace View		
Aperture	Smoothing aperture	:CALC:USER[1-1]:TRAC[1-8]:SMO:APER
Clear All Persistent Data	clear all persistence mode	:DISP:USER[1-1]:ALLT:PERS:CLE
Data -> Mem	Copy data to memory	:CALC:USER[1-1]:TRAC[1-8]:MATH:MEM
Data Hold	Data hold	:CALC:USER[1-1]:TRAC[1-8]:HOLD

Key Operation	Function	SCPI Command
Data Math	Sets/reads math operation type	:CALC:USER[1-1]:TRAC[1-8]:MATH:FUNC
Display Trace	Shows data and/or memory trace	:DISP:USER[1-1]:TRAC[1-8]:MODE
Enable Trace		
Trace 1	Enables/disables data trace 1	:DISP:USER[1-1]:TRAC[1-8]:STAT
Trace 2	Enables/disables data trace 2	:DISP:USER[1-1]:TRAC[1-8]:STAT
Trace 3	Enables/disables data trace 3	:DISP:USER[1-1]:TRAC[1-8]:STAT
Trace 4	Enables/disables data trace 4	:DISP:USER[1-1]:TRAC[1-8]:STAT
Trace 5	Enables/disables data trace 5	:DISP:USER[1-1]:TRAC[1-8]:STAT
Trace 6	Enables/disables data trace 6	:DISP:USER[1-1]:TRAC[1-8]:STAT
Trace 7	Enables/disables data trace 7	:DISP:USER[1-1]:TRAC[1-8]:STAT
Trace 8	Enables/disables data trace 8	:DISP:USER[1-1]:TRAC[1-8]:STAT
Persistence Mode	Sets/reads persistance mode	:DISP:USER[1-1]:TRAC[1-8]:PERS:STAT
Smoothing	Smoothing on/off	:CALC:USER[1-1]:TRAC[1-8]:SMO:STAT
Trace Label	Edits trace title label	:DISP:USER[1-1]:TRAC[1-8]:LAB:DATA

A Manual Changes

This appendix contains the information required to adapt this manual to earlier versions or configurations of the Agilent E5052A than that indicated by the current printing date of this manual. The information in this manual applies directly to the E5052A model that has the serial number prefix listed on the title page of this manual.

Manual Changes

To adapt this manual to your Agilent E5052A, refer to Table A-1 and Table A-2.

Table A-1 Manual Changes by Serial Number

Serial Prefix or Number	Make Manual Changes

Table A-2 Manual Changes by Firmware Version

Version	Make Manual Changes

Agilent Technologies uses a two-part, ten-character serial number that is stamped on the serial number plate (Figure A-1). The first five characters are the serial prefix and the last five digits are the suffix.

Execute the *IDN command on page 221 to check the firmware version.

Figure A-1 Serial Number Plate (Example)

e5052apj029

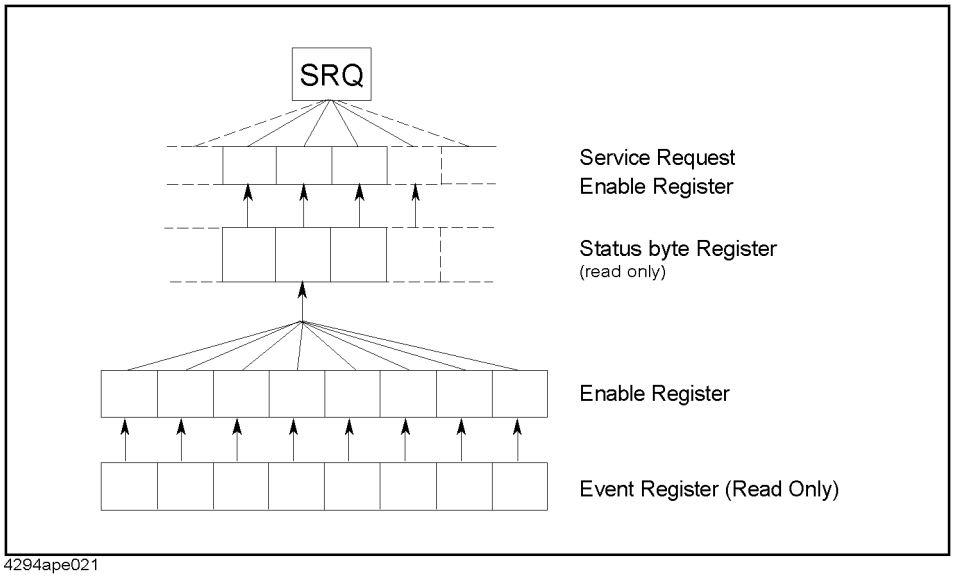
B Status Reporting System

This appendix describes the status reporting system of the Agilent E5052A.

General Status Register Model

The Agilent E5052A has a status reporting system to report the condition of the instrument.

Figure B-1 **General status register model**



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The status reporting system has a hierarchical structure as shown in Figure B-1. When the instrument satisfies a particular condition, the corresponding bit of the event register is set to 1. Therefore, you can check the instrument status by reading the event register.

When the event register bit is set to “1” and the corresponding enable register bit (the bit marked with an arrow in Figure B-1) is also “1,” the summary bit of the status byte register is set to “1.” You can read the status byte register by using the serial poll.

If the bit of the service request enable register is “1,” a service request (SRQ) is generated by the positive transition of the corresponding status byte register bit. By generating SRQ, you can notify the controller that the E5052A is requesting service. In other words, interruption by SRQ can be programmed.

For more information on using SRQ, see “Using the Status Register” on page 47 in Chapter 3 and “Using the status reporting system” on page 74 in Chapter 6.

Event Register

This reflects the corresponding condition of the E5052A (e.g., occurrence of an event) as a bit status. These bits continuously monitor changes in the E5052A's state and change the bit status when the condition for each bit is met (e.g., changing bit status to "1" if a specific event occurs). You cannot change the bit status by issuing an SCPI command.

Enable Register

Setting the enable register allows you to specify event register bits that can set "1" to the summary bit of the status byte register when an event occurs. The register bits work as mask bits; setting an enable register to "1" will enable the corresponding bit in the event register.

For example, when you want to set "1" as the summary bit in the status byte register by a specific register condition, set the corresponding enable register to "1."

Status Byte Register

If the enabled event register is set to "1," the corresponding bit of the status byte register is also set to "1." This register also indicates the output queue and SRQ status.

The value of the status byte register can be read by using the *STB command on page 222 or serial poll (SPOLL statement in HTBasic) from the controller.

Reading the status byte register by using the ***STB** command does not affect the contents of the status byte register. However, reading it with the SPOLL statement of HTBasic will clear the RQS bit in the status byte register.

