

Agilent E5052A Signal Source Analyzer

VBA Programmer's Guide

Fifth Edition

FIRMWARE REVISIONS

This manual applies directly to instruments that have the firmware revision A.02.50.

For additional information about firmware revisions, see Appendix A.



Agilent Technologies

Manufacturing No. E5052-90042

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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: E5052-90002)
October 2004	Second Edition (part number: E5052-90012, changes for firmware version A.01.10)
February 2005	Third Edition (part number: E5052-90022, changes for firmware version A.01.50)
August 2005	Fourth Edition (part number: E5052-90032, changes for firmware version A.02.00)
June 2006	Fifth Edition (part number: E5052-90042, changes for firmware version A.02.50)

Typeface Conventions

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

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), measurement examples, 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 provides an overview of this manual as well as useful information to help you navigate through the manual. It also briefly describes how to use this manual, focusing on how you can look up particular COM objects and code their corresponding commands.

Contents of This Manual

This is a VBA programming guide with Agilent E5052A single source analyzer. This guide describes programming method mainly aiming at learning how to write a program that controls the E5052A using COM objects, focusing on the macro function of the E5052A and sample usage with the built-in VBA.

Controlling the E5052A using an external controller is not covered by this guide; it is described in *Programmer's Guide*.

Description in this guide assumes that the reader has learned manual operation of the E5052A. For detailed information on each feature, see *User's Guide*.

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

- o Chapter 1, “Making Effective Use of This Manual,” on page 25
 - This chapter provides an overview of this manual as well as useful information to help you navigate through the manual. It also briefly describes how to use this manual, focusing on how you can look up particular COM objects and code their corresponding commands.
- o Chapter 2, “Introduction to VBA Programming,” on page 29
 - This chapter introduces you to the E5052A's VBA macro function, explains how you can implement your system using the VBA macro function, and provides an overview of the COM objects that come with the E5052A.
- o Chapter 3, “Operation Basics of the E5052A's VBA,” on page 35
 - This chapter provides descriptive information on basic operations for creating VBA programs within the E5052A's VBA environment. Topics include launching Visual Basic Editor as well as creating, saving, and running VBA programs.
- o Chapter 4, “Controlling the E5052A,” on page 71
 - This chapter explains how to use the E5052A's VBA to control the E5052A itself.
- o Chapter 5, “User Defined Window,” on page 89
- o Chapter 6, “Controlling Peripherals,” on page 95
 - This chapter explains how to control peripherals connected to the E5052A with GPIB by using the software (VISA library) installed in the E5052A.
- o Chapter 7, “COM Object Reference,” on page 101
 - This chapter describes the COM object model of the Agilent E5052A and the COM object reference in alphabetical order. If you want to look up COM objects by corresponding front panel keys, see “COM object list by front panel key.”
- o Appendix A, “Manual Changes,” on page 539

This appendix contains the information required to adapt this manual to the versions or configurations of the Agilent E5052A which were manufactured earlier than the printing date of this manual.

How to Use This Manual

Chapter 3, “Operation Basics of the E5052A's VBA,” on page 35 provides the basic operation of VBA for coding VBA programs.

Chapter 4, “Controlling the E5052A,” on page 71 and Chapter 6, “Controlling Peripherals,” on page 95 will help you to develop your custom programs.

For more information on individual COM object, see Chapter 7, “COM Object Reference,” on page 101.

Looking Up COM Objects

Chapter 7, “COM Object Reference,” on page 101 contains a complete reference of COM objects. You can look up a particular COM object in any of the following ways:

Lookup by Abbreviated COM Object Name

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

Lookup by Soft key

Chapter 7, “COM Object Reference,” provides a complete list of COM objects that correspond to the soft key and indicates the page numbers where the COM objects appear in the COM object reference (see “List by softkey” on page 457).

How to Code the Corresponding Commands

The description of each function may contain the corresponding SCPI commands. If SCPI command exists for each measurement window, use **xx**.

Example: SCPI. CALCulate. xx. TRACe. DATA. FDATA

The parameters for each measurement window are as follows:

- **FP**: Frequency/Power measurement
- **PN**: Phase noise measurement
- **SP**: Spectrum monitor measurement
- **TR**: Transient measurement
- **USER**: User window

NOTE

Some SCPI commands may not make use of particular measuring windows.

2 Introduction to VBA Programming

This chapter introduces you to the E5052A's VBA macro function, explains how you can implement your system using the VBA macro function, and provides an overview of the COM objects that come with the E5052A.

Introduction to the E5052A Macro Function

The E5052A has a built-in macro function that allows a single instruction to substitute for multiple instructions. You can have the E5052A automatically execute your own macro program that contains a series of VBA (Visual Basic for Application) statements.

VBA is based on the VB (Visual Basic) programming language. Although VBA is similar to VB, they are not the same. Although some of the VB features were eliminated from VBA, new application-specialized features were added. In particular, the E5052A's VBA has features for controlling the E5052A. For details of the differences between VBA and VB, refer to Microsoft official guides and various books on VBA.

For information on the basic operating procedures of the E5052A's VBA, see Chapter 3, "Operation Basics of the E5052A's VBA," on page 35. This manual is not meant to be an in-depth guide to VBA programming basics and the syntax of VBA functions and commands. Such in-depth information is covered in VBA Help, Microsoft official guides, and various books on VBA.

The macro function allows you to control the E5052A itself as well as various peripherals. You can do the following:

1. Automate repetitive tasks

You can use the E5052A's macro function to combine several processes into one. Automating repetitive tasks provides higher efficiency and eliminates human error. Once you have contained repetitive tasks in sub-procedures, you can later call the procedures from other programs, thus allowing effective reuse of programming assets.

2. Implement a user interface

The E5052A VBA supports user forms (see "User form" on page 39) that facilitate creating a visual user interface. User forms guide users through common tasks such as performing measurement and entering data without requiring familiarity with the E5052A, thus minimizing the possibility of human error.

Overview of Control System Based on Macro Function

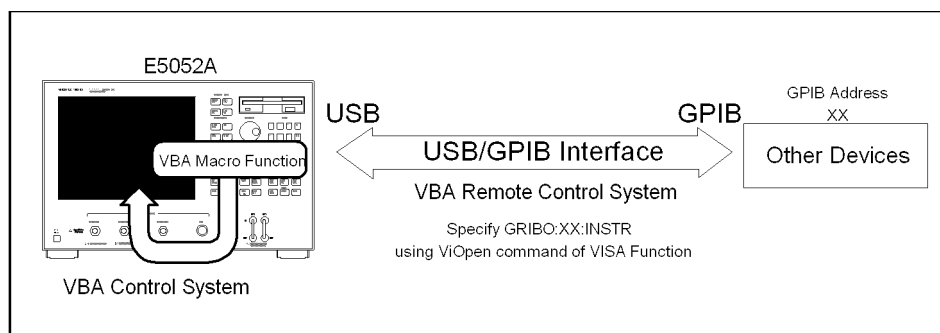
This section explains how you can use the E5052A's built-in VBA macro function to implement a system that controls the E5052A and peripherals and describes the command sets that are available for such purposes.

Implementing a control system

Macro-based control systems are classified into two types: As shown in Figure 2-1, a VBA control system controls the E5052A itself while a VBA remote control system controls peripherals. When you use the macro function to control peripherals, you must connect the E5052A with the peripherals through USB/GPIB interface and configure them to communicate over VISA (Virtual Instrument Software Architecture). For information on programming using the VISA library, refer to “Programming with VISA” on page 97.

Figure 2-1

Configuration example of control system using macro environment



e5052ave013

Required equipment

1. E5052A
2. Peripherals and/or other purpose-specific instruments
3. USB/GPIB interface

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

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

Control methods

The command set you can use differs depending on whether you use the macro function to control the E5052A or a peripheral.

Controlling the E5052A

When you want to control the E5052A itself, you can create a program using COM objects within the E5052A VBA environment. E5052ACOM objects that come with the E5052A include three objects specific to the COM interface and COM objects that correspond to SCPI commands. For information on objects, refer to “COM Object Model” on page 102.

For information on using the E5052A’s COM objects, see Chapter 7, “COM Object Reference,” on page 101. For information on using SCPI commands, see the “SCPI Command Reference” in the *Programmer’s Guide*.

Controlling Peripherals

When you want to control a peripheral, you can create a program by using VISA library functions within the E5052A VBA environment.

For information on using the VISA library, see Chapter 6, “Controlling Peripherals,” on page 95. For a complete description of VISA functions, refer to the VISA library’s online help. You can access this online help by double-clicking a file named visa.hlp contained in the CD-ROM (Agilent part No. E5052-9050x).

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

NOTE

The number position shown by “x” in the part numbers above indicates the edition number.

E5052A Overview of COM Objects

The VBA environment provides COM objects that support users in controlling the E5052A. This section provides an overview of COM objects as well as important considerations for using the E5052A's COM objects. For more information on the E5052A's COM objects and a comparison with SCPI commands, refer to Chapter 7, "COM Object Reference," on page 101.

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

About COM objects

When you control the E5052A through the macro function, you can use COM objects as components of your application. The functionality of the E5052A's COM objects is expressed through properties and methods.

Properties

A property allows you to read or write a setting or attribute of an object. With the E5052A, you can use properties to set or read the settings of the E5052A.

You can find properties in the description of syntax in Chapter 7, "COM Object Reference," on page 101). They set and obtain the values for a command.

Methods

A method allows you to manipulate an object in a particular way. With the E5052A, you can use methods to perform specific tasks.

You can find methods in the description of syntax in Chapter 7, "COM Object Reference," on page 101, which only describes commands.

Events

An event means an operation from outside that the program can recognize, such as clicking a mouse button. Without using user forms, the E5052A lets you perform an entire procedure assigned to a specific softkey as an event by simply pressing that softkey. This is particularly useful, for example, when the user wants an interruption in a VBA program that gives an option of whether to proceed. For more information, refer to "Executing a Procedure with a Softkey (user menu function)" on page 78.

Using COM objects to control the E5052A

When you want to control the E5052A, you can use COM objects alone or in conjunction with SCPI commands and the **Parse** on page 108 object. The latter method is slightly slower than the former because the **Parse** on page 108 object is used to parse the messages of SCPI commands. For instructions on using the E5052A's VBA Editor to create a program that uses COM objects, refer to Chapter 3, "Operation Basics of the E5052A's VBA," on page 35.

Major control difference between COM objects and SCPI commands

For information on the major control differences between using COM objects and SCPI commands, refer to "SCPI Objects" on page 103.

3 Operation Basics of the E5052A's VBA

This chapter provides descriptive information on basic operations for creating VBA programs within the E5052A's VBA environment. Topics include launching Visual Basic Editor as well as creating, saving, and running VBA programs.

Displaying Visual Basic Editor

This section describes how to launch Visual Basic Editor.

Step 1. From the E5052A measurement screen, launch Visual Basic Editor using the following method:

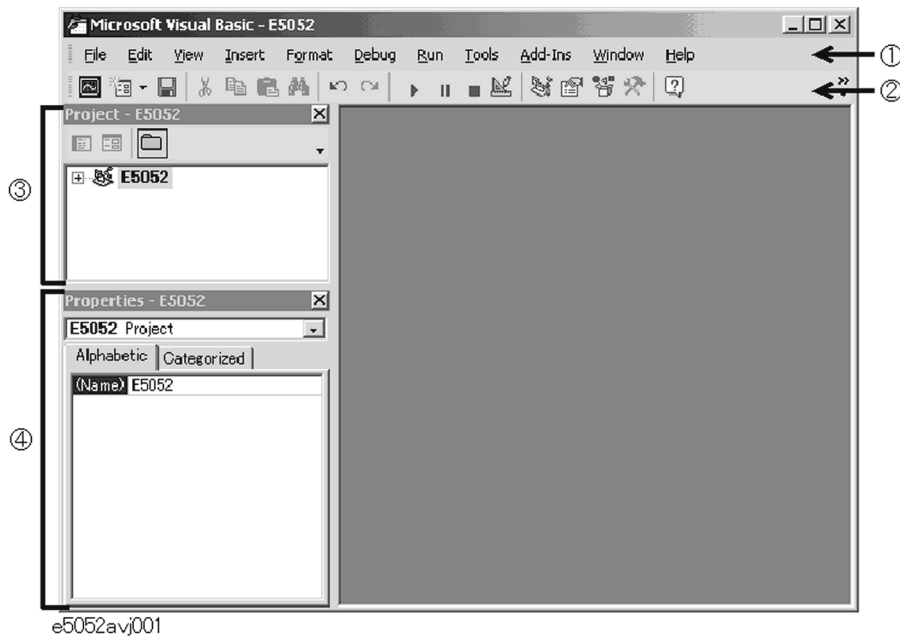
- **[Macro Setup] - VBA Editor Menu - Open Editor**

Initial Screen of Visual Basic Editor

When you launch Visual Basic Editor, it displays the initial screen, which contains a number of windows as shown in Figure 3-1. This section provides information on the names and functions of the main display areas.

Figure 3-1

Example of Visual Basic Editor initial screen



1. Menu Bar

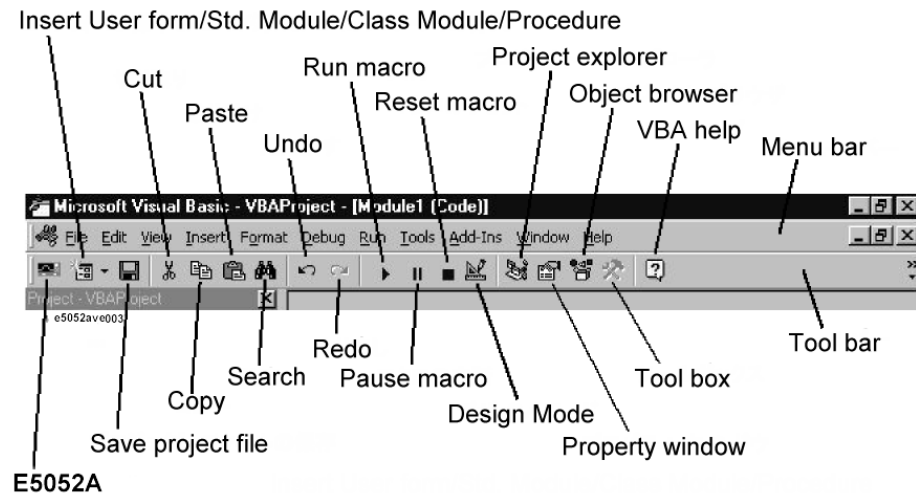
Clicking one of the menu labels brings up the corresponding menu. The menu bar can be used as the primary method for navigating through the E5052A's VBA environment.

2. Toolbar

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

Figure 3-2

Buttons on the standard toolbar



3. Project Explorer

Within the E5052A's VBA environment, you can develop your application as a project that consists of a number of files (modules). Project Explorer shows a list of all files (modules) that make up a project. The list also includes files (modules) created or loaded in Visual Basic Editor. For information on modules, refer to "A Project and Three Types of Modules" on page 39.

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

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

4. Property Window

A property window shows the settings (label, font, color, size, etc.) of a control (such as a command button or text box) placed on the user form. For information on user forms, refer to "User form" on page 39.

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

Step 1. To display the property window, do one of the following:

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

Closing Visual Basic Editor

This section describes how to quit Visual Basic Editor.

- Step 1.** Close Visual Basic Editor using one of the following methods:
- On Visual Basic Editor's **File** menu, click **Close and Return to Application**.
 - Within Visual Basic Editor, press **[Alt] + [Q]** on the keyboard.
 - **[Macro Setup] - VBA Editor Menu - Close Editor** (E5052A Measurement Screen)

NOTE

Whenever you launch Visual Basic Editor, it automatically displays the project files you used in the previous session. However, once you turn off the power to the E5052A, the project files kept in memory will be lost; therefore, it is strongly recommended that you save your VBA programs before turning off the power.

Switching to the E5052A Measurement Screen

You can switch to the E5052A measurement screen without closing Visual Basic Editor.

- Step 1.** To switch to the E5052A measurement screen, do one of the following:
- On the **View** menu, click **Application**.
 - Press **[Alt] + [F11]** on the keyboard.
 - On the toolbar, click the “E5052A” icon (Figure 3-2).
 - Press the **[Focus]** key on the E5052A front panel.

Necessary Preparation Before Coding

A Project and Three Types of Modules

Project Explorer (Figure 3-1) displays a list of files (modules) that are used in the E5052A VBA. This section describes a project composed of a number of files (modules) and three types of modules (“user form,” “standard,” and “class”). Each type of module performs its respective tasks as described below.

Project

When you develop an application within the E5052A’s VBA environment, you use a number of VBA program files (modules) and manage them as one project. The project is saved with the file extension “.vba”.

User form

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

Standard module

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

Class module

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

Displaying a Code Window

The code windows appear in the Visual Basic Editor when you insert modules in a project. A code window offers a practical environment for coding (programming).

The E5052A's VBA environment does not allow you to manage multiple projects. You can replace the current project in the Visual Basic Editor by loading a saved project file. This can be done by the following method from the E5052A measurement screen.

- **[Macro Setup] - VBA Editor Menu - New Project**

NOTE

When you replace the current project with a new project, a message asking whether to save the current project may appear. If you want to save the project, click the **Yes** button to display a dialog box for saving the file (Figure 3-6 on page 47). For more on saving a project, see "Saving a project file" on page 47.

Inserting the user form

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

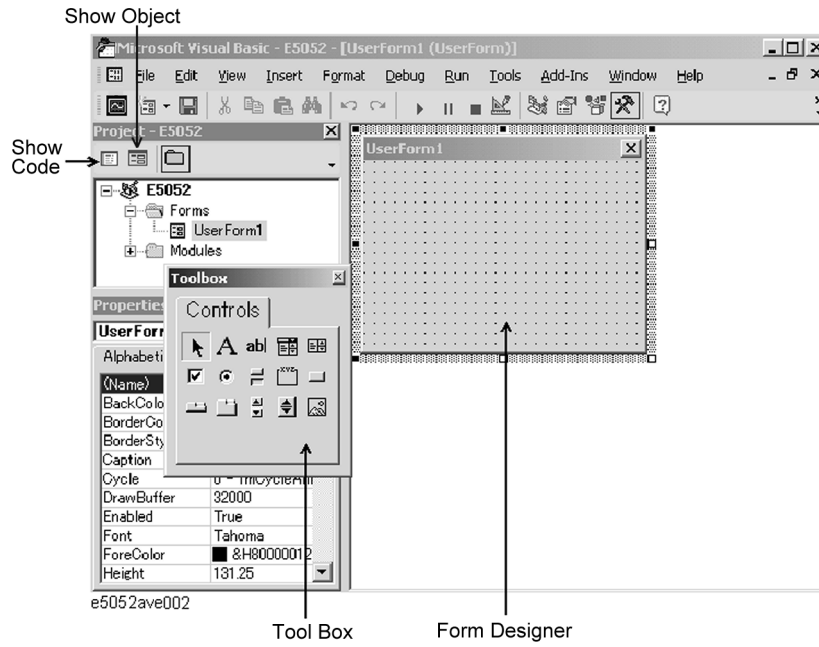
- On the **Insert** menu, click **UserForm**.
- On the toolbar, click the "Insert User Form/Standard Module/Class Module/Procedure" icon (Figure 3-2) and then click **UserForm**.
- In Project Explorer (Figure 3-1), right-click the "E5052" icon and then click **Insert - UserForm**.

NOTE

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

Figure 3-3

Adding a user form



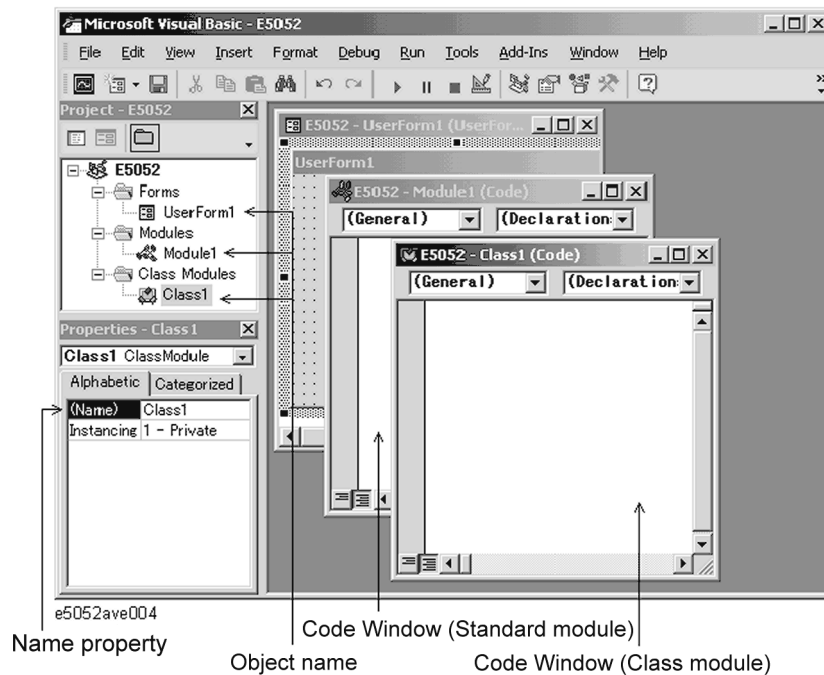
Inserting the standard module

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

- On the **Insert** menu, click **Module**.
- On the toolbar, click the “Insert User Form/Standard Module/Class Module/Procedure” icon (Figure 3-2) and then click **Module**.
- In Project Explorer (Figure 3-1), right-click the “E5052” icon and then click **Insert - Module**.

Figure 3-4

Adding a standard module/class module



Inserting the class module

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

- On the **Insert** menu, click **Class Module**.
- On the toolbar, click the “Insert User Form/Standard Module/Class Module/Procedure” icon (Figure 3-2) and then click **Class Module**.
- In Project Explorer (Figure 3-1), right-click the “E5052” icon and then click **Insert - Class Module**.

Deleting Modules

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

- Step 1.** In Project Explorer (Figure 3-1), click the “Class1” class module under the “Class

Modules” icon to highlight it.

Step 2. Delete the “Class1” class module using one of the following methods:

- On the **File** menu, click **Remove Class1...**
- Click the right mouse button and then click **Remove Class1...**

Step 3. When you are prompted to confirm whether to export (save) “Class1,” click **No**. Alternatively, you can click **Yes** if you want to save the module.

Coding a VBA Program

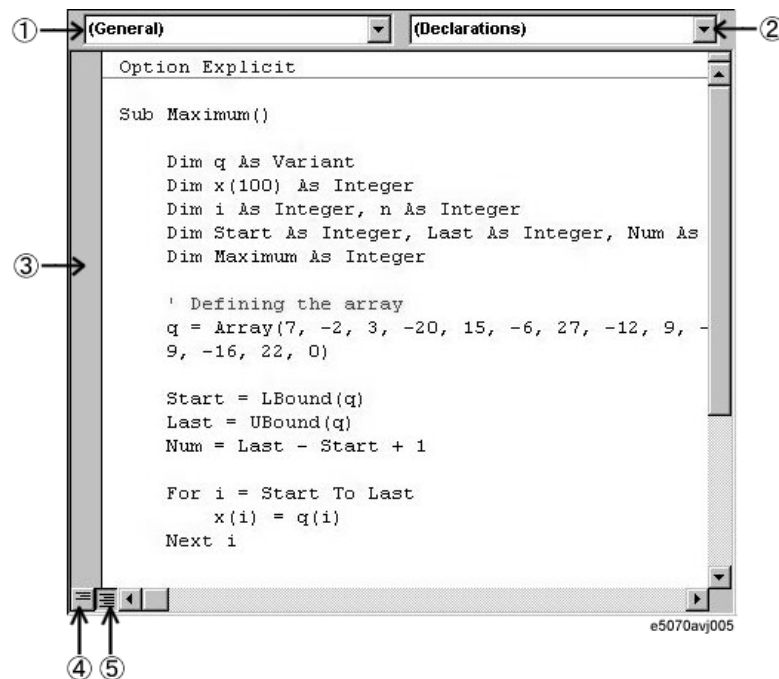
This section provides descriptive information on the user interface elements of a code window that lets you code a VBA program and walks you through a sample program (procedure) that finds the maximum value contained in an array. This should help you gain insight into how to create your own programs.

User Interface Elements of a Code Window

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

Figure 3-5

Code window for a standard module



1. Object box

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

2. Procedure box

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

3. Margin indicator bar

Primarily intended for use when debugging a program.

4. Show Procedure button

Displays only the procedure at the cursor position.

5. Show Module button

Displays the entire program contained in the code window.

Auto-complete Feature

When you use COM objects in the E5052A Visual Basic Editor, the editor's auto-complete feature allows you to easily type in keywords without misspelling them.

The following procedure assumes that you are entering the SCPI.INITiate.FP.CONTinuous object.

- Step 1.** In a standard module, type **sub main** and press the **[Enter]** key. **End Sub** is automatically added.
- Step 2.** Typing **scpi** followed by a dot (.) brings up a list of classes under the SCPI class.
- Step 3.** Typing **in** automatically moves the focus to INITiate in the list box.
- Step 4.** Typing **INITiate** followed by a dot (.) brings up a list of classes under the SCPI class.
- Step 5.** Typing **f** automatically moves the focus to FP in the list box.
- Step 6.** Typing FP followed by a dot (.) brings up a list of classes under the SCPI class.
- Step 7.** Typing **c** automatically moves the focus to **CONTinuous** in the list box.
- Step 8.** **=** is typed to bring up a list box for setting a Boolean value (**True/False**).
- Step 9.** Typing **t** automatically moves the focus to **True**.
- Step 10.** Pressing the **[Enter]** key completes the statement: SCPI.INITiate.FP.CONTinuous = True.

Saving a VBA Program

You can save VBA programs either as one complete project or on a module-by-module basis.

Saving a project file

When you decide to save your program as one complete project, you can gather the files (modules) making up the project into a single package. A project is saved as a .vba file. You can save your program to a project file by using one of the following two methods:

Saving a project from Visual Basic Editor

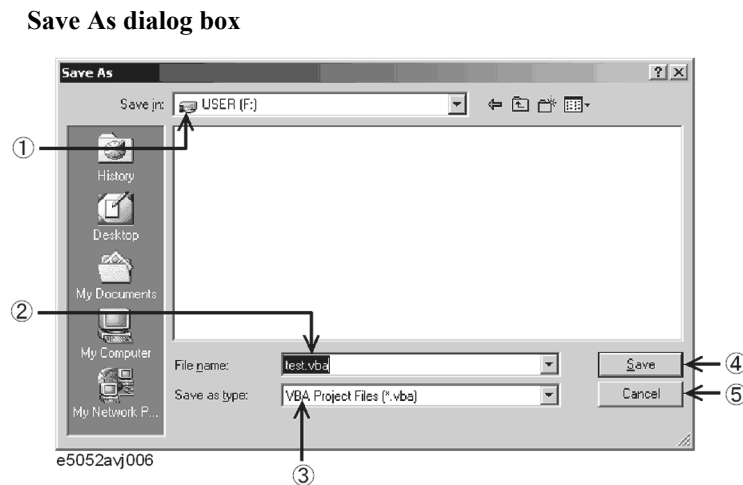
Step 1. Open the Save As dialog box by doing one of the following:

- On the **File** menu, click **Save xxx.VBA**. “xxx” represents the file name.
- On the toolbar, click the “Save Project File” icon (Figure 3-2).
- Press **[Ctrl] + [S]** on the keyboard.

Step 2. The Save As dialog box (Figure 3-6) appears. Specify the file name and location (drive or folder) and click **Save**.

The Save As dialog box has the following user interface elements:

Figure 3-6



- 1. Save in:** Specify the location (drive or folder) where you want to save the file.
- 2. File name** Type in the file name.
- 3. Save as type:** Select the type of the file you are saving. Normally, you should select **VBA Project Files [*.vba]**.
- 4. Save:** Clicking this button saves the project.
- 5. Cancel:** Clicking this button closes the Save As dialog box without saving the file and brings you back to the main screen.

Saving a project from the E5052A measurement screen

- Step 1.** Display the E5052A measurement screen by following the instructions given in “Switching to the E5052A Measurement Screen” on page 38.
- Step 2.** Open the Save As dialog box using the following key sequence:
- **[Macro Setup] - VBA Editor Menu - Save Project**
- Step 3.** The Save As dialog box (Figure 3-6) appears. Specify the file name and location (drive or folder) and click **Save**.

Saving a module (exporting)

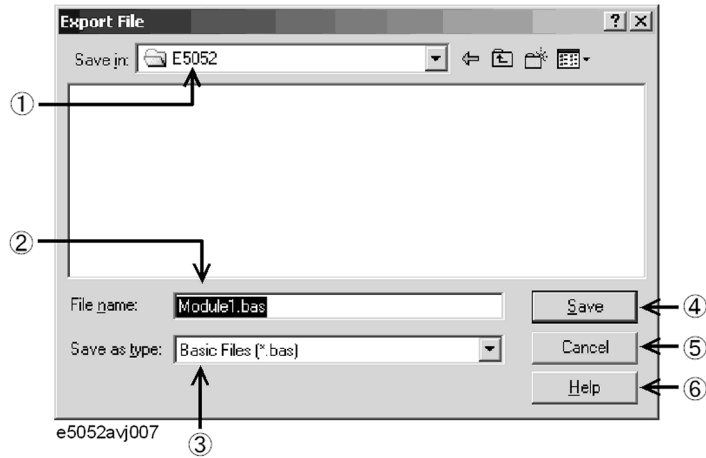
Alternatively, you can save each module (user form, standard, or class) of your VBA program individually. To save a module, you must use Visual Basic Editor. User forms are saved as .frm files, standard modules as .bas files, and class modules as .cls files.

- Step 1.** In Project Explorer (Figure 3-1), click the file name that appears under the desired module icon to highlight it.
- Step 2.** Open the Export File dialog box by doing one of the following:
- On the **File** menu, click **Export File...**
 - Click the right mouse button, and click **Export File...**
 - Press **[Ctrl] + [E]** on the keyboard.
- Step 3.** The Save As dialog box (Figure 3-7) appears. Specify the file name and location (drive or folder) and click **Save**.

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

Figure 3-7

Export File dialog box



- 1. Save in:** Specify the location (drive or folder) where you want to save the file.
- 2. File name** Type in the file name.
- 3. Save as type:** Select the type of module you are saving. The type that corresponds to the module you are saving is selected by default. Normally, you should use the default.
- 4. Save:** Clicking this button saves the module.
- 5. Cancel:** Clicking this button closes the Export File dialog box and brings you back to the main screen.
- 6. Help:** Brings up VBA Online Help.

3. Operation Basics of
the E5052A's VBA

Loading a VBA Program

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

Loading a project

You can load a saved project file either from the E5052A measurement screen or by specifying that the project file be automatically loaded when the power is turned on.

Loading a project from the E5052A measurement screen

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

- **[Macro Setup] - VBA Editor Menu - Load Project**

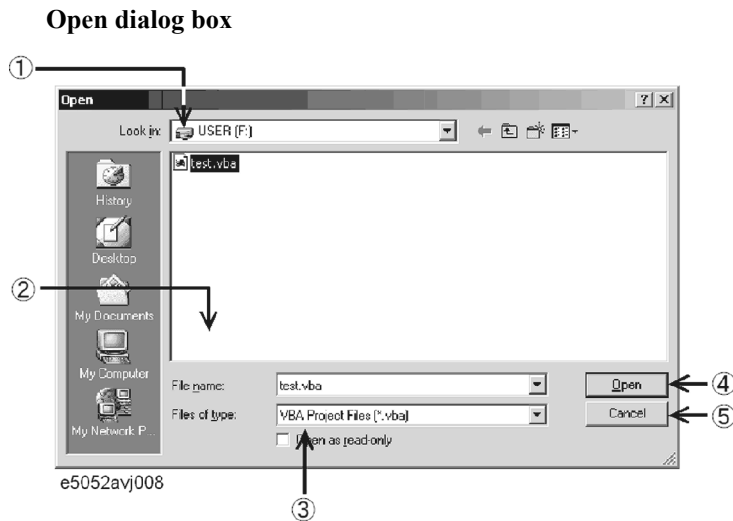
NOTE

When another project is already loaded on the Visual Basic Editor, a message asking whether you want to save the current project may appear. If you want to save the project, click the **Yes** button to display a dialog box for saving (Figure 3-6 on page 47). For saving the project, see “Saving a project file” on page 47.

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

The Open dialog box has the following user interface elements:

Figure 3-8



- 1. Look in:** Specify the location (drive or folder) where the project resides.
- 2. File name:** Specify the file name of the project you want to load.
- 3. Files of type:** Select the type of file you want to load. Normally, you should select **VBA Project Files (*.vba)**.
- 4. Open:** Clicking this button loads the project.
- 5. Cancel:** Clicking this button closes the Open dialog box without loading a

project and brings you back to the main screen.

Automatically loading a project at power-on

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

Auto-loaded project	Condition
Directory where the project resides.	A:\(A:\) or F:\(F:\)
Project file name	autoload.vba *1

*1. Upper/lower case insensitive.

NOTE

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

Loading a module (importing)

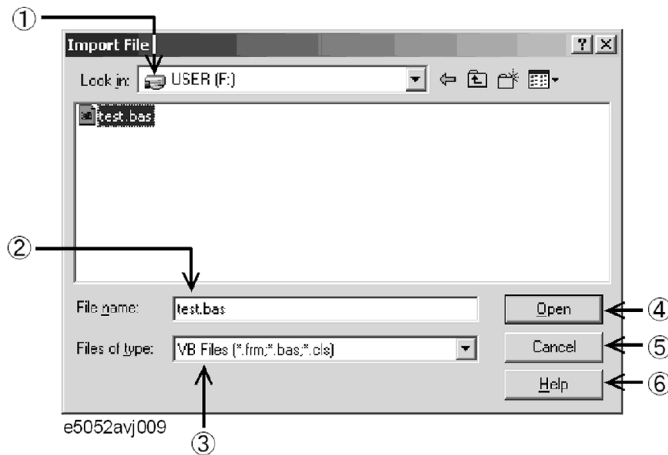
To load a saved module into a project, you must use Visual Basic Editor.

- Step 1.** In Project Explorer (Figure 3-1), click the file name that appears under the desired module icon to highlight it.
- Step 2.** Open the Import File dialog box by doing one of the following:
 - On the **File** menu, click **Import File...**
 - In Project Explorer (Figure 3-1), right-click the E5052 icon and then click **Import File...**
 - Press **[Ctrl] + [M]** on the keyboard.
- Step 3.** The Import File dialog box (Figure 3-9) appears. Specify the file name and location (drive or folder) of the file (module) you want to load and click **Open**.

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

Figure 3-9

Import File dialog box



- 1. Look in:** Specify the location (drive or folder) where the module resides.
- 2. File name:** Specify the file name of the module you want to load.
- 3. Files of type:** Select the type of file you want to load. Normally, you should select **VB Files [*.frm;*.bas;*.cls]**.
- 4. Open:** Clicking this button loads the module.
- 5. Cancel:** Clicking this button closes the Import File dialog box without loading a module and brings you back to the main screen.
- 6. Help:** Brings up VBA Online Help.

Running a VBA Program

The E5052A provides two methods to execute a VBA program: executing a program that you previously loaded and loading and executing a program in a batch process. The execution status of the VBA program is indicated in the instrument status bar, as shown in Figure 3-10. “Run” indicates that the program is running while “Stop” indicates that the program is stopped.

Figure 3-10

Instrument status bar indicating the status of the VBA program



Running a previous loaded VBA program

Running a program from Visual Basic Editor

The E5052A allows you to run a previously loaded VBA program by using one of the four methods listed in Step 1. below.

- Step 1.** Open the Macros dialog box (Figure 3-11) by doing one of the following:
- On the **Run** menu, click **Run Sub/UserForm**.
 - On the **Tools** menu, click **Macros...**
 - On the toolbar, click the “Run Macro” icon (Figure 3-2).
 - Press **[F5]** on the keyboard.

NOTE

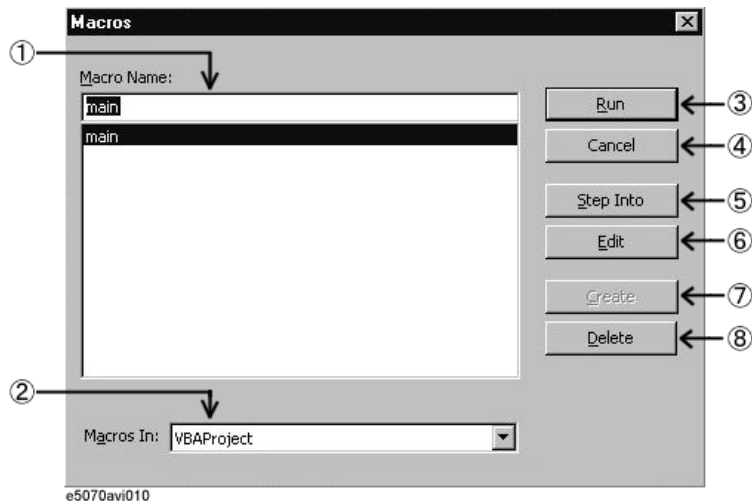
Doing the above steps with the cursor positioned within a procedure in the code window immediately runs the program without displaying the Macros dialog box.

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

The Macros dialog box has the following user interface elements:

Figure 3-11

Macros dialog box



- 1. Macro Name:** Select the VBA program (procedure name) you want to run from the list box so that its name appears here.
- 2. Macro In:** Specify the project that contains the VBA program you want to run. Normally, use the default.
- 3. Run:** Clicking this button runs the selected VBA program (procedure).
- 4. Cancel:** Clicking this button closes the Macros dialog box without running a VBA program and brings you back to the main screen.
- 5. Step Into:** Clicking this button brings up Visual Basic Editor and puts it into step-in mode, where the selected VBA program is run step by step. This mode is primarily intended for use when debugging a VBA program. For more information on step-in mode, see “Debug toolbar” on page 60.
- 6. Edit:** Displays the code of the selected VBA program. You can use this for re-editing your code.
- 7. Create:** This button is normally dimmed.
- 8. Delete:** Clicking this button deletes the selected VBA program. Take care not to inadvertently delete your VBA program before saving it.

NOTE

The Macros dialog provides access to subprograms without a parameter (procedures enclosed between **Sub()** and **End Sub**) created in a standard module.

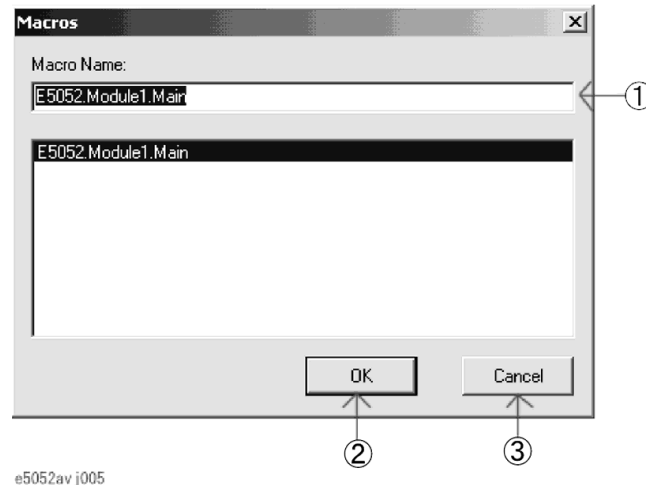
Running a program from the E5052A measurement screen

You can run a program from the E5052A measurement screen by using the method below.

- Step 1.** Display the E5052A measurement screen following the instructions given in “Switching to the E5052A Measurement Screen” on page 38.
- Step 2.** Run the VBA program (procedure) using the following key sequence:
 - **[Macro Setup] - Select Macro**
- Step 3.** In the Macros dialog box (Figure 3-12), select the VBA program (procedure name) you want to run, and click the **OK** button.

Figure 3-12

Macros dialog box



- e5052avj005
- 1. Macro Name:** Select the VBA program (procedure name) you want to run from the list box so its name appears here.
 - 2. OK:** Clicking this button runs the selected VBA program (procedure).
 - 3. Cancel:** Clicking this button closes the Macros dialog box and brings you back to the main screen.

NOTE The Macros dialog provides access to subprograms without a parameter (procedures enclosed between **Sub()** and **End Sub**) created in a standard module.

Loading and executing program in batch process

NOTE This feature is available for E5052A Rev. 1.50 or later.

This section describes how to load and execute a program (VBA project) in a batch process by pressing the softkey corresponding to the program name.

- Step 1.** Save the VBA program (VBA project file) into the following folder.

F:\VBA

NOTE This feature is available only for programs saved in F:\VBA. This feature is not available for programs saved in subfolders of F:\VBA.

NOTE When copying a VBA program to F:\VBA from another folder, copy all the files necessary to execute the program to appropriate folders. When copying a factory-installed VBA program into F:\VBA, choose only its VBA project file.

Step 2. Press **[Macro Setup] - Load & Run**.

Step 3. Press the softkey corresponding to the VBA project file name of the program you want to execute. The pressed VBA project is loaded and the program whose procedure name is set to "Main" (subprogram enclosed between Sub Main() and End Sub) and whose object name (Name property as displayed in the property window) is set to "Module" is executed.

NOTE When "Main" program of "Module1" doesn't exist, the "Illegal program name" error is displayed.

NOTE There is no limit to the number of VBA project files that can be saved in F:\VBA. However, the maximum number of programs that can be displayed as softkeys is 50.

- File names of the VBA projects saved in F:\VBA are displayed as softkeys in alphabetical order.
- The maximum number of characters that can be displayed in a softkey is 12. If a file name has 13 or more characters, "..." is added to the 12th character from the beginning of the program name and displayed. In this case a .vba extension is omitted.

Stopping a VBA Program

Breaking a running macro via the dialog box

This section describes how to break a procedure during the execution of a VBA program by displaying the dialog box shown in Figure 3-13, which permits a forced interrupt.

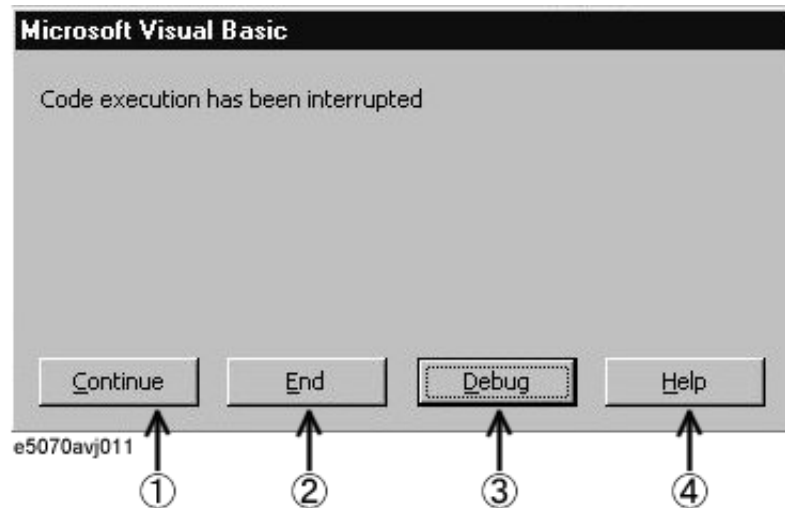
Step 1. To break the running VBA program, do one of the following:

- On the **Run** menu, click **Break**.
- On the toolbar, click the "Break Macro" icon (Figure 3-2).
- Press **[Ctrl] + [Break]** on the keyboard.
- **[Macro Setup] - Stop** (E5052A measurement screen)
- Press the **[Macro Break]** key on the E5052A front panel.

Step 2. The dialog box shown in Figure 3-13 is displayed after the forced interrupt, and the program is suspended.

Figure 3-13

Dialog box that appears when a VBA program is suspended



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

Abruptly terminating a VBA program

This section describes how to abruptly terminate a running procedure.

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

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

Errors and Debugging

Types of errors

Errors in VBA programs are classified as either syntax errors or run-time errors.

Syntax errors

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

The E5052A VBA environment is by default configured to automatically check for syntax errors, but you can disable the auto syntax check feature by using the following steps:

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

Run-time errors

A run-time error is generated when a VBA program attempts to execute an invalid statement at run time. When a run-time error is generated, the program is stopped at the invalid statement, and the error dialog box shown in Figure 3-13 appears. You can terminate the program by clicking the **END** button in the error dialog box. Also, you can click the **DEBUG** button in the error dialog box to identify the statement that caused the error. In this case, the statement in question is highlighted in yellow.

NOTE

Some run-time errors may occur under particular conditions, even though the program runs without error under normal conditions. For example, the “Marker search failed” error occurs when a program analyzing results while using the Marker Target Search feature fails to perform the search because the marker is not in the appropriate position. To avoid the interruption of a program due to such errors, you should handle these errors appropriately within the program.

About the error evacuation at the time of execution

Below, the program which performs a target search is explained at an example.

- Line 20 An error processing routine when an error occurs is confirmed.
- Line 30 A target search is performed.
 - *When an error occurs, a program is performed from the 80th line.
- Line 40 An error processing routine when an error occurs is repealed.
- Line 60 It slips out of the present sub program.
- Line 80 The place of an error processing routine is shown.
- Line 90 "Search Error" is displayed on a screen.
- Line 100 It goes back to the next line where the error occurred..

Example 3-1

The error evacuation program at the time of execution

```
10| Sub Main()  
20| On Error GoTo SearchError  
30| SCPI.CALCulate.FP.TRACe.MARKer.SEARCh.EXECute.TARGet  
40| On Error GoTo 0  
50|  
60| Exit Sub  
70|  
80| SearchError:  
90| MsgBox "Search Error"  
100| Resume Next  
110| End Sub
```

Using a debug tool

The E5052A's VBA environment provides a variety of debug tools to help you identify logical errors. Detailed information on using the debug tools is covered in the VBA Online Help and the wide selection of books on VBA.