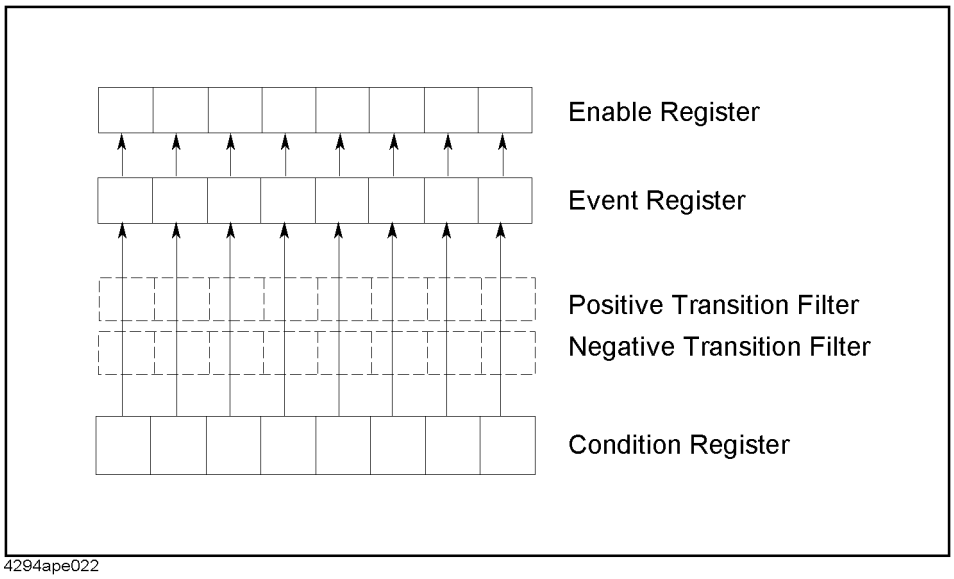
Also, setting the service request enable register by using the *SRE command on page 222 can generate a service request synchronously with the status byte register.

Condition Register and Transition Filter

When the status register has a transition filter, there is a lower register called a condition register under the event register. The transition filter is between the event register and the condition register.

The transition filter enables you to select a positive and/or negative transition of the condition register bit in order to set a bit in the corresponding event register. For example, using the negative transition filter to set bit 3 to “1” causes bit 3 of the event register to be set to “1” when bit 3 of the condition register makes a negative transition, that is, when it changes from 1 to 0.

Figure B-2 **Transition filter and condition register**



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In the E5052A, the following registers provide a condition register and transition filter:

- Operation status register
- Operation user defined status register
- Questionable status register

Status Register Structure

The status reporting system has a hierarchical structure as shown in Figure B-3, Figure B-4 and Figure B-5. The status byte register is a summary of registers in the lower level. This section describes the E5052A's status registers in each hierarchy. Each bit of the status register is described in Table B-1 through Table B-10.

Figure B-3 Status register structure (1 of 3)