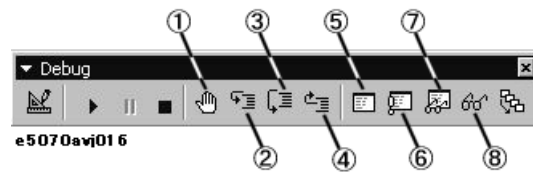
Debug toolbar

The debug toolbar (Figure 3-14) provides tool buttons that allow you to easily access various debug tools. To display the debug toolbar, do the following:

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

Figure 3-14

Debug toolbar



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

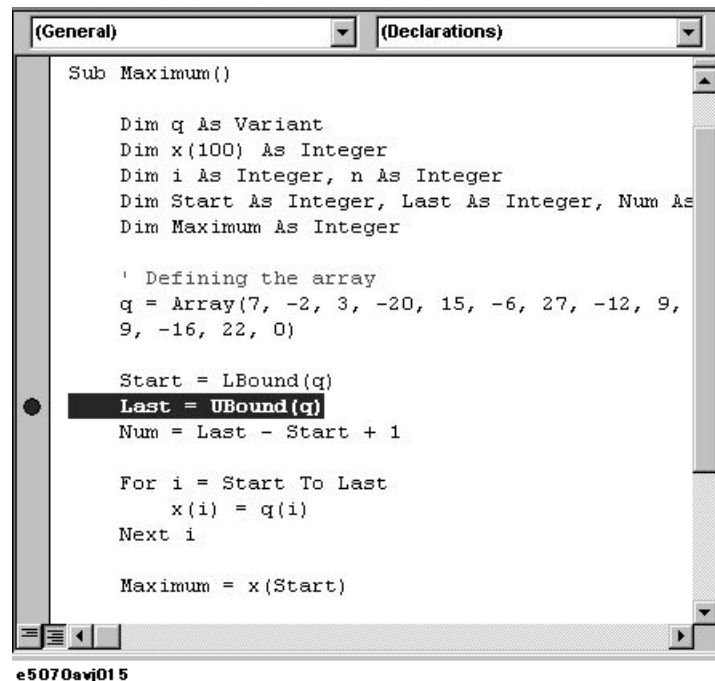
Setting a break point

By placing a break point at a particular statement in a VBA program, you can automatically suspend the program when its execution reaches that statement.

- Step 1.** To set a break point as shown in Figure 3-15, do one of the following (when you put a break point at a line, the line is highlighted in amber):
- Place the cursor at the desired line of code, and click the “Set/clear break points” button (Figure 3-14: 1) on the debug toolbar.
 - Click anywhere in the margin indicator bar of the code window.

Figure 3-15

Setting a break point



3. Operation Basics of
the E5052A's VBA

Monitoring variable or property values

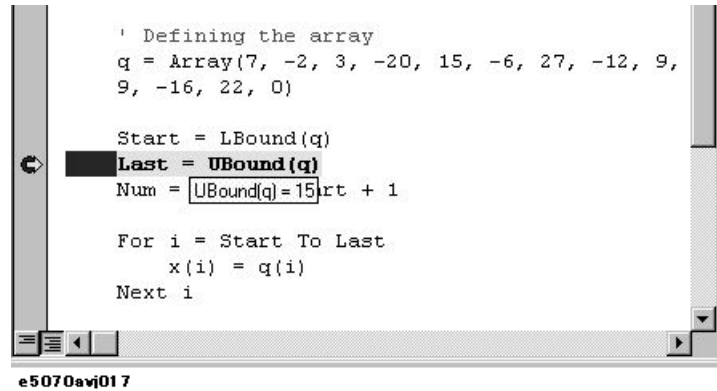
With your VBA program suspended, you can use the following debug tool to monitor variables or properties. To do this, you must set a break point, run the VBA program, and suspend it.

Data Hint

When you point to the variable or expression of interest, Data Hint shows the current value, as shown in Figure 3-16.

Figure 3-16

Data Hint



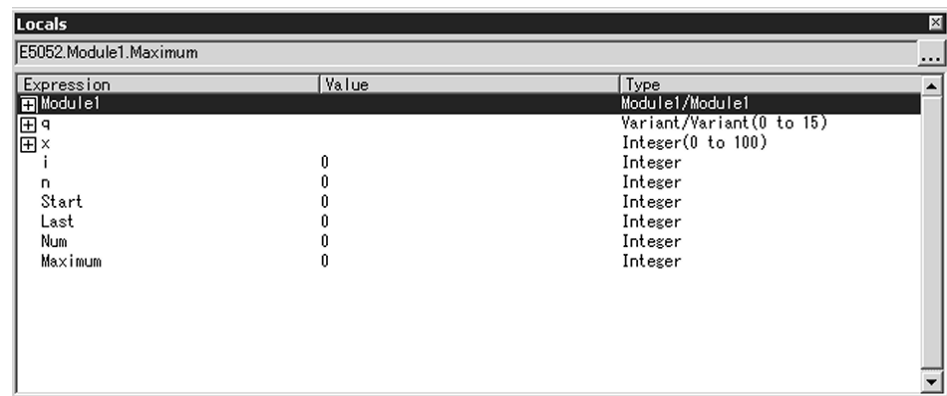
Locals window

To display the immediate window, click the “Local Window” button (Figure 3-14:5) on the debug toolbar.

All the local variable values in the module under execution are displayed, as shown in Figure 3-17.

Figure 3-17

locals window



Immediate window

To display the immediate window, click the “Immediate Window” button (Figure 3-14:6) on the debug toolbar.

In the immediate window, enter a question mark (?) followed by the variable or expression whose value you want to check and then press the Enter key. The current value appears in the line that follows, as shown in Figure 3-18.

Figure 3-18

Immediate window

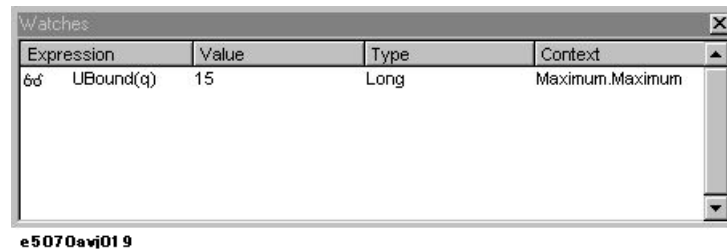


Watch window

To display the watch window (Figure 3-19), click the “Watch Window” button (Figure 3-14: 7) on the debug toolbar.

Figure 3-19

Watch window



Step 1. To open the Add Watch dialog box (Figure 3-20), do the following:

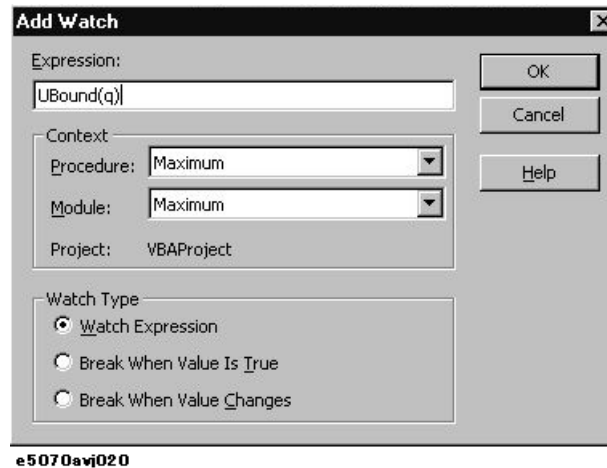
- On the **Debug** menu, click **Add Watch...**

Step 2. As shown in Figure 3-20, you can specify an expression of interest as a watch expression to always monitor its value.

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

Figure 3-20

Add Watch dialog box



Quick watch

In the code window, select a variable or expression whose value you want to watch. On the debug toolbar, click the “Quick Watch” button (Figure 3-14:8) to open the Quick Watch dialog box (Figure 3-21). The dialog box displays the current value of your specified variable or expression.

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

Figure 3-21

Quick watch



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Printing Output Values in the Echo Window

The echo window, which appears in the lower part of the E5052A measurement screen, can be used to display a message or the return value (data) of an object.

Entering values output to the echo window

You can use the COM object shown below to enter values output in the echo window. For more information on each object, see Chapter 7, "COM Object Reference."

- SCPI.DISPlay.ECHO.DATA on page 256

Opening the echo window

You can use the COM object shown below to open the echo window. For more information on each object, see Chapter 7, "COM Object Reference."

- SCPI.DISPlay.ECHO.STATe on page 257

Alternatively, you can also open the echo window by using the following key sequence:

- **[Macro Setup] - Echo Window Menu - Echo Window (ON)**

Clearing output values in the echo window

You can use the COM object shown below to clear output values in the echo window. For more information on this object, see Chapter 7, "COM Object Reference."

- SCPI.DISPlay.ECHO.CLEAr on page 256

Alternatively, you can also clear output values in the echo window by using the following key sequence:

- **[Macro Setup] - Echo Window Menu - Clear Echo**

Changing character size in echo window

You can use the COM object shown below to change the character size that appears in the echo window. For more information on this object, see Chapter 7, "COM Object Reference."

- SCPI.DISPlay.ECHO.FSIZE on page 256
- **[Macro Setup] - Echo Window Menu - Echo Font Size**

Using VBA Online Help

VBA Online Help provides useful topics such as VBA terminology or how to use a particular feature. In VBA Online Help, you can find a topic of interest through the Contents tab or by entering specific keywords.

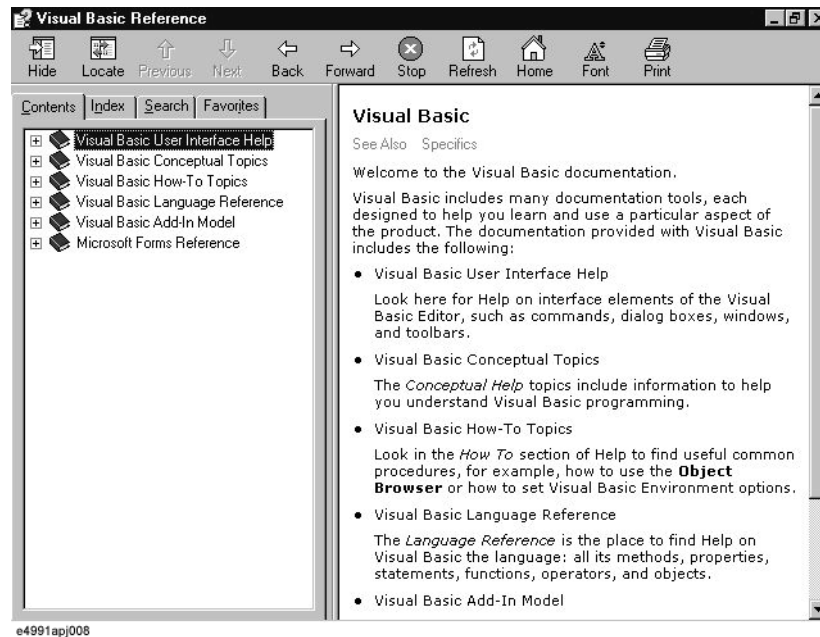
Accessing VBA Online Help

Step 1. From Visual Basic Editor, do one of the following to access the VBA Online Help screen (Figure 3-22):

- On the **Help** menu, click **Microsoft Visual Basic Help**.
- Press **[F1]** on the keyboard.
- On the toolbar, click the “VBA Help” icon (Figure 3-2).

Figure 3-22

VBA Online Help screen



Using the Contents Tab

Step 1. Clicking the **Contents** tab in the VBA Online Help screen brings up the items listed below. The E5052A VBA Online Help has a hierarchical table of contents. Click an item to expand it, and then find your particular topic of interest.

- Visual Basic User Interface Help
- Visual Basic Conceptual Topics
- Visual Basic How-To Topics
- Visual Basic Language Reference

Operation Basics of the E5052A's VBA

Using VBA Online Help

- Visual Basic Add-In Model
- Microsoft Forms Reference

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

Using the Index Tab

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

Looking up a keyword in the code within Visual Basic Editor

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

Using Advanced Techniques

Accessing a list of E5052A COM objects

The VBA environment provides COM objects that support the user in controlling the E5052A. When you are developing a program using E5052A COM objects, you can access a list of E5052A COM objects by opening Object Browser within Visual Basic Editor.

Step 1. To open Object Browser, do one of the following:

- On the **View** menu, click **Object Browser**.
- On the toolbar, click the “Object Browser” icon (Figure 3-2).

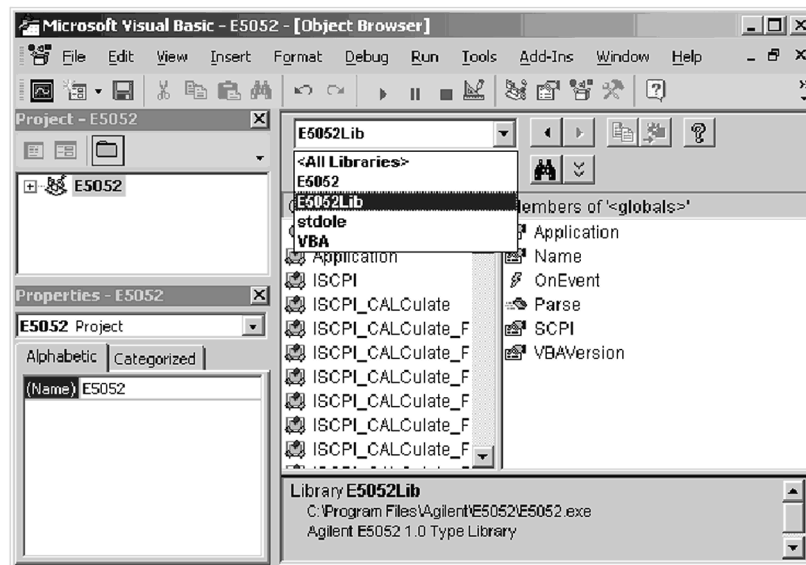
Step 2. Select **E5052LIB** from the Project/Library box to display the E5052A library as shown in Figure 3-23.

NOTE

Some COM objects in the Object Browser’s list are **not** used for controlling the E5052A VBA; these COM objects are not described in the Chapter 7, “COM Object Reference.”

Figure 3-23

How to use Object Browser



e5052avj042

Using automatic library references

For libraries that satisfy the following conditions, the library reference will be automatically set whenever a new project is created and loaded ([Macro Setup] - VBA Editor Menu - New Project).

Automatically referenced libraries	Condition
Directory where the library resides.	F:\Agilent (F:\Agilent)
Extensions of libraries	olb, tlb, dll, or ocx

To check the library reference setting, you must use Visual Basic Editor.

Perform the following to check the library reference setting.

- On the **Tools** menu, click **References...**

The library reference setting is enabled if the library name is checked.

NOTE

A project sets the library reference when the project is created. Therefore, if an existing project is loaded, libraries added after the development of the project are not automatically set in the library reference.

4

Controlling the E5052A

This chapter explains how to use the E5052A's VBA to control the E5052A itself.

Detecting End of Measurement

This section explains how to trigger the instrument to start a new measurement cycle and how to detect the end of a measurement cycle. For a detailed description of trigger detection, the trigger system, and the concept of triggering, see the Chapter on “Making a Measurement” in the *Programmer’s Guide*.

You can detect the end of measurement by using either “Using the Status Register” on page 72 or “Using Event Interruption feature” on page 73.

NOTE

For the E5052A’s VBA, regardless of the setting of the **SCPI.TRIGger.SOPC** command, neither **SCPI.IEEE4882.OPC** nor **SCPI.IEEE4882.WAI** can detect the end of measurement. Furthermore, the Parse command is not available.

Using the Status Register

The status of the E5052A can be monitored through the status register. For a complete description of the status report mechanism, including the specifications of each bit of the status register, see the Appendix on “Status Reporting System” in the *Programmer’s Guide*.

If your program is based on SPC commands, you can use SRQ (Service Request) interrupts to detect the end of measurement. For more information, see the Section on “Waiting for the End of Measurement” in the *Programmer’s Guide*.

The following is a sample program that demonstrates how to use an SRQ to detect the end of measurement.

In this program, you can start a measurement cycle by pressing the command button on the user form (cmdExec), and a message box will appear when the measurement finishes.

Line 40	The trigger continuous mode is turned “OFF”
Lines 50 to 60	The trigger system switches to "Idle" state and clears the operation status event register.
Lines 70 to 80	These lines configure the instrument so that operation status event register’s bit 4 is set to 1 only when the operation status condition register’s bit 4 is changed from 1 to 0 (negative transition).
Lines 100 to 120	The trigger source is set to “Bus Trigger” to start a measurement cycle.
Lines 140 to 170	These lines repeat until the end of measurement is detected. Line 150: The control is returned to Windows so that other applications may be executed.
Line 190	A message box appears when the end of measurement is detected.

Example 4-1

Using an Status Register to Detect the End of Measurement

```
10| Private Sub cmdExec_Click()  
20|     Dim i As Long  
30|
```



```
40| SCPI.INITiate.SP.CONTinuous = False
50| SCPI.ABORT
60| SCPI.IEEE4882.CLS
70| SCPI.STATus.OPERation.PTRansition = 0
80| SCPI.STATus.OPERation.NTRansition = 16
90|
100| SCPI.TRIGger.SP.Source = "bus"
110| SCPI.INITiate.SP.CONTinuous = True
120| SCPI.IEEE4882.TRG
130|
140| Do While i = 0
150|     DoEvents
160|     i = SCPI.STATus.OPERation.EVENT
170| Loop
180|
190| MsgBox "end"
200|
210| End Sub
```

NOTE

The E5052A's VBA program is executed as a part of E5052A's applications. Therefore, if any executed VBA program takes a long time before returning control to Windows, all processing operations other than VBA are suspended during this time. To prevent this, use DoEvents to return the control to E5052A applications.

Using Event Interruption feature

The E5052A provides an event interruption feature to allow you to detect the end of measurement. By enabling the E5052 Event softkey, you can obtain an end of sweep event.

For details, refer to the section on "Executing a Procedure with a Softkey (user menu function)" on page 78.

NOTE

To obtain an end of sweep event, you must create and execute a VBA program.

Interference between different interfaces

For the E5052A connected with two different interfaces (except for the VBA's COM interface), for example, GPIB and LAN, while a controller is waiting for the end of measurement with *OPC? command or *WAI command through GPIB interface, LAN interface is unavailable until the measurement completes.

On the other hand, for the E5052A connected with two different interfaces, for example, GPIB and VBA, VBA's COM interface is available, and commands can be executed even while a controller is waiting for the end of measurement with *OPC? command or *WAI command through GPIB interface. When the Parse command is executed, however, an error occurs.

Reading/Writing Measurement Data

This section describes how to process the E5052A's internal data. You can use these internal data arrays: unformatted data arrays, unformatted memory arrays, formatted data arrays, formatted memory arrays, and X-axis data arrays. For more information on the internal data arrays, see the section on "Internal Data Processing" in the *Programmer's Guide*.

To read/write a formatted data array, formatted memory array, unformatted data array, or unformatted memory array, use the following objects:

- SCPI.CALClate.xx.TRACe.DATA.FDATA
- SCPI.CALClate.xx.TRACe.DATA.FMEMory
- SCPI.CALClate.xx.TRACe.DATA.UDATA
- SCPI.CALClate.xx.TRACe.DATA.UMEMory

There are an unformatted data array and memory array where the phase noise measurement alone is contained with the unit of dBc.

- SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PDATA on page 149
- SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PMEMory on page 149

To read an X-axis data array, use the following object:

- SCPI.CALClate.xx.DATA.XDATA

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

- SCPI.CALCulate.TR(1-1).NARRow.DATA.XDATA on page 195
- SCPI.CALCulate.TR(1-1).WIDE.DATA.XDATA on page 221

To read a raw data array, use the following object:

- SCPI.CALClate.xx.DATA.RDATA

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

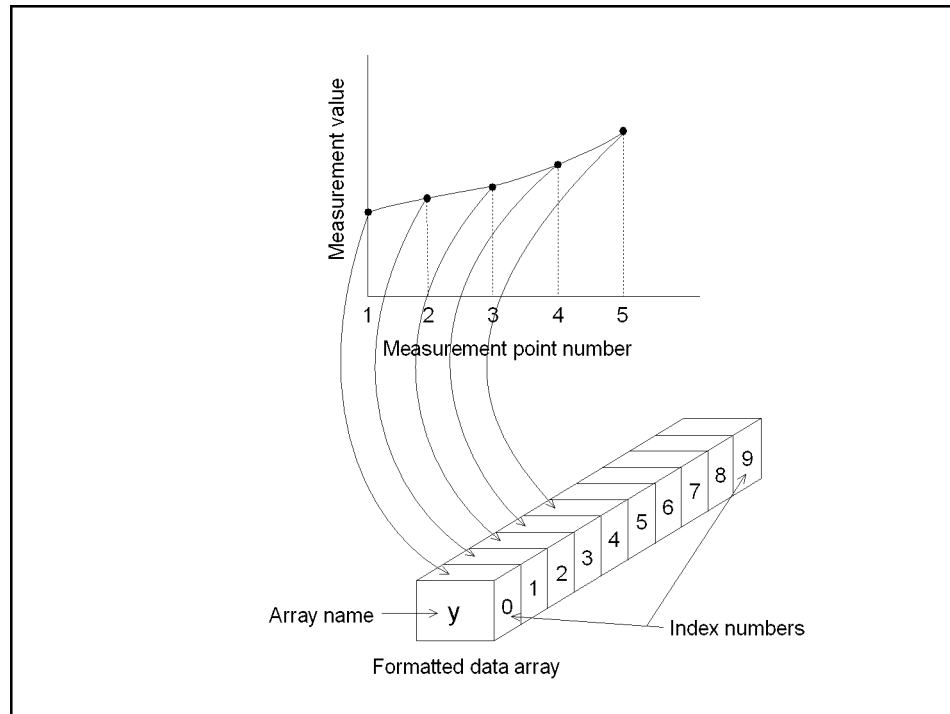
- SCPI.CALCulate.TR(1-1).NARRow.DATA.RDATA on page 195
- SCPI.CALCulate.TR(1-1).WIDE.DATA.RDATA on page 221

There is a raw array where the phase noise measurement alone is contained with the unit of dBc.

- SCPI.CALCulate.PN(1-1).DATA.PDATA on page 140

The E5052A VBA allows you to deal with multiple pieces of data through variables of the Double-precision Dynamic Array type. For example, a formatted data array that includes five measurement points is stored as shown in Figure 4-1. For more information on contained data, see the section on "Reading/Writing Measurement Data" in the *Programmer's Guide*.

Figure 4-1 Example of storing data into a Variant variable



e5052ave038

NOTE When you use one of the objects listed above, the base index number of the array is always 0 even if the declaration section contains the "Option Base 1" statement, which specifies the use of the base array index of 1.

Limit Test

This section describes how to define the limit lines and determine pass or fail with regard to the limit test function. For more on the concept of the limit test, refer to the Chapter describing “Data Analysis and Result Output” in the User’s Guide.

Using Commands to define Limit Lines

You can define the limit lines by specifying any limit value to the parameter of SCPI commands.

The program is described in detail below:

Line 20 to 30	Define the data array (variable) for the limit lines.
Line 40 to 50	Redefine the data array (variable) depending on the number of limit lines (segments).
Line 70 to 140	Set the upper limit value for the limit lines in the array.
Line 160 to 190	Set the lower limit value for the limit lines in the array.
Line 220 to 230	Specify the segment number for the upper and lower limit values.
Line 250 to 260	Specify the upper and lower limit values on the trace.
Line 280 to 320	Trigger the instrument.
Line 340	Display the limit lines.
Line 350	Display the determination result. (For fail only.)
Line 360	Activate the limit test function.