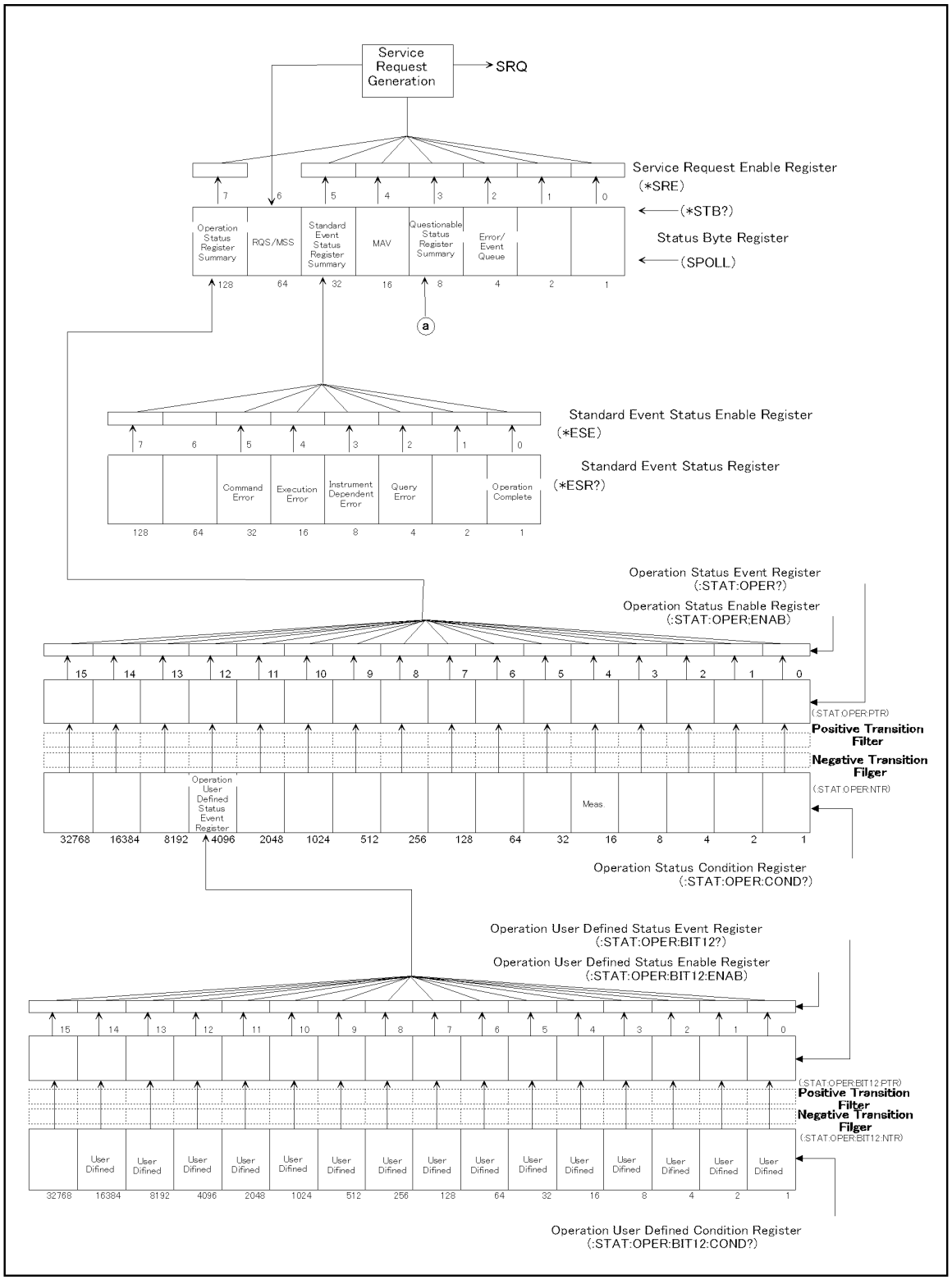

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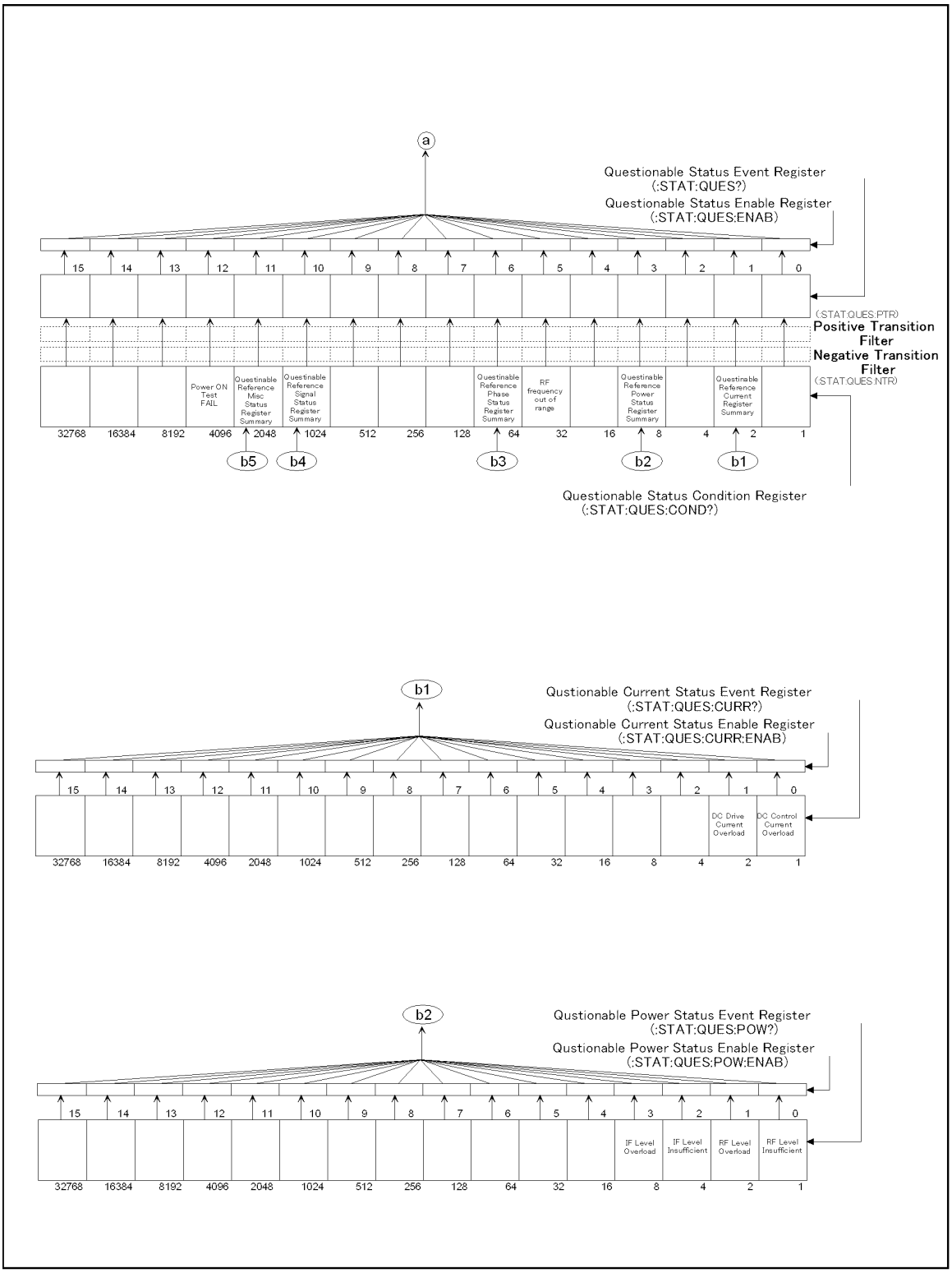
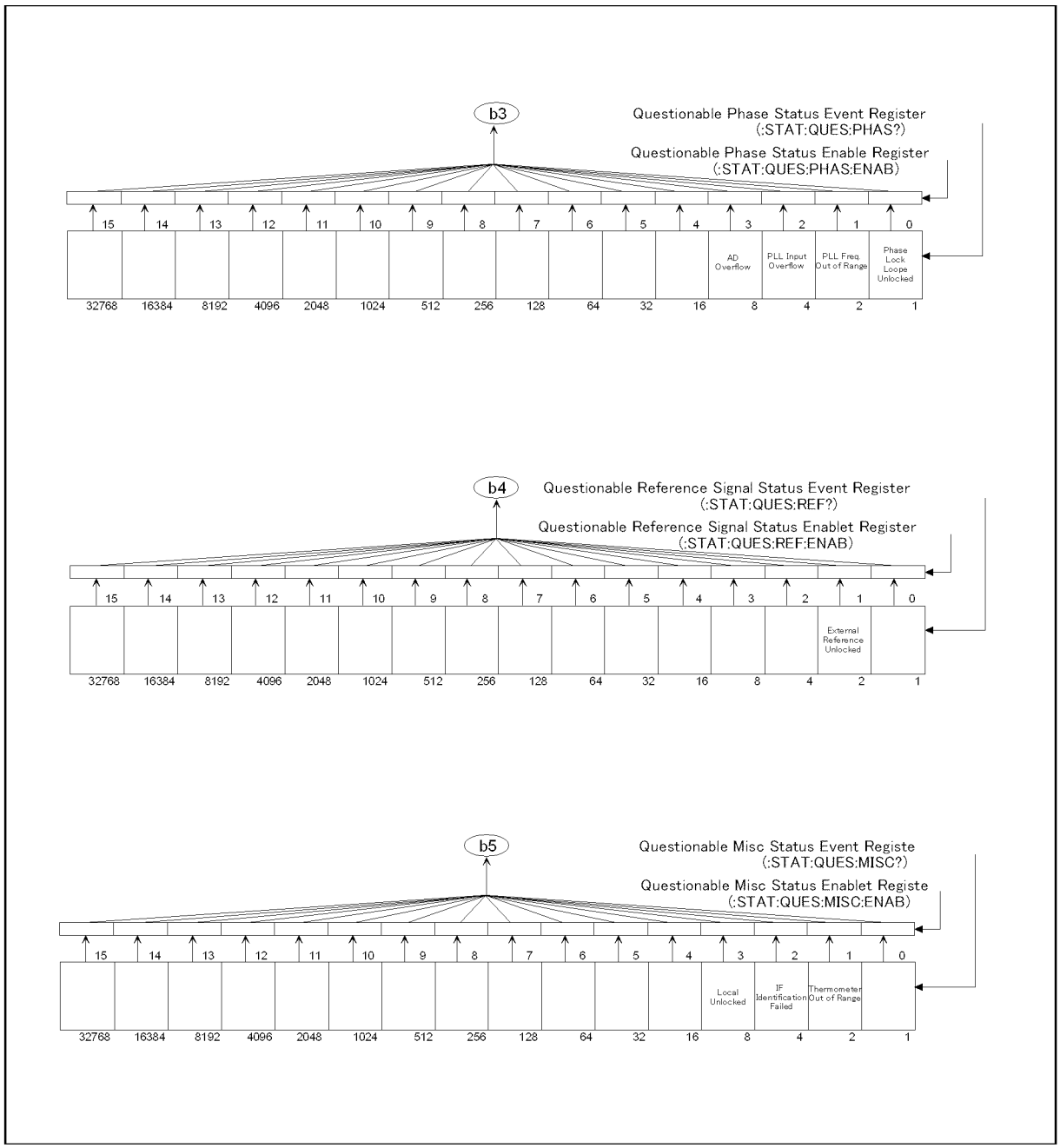
Figure B-4 **Status register structure (2 of 3)**



e5052ape004

Figure B-5 Status register structure (3 of 3)



e5052ape005

Table B-1 Status Bit Definitions of Status Byte Register

Bit Position	Name	Description
0, 1	Not used	Always 0
2	Error/Event Queue	Set to “1” if error/event queue contains data; reset to “0” when all data has been retrieved.
3	Questionable Status Register Summary	Set to “1” when one of the enabled bits in status event status register is set to “1.”
4	MAV (Message Available)	Set to “1” when output queue contains data; reset to “0” when all data has been retrieved.
5	Standard Event Status Register Summary	Set to “1” when one of the enabled bits in status event status register is set to “1.”
6	RQS/MSS	Set to “1” when any of the status byte register bits enabled by service request enable register is set to “1”; reset to “0” when all data has been retrieved through serial polling. See IEEE 488.1 and IEEE 488.2 standards for details.
7	Operation Status Register Summary	Set to “1” when one of the enabled bits in operational status register is set to “1.”

Issuing the ***CLS** command will clear all of the bits from the status byte register.