Example 4-2

Using Commands to define Limit Lines

```
10| Sub Main()  
20|   Dim Udata() As Double  
30|   Dim Ldata() As Double  
40|   ReDim Udata(7)  
50|   ReDim Ldata(3)  
60|  
70|   Udata(0) = 0  
80|   Udata(1) = 1400000000#  
90|   Udata(2) = 0.00002  
100|  Udata(3) = 1400000000#  
110|  Udata(4) = 0.00002  
120|  Udata(5) = 1600000000#  
130|  Udata(6) = 0.0001  
140|  Udata(7) = 1600000000#  
150|  
160|  Ldata(0) = 0  
170|  Ldata(1) = 1200000000#  
180|  Ldata(2) = 0.0001  
190|  Ldata(3) = 1200000000#  
200|  
210|  SCPI.DISPlay.WINDow.ACTive = "FP1"  
220|  SCPI.CALCulate.FP.TRACe.LIMit.UPPer.SEGMent.Count = 2  
230|  SCPI.CALCulate.FP.TRACe.LIMit.LOWer.SEGMent.Count = 1
```

```

240|
250|     SCPI.CALCulate.FP.TRACe.LIMit.UPPer.SEGMent.DATA = Udata
260|     SCPI.CALCulate.FP.TRACe.LIMit.LOWer.SEGMent.DATA = Ldata
270|
280|     SCPI.TRIGger.MODE = "FP1"
290|     SCPI.TRIGger.FP.Source = "bus"
300|     SCPI.INITiate.FP.CONTInuous = False
310|     SCPI.INITiate.FP.IMMEDIATE
320|     SCPI.IEEE4882.TRG
330|
340|     SCPI.DISPlay.FP.TRACe.LIMit.LINE = True
350|     SCPI.DISPlay.FP.LIMit.FSIGN = True
360|     SCPI.CALCulate.FP.TRACe.LIMit.STATe = True
370| End Sub

```

Reading Limit Lines from Files

You can create any upper and lower value for limit lines in the specified format in advance, and read the file later to specify the limit lines.

For information about creating upper and lower values for limit lines, refer to the chapter describing “Data analysis and Result Output” in the User’s Guide.

The file must be saved in the CSV format (with the extension *.csv).

The program is described in detail below:

NOTE Save the upper limit values together into one file, and the lower limit values into another.

Line 20	Read the lower limit value for the limit lines from the file.
Line 30	Read the upper limit value for the limit lines from the file.
Line 50 to 100	Trigger the instrument.
Line 120	Display the limit lines.
Line 130	Display the determination result. (For fail only.)
Line 140	Activate the limit test function.

Example 4-3

Reading Limit Lines from File

```

010| Sub Main()
020|     SCPI.MMEMory.FP.TRACe.LoAd.LIMit.LOWer = "f:\lower.csv"
030|     SCPI.MMEMory.FP.TRACe.LoAd.LIMit.UPPer = "f:\upper.csv"
040|
050|     SCPI.DISPlay.WINDow.ACTive = "FP1"
060|     SCPI.TRIGger.MODE = "FP1"
070|     SCPI.TRIGger.FP.Source = "bus"
080|     SCPI.INITiate.FP.CONTInuous = False
090|     SCPI.INITiate.FP.IMMEDIATE
100|     SCPI.IEEE4882.TRG
110|
120|     SCPI.DISPlay.FP.TRACe.LIMit.LINE = True
130|     SCPI.DISPlay.FP.LIMit.FSIGN = True
140|     SCPI.CALCulate.FP.TRACe.LIMit.STATe = True
150| End Sub

```

Executing a Procedure with a Softkey (user menu function)

The E5052A lets you perform procedures assigned to specific softkeys (**[Macro Setup] - User Menu - User Label 1/2/3/4/5/6/7/8**) without using user forms for the event activated by pressing the softkey. This function is called the user menu function.

NOTE

You must create and execute a VBA program when using the user menu function.

Preparing to use the User Menu Function

Before using the user menu function, perform the following preparation.

Settings for Softkey Label Name

When you want to change the softkey label names for the user menu function, you need to code within the VBA program. For details, refer to “Sample Program of Settings for Softkey Label and Softkey Enabled/Disabled (object name: Module1)” on page 80.

For more information on this object, see Chapter 7, “COM Object Reference.”

- SCPI.PROGRAM.SKEY.ITEM(1-8).LABEL on page 331

Enabling/Disabling Softkey

When you want to enable or disable the softkey for the user menu function, you need to code within the VBA program. For details, refer to “Sample Program of Settings for Softkey Label and Softkey Enabled/Disabled (object name: Module1)” on page 80. For more information on this object, see Chapter 7, “COM Object Reference.”.

Use the following COM objects to enable or disable the softkey. For more information on this object, see Chapter 7, “COM Object Reference.”.

- SCPI.PROGAm.SKEY.ITEM(1-8).ENABle on page 331

How to use the User Menu Function

To execute the procedure assigned to a softkey, you need to generate an event by pressing the softkey.

For this, you need to code within the VBA program to execute a procedure. For more information, refer to “Sample Program Executing User Menu (object name: Class1)” on page 81.

Use the following function to execute a procedure in the user menu.

Step 1. Enable the softkey to generate an event.

- **[Macro Setup] - E5052 Event ON**

Step 2. Press the softkey.

- **[Macro Setup] - User Menu - User Label No.**

“No.” represents the button number. You can set the label for “User Label No.” as you like. For details, refer to the “Enabling/Disabling Softkey.” section.

NOTE

You can use the user menu function only when the VBA program is running. For information on how to verify whether the VBA is running, refer to “Running a VBA Program” on page 53.

Simple usage example

The following is a simple example that uses a standard module and a class module.

Object name	Module type	Function
Module1	Standard module	Sets the softkey labels and enables interrupts from the softkeys
Class1	Class module	Specifies the processing to be followed when an event occurs

The program (object name: Module1) is described in detail below:

Line 60	The instance of the class module specified by Class1 is assigned to clsEvent (Object creation).
Lines 80 to 140	Set the first and second softkey (<i>id.</i> 1 to 2) to enabled and set the third to eighth softkey (<i>id.</i> 3 to 8) to disabled.
Lines 160 to 170	Set the first softkey label (<i>id.</i> 1) to "Preset" and the second softkey label (<i>id.</i> 2) to "Exit".
Lines 190 to 210	Processing repeated until the event occurs.
Line 200	Detects an event when a specific softkey is pressed and enables the interrupt from the event.

Example 4-4**Sample Program of Settings for Softkey Label and Softkey Enabled/Disabled (object name: Module1)**

```

10| Sub Main()
20|
30|   Dim clsEvent As Class1
40|   Dim I As Long, J As Long
50|
60|   Set clsEvent = New class1
70|
80|   For I = 1 To 2
90|     SCPI.PROGRAM.SKEY.Item(I).ENABLE = True
100|  Next I
110|
120|   For J = 3 To 8
130|     SCPI.PROGRAM.SKEY.Item(J).ENABLE = False
140|  Next J
150|
160|   SCPI.PROGRAM.SKEY.Item(1).LABEL = "Preset"
170|   SCPI.PROGRAM.SKEY.Item(2).LABEL = "Exit"
180|
190|   Do
200|     DoEvents
210|   Loop
220|
230|   Set clsEvent = Nothing
240|
250| End Sub

```


Executing a Procedure with a Softkey (user menu function)

The program (object name: Class1) is described in detail below:

- Lines 50 to 130 An event occurs when the softkey is pressed from the user menu.
- Lines 70 to 80: E5052A are reset to the initial setting when the first softkey is pressed.
- Lines 90 to 120: The program ends with a message box displayed when the second softkey is pressed.
- Lines 140 to 150 An event occurs when the triggered sweep ends.
- Line 150: A message box appears when the sweep ends.
- Lines 190 to 210 Implement the object.
- Lines 230 to 250 Release the object.

Example 4-5**Sample Program Executing User Menu (object name: Class1)**

```

10| Dim WithEvents app As Application
20|
30| Private Sub app_OnEvent(ByVal ReasonStr As String, ByVal
OptionStr As String)
40|     Select Case ReasonStr
50|         Case "UserLabel"
60|             Select Case OptionStr
70|                 Case 1
80|                     SCPI.SYSem.PRESet
90|                 Case 2
100|                    SCPI.PROGram.COM.EVENT = False
110|                    MsgBox "Program ended"
120|                End
130|            End Select
140|        Case "SweepEnd"
150|            MsgBox "Sweep ended"
160|    End Select
170| End Sub
180|
190| Private Sub Class_Initialize()
200|     Set app = Application
210| End Sub
220|
230| Private Sub Class_Terminate()
240|     Set app = Nothing
250| End Sub

```

NOTE

The E5052A's VBA program is executed as a part of E5052A's applications. Therefore, if any executed VBA program takes a long time before returning control to Windows, all processing operations other than VBA are suspended during this time. To prevent this, use DoEvents to return the control to E5052A applications.

Argument for event occurrence

The arguments for event occurrence are described below. An event represents `app_OnEvent`, which is described in Example 4-5 of the “Simple usage example”.

Event	First argument	Second argument
User menu	UserLabel	Softkey label NO. (1-8)
End of sweep	SweepEnd	Measurement window (FP/PN/SP/TR/USER)
Request for service	RQS	Nothing

NOTE

`OnEvent(id1 As String, id2 As String)` is an event handler of the events from the application and can refer to the instance (data) of the class. By declaring the object a variable “app” in the class module, it can be utilized as a procedure to obtain the event occurrence.

Within the event handler (lines 30-170), the processing should be the minimum necessary before an event ends. Nesting is also not allowed.

Controlling VBA Externally

This section describes how to control the E5052A's VBA externally.

Executing VBA Using External Controller

You can execute VBA from an external PC by running either macros or the user menu.

Running Macro

To start VBA from an external PC, use the following command:

- SCPI.MMEMory.LOAD.PROGram on page 320
- SCPI.PROGram.COM.EVENT on page 329
- SCPI.PROGram.SELected.STATe on page 330

Running User Menu

To execute the user menu from an external PC, use the following command: This command executes the first of the menu.

To execute the user menu, you must execute the user menu function in advance. For more information, refer to “Running User Menu” on page 83.

- SCPI.PROGram.SKEY.Item(1).IMMEDIATE

Receiving the Termination of VBA Using External Controller

To allow the external controller to receive the termination of VBA from the E5052A, you may either confirm the operational status of VBA or use the user-defined register.

Confirming VBA's Operational Status

To confirm the operational status of VBA, use the following command:

- SCPI.PROGram.SELected.STATe on page 330

Using User-defined Register

To use the user-defined register, use the following command: For more information, refer to “Using User-defined Register” on page 84.

- SCPI.STATus.OPERation.BIT12.CLEAr on page 388
- SCPI.STATus.OPERation.BIT12.CONDITION on page 388
- SCPI.STATus.OPERation.BIT12.ENABLE on page 389
- SCPI.STATus.OPERation.BIT12.EVENT on page 389
- SCPI.STATus.OPERation.BIT12.NTRAnsition on page 389
- SCPI.STATus.OPERation.BIT12.PTRAnsition on page 390
- SCPI.STATus.OPERation.BIT12.SET on page 390

Using User-defined Register

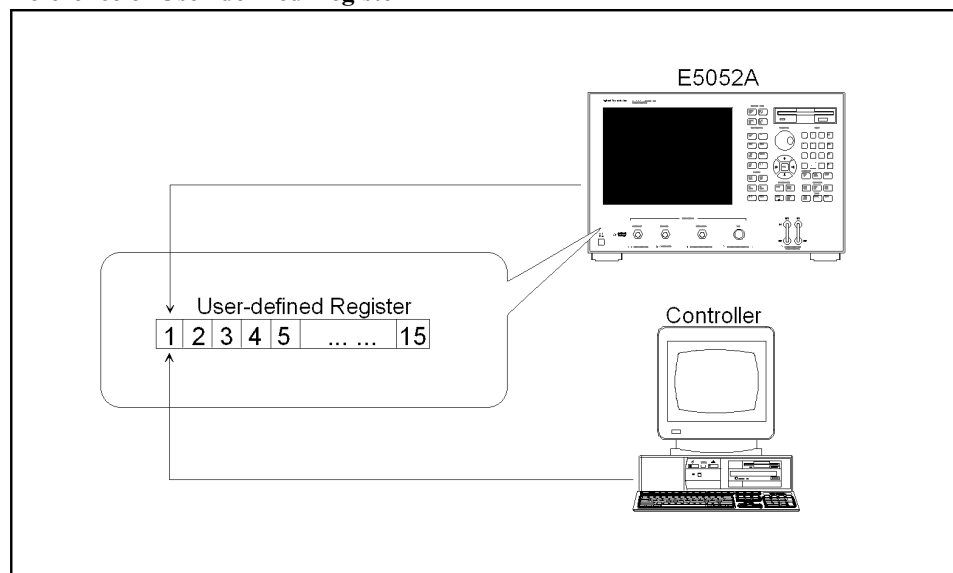
The E5052A does not control the individual status flag of the user-defined register. In order to start the E5052A VBA using the external controller to obtain the end bit, the user must make the user-defined register to be controlled within the program.

The user can assign any register number to the user-defined register which he/she wants to use. Available register numbers are 1 to 15 (0 to 14 bit).

If you use the user-defined register, you must specify the same register number for both the external controller side and the E5052A's program side. (Figure 4-2)

Figure 4-2

Reference of User-defined Register

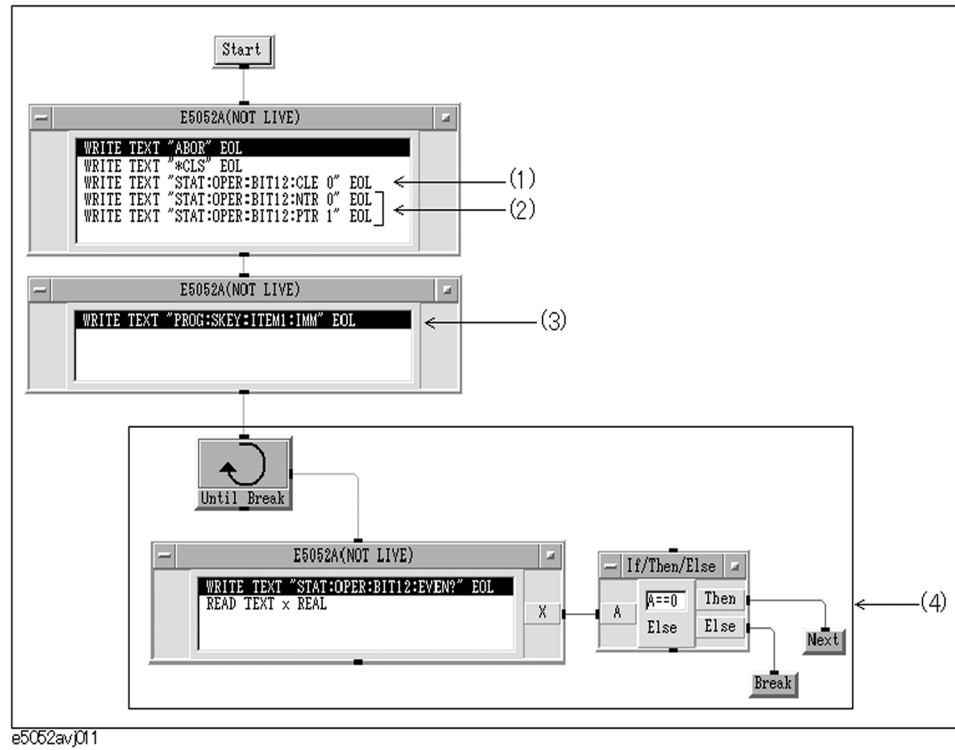


e5052ave010

The following is a sample program.

- (1) Clears the first condition register to be used (bit 0).
- (2) These lines configure the instrument so that the operation use-defined status event register's bit 0 is set to 1, when the operation use-defined condition register's bit 0 is changed from 0 to 1 (i.e. positive transition).
- (3) Executes the user menu.
- (4) Repeats until the termination of VBA is detected.

Figure 4-3 A Sample Program to Control User-defined Register (On the Controller Side)



- Lines 30 to 90 An event occurs when the softkey is pressed from the user menu.
 - Lines 50 to 60: E5052A will be reset to the initial setting, when the first softkey is pressed.
 - Lines 70 to 80: The message box will appear, when the second softkey is pressed.
- Lines 100 to 110 An event will occur when the triggered sweep ends.
 - Line 110: A message box will appear when the sweep ends.
- Line 130 Sets a flag to the first of the user-defined register (bit 0).
- Line 140 This procedure terminates the program.

Example 4-6 A Sample Program to Control User-defined Register (On the E5052A Side)

```

10|Private Sub app_OnEvent(ByVal ReasonStr As String, ByVal
OptionStr As String)
20|    Select Case ReasonStr
30|        Case "UserLabel"
40|            Select Case OptionStr
50|                Case 1
60|                    SCPI.SYSem.PRESet
70|                Case 2
80|                    MsgBox "Program ended"
90|            End Select
100|        Case "SweepEnd"
110|            MsgBox "Sweep ended"
120|    End Select

```

Controlling the E5052A

Controlling VBA Externally

```
130|     SCPI.STATus.OPERation.BIT12.SET = 0
140|     End
150|End Sub
```

NOTE

For more information on the user-defined register, refer to the status reporting system described in the appendix of the programmer's guide

Using User-defined Variables

The E5052A has an area for which the users may set any value. The areas are divided for each data type.

An area can be used up to 10 (1 to 10) for each command.

The values set by a command cannot be removed by executing preset.

- SCPI.PROGram.VARiable.ARRay(1-10).DATA on page 332
- SCPI.PROGram.VARiable.ARRay(1-10).POINTs on page 332
- SCPI.PROGram.VARiable.DOUBLE(1-10) on page 333
- SCPI.PROGram.VARiable.INTeger(1-10) on page 333
- SCPI.PROGram.VARiable.STRING(1-10) on page 334

NOTE

These commands do not refer to or change the results within the E5052A.

The following is a sample program for configuration, which demonstrates how to use the floating-point-formatted user-defined array.

Line 30 to 50	Define the variables.
Line 70	Assign values to the variables.
Line 90	Call the function to trigger the instrument.
Line 110	Configure marker X for frequency measurement (trace 1).
Line 120	Read out marker Y for frequency measurement (trace 1).
Line 130	Configure marker X for power measurement (trace 2).
Line 140	Read out marker Y for power measurement (trace 2).
Line 160	Set the value of marker Y for frequency measurement at the beginning of the user-defined array.
Line 170	Set the value of marker Y for power measurement to that of the 2nd dimension of the user-defined array.

Example 4-7

How to use floating point formatted user-defined array

```

10| Sub Main()
20|
30|   Dim Vcc1 As Double
40|   Dim FP_Freq As Double
50|   Dim FP_Power As Double
60|
70|   Vcc1 = 0.5
80|
90|   Call FP_SingleSweep
100|
110|   SCPI.CALCulate.FP.Trace(1).MARKer(1).X = Vcc1
120|   FP_Freq = SCPI.CALCulate.FP.Trace(1).MARKer(1).Y
130|   SCPI.CALCulate.FP.Trace(2).MARKer(1).X = Vcc1
140|   FP_Power = SCPI.CALCulate.FP.Trace(2).MARKer(1).Y
150|

```

Controlling the E5052A

Controlling VBA Externally

```
160| SCPI.PROGRAM.VARIABLE.DOUBLE(1) = FP_Freq
170| SCPI.PROGRAM.VARIABLE.DOUBLE(2) = FP_Power
180| End Sub
```

The following sample program demonstrates how to use the array-formatted user-defined array.

Line 30 to 50	Define the variables.
Line 70	Call the function to trigger the instrument.
Line 90	Read out the number of points and set it to the variable.
Line 100 to 110	Redefine the array (variable).
Line 130	Read out the trace data and set it to the variable.
Line 140	Read out the X-axis data and set them to the variable.
Line 160	Specify the number of data points at the beginning of the user-defined array.
Line 170	Specify the trace data at the beginning of the user-defined array.
Line 190	Specify the number of data points to that of the 2nd dimension of the user-defined array.
Line 200	Specify the X-axis data to that of the 2nd dimension of the user-defined array.

Example 4-8

How to use the array formatted user-defined array

```
10| Sub Main()
20|
30| Dim PN_Nop As Long
40| Dim PN_Trace() As Double
50| Dim PN_Freq() As Double
60|
70| Call PN_SingleSweep
80|
90| PN_Nop = SCPI.SENSE.PN.SWEEP.POINTS
100| ReDim PN_Trace(PN_Nop - 1)
110| ReDim PN_Freq(PN_Nop - 1)
120|
130| PN_Trace = SCPI.CALCULATE.PN.TRACE.DATA.FDATA
140| PN_Freq = SCPI.CALCULATE.PN.DATA.XDATA
150|
160| SCPI.PROGRAM.VARIABLE.ARRAY(1).POINTS = PN_Nop
170| SCPI.PROGRAM.VARIABLE.ARRAY(1).DATA = PN_Trace
180|
190| SCPI.PROGRAM.VARIABLE.ARRAY(2).POINTS = PN_Nop
200| SCPI.PROGRAM.VARIABLE.ARRAY(2).DATA = PN_Freq
210|
220| End Sub
```

5 **User Defined Window**

Overview

The E5052A's user defined window provides graphics utility for tailoring the measurement and interpreting the results. Users can operate scale, trace, and marker functions as same as that of E5052A's other instrument mode.

How to use the User Defined Window

This section explains how to use the user defined window on the E5052A.

Printing Measurement Data in the User Define Window

The E5052A's user defined window enables the display traces by copying the data array to the trace array of the user defined window. Users can access all the data array of the user defined window via either VBA COM commands or SCPI commands. Up to 8 traces can be displayed in the E5052A's user defined window.

The example 5-1 shows a sample procedure that demonstrates how to display traces that users define data array both in X-axis and Y-axis.