Table B-2 Status Bit Definitions of Standard Event Status Register (ESR)

Bit Position	Name	Description
0	Operation Complete	Set to "1" upon completion of all operations done by commands that precede *OPC command on page 221.
1	Not used	Always 0
2	Query Error	1. Set to "1" when E5052A receives a data output request but there is no data to output. 2. Set to "1" when the data of E5052A's output queue has been cleared for a new message received before completion of data output.
3	Instrument Dependent Error	Set to "1" for an error that is not a command, query, or execution error.
4	Execution Error	1. Set to "1" when any parameter in an SCPI command exceeds its input range or is inconsistent with E5052A's capabilities. 2. Set to "1" when an SCPI command cannot be properly executed due to some condition of E5052A.
5	Command Error	1. Set to "1" when an IEEE 488.2 syntax error occurs (a command sent to E5052A does not follow the IEEE 488.2 syntax). Possible violations include command parameters violating E5052A listening formats or other unacceptable conditions. 2. Set to "1" when a semantic error occurs. Possible causes include sending to E5052A a command containing misspellings or an IEEE 488.2 command not supported by E5052A. 3. Set to "1" when GET (Group Execution Trigger) is input while receiving a program message.
6	Not used	Always 0
7	Not used	Always 0

Issuing the ***CLS** command will clear all of the bits from the standard event status register.

Table B-3 Status Bit Definitions of Operation Status Condition Register

Bit Position	Name	Description
0 - 3	Not used	Always 0
4	Measurement	Set to "1" during measurement*1.
5 - 11	Not used	Always 0
12	Operation user defined status register summary	Set to "1" when one of the enable bits in operation user defined status register is set to "1."
13 - 15	Not used	Always 0

*1. This is the time from the beginning of the first sweep to the end of the last sweep when several sweeps are executed for one measurement. Note that this bit is set to "1" even in the "Waiting for Trigger" state when the trigger is set to "Ext/Video" in the transient measurement. This is because pre-triggering is performed in "Waiting for Trigger" state in the transient measurement.

Issuing the ***CLS** command will clear all bits from the operation status event register.

Table B-4 Status Bit Definitions of Operation User Defined Status Condition Register

Bit Position	Name	Description
0 - 14	Defined by the user	Set to "1" as defined by the user.
15	Not used	Always 0

The user-defined bits (0 to 14) can be specified by the user as required and are not used by the E5052A.

Table B-5 Status Bit Definitions of Questionable Status Condition Register

Bit Position	Name	Description
0	Not used	Always 0
1	Questionable Current Status Register Summary	Set to “1” when one of the enable bits in questionable current status register is set to “1.”
2	Not used	Always 0
3	Questionable Power Status Register Summary	Set to “1” when one of the enable bits in questionable power status register is set to “1.”
4	Not used	Always 0
5	RF frequency out of range	Set to “1” when DUT’s oscillation frequency is out of E5052A’s measurement range. In this case, DUT’s oscillation frequency should be verified.
6	Questionable Phase Status Register Summary	Set to “1” when one of the enable bits in the questionable phase status register is set to “1.”
7 - 9	Not used	Always 0
10	Questionable Reference Signal Status Register Summary	Set to “1” when one of the enable bits in the questionable reference signal status register is set to “1.”
11	Questionable Misc Status Register Summary	Set to “1” when one of the enable bits in the questionable misc. status register is set to “1.”
12	Power-on Test FAIL	Set to “1” when the power-on self test results in “FAIL.”
13 - 15	Not used	Always 0

Issuing the ***CLS** command will clear all of the bits from the questionable status condition register.

Table B-6 Status Bit Definitions of Questionable Current Status Event Register

Bit Position	Name	Description
0	DC Control Current Overloaded	Set to "1" when excessive DC control current is loaded.
1	DC Power Current Overloaded	Set to "1" when excessive DC power current is loaded.
2-15	Not used	Always 0

Issuing the ***CLS** command will clear all of the bits from the questionable current status event register.

Table B-7 Status Bit Definitions of Questionable Power Status Event Register

Bit Position	Name	Description
0	RF Level Insufficient	Set to "1" when an insufficient level of RF input is applied.
1	RF Level Overloaded	Set to "1" when an excessive level of RF input is applied.
2	Insufficient IF Level	Set to "1" when an insufficient level of RF input is applied.
3	IF Level Overloaded	Set to "1" when an excessive level of IF input is applied.
4-15	Not used	Always 0

Issuing the ***CLS** command will clear all of the bits in the questionable power status event register.

Table B-8 Status Bit Definitions of Questionable Phase Status Event Register

Bit Position	Name	Description
0	Phase Lock Loop Unlocked	Set to "1" when Phase Lock Loop is not locked.
1	PLL Frequency Out of Range	Set to "1" when PLL frequency is out of E5052A's measurement range.
2	PLL Input Overflow	Set to "1" when PLL input overflows.
3	A/D Overflow	Set to "1" when signal level aturates at A/D.
4-15	Not used	Always 0

Issuing the ***CLS** command will clear all of the bits in the questionable phase status event register.

Table B-9 **Status Bit Definitions of Questionable Reference Signal Status Event Register**

Bit Position	Name	Description
0	Not used	Always 0.
1	External Reference Unlock	Set to “1” when external reference is not locked.
3-15	Not used	Always 0

Issuing the ***CLS** command will clear all of the bits in the questionable reference signal status event register.

Table B-10 **Status Bit Definitions of Questionable Misc Status Event Register**

Bit Position	Name	Description
0	Not used	Always 0.
1	Thermometer Out of Range	Set to “1” when thermometer is out of range.
2	IF not Detected	Set to “1” when IF is not detected.
3	Local Unlock	Set to “1” when local oscillator is unlocked.
4-15	Not used	Always 0

Issuing the ***CLS** command will clear all of the bits in the questionable phase status event register.

Using the Status Reporting System

You can manage the status report system by using the following commands in any combination:

- *CLS on page 220
- *SRE on page 222
- *STB on page 222
- *ESE on page 221
- *ESR on page 221
- :STATus:OPERation:BIT12:CLEar on page 266
- :STATus:OPERation:BIT12:CONDition on page 266
- :STATus:OPERation:BIT12:ENABle on page 266
- :STATus:OPERation:BIT12[:EVENt] on page 267
- :STATus:OPERation:BIT12:NTRansition on page 267
- :STATus:OPERation:BIT12:PTRansition on page 267
- :STATus:OPERation:BIT12:SET on page 268
- :STATus:OPERation:CONDition on page 268
- :STATus:OPERation:ENABle on page 268
- :STATus:OPERation[:EVENt] on page 269
- :STATus:OPERation:NTRansition on page 269
- :STATus:OPERation:PTRansition on page 269
- :STATus:PRESet on page 270
- :STATus:QUEStionable:CONDition on page 270
- :STATus:QUEStionable:CURRent:ENABle on page 270
- :STATus:QUEStionable:CURRent[:EVENt] on page 270
- :STATus:QUEStionable:ENABle on page 271
- :STATus:QUEStionable[:EVENt] on page 271
- :STATus:QUEStionable:MISC:ENABle on page 271
- :STATus:QUEStionable:MISC[:EVENt] on page 272
- :STATus:QUEStionable:NTRansition on page 272
- :STATus:QUEStionable:PHASe:ENABle on page 272
- :STATus:QUEStionable:PHASe[:EVENt] on page 273
- :STATus:QUEStionable:POWer:ENABle on page 273
- :STATus:QUEStionable:POWer[:EVENt] on page 273
- :STATus:QUEStionable:PTRansition on page 273
- :STATus:QUEStionable:REFerence:ENABle on page 274
- :STATus:QUEStionable:REFerence[:EVENt] on page 274

For sample programs that demonstrate the use of the commands listed above, refer to “Using the Status Register” on page 47 in Chapter 3.

C Communication with External Instruments Using 24-bit I/O Port

This chapter provides necessary information for communicating with external instruments (for example, a handler in a production line) by using the 24-bit I/O port equipped with the Agilent E5052A.

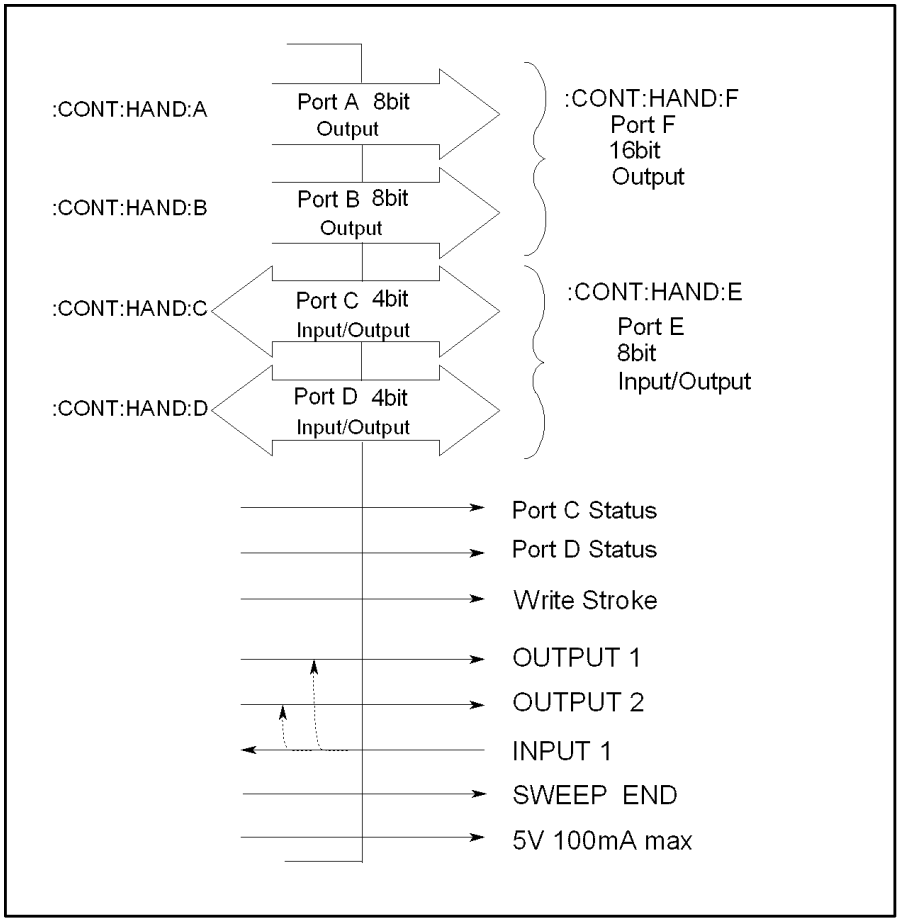
24-bit I/O Port Overview

The E5052A 24-bit I/O port provides four independent parallel ports for data I/O associated with several control signal lines and the power line. All signals operate in TTL logic.

The data I/O ports are configured with 2 pairs of 8-bit output ports and 2 pairs of 4-bit bi-directional ports. Furthermore, these ports can cooperate to provide a maximum 16-bit-wide output port or a maximum 8-bit-wide input port.

The I/O signals operate on a negative logic basis. The control signal lines consist of various control output data, including completion of measurement or control signal for handshaking. Figure C-1 outlines the I/O ports and control signal lines.

Figure C-1 **24-bit I/O port outline**

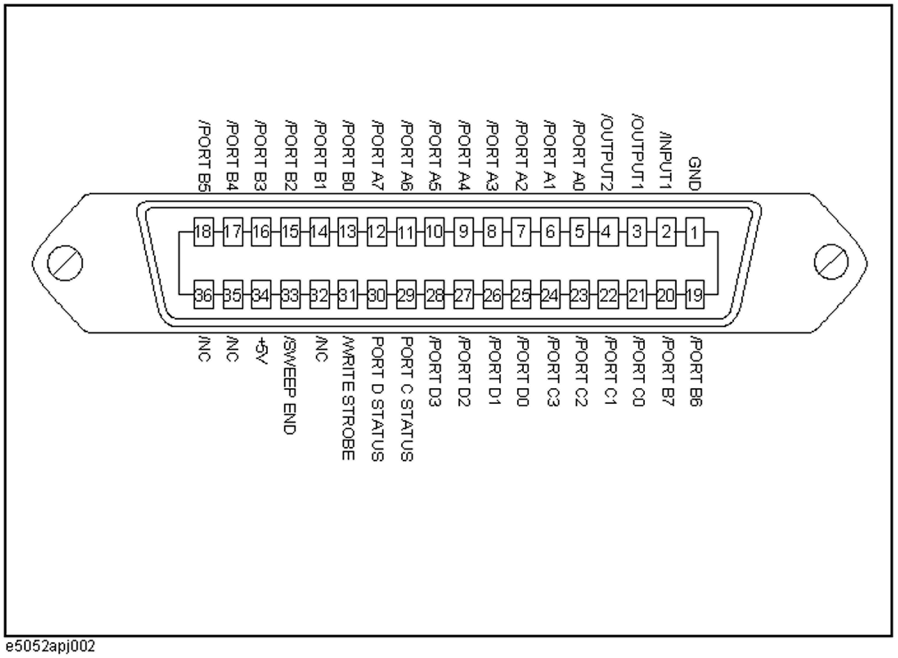


e5052ape001

I/O Signal Pin Layout and Description

Figure A-2 illustrates the layout of the I/O signal pins on the 24-bit interface connector, and Table C-1 on page 372 briefly describes these signals.

Figure C-2 **24-bit interface connector pin layout**



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NOTE A slash (/) symbol preceding signal names means that they are negative logic (active low).

Table C-1 Description of the 24-bit Interface I/O Signals

Pin number	Signal name	Signal direction	Description
1	GND	——	Ground
2	/INPUT1	Input	When this port receives a negative pulse, /OUTPUT1 and /OUTPUT2 are changed to the Low level.
3	/OUTPUT1	Output	Changes to the Low level when /INPUT1 receives a negative pulse. A command is available for altering the Low/High level logic.
4	/OUTPUT2	Output	Changes to the Low level when /INPUT1 receives a negative pulse. A command is available for altering the Low/High level logic.
5	/PORT A0	Output	Bit 0 of the port A (8-bit parallel output port)
6	/PORT A1	Output	Bit 1 of the port A
7	/PORT A2	Output	Bit 2 of the port A
8	/PORT A3	Output	Bit 3 of the port A
9	/PORT A4	Output	Bit 4 of the port A
10	/PORT A5	Output	Bit 5 of the port A
11	/PORT A6	Output	Bit 6 of the port A
12	/PORT A7	Output	Bit 7 of the port A
13	/PORT B0	Output	Bit 0 of the port B (8-bit parallel output port)
14	/PORT B1	Output	Bit 1 of the port B
15	/PORT B2	Output	Bit 2 of the port B
16	/PORT B3	Output	Bit 3 of the port B
17	/PORT B4	Output	Bit 4 of the port B
18	/PORT B5	Output	Bit 5 of the port B
19	/PORT B6	Output	Bit 6 of the port B
20	/PORT B7	Output	Bit 7 of the port B
21	/PORT C0	Input/Output	Bit 0 of the port C (4-bit parallel I/O port)
22	/PORT C1	Input/Output	Bit 1 of the port C
23	/PORT C2	Input/Output	Bit 2 of the port C
24	/PORT C3	Input/Output	Bit 3 of the port C
25	/PORT D0	Input/Output	Bit 0 of the port D (4-bit parallel I/O port)
26	/PORT D1	Input/Output	Bit 1 of the port D
27	/PORT D2	Input/Output	Bit 2 of the port D
28	/PORT D3	Input/Output	Bit 3 of the port D