Lines 20 to 30	Defines data array to be displayed in the trace of user defined window.
Line 50	Selects and specifies the user defined window as active window.
Lines 80 to 90	Copies formatted data trace from the frequency-power measurement results to the data array defined in the VBA program.
Line 110	Specifies trace 1 as active trace
Line 140	Copies data array to X-axis data on trace 1
Line 170	Copies data array to Y-axis data on trace 1
Lines 200 to 210	Sets display unit of X-axis and Y-axis respectively.
Line 240	Execute autoscale
Line 260	Returns to the E5052A application

User Defined Window

How to use the User Defined Window

Example 5-1

Measurement Data in the User Define Window

```
10| Sub Main()  
20|   Dim aryXdata() As Double  
30|   Dim aryYdata() As Double  
40|  
50|   SCPI.DISPlay.USER.STATe = True  
60|   SCPI.DISPlay.WINDow.ACTive = "USER1"  
70|  
80|   aryXdata = SCPI.CALCulate.FP.DATA.XDATA  
90|   aryYdata = SCPI.CALCulate.FP.TRACe(1).DATA.FDATA  
100|  
110|   SCPI.DISPlay.USER.TRACe(1).STATe = True  
120|  
130|   'x data  
140|   SCPI.CALCulate.USER.TRACe(1).DATA.XDATA = aryXdata  
150|  
160|   'y data  
170|   SCPI.CALCulate.USER.TRACe(1).DATA.FDATA = aryYdata  
180|  
190|   'Unit  
200|   SCPI.DISPlay.USER.TRACe(1).X.UNIT = "v"  
210|   SCPI.DISPlay.USER.TRACe(1).Y.UNIT = "Hz"  
220|  
230|   'Auto scale  
240|   SCPI.DISPlay.USER.ALLTrace.Y.SCALe.AUTO  
250|  
260|   DoEvents  
270|  
280| End Sub
```

NOTE

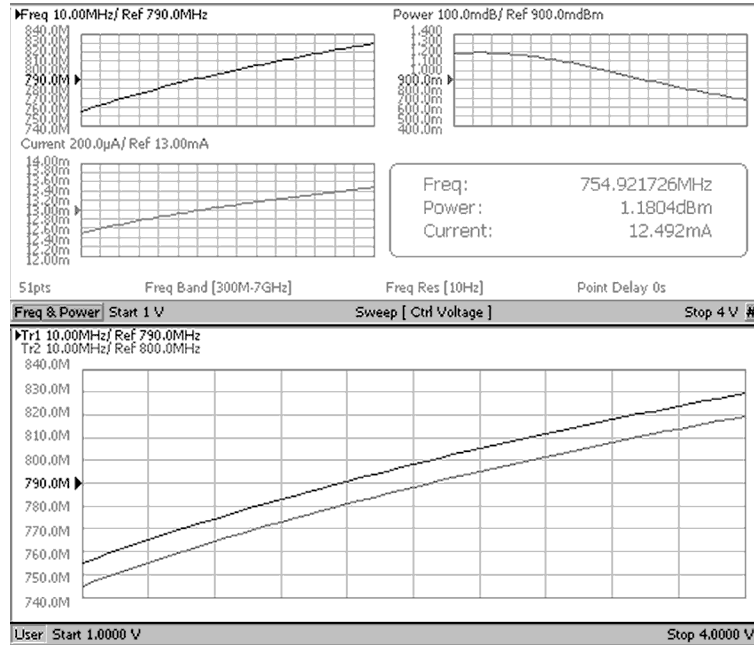
The E5052A's VBA program is executed as an application. Therefore, if any executed VBA program takes a long time before returning control to the E5052A, all processing operations other than VBA are suspended during this time. To prevent this, use DoEvents to return the control to the E5052A.

NOTE

The value in the X-data array for the user defined window has to have incremental order, that means (the value at N point) < (the value at N+1 point). When the error message, "Illegal parameter value" is received, check the values of the X-data array data on point-to-point to ensure this rule.

Figure 5-1

Example of display to User Define Window



e5052avj015

Analysis Functions and Save/Recall Functions

- Analyzing Data on the Trace Using the Marker
- Searching for Positions that Match Specified Criteria
- Determining the Mean, Standard Deviation, and p-p of the Trace
- Comparing Traces
- Performing Data Math
- Saving and Recalling Instrument State
- Saving Trace Data to a File

6**Controlling Peripherals**

This chapter explains how to control peripherals connected to the E5052A with GPIB by using the software (VISA library) installed in the E5052A.

Overview

The E5052A macro function (E5052A VBA) can be used not only to automate measurements but also to control external measurement instruments connected via the USB/GPIB interface cable by acting as a self-contained system controller (see "Overview of Control System Based on Macro Function" on page 31).

The E5052A macro function (E5052A VBA) performs communications via the COM interface when controlling the E5052A itself, but it communicates via VISA (Virtual Instrument Software Architecture) when controlling external measurement instruments.

To control peripherals connected to the E5052A via the USB/GPIB interface cable, the following preparation is required.

Preparation

Importing definition files

To use the VISA library in the E5052A macro (E5052A VBA), you need to import two definition files into your project with the Visual Basic editor to define the VISA functions and perform other tasks. You can find the source file of this program saved under the following name on the sample program disk. For importing the module, see "Loading a module (importing)" on page 51

- visa32.bas
- vpptype.bas

Programming with VISA

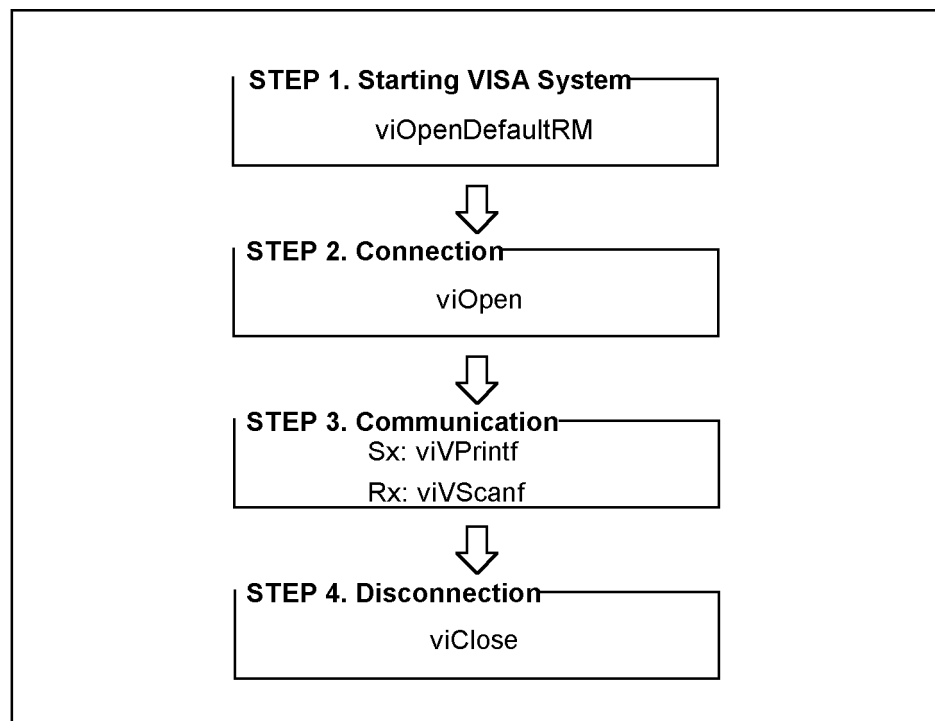
Figure 6-1 shows the flow of controlling the instrument with VISA. When developing a VISA program in the Visual Basic language, a special programming notice (in the readme text file listed below) must be reviewed.

For details on the use of the VISA library and the programming notice for using the VISA library with the E5052A macro (E5052A VBA), refer to the following files on the CD-ROM (Agilent part number: E5052-9050x).

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

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

Figure 6-1 Flow of instrument control with VISA



e4991ape033

STEP 1. Starting Up VISA System

VISA's viOpenDefaultRM function initializes and starts up the VISA system. The function viOpenDefaultRM should always be used when initiating VISA functions. The parameter of this function is startup information.

Syntax

viOpenDefaultRM(*param*)

Parameter

	<i>param</i>
Description	Startup information (output)
Data type	Long integer type

STEP 2. Connection

VISA's viOpen function makes connection with the specified instrument. The viOpen function returns a value so that the VISA functions can apply it to the specified instrument. The parameters of this function are startup information, the address information of the specified instrument, access mode, timeout, and connection information.

Syntax

viOpen(*param1*, *param2*, *param3*, *param4*, *param5*)

Parameter

	<i>param1</i>
Description	Startup information (input)
Data type	Long integer type

	<i>param2</i>
Description	Address information of specified instrument (input)
Data type	Character string type
Syntax	GPIB[<i>board</i>] ^{*1} :: <i>primary address</i> ^{*2} ::INSTR

*1. GPIB0 for E5052A

*2. GPIB address of instrument controlled by E5052A

	<i>param3</i>
Description	Access mode (Enter 0)

	<i>param4</i>
Description	Timeout (Enter 0)

	<i>param5</i>
Description	Connection information (output)
Data type	Long integer type

STEP 3. Communication

VISA's viVPrintf function sends a program message (GPIB command) to the specified instrument. The parameters of this function are connection information, the program message, and the variable to be formatted.

NOTE

To input/output GPIB commands, the viVPrintf function and the viVScanf function are mainly used, but other VISA functions are also available. For more information, refer to visa.hlp (online help for the VISA library).

Syntax

viVPrintf(*param1*, *param2*, *param3*)

Parameter

	<i>param1</i>
Description	Connection information (input)
Data type	Long integer type

	<i>param2</i>
Description	Program message (input) ^{*1}
Data type	Character string type

*1. When sending a program message of the GPIB command, a message terminator is required at the end of the message.

	<i>param3</i>
Description	A variable to be formatted ^{*1}
Data type	Specified data type

*1. If not applicable, enter 0.

VISA's viVScanf function receives the result from the specified instrument and stores it in the output variable. The parameters of this function are connection information, the format parameter for the output variable, and the output variable.

Syntax

viVScanf(*param1*, *param2*, *param3*)

Parameter

	<i>param1</i>
Description	Connection information (input)
Data type	Long integer type

	<i>param2</i>
Description	Format parameter for output variable
Data type	Character string type

	<i>param3</i>
Description	Output variable (output)
Data type	Character string type

STEP 4. Disconnection

VISA's viClose function disconnects communication and terminates the VISA system. The parameter of this function is startup information.

Syntax

viClose(*param*)

Parameter

	<i>param</i>
Description	Startup information (input)
Data type	Long integer type

7**COM Object Reference**

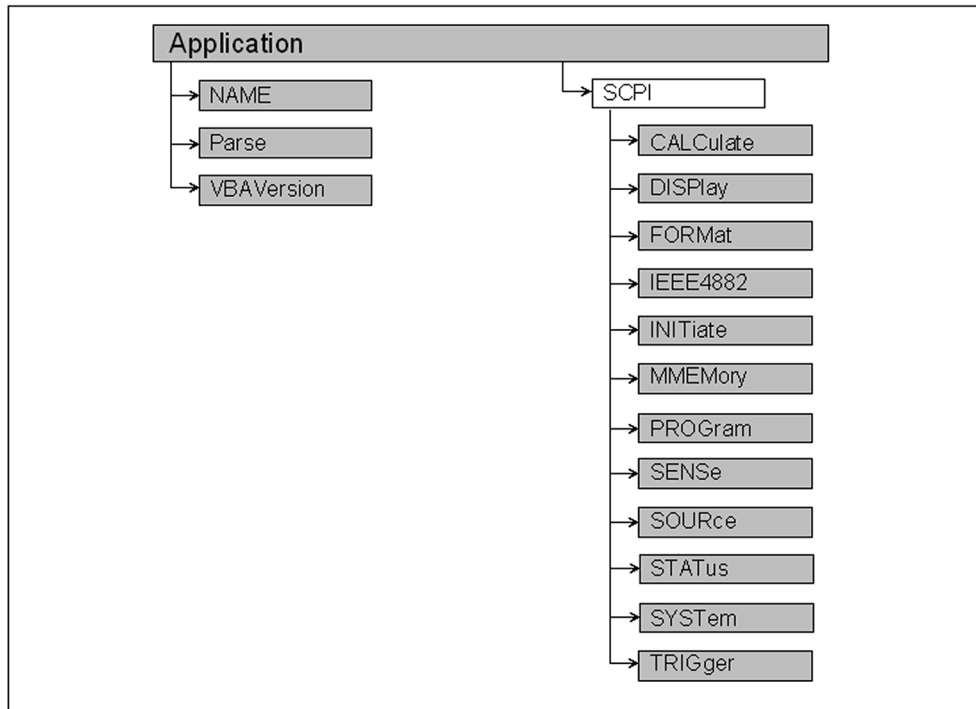
This chapter describes the COM object model of the Agilent E5052A and the COM object reference in alphabetical order. If you want to look up COM objects by corresponding front panel keys, see “COM object list by front panel key.”

COM Object Model

The COM objects provided for the E5052A are structured hierarchically as shown in Figure 7-1.

Figure 7-1

E5052A COM object model



e5052avj012

Application Objects

The Application objects are at the top of the hierarchy of the E5052A COM object model. They consist of 3 objects dedicated to the COM interface and SCPI objects corresponding to SCPI commands. For information on the basic use of the 3 objects dedicated to the COM interface, see “Application Objects” on page 102.

SCPI Objects

The SCPI objects are created to realize the SCPI commands of the E5052A with the COM interface. For information on the basic use of the SCPI objects, see “SCPI Objects” on page 103.

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

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

SCPI command	COM object
OUTPUT 717;":SENS:SP:AVER:CONT 16"	→ SCPI.SENSe.SP.AVERAge.COUNt = 16
OUTPUT 717;":SENS:SP:AVER:STAT?" ENTER 717;A\$	→ A = SCPI.SENSe.SP.AVERAge.STATe
OUTPUT 717;"*CLS"	→ SCPI.IEEE4882.CLS

Notational Rules of COM Objects

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

Syntax

Part with heading “Syntax” describes the syntax to send a COM object from the E5052A VBA to the E5052A. The syntax consists of the object part and the set/read part, with an equal “=” inserted between them. Variables are indicated by italicized letters. Variables with () are indices. For indices with () having their preset values, you can omit “(variable),” and, if omitted, the preset values are automatically set.

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

"Object (property) = *variable*": to set the stat of the E5052A.

variable=object (property): to read the stat of the E5052A.

"Object (method)": to make the E5052A perform some processing.

Description

Part with heading “Description” describes how to use the COM object or the operation when executed. COM objects used only to read the state of the E5052A are indicated with “Read only” and ones used only to set the state of the E5052A “No read.”

Variable

Part with heading “Variable” describes necessary variables when using the object. It gives the description, data type, allowable range, preset value, unit, resolution, and notes for *variable* (*italic*) shown in the syntax.

Variables declared as the string data type (String) are case insensitive. For variables of the string type that indicate arguments (written as *Param* in the syntax), you can omit lower-case letters.

The data types of the E5052A COM objects include 5 types as shown in Table 7-1. Before using variables, declare the data type of each variable. If you do not declare the data type of a variable, it is automatically dealt as the variant type.

Table 7-1 Data type

Data type	Name	Consumed memory	Range
Long	Long integer type	4 bytes	-2,147,483,648 to 2,147,483,647
Double	Double precision floating point type	8 bytes	For a negative value: -1.79769313486232E+308 to -4.94065645841247E-324 For a positive value: -1.79769313486232E+308 to -4.94065645841247E-324
Boolean	Boolean type	2 bytes	-1 (True) or 0 (False)
String	Character string type *1	1 byte/alphan umeric character	Up to approximately 2 billion characters
Variant	Variant type	16 bytes	No limitation

*1. For a fixed length string, declare the number of characters.

Examples

Part with heading “Examples” describes a simple example of how to use the object for coding with E5052A VBA.

Equivalent Key

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

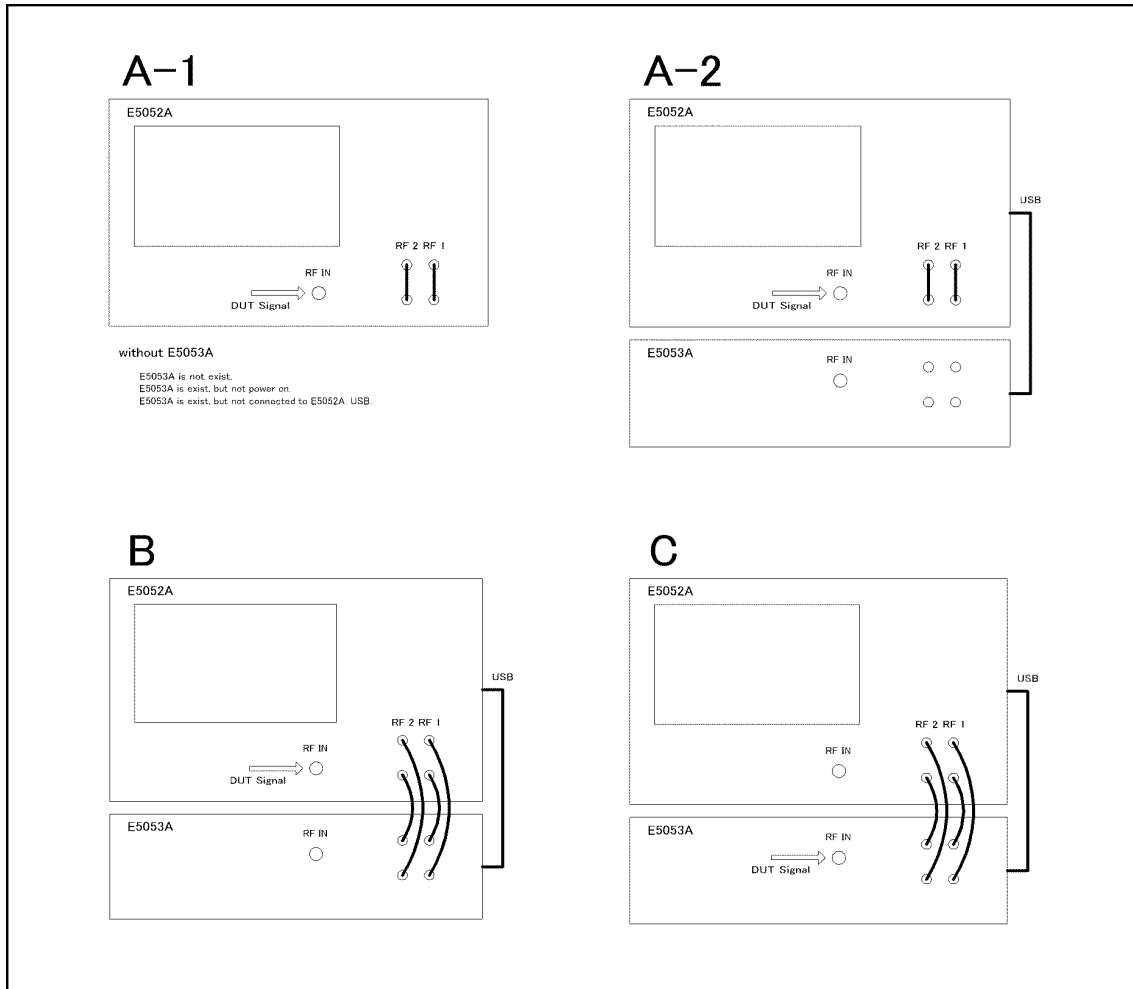
[Key] Indicates that you press the key named Key.

[Key] -> Item Indicates a series of key operation in which you press the **[Key]** key, move the focus to the button called Item on the displayed menu using the **[←↓]** key and so on, and then press the **[Enter]** key.

Device Configuration Using E5052A and E5053A Microwave Downconverter

There are 4 types of device configurations using the E5052A and the E5053A Microwave Downconverter including the stand-alone use of the E5052A: A-1, A-2, B, and C(Figure 7-2)

Figure 7-2 Device Configurations Using E5052A and E5053A



e5052auj4001

The table below lists the configuration ID used in this chapter with its description as well.

Configuration ID	Description
A-1	E5052A used stand-alone
A-2	With downconverter turned off

Configuration ID	Description
B	With downconverter turned on and the RF input set to 'E5052A Direct'
C	With downconverter turned on and the RF input set to 'Downconverter'

Application Objects

The Application objects are at the top of the hierarchy of the E5052A COM object model. They consist of 3 objects dedicated to the E5052A COM interface and SCPI objects corresponding to SCPI commands. This section describes the objects dedicated to the E5052A COM interface.

NAME

Object type	Property
Syntax	<i>App</i> = NAME
Description	Reads out the application name of VBA. “E5052A” is always read out. (Read only)
Variable	

	<i>App</i>
Description	Application name
Data type	Character string type (String)

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

Parse

Object type	Method
Syntax	Parse(<i>Scpi</i>) <i>Return</i> = Parse(<i>Scpi</i> ?)
Description	Executes an SCPI command of the E5052A. For information on the SCPI commands, see Chapter “SCPI Command Reference” in the <i>E5052A Programmer’s Guide</i> . The Parse object is a little slower in the execution speed than the COM object which has the same function as the SCPI command because it must parse the message string of the SCPI command.
Variable	

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

	<i>Return</i>
Description	Response (query) of the SCPI command

	<i>Return</i>
Data type	Character string type (String)

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

VBAVersion

Object type Property

Syntax *Vers* = VBAVersion

Description Reads out the version information of VBA installed in the E5052A. (Read only)

Variable

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

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

SCPI Objects

SCPI objects are a collection of the COM interface having one-on-one correspondence with the SCPI commands. This section describes the SCPI objects provided for the E5052A.

SCPI.ABORT

Syntax	SCPI.ABORT
Description	Abort measurement (No Read)
Equivalent key	No equivalent key is available on the front panel.

SCPI.CALCulate.FP(1-1).ALLTrace.ACTive

Syntax	SCPI.CALCulate.FP(1-1).ALLTrace.ACTive = <long> <long> = SCPI.CALCulate.FP(1-1).ALLTrace.ACTive
Description	Selects active trace
Variable	

	<Long>
Range	1 to 4
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).ALLTrace.BDMarker.X.COUPle.STATE

Syntax	SCPI.CALCulate.FP(1-1).ALLTrace.BDMarker.X.COUPle.STATE = <boolean> <boolean> = SCPI.CALCulate.FP(1-1).ALLTrace.BDMarker.X.COUPle.STATE
Description	Turns on/off bandmarker X coupling function
Variable	

	Param
True or -1	Set bandmarker X coupling function mode to 'ON'

	Param
False or 0(Preset value)	Set bandmarker X coupling function mode to 'OFF'

Equivalent key FP Menu -> Marker Function -> Couple
 FP Menu -> Marker Search -> Couple

SCPI.CALCulate.FP(1-1).ALLTrace.LIMit.FAIL

<boolean> = SCPI.CALCulate.FP(1-1).ALLTrace.LIMit.FAIL

Description Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

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

SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.COUPle.STATe

Syntax SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.COUPle.STATe = <boolean>

<boolean> = SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.COUPle.STATe

Description Turns on/off marker coupling function

Variable

	Param
True or -1	Set marker coupling function mode to 'ON'
False or 0(Preset value)	Set marker coupling function mode to 'OFF'

Equivalent key FP Menu -> Marker -> Couple

SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.DISCrete.STATe

Syntax SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.DISCrete.STATe = <boolean>
 <boolean> = SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.DISCrete.STATe

Description Enables/disables marker discrete function

Variable

	Param
True or -1	Enable marker discrete function
False or 0(Preset value)	Disable marker discrete function

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

SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.REFerence.NUMBer

Syntax SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.REFerence.NUMBer = <long>
 <long> = SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.REFerence.NUMBer

Description Sets/reads marker reference number

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.REFerence.STATe

Syntax SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.REFerence.STATe = <boolean>
 <boolean> = SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.REFerence.STATe

Description Turns on/off delta marker mode

Variable

	Param
True or -1	Set delta marker mode to 'ON'
False or 0(Preset value)	Set delta marker mode to 'OFF'

Equivalent key

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

SCPI.CALCulate.FP(1-1).DATA.RDATA

Syntax

SCPI.CALCulate.FP(1-1).DATA.RDATA = <variant>
 <variant> = SCPI.CALCulate.FP(1-1).DATA.RDATA

Description

Sets/reads the measurement raw data

Variable

	<Variant>
Range	1...3003
Preset value	-
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.FP(1-1).DATA.TDATA

Syntax

<variant> = SCPI.CALCulate.FP(1-1).DATA.TDATA

Description

Sets/Reads tester mode data

Variable

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

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.FP(1-1).DATA.XDATA

Syntax	<variant> = SCPI.CALCulate.FP(1-1).DATA.XDATA
Description	Reads X-axis data (Read Only)
Equivalent key	No equivalent key is available on the front panel.

SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.ACTive

Syntax	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.ACTive = <long> <long> = SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.ACTive
Description	Selects active marker
Variable	

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.X

Syntax	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.X = <string> <string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.X
Description	Sets/reads marker search range (X-axis)
Variable	

	Param
FRANge(Preset value)	Set marker search range (X-axis) to 'Full Range'
BDMarker	Set marker search range (X-axis) to 'Band Marker'

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARch.DOMain.Y

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARch.DOMain.Y = <string>
<string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARch.DOMain.Y

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

Variable

	Param
FRANge(Preset value)	Set marker search range (Y-axis) to 'Full Range'
BDMarker	Set marker search range (Y-axis) to 'Band Marker'

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARch.PEAK

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARch.PEAK

Description Execute marker search all (No Read)

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.CENTer

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.CENTer = <double>
<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.CENTer

Description Sets/reads the center value of bandmarker X

Variable

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

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

FP Menu -> Marker Search -> Band Marker X -> Center

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.SPAN

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.SPAN = <double>

<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.SPAN

Description

Sets/reads the span value of bandmarker X

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-
Resolution	-

Equivalent key

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

FP Menu -> Marker Search -> Band Marker X -> Span

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.START

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.START = <double>

<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.START

Description

Sets/reads the start value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

Equivalent key

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

FP Menu -> Marker Search -> Band Marker X -> Start

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STATe

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STATe = <boolean>

<boolean> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STATe

Description Turns on/off bandmarker X

Variable

	Param
True or -1	Set bandmarker X to 'ON'
False or 0(Preset value)	Set bandmarker X to 'OFF'

Equivalent key

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

FP Menu -> Marker Search -> Band Marker X -> Band Marker X

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STOP

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STOP = <double>

<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STOP

Description

Sets/reads the stop value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

Equivalent key

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

FP Menu -> Marker Search -> Band Marker X -> Stop

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.CENTe r

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.CENTer = <double>

<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.CENTer

Description

Sets/reads the center value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T

	<Double>
Preset value	0
Unit	-
Resolution	-

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

FP Menu -> Marker Search -> Band Marker Y -> Center

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.SPAN

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.SPAN = <double>

<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.SPAN

Description Sets/reads the span value of bandmarker Y

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-
Resolution	-

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

FP Menu -> Marker Search -> Band Marker Y -> Span

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.START

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.START = <double>

<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.START

Description Sets/reads the start value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STATe

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STATe = <boolean>
 <boolean> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STATe

Description Turns on/off bandmarker Y

Variable

	Param
True or -1	Set bandmarker Y to 'ON'
False or 0(Preset value)	Set bandmarker Y to 'OFF'

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STOP

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STOP = <double>
 <double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STOP

Description Sets/reads the stop value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.COPY

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.COPY

Description Copies trace data to the user trace (No Read)

COM Object Reference
SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FDATA

Variable

	<Long>
Range	1 to 8
Preset value	-
Unit	-
Resolution	-

Equivalent key

FP Menu -> Trace View-> Copy to USER -> Copy to USER1
 FP Menu -> Trace View-> Copy to USER -> Copy to USER2
 FP Menu -> Trace View-> Copy to USER -> Copy to USER3
 FP Menu -> Trace View-> Copy to USER -> Copy to USER4
 FP Menu -> Trace View-> Copy to USER -> Copy to USER5
 FP Menu -> Trace View-> Copy to USER -> Copy to USER6
 FP Menu -> Trace View-> Copy to USER -> Copy to USER7
 FP Menu -> Trace View-> Copy to USER -> Copy to USER8

SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FDATA

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FDATA = <variant>
 <variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FDATA

Description

Set/Get formatted trace data

Variable

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

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FMEMory

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FMEMory = <variant>
 <variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FMEMory

Description

Sets/reads formatted memory data

Variable

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

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.UDATa

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.UDATa = <variant>
 <variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.UDATa

Description Sets/reads unformatted trace data

Variable

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

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.UMEMory

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.UMEMory = <variant>
 <variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.UMEMory

Description Sets/reads unformatted memory data

Variable

	<Variant>
Range	1...1001
Preset value	-
Unit	-

	<Variant>
Resolution	-

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).FORMat.FREQuency

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).FORMat.FREQuency = <string>
 <string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).FORMat.FREQuency

Description Selects FP-frequency format

Variable

	Param
HZ(Preset value)	Set FP-frequency format to 'Hz'
HZV	Set FP-frequency format to ' Hz/V' (Hz/V:Tuning sensitivity)
DHZ	Set FP-frequency format to 'ΔHz'
PCT	Set FP-frequency format to '%'
PPM	Set FP-frequency format to 'ppm'

This command is available when trace1 or trace 4.

Equivalent key FP Menu -> Format -> Frequency Format

SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.DOMain.X

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.DOMain.X = <string>
 <string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.DOMain.X

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

Variable

	Param
FRANge	Set analysis/search range (Y-axis) to 'Full Range'
BDMarker(Preset value)	Set analysis/search range (Y-axis) to 'Band Marker'

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.DOMain.Y

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.DOMain.Y = <string>
 <string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.DOMain.Y

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

Variable

	Param
FRANge	Set analysis/search range (Y-axis) to 'FRANge'
BDMarker(Preset value)	Set analysis/search range (Y-axis) to 'BDMarker'

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.LREGression.DATA_Q a, b

Syntax <double>,<double> =
 SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.LREGression.DATA_Q a, b

Description Assigns trace data to the regression line coefficient (a and b) (Read Only)
 When the X-axis band marker is set to on, calculation is made within the range specified by the band marker.

NOTE When less than two measurement points are in the range of the band marker, a and b return 0 (zero).

Examples

```
Dim a_val As Double
Dim b_val As Double

SCPI.CALCulate.FP.TRACe.FUNCTion.LREGression.DATA_Q a_val, b_val
```

Equivalent key FP Menu -> Trace View -> Memory Trace -> Line (Y = AX + B) -> Data Trace -> A,B

SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.LREGression.MEMory_Q a, b

Syntax <double>,<double> =
 SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.LREGression.MEMory_Q a, b

Description Assigns trace memory to the regression line coefficient (a and b) (Read Only)
 When the X-axis band marker is set to on, calculation is made within the range specified by the band marker.

NOTE When less than two measurement points are in the range of the band marker, a and b return 0 (zero).

Examples

```
Dim a_val As Double
Dim b_val As Double

SCPI.CALCulate.FP.TRACe.FUNCTION.LREGression.MEMory_Q a_val, b_val
```

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.STATistics.DATA_Q

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.STATistics.DATA_Q mean, s_dev, p_p

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

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double

SCPI.CALCulate.FP.TRACe.FUNCTION.STATistics.DATA_Q mean, s_dev, p_p
```

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.STATistics.MEMory_Q

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.STATistics.MEMory_Q mean, std_dev, peak_to_peak

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

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double

SCPI.CALCulate.FP.TRACe.FUNCTION.STATistics.MEMory_Q mean, s_dev, p_p
```

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.TYPE

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.TYPE = <string>
<string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.TYPE

Description Sets/reads analysis type

Variable

	Param
OFF(Preset value)	Set analysis type to 'Off'
STATistics	Set analysis type to 'Statistics'

Equivalent key

FP Menu -> Marker Function -> Analysis Type

SCPI.CALCulate.FP(1-1).TRACe(1-4).HOLD

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).HOLD = <string>
 <string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).HOLD

Description

Selects data hold type

Variable

	Param
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

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.FAIL

<boolean> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.FAIL

Description

Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.LDATa

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.LDATa = <variant>
 <variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.LDATa

Description Sets/reads the lower limit values of all measurement points

Variable

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

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.CLEAr

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.CLEAr

Description Clears the lower limit line (No Read)

Equivalent key FP Menu -> Display -> Limit Test -> Delete Lower Limit Line

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.COUNT

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.COUNT = <long>
 <long> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.COUNT

Description Sets/reads the number of segments in the lower limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWER.SEGMent.DATA

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWER.SEGMent.DATA = <variant>
<variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWER.SEGMent.DATA

Description Sets/reads segment data of the lower limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.REPort.DATA

<variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.REPort.DATA

Description Reads the limit test results of all measurement points in selected traces (Read Only)

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.STATe

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.STATe = <boolean>
<boolean> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.STATe

Description Turns on/off the limit test function

Variable

	Param
True or -1	Turn on the limit test function mode
False or 0(Preset value)	Turn off the limit test function mode

Equivalent key FP Menu -> Display -> Limit Test -> Limit Test

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.LDATA

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.LDATA = <variant>
 <variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.LDATA

Description Sets/reads the upper limit values of all measurement points

Variable

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

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.CLEAr

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.CLEAr

Description Clears the upper limit line (No Read)

Equivalent key FP Menu -> Display -> Limit Test -> Delete Upper Limit Line

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.COUNT

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.COUNT = <long>
 <long> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.COUNT

Description Sets/reads the number of segments in the upper limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.DATA

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.DATA = <variant>
 <variant> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.DATA

Description Sets/reads segment data of the upper limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.A

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.A = <double>
 <double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.A

Description Sets/Reads the regression line coefficient a (slope)

Variable

	<Double>
Description	Regression line coefficient a
Range	-500 T to 500 T
Preset value	0
Unit	-
Resolution	-

Equivalent key FP Menu -> Trace View -> Memory Trace -> Line (Y = AX + B) -> A

SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.B

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.B = <double>
 <double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.B

Description Sets/Reads the regression line coefficient b (intercept)

Variable

	<Double>
Description	Regression line coefficient b
Range	-500 T to 500 T
Preset value	0
Unit	-
Resolution	-

Equivalent key FP Menu -> Trace View -> Memory Trace -> Line (Y = AX + B) -> B

SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.MEMory

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.MEMory

Description Saves the obtained regression line to a trace memory (No Read)

Equivalent key FP Menu -> Trace View -> Memory Trace -> Line (Y = AX + B) -> Set Line to Memory

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LPEak

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LPEak

Description Execute marker peak search left (No Read)

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LTARget

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LTARget

Description Execute marker target search left (No Read)

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.MAXimum

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.MAXimum

Description Execute marker search maximum (No Read)

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

Syntax	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.MINImum
Description	Execute marker search minimum (No Read)
Equivalent key	FP Menu -> Marker Search -> Search Min

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.PEAK

Syntax	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.PEAK
Description	Execute marker peak search (No Read)
Equivalent key	FP Menu -> Marker Search -> Peak -> Search Peak

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.RPEak

Syntax	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.RPEak
Description	Execute marker peak search right (No Read)
Equivalent key	FP Menu -> Marker Search -> Peak -> Search Right

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.RTARget

Syntax	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.RTARget
Description	Execute marker target search right (No Read)
Equivalent key	FP Menu -> Marker Search -> Target -> Search Right

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.TARGet

Syntax	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.TARGet
Description	Execute marker target search (No Read)
Equivalent key	FP Menu -> Marker Search -> Target -> Search Target

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.PEAK.EXCursion

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.PEAK.EXCursion =
<double>
<double> =
SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.PEAK.EXCursion

Description Sets/reads the peak excursion value

Variable

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

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.PEAK.POLarity

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.PEAK.POLarity =
<string>
<string> =
SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.PEAK.POLarity

Description Sets/reads the marker peak-search polarity

Variable

	Param
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

**SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEA
Rch.TARGet.TRANSition**

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.TRANSition =
<string>

<string> =

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.TRANSition

Description Sets/reads the target transition definition

Variable

	Param
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 FP Menu -> Marker Search -> Target -> Target Transition

**SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEA
Rch.TARGet.Y**

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.Y = <double>

<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.Y

Description Sets/reads the marker target value

Variable

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

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

**SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEA
Rch.TRACKing.TYPE**

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TRACKing.TYPE =

<string>

<string> =

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TRACKing.TYPE

Description

Sets/reads the marker tracking type

Variable

	Param
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

FP Menu -> Marker Search -> Tracking

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe = <boolean>

<boolean> = SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe

Description

Turns on/off a marker

Variable

	Param
True or -1	Set a marker to 'ON'
False or 0(Preset value)	Set a marker to 'OFF'

Equivalent key

FP Menu -> Marker -> Clear Marker Menu -> Marker 1

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).X

Syntax

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).X = <double>

<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).X

Description

Sets/reads the marker X value

Variable

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

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).Y

Syntax <double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).Y

Description Reads the marker Y value (Read Only)

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.FUNcTION

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.FUNcTION = <string>
 <string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.FUNcTION

Description Sets/reads math operation type

Variable

	Param
NORMal(Preset value)	Set math operation type to 'Off'
SUBTract	Set math operation type to 'Data - Mem'
DIVide	Set math operation type to 'Data / Mem'
ADD	Set math operation type to 'Data + Mem'
MULTIply	Set math operation type to 'Data * Mem'

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.MEMorize

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.MEMorize

Description Copy data to memory (No Read)

COM Object Reference
SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.OFFSet

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

SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.OFFSet

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.OFFSet = <double>
<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.OFFSet

Description Sets/Reads the offset value of the trace

Variable

	<Double>
Description	Offset value of the trace
Range	-500 G to 500 G
Preset value	0
Unit	-
Resolution	-

Equivalent key FP Menu -> Trace View -> Offset
FP Menu -> Trace View -> [Marker -> -Offset]

SCPI.CALCulate.FP(1-1).TRACe(1-4).PARAmeter

<string> = SCPI.CALCulate.FP(1-1).TRACe(1-4).PARAmeter

Description Reads the trace parameter. (Read Only)

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

**SCPI.CALCulate.FP(1-1).TRACe(1-4).REFerence.FREQue
ncy**

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).REFerence.FREQuency = <double>
<double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).REFerence.FREQuency

Description Sets/reads the frequency reference.

Variable

	<Double>
Range	-500G to 500G
Preset value	0
Unit	Hz

	<Double>
Resolution	-

Equivalent key FP Menu -> Format -> Frequency Reference

SCPI.CALCulate.FP(1-1).TRACe(1-4).SAPerture

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).SAPerture = <double>
 <double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).SAPerture

Description Sets/reads the sensitivity aperture value for tuning sensitivity (Hz/V)

Variable

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

Equivalent key FP Menu -> Format -> Sensitivity Aperture

SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.APERTure

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.APERTure = <double>
 <double> = SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.APERTure

Description Sets/reads the smoothing aperture value

Variable

	<Double>
Range	50m to 25
Preset value	1.5
Unit	%
Resolution	10m

Equivalent key FP Menu -> Trace View -> Aperture

SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.STATe

Syntax SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.STATe = <boolean>
<boolean> = SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.STATe

Description Turns on/off smoothing function

Variable

	Param
True or 1	Set smoothing function to 'ON'
False or 0(Preset value)	Set smoothing function to 'OFF'

Equivalent key FP Menu -> Trace View -> Smoothing

SCPI.CALCulate.PN(1-1).ALLTrace.LIMit.FAIL

<boolean> = SCPI.CALCulate.PN(1-1).ALLTrace.LIMit.FAIL

Description Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

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

SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.COUPle.STATe

Syntax SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.COUPle.STATe = <boolean>
<boolean> = SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.COUPle.STATe

Description Turns on/off marker coupling function

Variable

	Param
True or 1	Set marker coupling function to 'ON'

	Param
False or 0(Preset value)	Set marker coupling function to 'OFF'

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

SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.DISCrete.STATe

Syntax SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.DISCrete.STATe = <boolean>
<boolean> = SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.DISCrete.STATe

Description Enables/disables marker discrete function

Variable

	Param
True or -1	Enable marker discrete function
False or 0(Preset value)	Disable marker discrete function

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

SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFerence.NUMBer

Syntax SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFerence.NUMBer = <long>
<long> = SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFerence.NUMBer

Description Sets/reads marker reference number

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

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

**SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFerence.S
TATe**

Syntax SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFerence.STATe = <boolean>
<boolean> = SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFerence.STATe

Description Turns on/off delta marker mode

Variable

	Param
True or -1	Set delta marker mode to 'ON'
False or 0(Preset value)	Set delta marker mode to 'OFF'

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

SCPI.CALCulate.PN(1-1).DATA.CARRier

Syntax SCPI.CALCulate.PN(1-1).DATA.CARRier = <variant>
<variant> = SCPI.CALCulate.PN(1-1).DATA.CARRier

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

Variable

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

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

SCPI.CALCulate.PN(1-1).DATA.PDATAa

Syntax SCPI.CALCulate.PN(1-1).DATA.PDATAa = <variant>
<variant> = SCPI.CALCulate.PN(1-1).DATA.PDATAa

Description Sets/reads the raw power data (dBc)

Variable

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

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

SCPI.CALCulate.PN(1-1).DATA.RDATA

Syntax SCPI.CALCulate.PN(1-1).DATA.RDATA = <variant>
 <variant> = SCPI.CALCulate.PN(1-1).DATA.RDATA

Description Sets/reads the measurement raw data

Variable

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

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

SCPI.CALCulate.PN(1-1).DATA.XDATA

Syntax <variant> = SCPI.CALCulate.PN(1-1).DATA.XDATA

Description Reads the X data (Read Only)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.ACTive

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.ACTive = <long>
 <long> = SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.ACTive

Description Selects active marker

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARCh.DOMain.X

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARCh.DOMain.X = <string>

<string> = SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARCh.DOMain.X

Description

Sets/reads marker search range (X-axis)

Variable

	Param
FRANge(Preset value)	Set marker search range (X-axis) to 'Full Range'
BDMarker	Set marker search range (X-axis) to 'Band Marker'

Equivalent key

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARCh.DOMain.Y

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARCh.DOMain.Y = <string>

<string> = SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARCh.DOMain.Y

Description

Sets/reads marker search range (Y-axis)

Variable

	Param
FRANge(Preset value)	Set marker search range (Y-axis) to 'Full Range'
BDMarker	Set marker search range (Y-axis) to 'Band Marker'

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARCh.PEAK

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARCh.PEAK

Description Execute marker search all (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.CENTer

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.CENTer = <double>

<double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.CENTer

Description Sets/reads the center value of bandmarker X

Variable

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

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

PN Menu -> Marker Search -> Band Marker X -> Center

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.SPAN

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.SPAN = <double>

<double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.SPAN

Description Sets/reads the span value of bandmarker X

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-

	<Double>
Resolution	-

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

PN Menu -> Marker Search -> Band Marker X -> Span

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.START

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.START = <double>

<double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.START

Description Sets/reads the start value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

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

PN Menu -> Marker Search -> Band Marker X -> Start

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.STATE

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.STATE = <boolean>

<boolean> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.STATE

Description Turns on/off bandmarker X

Variable

	Param
True or -1	Set bandmarker X mode to 'ON'
False or 0(Preset value)	Set bandmarker X mode to 'OFF'

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

PN Menu -> Marker Search -> Band Marker X -> Band Marker X

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.STOP

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.STOP = <double>
 <double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.STOP

Description Sets/reads the stop value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.CENTer

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.CENTer = <double>
 <double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.CENTer

Description Sets/reads the center value of bandmarker Y

Variable

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

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.SPAN

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.SPAN = <double>
 <double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.SPAN

Description Sets/reads the span value of bandmarker Y

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-
Resolution	-

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

PN Menu -> Marker Search -> Band Marker Y -> Span

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STARt

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STARt = <double>

<double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STARt

Description Sets/reads the start value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

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

PN Menu -> Marker Search -> Band Marker Y -> Start

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STATe

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STATe = <boolean>

<boolean> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STATe

Description Turns on/off bandmarker Y

Variable

	Param
True or -1	Set bandmarker Y mode to 'ON'
False or 0(Preset value)	Set bandmarker Y mode to 'OFF'

Equivalent key

PN Menu -> Marker Function -> Band Marker Y -> Band Marker Y
 PN Menu -> Marker Search -> Band Marker Y -> Band Marker Y

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STOP

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STOP = <double>
 <double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STOP

Description

Sets/reads the stop value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

Equivalent key

PN Menu -> Marker Function -> Band Marker Y -> Stop
 PN Menu -> Marker Search -> Band Marker Y -> Stop

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.COPY

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.COPY

Description

Copies trace data to the user trace (No Read)

Variable

	<Long>
Range	1 to 8
Preset value	-
Unit	-
Resolution	-

NOTE The annotation of a trace (carrier frequency and level) is copied to the trace's annotation area of a copy destination in the user window.