Table C-1 Description of the 24-bit Interface I/O Signals

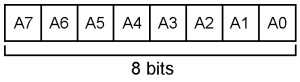
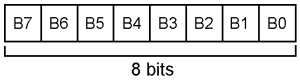
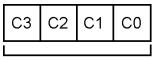
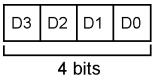
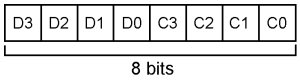
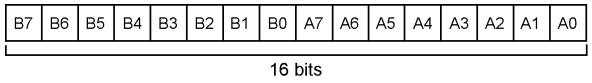
Pin number	Signal name	Signal direction	Description
29	PORT C STATUS	Output	Port C status signal. This signal is changed to the High level when port C is configured to output port. It is changed to the Low level when the port is configured to input port.
30	PORT D STATUS	Output	Port D status signal. This signal is changed to the High level when port D is configured to output port. It is changed to the Low level when the port is configured to input port.
31	/WRITE STROBE	Output	A output port write strobe signal. When data is present (that is, output level changes) on any of the output ports, this signal provides a negative pulse.
32	NC*1		Not used
33	/SWEEP END	Output	A sweep completion signal. When measurement (all sweeps of all channels) and data calculation are completed, this signal provides a negative pulse.
34	+5V	Output	Provides +5V DC power supply for external instruments.
35	NC*1		Not used
36	NC*1		Not used

∗1. To prevent failure that may be caused based on signal I/O, do not connect anything.

Inputting/Outputting Data

The E5052A 24-bit I/O port provides the ports for data I/O shown in Table C-2.

Table C-2 I/O Ports

Port Name	Usage	Data Structure
Port A	Output	
Port B	Output	
Port C	Input/Output	
Port D	Input/Output	
Port E	Input/Output	
Port F	Output	

Specifying signal direction of port

Signal direction (input/output) can be changed for ports C, D, and E as shown in Table C-2. Thus, before the ports are used, the directions should be determined according to their usage.

To specify the I/O direction for ports C and D, use the following commands. The direction for port E depends on the setting of ports C and D.

Port Name	Command
Port C	:CONTrol:HANDler:C:MODE on page 175
Port D	:CONTrol:HANDler:D:MODE on page 176

Reading data input to port

When port C, D, or E is configured to input port, the binary data represented with High(0)/Low(1) of each bit of the port is read as decimal data.

To retrieve the data, use the following commands as query:

Port Name	Command
Port C	:CONTrol:HANDler:C[:DATA] on page 175
Port D	:CONTrol:HANDler:D[:DATA] on page 176
Port E	:CONTrol:HANDler:E[:DATA] on page 176

Data output to port

Binary data (decimal data when output data is specified with a command) represented with High(0)/Low(1) of each bit of the port can be output to ports A through F (ports C, D, and E should be configured to output ports).

To output data, use the following commands.

Port Name	Command
Port A	:CONTrol:HANDler:A[:DATA] on page 174
Port B	:CONTrol:HANDler:B[:DATA] on page 174
Port C	:CONTrol:HANDler:C[:DATA] on page 175
Port D	:CONTrol:HANDler:D[:DATA] on page 176
Port E	:CONTrol:HANDler:E[:DATA] on page 176
Port F	:CONTrol:HANDler:F[:DATA] on page 177

Preset States at Power-on

The 24-bit I/O port is set at power-on as follows (not affected at reset).

Port A	High (All Bits)
Port B	High (All Bits)
Port C	Input
Port D	Input
PORT C STATUS	Low
PORT D STATUS	Low
/OUTPUT1	High
/OUTPUT2	High
/SWEEP END	High

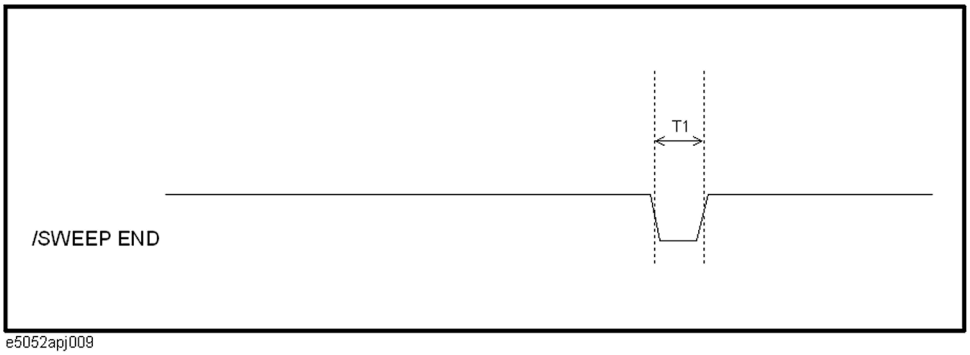
Timing Chart and Pulse Width

When the formatted data calculation is completed during the sweep, a negative pulse is provided. The pulse width of the sweep completion signal is shown in Figure C-3.

Table C-3 Value of T1 in Figure C-3 (typical)

		Typical Value
T1	Pulse width of /SWEEP END	12 µs

Figure C-3 Pulse width of /SWEEP END



e5052apj009

Figure C-4 shows the timing chart for data output and write strobe signal output to ports A through F.

Table C-4 Values of T1 through T2 in Figure C-4 (typical)

T1	Response time of write strobe signal	1 µs
T2	Pulse width of write strobe signal	1 µs

Figure C-4 Timing chart of data output and write strobe signal

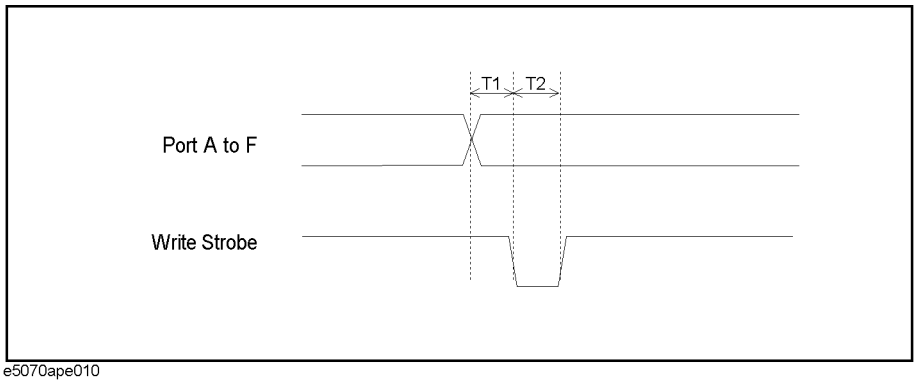


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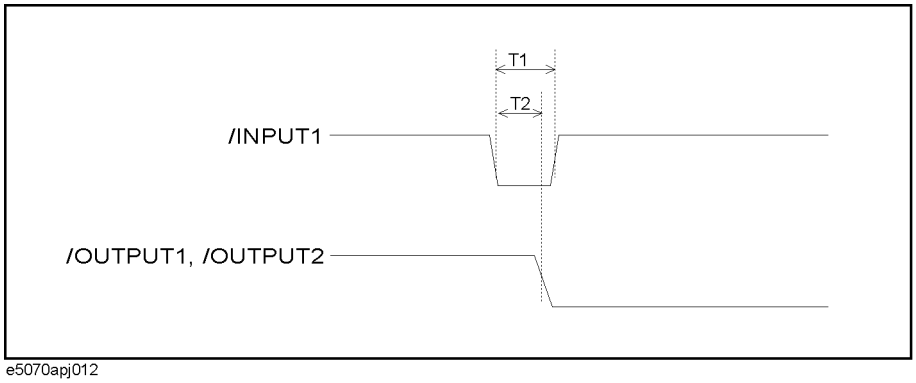
Figure C-5 shows a timing chart of the pulse input to INPUT1, /OUTPUT1 signal output and /OUTPUT2 signal output.

Table C-5 Values of T1 through T2 in Figure C-5 (typical)

		Minimum value
T1	Pulse width of /INPUT1	1 µs
T2	Response time of /OUTPUT1, /OUTPUT2	0.5 µs

Figure C-5 Timing chart of /INPUT1 and /OUTPUT1, /OUTPUT2



e5070apj012

Electrical Characteristics

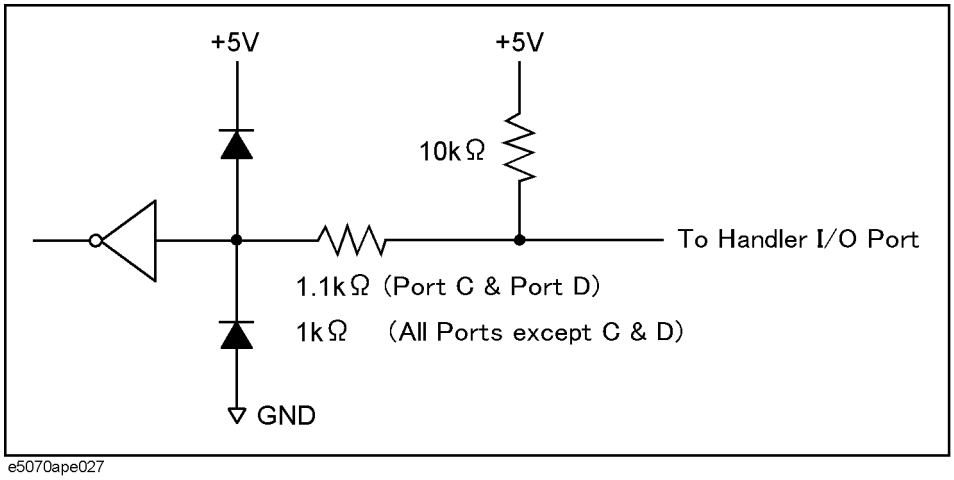
Input signal

All input signals are TTL compatible. Table C-6 shows the electrical characteristics of the input signals, and Figure C-6 shows the circuit diagram of the input signals.

Table C-6 Electrical Characteristics of Input Signals (typical)

Maximum rate input voltage		-0.5 V to 5.5 V
Input voltage	High level	2.0 V to 5.0 V
	Low level	0 V to 0.5 V

Figure C-6 Circuit diagram of input signals



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Output signal

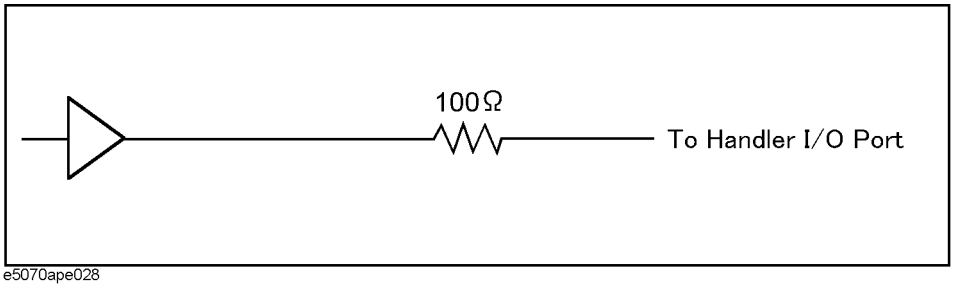
All output signals are TTL compatible. Table C-7 shows the electrical characteristics of output signals, and Figure C-7 shows the circuit diagram of the output signals.

Table C-7 Electrical Characteristics Of Output Signals (typical)

Maximum rate output current		-10 mA to 10 mA
Output current	High level	-5 mA
	Low level	-5 mA
Output voltage	High level	2.0 V to 3.3 V (when output current is -5 mA to 0 mA) 3.20 V (when output current is -1 mA) 2.75 V (when output current is -5 mA)
	Low level	0 V to 0.8 V (when output current is 0 mA to 3 mA) 0.25 V*1 (when output current is 1 mA) 0.55 V (when output current is 3 mA)

*1. Note that, in the cases of C0 to C3 (port C) and D0 to D3 (port D), output voltage is 0.30 V.

Figure C-7 Circuit diagram of output signals



e5070ape028

Power supply (+5 V)

Table C-8 shows the electrical characteristics of the +5 V power supply for external instruments.

Table C-8 Electrical Characteristics of +5 V Power Supply (typical)

Output voltage	4.5 V to 5.5 V
Maximum output current	100 mA

D Error Messages

The Agilent E5052A provides error messages to indicate its operating status. This appendix describes the error messages of the E5052A, listed in alphabetical order.

Error Messages

An error message is displayed against a red background in the instrument message/warning area in the lower-left part of the screen. Touching **Entry Off key** at the front panel or executing the :DISPlay:MESSage:CLEar command on page 188 clears the error message. Errors caused by operation of a front panel key simply appear on the display; with a few exceptions, these are not stored in the error queue.

An error with a positive error number is one uniquely defined for this instrument. On the other hand, an error with a negative error number is basically one defined for common GPIB devices in IEEE488.2

D

-222 **Data out of range**

A data element (not violating the standard) outside the range defined by this instrument has been received. This error occurs, for example, when an integer-based command for which the parameter can be rounded exceeds the range of -65536 to +65536 or when a real-number-based command for which the parameter can be rounded exceeds the range of -9.9e37 to +9.9e37.

280 **DC control overload**

The current through the DC CONTROL connector is too large.

270 **DC power overload**

The current through the DC POWER connector is too large.

E

-200 **Execution error**

An error associated with execution has been generated for which this instrument cannot specify the error message. This code shows the occurrence of an error associated with execution, as defined in 11.5.1.1.5, IEEE488.2.

F

72 **Failed to copy file**

This error occurs when copying a file (MMEM:COPY command) fails.

74 **Failed to create directory**

This error occurs when creating a directory (MMEM:MDIR command) fails.

73 **Failed to delete file**

This error occurs when deleting a file (MMEM:DEL command) fails.

91 **Failed to execute user defined key**

In the user menu function, this error occurs when a disabled softkey is executed.

61 **Failed to hide trace**

In the user window, this error occurs when the show trace “OFF” command is executed to turn off the remaining trace on the window. At least one trace should be visible at all times.

60 **Failed to hide window**

This error occurs when the show window “OFF” command is executed to turn off the remaining window on the screen. At least one window should be visible at all times.