Equivalent key PN Menu -> Trace View-> Copy to USER -> Copy to USER1
 PN Menu -> Trace View-> Copy to USER -> Copy to USER2
 PN Menu -> Trace View-> Copy to USER -> Copy to USER3
 PN Menu -> Trace View-> Copy to USER -> Copy to USER4
 PN Menu -> Trace View-> Copy to USER -> Copy to USER5
 PN Menu -> Trace View-> Copy to USER -> Copy to USER6
 PN Menu -> Trace View-> Copy to USER -> Copy to USER7
 PN Menu -> Trace View-> Copy to USER -> Copy to USER8

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.FDATA

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.FDATA = <variant>
 <variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.FDATA

Description Set/Get formatted trace data

Variable

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

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.FMEMory

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.FMEMory = <variant>
 <variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.FMEMory

Description Sets/reads formatted memory data

Variable

	<Variant>
Range	1...1601

	<Variant>
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PDATA

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PDATA = <variant>
 <variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PDATA

Description Sets/reads unformatted trace power data (dBc)

Variable

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

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PMEMory

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PMEMory = <variant>
 <variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PMEMory

Description Sets/reads unformatted memory power data (dBc)

Variable

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

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.SDATA

<variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.SDATA

Description Reads the spurious judgement results (0/1) of trace data (Read Only)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.SMEMory

<variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.SMEMory

Description Reads the spurious judgement results (0/1) of memory data. (Read Only)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.UDATa

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.UDATa = <variant>

<variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.UDATa

Description Sets/reads unformatted trace data

Variable

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

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.UMEMory

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.UMEMory = <variant>

<variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.UMEMory

Description Sets/reads unformatted memory data

Variable

	<Variant>
Range	1...1601
Preset value	-

**SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCtion.AVARiance.DATA_Q
avg_time, fcutoff, avariance, jitter**

	<Variant>
Unit	-
Resolution	-

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

**SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCtion.AVARiance
e.DATA_Q avg_time, fcutoff, avariance, jitter**

Syntax <double>,<double>,<double>,<double> =
SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCtion.AVARiance.DATA_Q avg_time,
fcutoff, avariance, jitter

Description Reads specified average time, Allan avariance, and jitter at cut-off frequency from trace data (Read Only)

Variable

	<avg_time>	<fcutoff>
Description	Specified average time	Cut-off frequency
Range	1 n to 1 k	0 to 1 G
Preset value	-	-
Unit	-	-
Resolution	-	-

Examples

```
Dim avg_time      As Double
Dim fcutoff       As Double
Dim avariance     As Double
Dim jitter        As Double

avg_time = 0.1           ' average time      : 100 msec
fcutoff = 1000000#      ' cut off frequency : 1 MHz

SCPI.CALCulate.PN.TRACe.FUNCtion.avariance.DATA_Q avg_time,
fcutoff, avariance, jitter
```

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

**SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCtion.AVARiance
e.MEMory_Q avg_time, fcutoff, avariance, jitter**

Syntax <double>,<double> =
SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCtion.AVARiance.MEMory_Q avg_time,
fcutoff, avariance, jitter

COM Object Reference
SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNction.DOMain.X

Description Reads specified average time, Allan avariance, and jitter at cut-off frequency from trace memory (Read Only)

Variable

	<avg_time>	<fcutoff>
Description	Specified average time	Cut-off frequency
Range	0 to 9.9e+37	0 to 9.9e+37
Preset value	-	-
Unit	-	-
Resolution	-	-

Examples

```
Dim avg_time      As Double
Dim fcutoff       As Double
Dim avariance     As Double
Dim jitter        As Double

avg_time = 0.5           ' average time      : 500 msec
fcutoff = 300000000#    ' cut off frequency : 300 MHz

SCPI.CALCulate.PN.TRACe.FUNction.avariance.MEMory_Q avg_time,
fcutoff, avariance, jitter
```

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNction.DOMain.X

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNction.DOMain.X = <string>

<string> = SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNction.DOMain.X

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

Variable

	Param
FRANge	Set analysis/search range (X-axis) to 'Full Range'
BDMarker(Preset value)	Set analysis/search range (X-axis) to 'Band Marker'

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.DOMain.Y

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.DOMain.Y = <string>
<string> = SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.DOMain.Y

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

Variable

	Param
FRANge	Set analysis/search range (Y-axis) to 'Full Range'
BDMarker(Preset value)	Set analysis/search range (Y-axis) to 'Band Marker'

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.INTegral.DATA_Q integ_noise, freq_range, rms_rad, rms_deg, jitter, residual_fm

<double>,<double>,<double>,<double>,<double>,<double> =
SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.INTegral.DATA_Q integ_noise,
freq_range, rms_rad, rms_deg, jitter, residual_fm

Description Reads the integrated phase noise, frequency range, RMS noise, RMS jitter, and residual FM of trace data. (Read Only)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.INTegral.MEMory_Q integ_noise, freq_range, rms_rad, rms_deg, jitter, residual_fm

<double>,<double>,<double>,<double>,<double>,<double> =
SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.INTegral.MEMory_Q integ_noise,
freq_range, rms_rad, rms_deg, jitter, residual_fm

Description Reads integrated phase noise, frequency range, RMS noise, RMS jitter, and residual FM of memory data. (Read Only)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.STATistics.DATA_Q

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.STATistics.DATA_Q mean, std_dev,

peak_to_peak

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

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double
```

```
SCPI.CALCulate.PN.TRACe.FUNCTION.STATistics.DATA_Q mean, s_dev, p_p
```

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTION.STATistics.MEMory_Q**Syntax**

```
SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTION.STATistics.MEMory_Q mean, std_dev, peak_to_peak
```

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

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double
```

```
SCPI.CALCulate.PN.TRACe.FUNCTION.STATistics.MEMory_Q mean, s_dev, p_p
```

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTION.TYPE**Syntax**

```
SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTION.TYPE = <string>
<string> = SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTION.TYPE
```

Description Sets/reads analysis type

Variable

	Param
OFF(Preset value)	Set analysis type to 'Off'
STATistics	Set analysis type to 'Statistics'
INTEgral	Set analysis type to 'Integral'

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).HOLD**Syntax**

```
SCPI.CALCulate.PN(1-1).TRACe(1-1).HOLD = <string>
```

<string> = SCPI.CALCulate.PN(1-1).TRACe(1-1).HOLD

Description Selects data hold type

Variable

	Param
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

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.FAIL

<boolean> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.FAIL

Description Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWER.LDATa

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWER.LDATa = <variant>

<variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWER.LDATa

Description Sets/reads the lower limit values of all measurement points

Variable

	<Variant>
Range	1...1601
Preset value	-
Unit	-

	<Variant>
Resolution	-

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.CLEAr

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.CLEAr

Description Clears the lower limit line (No Read)

Equivalent key PN Menu -> Display -> Limit Test -> Delete Lower Limit Line

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.COUNT

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.COUNT = <long>
<long> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.COUNT

Description Sets/reads the number of segments in the lower limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.DATA

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.DATA = <variant>
<variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.DATA

Description Sets/reads segment data of the lower limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.REPort.DATA

<variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.REPort.DATA

Description Reads the limit test results of all measurement points in selected traces (Read Only)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.STATe

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.STATe = <boolean>

<boolean> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.STATe

Description Turns on/off the limit test function

Variable

	Param
True or -1	Turn on the limit test function mode
False or 0(Preset value)	Turn off the limit test function mode

Equivalent key PN Menu -> Display -> Limit Test -> Limit Test

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.LDATa

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.LDATa = <variant>

<variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.LDATa

Description Sets/reads the upper limit values of all measurement points

Variable

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

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.CLEAr

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.CLEAr

Description Clears the upper limit line (No Read)

Equivalent key PN Menu -> Display -> Limit Test -> Delete Upper Limit Line

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.COUNT

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.COUNT = <long>
 <long> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.COUNT

Description Sets/reads the number of segments in the upper limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.DATA

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.DATA = <variant>
 <variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.DATA

Description Sets/reads segment data of the upper limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LPEak

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LPEak

Description Execute marker peak search left (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LTARget

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LTARget

Description Execute marker target search left (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum

Description Execute marker search maximum (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MINimum

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MINimum

Description Execute marker search minimum (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.PEAK

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.PEAK

Description Execute marker peak search (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RPEak

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RPEak

Description Execute marker peak search right (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RTARget

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RTARget

Description Execute marker target search right (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.TARGet

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.TARGet

Description Execute marker target search (No Read)

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion = <double>

<double> =

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion

Description Sets/reads the peak excursion value

Variable

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

Equivalent key

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity =
<string>

<string> =

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity

Description

Sets/reads the marker peak-search polarity

Variable

	Param
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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGET.TRANSition

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGET.TRANSition =
<string>

<string> =

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGET.TRANSition

Description

Sets/reads the target transition definition

Variable

	Param
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 -> Target Transition

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGET.Y

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGET.Y = <double>
 <double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGET.Y

Description

Sets/reads the marker target value

Variable

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

Equivalent key

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE =
 <string>
 <string> =
 SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE

Description

Sets/reads the marker tracking type

Variable

	Param
OFF(Preset value)	Set marker tracking type to 'Off'

	Param
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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).STATe

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).STATe = <boolean>
<boolean> = SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).STATe

Description Turns on/off a marker

Variable

	Param
True or -1	Set a marker to 'ON'
False or 0(Preset value)	Set a marker to 'OFF'

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).X

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).X = <double>
<double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).X

Description Sets/reads the marker X value

Variable

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

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).Y

Syntax	<double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).Y
Description	Reads the marker Y value (Read Only)
Equivalent key	No equivalent key is available on the front panel.

SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.FUNcTion

Syntax	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.FUNcTion = <string> <string> = SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.FUNcTion
Description	Selects math operation type
Variable	

	Param
NORMal(Preset value)	Set math operation type to 'Data - Mem'
SUBTract	Set math operation type to 'Data / Mem'
DIVide	Set math operation type to 'Data + Mem'
ADD	Set math operation type to 'Data * Mem'
MULTiply	Set math operation type to 'Data - Mem'

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.MEMorize

Syntax	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.MEMorize
Description	Copy data to memory (No Read)
Equivalent key	No equivalent key is available on the front panel.

SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.OFFSet

Syntax	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.OFFSet = <double> <double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.OFFSet
Description	Sets/Reads the offset value of the trace

Variable

	<double>
Description	Offset value of the trace
Range	-500 G to 500 G
Preset value	0
Unit	-
Resolution	-

Equivalent key

PN Menu -> Trace View -> Offset
 PN Menu -> Trace View -> [Marker -> -Offset]

SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.APERture

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.APERture = <double>
 <double> = SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.APERture

Description

Sets/reads the smoothing aperture value

Variable

	<Double>
Range	50m to 25
Preset value	1.5
Unit	%
Resolution	10m

Equivalent key

PN Menu -> Trace View -> Aperture

SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.STATe

Syntax

SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.STATe = <boolean>
 <boolean> = SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.STATe

Description

Turns on/off smoothing function

Variable

	Param
True or -1	Set smoothing function to 'ON'

	Param
False or 0(Preset value)	Set smoothing function to 'OFF'

Equivalent key PN Menu -> Trace View -> Smoothing

SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.OMISSion

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.OMISSion = <boolean>
<boolean> = SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.OMISSion

Description Turns on/off spurious omission function

Variable

	Param
True or -1	Set spurious omission function to 'ON'
False or 0(Preset value)	Set spurious omission function to 'OFF'

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.POWER

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.POWER = <boolean>
<boolean> = SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.POWER

Description Turns on/off the spurious power value display

Variable

	Param
True or -1	Turn on the spurious power value display mode
False or 0(Preset value)	Turn off the spurious power value display mode

Equivalent key PN Menu -> Trace View -> Spurious -> Power (dBc)

SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THRESHold.LEVel.MINimum

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THRESHold.LEVel.MINimum = <double>

SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLE.CLEAr

<double> =
 SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.LEVel.MINimum

Description Sets/Reads the minimum spurious level when the spurious elimination function and the power value display are on.

Variable

	<Double>
Range	-500 to 500
Preset value	-500
Unit	dBc
Resolution	-

Equivalent key PN Menu -> Trace View -> Spurious -> Minimum Spur Level

SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLE.CLEAr

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLE.CLEAr

Description Clears the threshold data (No Read)

Equivalent key PN Menu -> Trace View -> Spurious -> Clear Threshold Table

SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLE.COUNT

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLE.COUNT = <long>
 <long> = SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLE.COUNT

Description Sets/reads the number of segments in the threshold data

Variable

	<Long>
Range	1 to 20
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLe.DATA

Syntax SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLe.DATA = <variant>
 <variant> = SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLe.DATA

Description Sets/reads the threshold data

Variable

	<Variant>
Range	1...60
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).ALLTrace.LIMit.FAIL

<boolean> = SCPI.CALCulate.SP(1-1).ALLTrace.LIMit.FAIL

Description Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

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

SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.COUPle.STATe

Syntax SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.COUPle.STATe = <boolean>
 <boolean> = SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.COUPle.STATe

Description Turns on/off marker coupling function

Variable

	Param
True or -1	Set marker coupling function to 'ON'
False or 0(Preset value)	Set marker coupling function to 'OFF'

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.DISCrete.STATe

Syntax

SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.DISCrete.STATe = <boolean>
 <boolean> = SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.DISCrete.STATe

Description

Turns on/off marker discrete function

Variable

	Param
True or -1	Enable marker discrete function
False or 0(Preset value)	Disable marker discrete function

Equivalent key

SP Menu -> Marker -> More Functions -> Discrete

SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.REFerence.NUMBer

Syntax

SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.REFerence.NUMBer = <long>
 <long> = SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.REFerence.NUMBer

Description

Sets/reads marker reference number

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.REFerence.S TATe

Syntax SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.REFerence.STATe = <boolean>
<boolean> = SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.REFerence.STATe

Description Turns on/off delta marker mode

Variable

	Param
True or -1	Set delta marker mode to 'ON'
False or 0(Preset value)	Set delta marker mode to 'OFF'

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

SCPI.CALCulate.SP(1-1).DATA.RDATA

Syntax SCPI.CALCulate.SP(1-1).DATA.RDATA = <variant>
<variant> = SCPI.CALCulate.SP(1-1).DATA.RDATA

Description Sets/reads the measurement raw data

Variable

	<Variant>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).DATA.XDATA

Syntax <variant> = SCPI.CALCulate.SP(1-1).DATA.XDATA

Description Reads X-axis data (Read Only)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.ACTive

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.ACTive = <long>
 <long> = SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.ACTive

Description Selects active marker

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.DOMain.X

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.DOMain.X = <string>
 <string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.DOMain.X

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

Variable

	Param
FRANge(Preset value)	Set marker search range (X-axis) to 'Full Range'
BDMarker	Set marker search range (X-axis) to 'Band Marker'

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.DOMain.Y

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.DOMain.Y = <string>
 <string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.DOMain.Y

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

Variable

	Param
FRANge(Preset value)	Set marker search range (Y-axis) to 'Full Range'
BDMarker	Set marker search range (Y-axis) to 'Band Marker'

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARCh.PEAK

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARCh.PEAK

Description Execute marker search all (No Read)

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

**SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.CENTe
r**Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.CENTer = <double>boolean
<double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.CENTer

Description Sets/reads the center value of bandmarker X

Variable

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

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

SP Menu -> Marker Search -> Band Marker X -> Center

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.SPANSyntax SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.SPAN = <double>
<double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.SPAN

Description Sets/reads the span value of bandmarker X

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-
Resolution	-

Equivalent key

SP Menu -> Marker Function -> Band Marker X -> Span
 SP Menu -> Marker Search -> Band Marker X -> Span

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.START

Syntax

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.START = <double>
 <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.START

Description

Sets/reads the start value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

Equivalent key

SP Menu -> Marker Function -> Band Marker X -> Start
 SP Menu -> Marker Search -> Band Marker X -> Start

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STATE

Syntax

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STATE = <boolean>
 <boolean> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STATE

Description

Turns on/off bandmarker X

Variable

	Param
True or -1	Set bandmarker X function to 'ON'

	Param
False or 0(Preset value)	Set bandmarker X function to 'OFF'

Equivalent key SP Menu -> Marker Function -> Band Marker X -> Band Marker X
 SP Menu -> Marker Search -> Band Marker X -> Band Marker X

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STOP

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STOP = <double>
 <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STOP

Description Sets/reads the stop value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker X -> Stop
 SP Menu -> Marker Search -> Band Marker X -> Stop

**SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.CENTe
r**

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.CENTer = <double>
 <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.CENTer

Description Sets/reads the center value of bandmarker Y

Variable

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

Equivalent key SP Menu -> Marker Function -> Band Marker Y -> Center
 SP Menu -> Marker Search -> Band Marker Y -> Center

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.SPAN

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.SPAN = <double>
 <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.SPAN

Description Sets/reads the span value of bandmarker Y

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker Y -> Span
 SP Menu -> Marker Search -> Band Marker Y -> Span

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.START

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.START = <double>
 <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.START

Description Sets/reads the start value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

Equivalent key SP Menu -> Marker Function -> Band Marker Y -> Start
 SP Menu -> Marker Search -> Band Marker Y -> Start

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STATE

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STATE = <boolean>

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STOP

<boolean> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STATe

Description Turns on/off bandmarker Y

Variable

	Param
True or -1	Set bandmarker Y function to 'ON'
False or 0(Preset value)	Set bandmarker Y function to 'OFF'

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

SP Menu -> Marker Search -> Band Marker Y -> Band Marker Y

SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STOP

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STOP = <double>

<double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STOP

Description Sets/reads the stop value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

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

SP Menu -> Marker Search -> Band Marker Y -> Stop

SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.COPY

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.COPY

Description Copies trace data to the user trace (No Read)

Variable

	<Long>
Range	1 to 8

	<Long>
Preset value	-
Unit	-
Resolution	-

Equivalent key

SP Menu -> Trace View-> Copy to USER -> Copy to USER1
 SP Menu -> Trace View-> Copy to USER -> Copy to USER2
 SP Menu -> Trace View-> Copy to USER -> Copy to USER3
 SP Menu -> Trace View-> Copy to USER -> Copy to USER4
 SP Menu -> Trace View-> Copy to USER -> Copy to USER5
 SP Menu -> Trace View-> Copy to USER -> Copy to USER6
 SP Menu -> Trace View-> Copy to USER -> Copy to USER7
 SP Menu -> Trace View-> Copy to USER -> Copy to USER8

SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.FDATA

Syntax

SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.FDATA = <variant>
 <variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.FDATA

Description

Sets/reads formatted trace data

Variable

	<Variant>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.FMEMory

Syntax

SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.FMEMory = <variant>
 <variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.FMEMory

Description

Sets/reads formatted memory data

Variable

	<Variant>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.UDATa

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.UDATa = <variant>
<variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.UDATa

Description Sets/reads unformatted trace data

Variable

	<Variant>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.UMEMory

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.UMEMory = <variant>
<variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.UMEMory

Description Sets/reads unformatted memory data

Variable

	<Variant>
Range	1...1024
Preset value	-
Unit	-

	<Variant>
Resolution	-

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).FORMat

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).FORMat = <string>
 <string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).FORMat

Description Selects spectrum monitor mode format

Variable

	Param
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 'dBm / Hz'
DBVHz	Set SP format to 'dBV / Hz'
WHZ	Set SP format to 'Watt / Hz'
VHZ	Set SP format to 'Volt / Hz'

Equivalent key SP Menu -> Format -> Format

SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCtion.DOMain.X

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCtion.DOMain.X = <string>
 <string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCtion.DOMain.X

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

Variable

	Param
FRANge	Set analysis/search range (X-axis) to 'Full Range'

	Param
BDMarker(Preset value)	Set analysis/search range (X-axis) to 'Band Marker'

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.DOMain.Y

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.DOMain.Y = <string>
<string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.DOMain.Y

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

Variable

	Param
FRANge	Set analysis/search range (Y-axis) to 'Full Range'
BDMarker(Preset value)	Set analysis/search range (Y-axis) to 'Band Marker'

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.STATistics.DATA_Q

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.STATistics.DATA_Q mean, std_dev, peak_to_peak

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

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double
```

```
SCPI.CALCulate.SP.TRACe.FUNCTion.STATistics.DATA_Q mean, s_dev, p_p
```

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.STATistics.MEMory_Q

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.STATistics.MEMory_Q mean, std_dev, peak_to_peak

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

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double

SCPI.CALCulate.SP.TRACe.FUNCtion.STATistics.MEMory_Q mean, s_dev,
p_p
```

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCtion.TYPE

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCtion.TYPE = <string>
 <string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCtion.TYPE

Description Sets/reads analysis type

Variable

	Param
OFF(Preset value)	Set analysis type to 'Off'
STATistics	Set analysis type to 'Statistics'

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).HOLD

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).HOLD = <string>
 <string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).HOLD

Description Selects data hold type

Variable

	Param
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

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.FAIL

<boolean> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.FAIL

Description Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.LDATa

Syntax

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.LDATa = <variant>
 <variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.LDATa

Description

Sets/reads the lower limit values of all measurement points

Variable

	<Variant>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.CLEar

Syntax

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.CLEar

Description

Clears the lower limit line (No Read)

Equivalent key

SP Menu -> Display -> Limit Test -> Delete Lower Limit Line

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.COUNT

Syntax

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.COUNT = <long>
 <long> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.COUNT

Description Sets/reads the number of segments in the lower limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.DATA

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.DATA = <variant>
<variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.DATA

Description Sets/reads segment data of the lower limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.REPort.DATA

<variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.REPort.DATA

Description Reads the limit test results of all measurement points in selected traces (Read Only)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.STATe

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.STATe = <boolean>
<boolean> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.STATe

Description Turns on/off the limit test function

Variable

	Param
True or -1	Turn on the limit test function mode
False or 0(Preset value)	Turn off the limit test function mode

Equivalent key SP Menu -> Display -> Limit Test -> Limit Test

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.LDATA

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.LDATA = <variant>
<variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.LDATA

Description Sets/reads the upper limit values of all measurement points

Variable

	<Variant>
Range	1...1024
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMe nt.CLEAr

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMe nt.CLEAr

Description Clears the upper limit line (No Read)

Equivalent key SP Menu -> Display -> Limit Test -> Delete Upper Limit Line

SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMe nt.COUNt

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMe nt.COUNt = <long>
<long> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMe nt.COUNt

Description Sets/reads the number of segments in the upper limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

**SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMe
nt.DATA**

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.DATA = <variant>
 <variant> = SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.DATA

Description Sets/reads segment data of the upper limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

**SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEA
Rch.EXECute.LPEak**

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LPEak

Description Execute marker peak search left (No Read)

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

**SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEA
Rch.EXECute.LTARget**

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LTARget

Description Execute marker target search left (No Read)

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum

Description Execute marker search maximum (No Read)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MINimum

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MINimum

Description Execute marker search minimum (No Read)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.PEAK

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.PEAK

Description execute marker peak search (No Read)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RPEak

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RPEak

Description Execute marker peak search right (No Read)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RTARget

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RTARget

Description Execute marker target search right (No Read)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.TARGet

Syntax	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.TARGet
Description	Execute marker target search (No Read)
Equivalent key	SP Menu -> Marker Search -> Target -> Search Target

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion

Syntax	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion = <double> <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion
Description	Sets/reads the peak excursion value

Variable

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

Equivalent key	SP Menu -> Marker Search -> Peak -> Peak Excursion
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SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity

Syntax	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity = <string> <string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity
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Description	Sets/reads the marker peak-search polarity
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Variable

	Param
POSitive(Preset value)	Set marker peak-search polarity to 'Positive'

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.TRANSition

	Param
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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.TRANSition

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.TRANSition = <string>

<string> =

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.TRANSition

Description Sets/reads the target transition definition

Variable

	Param
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 -> Target Transition

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.Y

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.Y = <double>
<double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.Y

Description Sets/reads the marker target value

Variable

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE = <string>

<string> =
SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE

Description Sets/reads the marker tracking type

Variable

	Param
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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe = <boolean>

<boolean> = SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe

Description Turns on/off a marker

Variable

	Param
True or -1	Enable a marker
False or 0(Preset value)	Disable a marker

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).X

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).X = <double>

COM Object Reference
SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).Y

<double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).X

Description Sets/reads the marker X value

Variable

	<Double>
Range	-
Preset value	992.5M
Unit	-
Resolution	-

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).Y

Syntax <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).Y

Description Reads the marker Y value (Read Only)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.FUNCtion

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.FUNCtion = <string>
 <string> = SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.FUNCtion

Description Selects math operation type

Variable

	Param
NORMAL(Preset value)	Set math operation type to 'Off'
SUBTract	Set math operation type to 'Data - Mem'
DIVide	Set math operation type to 'Data / Mem'
ADD	Set math operation type to 'Data + Mem'
MULTiply	Set math operation type to 'Data * Mem'

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.MEMorize

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.MEMorize

Description Copy data to memory (No Read)

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

SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.OFFSet

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.OFFSet = <double>
 <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.OFFSet

Description Sets/Reads the offset value of the trace

Variable

	<Double>
Description	Offset value of the trace
Range	-500 G to 500 G
Preset value	0
Unit	-
Resolution	-

Equivalent key SP Menu -> Trace View -> Offset
 SP Menu -> Trace View -> [Marker -> -Offset]

SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.APERture

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.APERture = <double>
 <double> = SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.APERture

Description Sets/reads smoothing aperture value

Variable

	<Double>
Range	50m to 25
Preset value	1.5
Unit	%
Resolution	10m

COM Object Reference
SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.STATe

Equivalent key SP Menu -> Trace View -> Aperture

SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.STATe

Syntax SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.STATe = <boolean>
 <boolean> = SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.STATe

Description Turns on/off smoothing function

Variable

	Param
True or -1	Set smoothing function to 'ON'
False or 0(Preset value)	Set smoothing function to 'OFF'

Equivalent key SP Menu -> Trace View -> Smoothing

SCPI.CALCulate.TR(1-1).ALLTrace.ACTive

Syntax SCPI.CALCulate.TR(1-1).ALLTrace.ACTive = <long>
 <long> = SCPI.CALCulate.TR(1-1).ALLTrace.ACTive

Description Selects active trace

Variable

	<Long>
Range	1 to 4
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.TR(1-1).ALLTrace.BDMarker.X.COUPle.STATe

Syntax SCPI.CALCulate.TR(1-1).ALLTrace.BDMarker.X.COUPle.STATe = <boolean>
 <boolean> = SCPI.CALCulate.TR(1-1).ALLTrace.BDMarker.X.COUPle.STATe