70 **Failed to read file**

This error occurs when a VBA project file (MMEM:LOAD:PROG command) or other type of file cannot be read normally.

90 **Failed to stop program**

This error occurs when stopping a program fails.

71 **Failed to write file**

This error occurs when the display image (MMEM:STOR:IMAG command) for the LCD screen, a VBA project file (MMEM:STOR:PROG command) or other type of file cannot be written normally.

-257 **File name error**

A file name error. This message appears when an error exists in the file name and thus a command is not executed correctly. This error occurs, for example, when you try to copy to an improper file name.

-256 **File name not found**

The file name specified is not found and thus the command is not executed correctly. This error occurs, for example, when you try to read a file that does not exist in a disk or a disk is not correctly inserted into the drive.

80 **File transfer failed**

This error occurs when writing data into or reading data from a file (MMEM:DATA command) fails.

I

213 **IF A/D overflow**

The internal PLL cannot be locked. In the phase noise measurement, check that the DUT’s carrier signal is within the selected frequency band. In the spectrum monitor measurement, decrease the DUT’s carrier level, or set the reference level or input attenuator value larger than the current setting. In the transient measurement, decrease the DUT’s carrier level, or set the max input level or input attenuator value larger than the current setting.

260 **IF Level Overload**

The IF level is too high. Set the input attenuator value larger than the current setting.

312 **IF not found**

The IF signal cannot be found. In the phase noise measurement, this error occurs when no signal is inputted to the RF IN, or the input level to the RF IN is too low. Aside from the above reasons, there is the possibility of a device failure. Contact an Agilent Technologies sales office or the company from which you bought the device.

-224 **Illegal parameter value**

The parameter value is improperly set.

-282 **Illegal program name**

This error occurs when a nonexistent VBA program name is specified by the PROG:SEL:NAME command.

-213 **Init ignored**

Because another measurement is in progress, the request for initiating a measurement (“INIT” command) is ignored.

250 **Insufficient IF Level**

The IF level is too low. Set the input attenuator value larger than the current setting.

230 **Insufficient RF Level**

The input level to the RF IN connector is too low.

L

77 **Load VBA program failed**

This error occurs when loading a VBA program file fails.

M

20 **Marker search failed**

This error occurs when marker search fails.

-109 **Missing parameter**

The number of parameters is less than that required for the command, or the parameter has not been entered.

P

-220 **Parameter error**

When a parameter-related error other than Errors -221 through -229 occurs, that error is displayed.

-108 **Parameter not allowed**

The number of parameters exceeds that required for the command.

See the command reference to confirm the required number of parameters.

210 **Phase lock loop unlocked**

This error occurs when the PLL circuit of the instrument becomes unlocked while the measurement is in progress, and thus the measurement value is not correct. In the phase noise measurement, the error occurs when the DUT’s carrier signal is unstable. Aside from the above reason, there is the possibility of a device failure. Contact an Agilent Technologies sales office or the company from which you bought the device.

211 **PLL frequency range over**

This error occurs when the internal PLL circuit becomes unlocked while the measurement is in progress. This error may occur when the frequency of the input signal is out of range.

212 **PLL Input overflow**

This error occurs when the internal PLL circuit becomes unlocked while the measurement is in progress. This error may occur when the level of the input signal is too large.

200 **Power on test failed**

This error occurs when the power-on test fails, indicating a failure of the instrument. Contact an Agilent Technologies sales office or the company from which you bought the instrument.

40 **Printer error**

This error occurs when the previous printing is still in progress or the printer fails (offline, short of paper, etc.) at the time of outputting the display image on the LCD screen to the printer (HCOP:IMM command).

41 **Print failed**

This error occurs when printing fails for reasons other than Error 40, Printer error.

-284 **Program currently running**

This error occurs when the PROG:SEL:STAT RUN command is executed when the VBA program is in the Run state.

-286 **Program runtime error**

An error occurring when VBA is executed.

R

75 **Recall failed**

This error occurs when reading an instrument status file (State01.sta, etc.) (MMEM:LOAD:STAT command) fails.

220 **RF freq out of range**

This error occurs when the DUT's output frequency is not within the measurement range.

240 **RF level overload**

This error occurs when the input to the RF IN port exceeds the maximum input level in the measurement. The measurement value obtained in such a case is not correct. In the worst case, a failure (damage to the receiver) may occur.

S

76 **Save failed**

This error occurs when writing an instrument status file (State01.sta, etc.) (MMEM:STOR:STAT command) fails.

78 **Save VBA program failed**

This error occurs when saving a VBA program file fails.

-310 **System error**

One of the errors designated as "system errors" in this instrument has occurred.

T

-223 **Too much data**

The block-, expression-, or character-string-type program data that have been received conform with the standard but exceed the amount that can be processed under the conditions of the memory or conditions specific to memory-related devices. In this instrument, this error occurs when the number of characters exceeds 254 in a character-string parameter.

-211 **Trigger ignored**

This instrument receives and detects a trigger command (“TRIG”) or an external trigger signal, but it is ignored due to the timing conditions (the instrument is not in the wait-for-trigger state, for example). Change the setup so that a trigger command or an external trigger signal can be sent after the instrument has entered the wait-for-trigger state.

U

-113 **Undefined header**

A command not defined in this instrument, although not illegal in the syntactic structure, has been received. See the command reference and use correct commands.

311 **Unlock local**

This error occurs when the internal Local signal of the instrument cannot be unlocked. There is the possibility of a device failure. Contact an Agilent Technologies sales office or the company from which you bought the device.

Warning Message

A warning message is displayed in the instrument message/Warning area in the lower-left part of the display against a gray background. Touching **Entry Off key** at the front panel executing the :DISPlay:MESSage:CLEar command on page 188 clears the message.

This message simply appears on the display, since it is not known to remote environments such as a GPIB. This message is not displayed when another error message (against a red background) has already been displayed in the instrument message/Warning area.

The warning messages for this instrument are as follows:

571 **DC control out of limit**

This message occurs when the specified DC control voltage or the sweep start/stop DC control voltage for the frequency & power measurement is out of the maximum/minimum allowed voltage of DC control.

570 **DC power out of limit**

This message occurs when the specified DC power voltage or the sweep start/stop DC power voltage for the frequency & power measurement is out of the maximum/minimum allowance voltage of DC control.

560 **Incompatible recall file**

This message occurs when an incompatible file is read.

550 **Marker tracking failed**

This message occurs when marker tracking fails.

503 **Set RF ATT 0dB**

This message occurs when the input attenuator is set improperly. Set the input attenuator to 0 dB.

504 **Set RF ATT 5dB**

This message occurs when the input attenuator is set improperly. Set the input attenuator to 5 dB.

505 **Set RF ATT 10dB**

This message occurs when the input attenuator is set improperly. Set the input attenuator to 10 dB.

506 **Set RF ATT 15dB**

This message occurs when the input attenuator is set improperly. Set the input attenuator to 15 dB.

507 **Set RF ATT 20dB**

This message occurs when the input attenuator is set improperly. Set the input attenuator to 20 dB.

508 **Set RF ATT 25dB**

This message occurs when the input attenuator is set improperly. Set the input attenuator to 25 dB.

510 **Set RF ATT 30dB**

Error number: 511

This message occurs when the input attenuator is set improperly. Set the input attenuator to 30 dB.

511 **Set RF ATT 35dB**

This message occurs when the input attenuator is set improperly. Set the input attenuator to 35 dB.

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