Description Turns on/off bandmarker coupling function

Variable

	Param
True or -1	Set bandmarker coupling function to 'ON'
False or 0(Preset value)	Set bandmarker coupling function to 'OFF'

Equivalent key

TR Menu -> Marker Function -> Couple
 TR Menu -> Marker Search -> Couple

SCPI.CALCulate.TR(1-1).ALLTrace.LIMit.FAIL

<boolean> = SCPI.CALCulate.TR(1-1).ALLTrace.LIMit.FAIL

Description

Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.COUPle.STATe

Syntax

SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.COUPle.STATe = <boolean>
 <boolean> = SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.COUPle.STATe

Description

Turns on/off marker coupling function

Variable

	Param
True or -1	Set marker coupling function to 'ON'
False or 0(Preset value)	Set marker coupling function to 'OFF'

Equivalent key

TR Menu -> Marker -> Couple

SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.DISCrete.STATe

Syntax SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.DISCrete.STATe = <boolean>
 <boolean> = SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.DISCrete.STATe

Description Enable/disable marker discrete function

Variable

	Param
True or -1	Enable marker discrete function
False or 0(Preset value)	Disable marker discrete function

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

SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFerence.NUMBer

Syntax SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFerence.NUMBer = <long>
 <long> = SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFerence.NUMBer

Description Sets/reads marker reference number

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFerence.STATe

Syntax SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFerence.STATe = <boolean>
 <boolean> = SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFerence.STATe

Description Turns on/off delta marker mode

Variable

	Param
True or -1	Set delta marker mode to 'ON'
False or 0(Preset value)	Set delta marker mode to 'OFF'

Equivalent key

TR Menu -> Marker -> More Functions -> Ref Marker Mode

SCPI.CALCulate.TR(1-1).NARRow.DATA.RDATA

Syntax

SCPI.CALCulate.TR(1-1).NARRow.DATA.RDATA = <variant>
 <variant> = SCPI.CALCulate.TR(1-1).NARRow.DATA.RDATA

Description

Sets/reads the measurement raw data

Variable

	<Variant>
Range	1...3753
Preset value	-
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.TR(1-1).NARRow.DATA.XDATA

Syntax

<variant> = SCPI.CALCulate.TR(1-1).NARRow.DATA.XDATA

Description

X axis data (Read Only)

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.ACTive

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.ACTive = <long>
 <long> = SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.ACTive

Description

Selects active marker

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.X

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.X = <string>

<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.X

Description

Sets/reads marker search range (X-axis)

Variable

	Param
FRANge(Preset value)	Set marker search range (X-axis) to 'Full Range'
BDMarker	Set marker search range (X-axis) to 'Band Marker'

Equivalent key

TR Menu -> Marker Search -> Search Range (X)

SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.Y

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.Y = <string>

<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.Y

Description

Sets/reads marker search range (Y-axis)

Variable

	Param
FRANge(Preset value)	Set marker search range (Y-axis) to 'Full Range'
BDMarker	Set marker search range (Y-axis) to 'Band Marker'

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARCh.PEAK

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARCh.PEAK

Description Execute marker search all (No Read)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.CENTer

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.CENTer = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.CENTer

Description Sets/reads the center value of bandmarker X

Variable

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

Equivalent key TR Menu -> Marker Function -> Band Marker X -> Center
 TR Menu -> Marker Search -> Band Marker X -> Center

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.SPAN

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.SPAN = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.SPAN

Description Sets/reads the span value of bandmarker X

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-

	<Double>
Resolution	-

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

TR Menu -> Marker Search -> Band Marker X -> Span

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.START

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.START = <double>

<double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.START

Description Sets/reads the start value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

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

TR Menu -> Marker Search -> Band Marker X -> Start

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STATe

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STATe = <boolean>

<boolean> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STATe

Description Turn on/off bandmarker X

Variable

	Param
True or -1	Set bandmarker X function to 'ON'
False or 0(Preset value)	Set bandmarker X function to 'OFF'

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

TR Menu -> Marker Search -> Band Marker X -> Band Marker X

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STOP

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STOP = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STOP

Description Sets/reads the stop value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

Equivalent key TR Menu -> Marker Function -> Band Marker X -> Stop
 TR Menu -> Marker Search -> Band Marker X -> Stop

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.CENTer

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.CENTer = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.CENTer

Description Sets/reads the center value of bandmarker Y

Variable

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

Equivalent key TR Menu -> Marker Function -> Band Marker Y -> Center
 TR Menu -> Marker Search -> Band Marker Y -> Center

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.SPAN

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.SPAN = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.SPAN

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STARt

Description Sets/reads the span value of bandmarker Y

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-
Resolution	-

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

TR Menu -> Marker Search -> Band Marker Y -> Span

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STARt

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STARt = <double>

<double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STARt

Description Sets/reads the start value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

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

TR Menu -> Marker Search -> Band Marker Y -> Start

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STATe

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STATe = <boolean>

<boolean> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STATe

Description Turn on/off bandmarker Y

Variable

	Param
True or -1	Set bandmarker Y function to 'ON'
False or 0(Preset value)	Set bandmarker Y function to 'OFF'

Equivalent key

TR Menu -> Marker Function -> Band Marker Y -> Band Marker Y
 TR Menu -> Marker Search -> Band Marker Y -> Band Marker Y

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STOP

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STOP = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STOP

Description

Sets/reads the stop value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

Equivalent key

TR Menu -> Marker Function -> Band Marker Y -> Stop
 TR Menu -> Marker Search -> Band Marker Y -> Stop

SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.COPY

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.COPY

Description

Copies trace data to the user trace (No Read)

Variable

	<Long>
Range	1 to 8
Preset value	-
Unit	-
Resolution	-

SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FDATA

Equivalent key TR Menu -> Trace View-> Copy to USER -> Copy to USER1
 TR Menu -> Trace View-> Copy to USER -> Copy to USER2
 TR Menu -> Trace View-> Copy to USER -> Copy to USER3
 TR Menu -> Trace View-> Copy to USER -> Copy to USER4
 TR Menu -> Trace View-> Copy to USER -> Copy to USER5
 TR Menu -> Trace View-> Copy to USER -> Copy to USER6
 TR Menu -> Trace View-> Copy to USER -> Copy to USER7
 TR Menu -> Trace View-> Copy to USER -> Copy to USER8

SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FDATA

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FDATA = <variant>
 <variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FDATA

Description Sets/reads formatted trace data

Variable

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

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FMEMory

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FMEMory = <variant>
 <variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FMEMory

Description Sets/reads formatted memory data

Variable

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

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.UDATa

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.UDATa = <variant>
 <variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.UDATa

Description Sets/reads unformatted trace data

Variable

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

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.UMEMory

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.UMEMory = <variant>
 <variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.UMEMory

Description Sets/reads unformatted memory data

Variable

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

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.FREQuency

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.FREQuency = <string>
 <string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.FREQuency

Description Sets/reads the frequency format

Variable

	Param
HZ(Preset value)	Set the frequency format to 'Hz'
DHZ	Se the frequency format to ' Δ Hz'
PCT	Set the frequency format to '%'
PPM	Set the frequency format to 'ppm'

Equivalent key TR Menu -> Format -> Frequency Format

SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.PR EFerence.OFFSet

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.PREference.OFFSet =
<double>

<double> =

SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.PREference.OFFSet

Description Sets/reads the offset value of the phase reference frequency

Variable

	<Double>
Range	-25.6M to 25.6M
Preset value	0
Unit	Hz
Resolution	1m

Equivalent key TR Menu -> Setup -> Recalc Phase Reference -> Phase Ref. Offset

SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.UN IT

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.UNIT = <string>

<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.UNIT

Description Selects phase format on transient measurement

Variable

	Param
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 'Drad'

Equivalent key

TR Menu -> Format -> Phase Unit

SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.WRAP

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.WRAP = <boolean>
 <boolean> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.WRAP

Description

Turns on/off wrap-phase

Variable

	Param
True or -1(Preset value)	Set wrap-phase mode to 'ON'
False or 0	Set wrap-phase mode to 'OFF'

Equivalent key

TR Menu -> Format -> Wrap Phase

SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.XREFERENCE

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.XREFERENCE = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.XREFERENCE

Description

Sets/Reads stimulus value that is set as phase reference (0 degree reference) of a trace

Variable

	<Double>
Description	Stimulus value set as phase reference of a trace
Range	-8.00768 to 11.0096
Preset value	11.0096
Unit	s

	<Double>
Resolution	-

Equivalent key TR Menu -> Format -> Phase X Reference

TR Menu -> Format -> [Marker -> Phase X Reference]

SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.DOMain.X

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.DOMain.X = <string>

<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.DOMain.X

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

Variable

	Param
FRANge	Set analysis/search range (X-axis) to 'Full Range'
BDMarker(Preset value)	Set analysis/search range (X-axis) to 'Band Marker'

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.DOMain.Y

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.DOMain.Y = <string>

<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.DOMain.Y

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

Variable

	Param
FRANge	Set analysis/search range (Y-axis) to 'Full Range'
BDMarker(Preset value)	Set analysis/search range (Y-axis) to 'Band Marker'

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCTion.LREGression.DATA_Q a, b

Syntax	<double>,<double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCTion.LREGression.DATA_Q a, b
Description	Assigns trace data to the regression line coefficient (a and b) (Read Only) When the X-axis band marker is on, calculation is made within the range specified by the band marker.
NOTE	When less than two measurement points are in the range of the band marker, a and b return 0 (zero).
Examples	Dim a_val As Double Dim b_val As Double SCPI.CALCulate.TR.TRACe.FUNCTion.LREGression.DATA_Q a_val, b_val
Equivalent key	FP Menu -> Trace View -> Memory Trace -> Line (Y = AX + B) -> Data Trace -> A,B

SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCTion.LREGression.MEMory_Q a, b

Syntax	<double>,<double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCTion.LREGression.MEMory_Q a, b
Description	Assigns trace memory to the regression line coefficient (a and b) (Read Only) When the X-axis band marker is on, calculation is made within the range specified by the band marker.
NOTE	When less than two measurement points are in the range of the band marker, a and b return 0 (zero).
Examples	Dim a_val As Double Dim b_val As Double SCPI.CALCulate.TR.TRACe.FUNCTion.LREGression.MEMory_Q a_val, b_val
Equivalent key	No equivalent key is available on the front panel.

SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCTion.STATistics.DATA_Q

Syntax	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCTion.STATistics.DATA_Q mean, std_dev, peak_to_peak
Description	Reads the result of statistical analysis for the data trace (Read Only)
Examples	Dim meas As Double

SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNcTion.STATistics.MEMory_Q

```
Dim s_dev As Double
Dim p_p As Double
```

```
SCPI.CALCulate.TR.TRACe.FUNcTion.STATistics.DATA_Q mean, s_dev, p_p
```

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNcTion.STATistics.MEMory_Q

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNcTion.STATistics.MEMory_Q mean, std_dev, peak_to_peak

Description Reads the result of statistical analysis for the memory trace (Read Only)

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double

SCPI.CALCulate.TR.TRACe.FUNcTion.STATistics.MEMory_Q mean, s_dev, p_p
```

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNcTion.TYPE

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNcTion.TYPE = <string>
<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNcTion.TYPE

Description Sets/reads analysis type

Variable

	Param
OFF(Preset value)	Set analysis type to 'Off'
STATistics	Set analysis type to 'Statistics'

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).HOLD

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).HOLD = <string>
<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).HOLD

Description Sets/reads data hold type

Variable

	Param
OFF(Preset value)	Set data hold to 'Off'
MAXimum	Set data hold to 'Maximum'
MINimum	Set data hold to 'Mimimum'

Equivalent key

TR Menu -> Trace View -> Data Hold

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.FAIL

<boolean> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.FAIL

Description

Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.LDATa

Syntax

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.LDATa = <variant>

<variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.LDATa

Description

Sets/reads the lower limit values of all measurement points

Variable

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

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.CLEAr

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.CLEAr

Description Clears the lower limit line (No Read)

Equivalent key TR Menu -> Display -> Limit Test -> Delete Lower Limit Line

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.COUNT

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.COUNT = <long>

<long> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.COUNT

Description Sets/reads the number of segments in the lower limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.DATA

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.DATA = <variant>

<variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.DATA

Description Sets/reads segment data of the lower limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.REPort.DAT A

<variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.REPort.DATA

Description Reads the limit test results of all measurement points in selected traces (Read Only)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.STATe

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.STATe = <boolean>

<boolean> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.STATe

Description Turns on/off the limit test function

Variable

	Param
True or -1	Turn on the limit test function mode
False or 0(Preset value)	Turn off the limit test function mode

Equivalent key TR Menu -> Display -> Limit Test -> Limit Test

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.LDATa

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.LDATa = <variant>

<variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.LDATa

Description Sets/reads the upper limit values of all measurement points

Variable

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

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.CLEar

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.CLEar

Description Clears the upper limit line (No Read)

Equivalent key TR Menu -> Display -> Limit Test -> Delete Upper Limit Line

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.COUNT

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.COUNT = <long>

<long> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.COUNT

Description Sets/reads the number of segments in the upper limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.DATA

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.DATA = <variant>

<variant> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.DATA

Description Sets/reads segment data of the upper limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.A

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.A = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.A

Description Sets/Reads the regression line coefficient a (slope)

Variable

	<Double>
Description	Regression line coefficient a
Range	-500 T to 500 T
Preset value	0
Unit	-
Resolution	-

Equivalent key TR Menu -> Trace View -> Memory Trace -> Line (Y = AX + B) -> A

SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.B

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.B = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.B

Description Sets/Reads the regression line coefficient b (intercept)

Variable

	<Double>
Description	Regression line coefficient b
Range	-500 T to 500 T
Preset value	0
Unit	-
Resolution	-

Equivalent key TR Menu -> Trace View -> Memory Trace -> Line (Y = AX + B) -> B

SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.MEMory

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.MEMory

Description Saves the obtained regression line to a trace memory (No Read)
Equivalent key TR Menu -> Trace View -> Memory Trace -> Line (Y = AX + B) -> Set Line to Memory

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.LPEak

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.LPEak

Description Execute marker peak search left (No Read)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.LTARget

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.LTARget

Description Execute marker target search left (No Read)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.MAXimum

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.MAXimum

Description Execute marker search maximum (No Read)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.MINimum

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.MINimum

Description Execute marker search minimum (No Read)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.PEAK

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.PEAK

Description Execute marker peak search (No Read)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RPEak

Syntax	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RPEak
Description	Execute marker peak search right (No Read)
Equivalent key	TR Menu -> Marker Search -> Peak -> Search Right

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RTARget

Syntax	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RTARget
Description	Execute marker target search right (No Read)
Equivalent key	TR Menu -> Marker Search -> Target -> Search Right

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.TARGet

Syntax	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.TARGet
Description	Execute marker target search (No Read)
Equivalent key	TR Menu -> Marker Search -> Target -> Search Target

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.EXCursion

Syntax	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.EXCursion = <double> <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.EXCursion
Description	Sets/reads the peak excursion value
Variable	

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

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.POLarity

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.POLarity = <string>

<string> =

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.POLarity

Description Sets/reads the marker peak-search polarity

Variable

	Param
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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGET.TRANSition

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGET.TRANSition = <string>

<string> =

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGET.TRANSition

Description Sets/reads the target transition definition

Variable

	Param
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 -> Target Transition

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.Y

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.Y = <double>
<double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.Y

Description Sets/reads the marker target value

Variable

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

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TRACking.TYPE

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TRACking.TYPE = <string>
<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TRACking.TYPE

Description Sets/reads the marker tracking type

Variable

	Param
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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STaTe

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STaTe = <boolean>
 <boolean> = SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STaTe

Description Turns on/off a marker

Variable

	Param
True or -1	Enable a marker
False or 0(Preset value)	Disable a marker

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).X

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).X = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).X

Description Sets/reads the marker X value

Variable

	<Double>
Range	-
Preset value	-50m
Unit	-
Resolution	-

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).Y

Syntax <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).Y

Description Reads the marker Y value (Read Only)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.FUNCTION

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.FUNCTION = <string>
 <string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.FUNCTION

Description Selects math operation type

Variable

	Param
NORMAL(Preset value)	Set math operation type to 'Off'
SUBTract	Set math operation type to 'Data - Mem'
DIVide	Set math operation type to 'Data / Mem'
ADD	Set math operation type to 'Data + Mem'
MULTIply	Set math operation type to 'Data * Mem'

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.MEMorize

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.MEMorize

Description Copy data to memory (No Read)

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

SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.OFFSet

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.OFFSet = <double>
 <double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.OFFSet

Description Sets/Reads the offset value of the trace

Variable

	<Double>
Description	Offset value of the trace
Range	-500 G to 500 G
Preset value	0
Unit	-
Resolution	-

COM Object Reference
SCPI.CALCulate.TR(1-1).TRACe(1-4).PARAmeter

Equivalent key TR Menu -> Trace View -> Offset
TR Menu -> Trace View -> [Marker -> -Offset]

SCPI.CALCulate.TR(1-1).TRACe(1-4).PARAmeter

<string> = SCPI.CALCulate.TR(1-1).TRACe(1-4).PARAmeter

Description Reads the trace parameter. (Read Only)

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

**SCPI.CALCulate.TR(1-1).TRACe(1-4).REFerence.FREQue
ncy**

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).REFerence.FREQuency = <double>

<double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).REFerence.FREQuency

Description Sets/reads the reference frequency

Variable

	<Double>
Range	-500G to 500G
Preset value	0
Unit	Hz
Resolution	-

Equivalent key TR Menu -> Format -> Frequency Reference

**SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.APERtu
re**

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.APERture = <double>

<double> = SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.APERture

Description Sets/reads smoothing aperture value

Variable

	<Double>
Range	50m to 25
Preset value	1.5
Unit	%

	<Double>
Resolution	10m

Equivalent key TR Menu -> Trace View -> Aperture

SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.STATe

Syntax SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.STATe = <boolean>
 <boolean> = SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.STATe

Description Turns on/off smoothing function

Variable

	Param
True or -1	Set smoothing function to 'ON'
False or 0(Preset value)	Set smoothing function to 'OFF'

Equivalent key TR Menu -> Trace View -> Smoothing

SCPI.CALCulate.TR(1-1).WIDE.DATA.RDATA

Syntax SCPI.CALCulate.TR(1-1).WIDE.DATA.RDATA = <variant>
 <variant> = SCPI.CALCulate.TR(1-1).WIDE.DATA.RDATA

Description Sets/reads the measurement raw data

Variable

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

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

SCPI.CALCulate.TR(1-1).WIDE.DATA.XDATA

Syntax <variant> = SCPI.CALCulate.TR(1-1).WIDE.DATA.XDATA

Description Reads the X-axis data (Read Only)

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

SCPI.CALCulate.USER(1-1).ALLTrace.ACTive

Syntax SCPI.CALCulate.USER(1-1).ALLTrace.ACTive = <long>
<long> = SCPI.CALCulate.USER(1-1).ALLTrace.ACTive

Description Selects active trace

Variable

	<Long>
Range	1 to 8
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.USER(1-1).ALLTrace.BDMarker.X.COUPle.STATE

Syntax SCPI.CALCulate.USER(1-1).ALLTrace.BDMarker.X.COUPle.STATE = <boolean>
<boolean> = SCPI.CALCulate.USER(1-1).ALLTrace.BDMarker.X.COUPle.STATE

Description Turns on/off bandmarker coupling function

Variable

	Param
True or -1	Set bandmarker coupling function to 'ON'
False or 0(Preset value)	Set bandmarker coupling function to 'OFF'

Equivalent key USER Menu -> Marker Function -> Couple
USER Menu -> Marker Search -> Couple

SCPI.CALCulate.USER(1-1).ALLTrace.LIMit.FAIL

<boolean> = SCPI.CALCulate.USER(1-1).ALLTrace.LIMit.FAIL

Description Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

Equivalent key

No equivalent key is available on the front panel.

**SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.COUPle.S
TATe**

Syntax

SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.COUPle.STATe = <boolean>
 <boolean> = SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.COUPle.STATe

Description

Turns on/off marker coupling function

Variable

	Param
True or -1	Set marker coupling function to 'ON'
False or 0(Preset value)	Set marker coupling function to 'OFF'

Equivalent key

USER Menu -> Marker -> Couple

**SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.DISCrete.
STATe**

Syntax

SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.DISCrete.STATe = <boolean>
 <boolean> = SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.DISCrete.STATe

Description

Enables/disables marker discrete function

Variable

	Param
True or -1	Enable marker discrete function
False or 0(Preset value)	Disable marker discrete function

Equivalent key

USER Menu -> Marker -> More Functions -> Discrete

SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.NUMBer

Syntax SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.NUMBer = <long>
 <long> = SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.NUMBer

Description Sets/reads marker reference number

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.STATE

Syntax SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.STAtE = <boolean>
 <boolean> = SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.STAtE

Description Turns on/off delta marker mode

Variable

	Param
True or -1	Set delta marker mode to 'ON'
False or 0(Preset value)	Set delta marker mode to 'OFF'

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.ACTive

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.ACTive = <long>
 <long> = SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.ACTive

Description Selects active marker

Variable

	<Long>
Range	1 to 10
Preset value	1
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEA Rch.DOMain.X

Syntax

SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEARCh.DOMain.X = <string>

<string> = SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEARCh.DOMain.X

Description

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

Variable

	Param
FRANge(Preset value)	Set marker search X range to 'Full Range'
BDMarker	Set marker search X range to 'Band Marker'

Equivalent key

USER Menu -> Marker Search -> Search Range (X)

SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEA Rch.DOMain.Y

Syntax

SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEARCh.DOMain.Y = <string>

<string> = SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEARCh.DOMain.Y

Description

Sets/reads marker search range (Y-axis)

Variable

	Param
FRANge(Preset value)	Set marker search Y range to 'Full Range'
BDMarker	Set marker search Y range to 'Band Marker'

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEA Rch.PEAK

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEARCh.PEAK

Description Execute marker peak search all (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.CE Nter

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.CENter = <double>
<double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.CENter

Description Sets/reads the center value of bandmarker X

Variable

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

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

USER Menu -> Marker Search -> Band Marker X -> Center

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.SPA N

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.SPAN = <double>
<double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.SPAN

Description Sets/reads the span value of bandmarker X

Variable

	<Double>
Range	0 to 2T
Preset value	2T

	<Double>
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Span
 USER Menu -> Marker Search -> Band Marker X -> Span

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STARt

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STARt = <double>
 <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STARt

Description Sets/reads the start value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Start
 USER Menu -> Marker Search -> Band Marker X -> Start

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STATe

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STATe = <boolean>
 <boolean> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STATe

Description Turns on/off bandmarker X

Variable

	Param
True or -1	Set bandmarker X to 'ON'
False or 0(Preset value)	Set bandmarker X to 'OFF'

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STOP

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Band Marker X
 USER Menu -> Marker Search -> Band Marker X -> Band Marker X

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STOP

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STOP = <double>
 <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STOP

Description Sets/reads the stop value of bandmarker X

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker X -> Stop
 USER Menu -> Marker Search -> Band Marker X -> Stop

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.CENTer

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.CENTer = <double>
 <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.CENTer

Description Sets/reads the center value of bandmarker Y

Variable

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

Equivalent key USER Menu -> Marker Function -> Band Marker Y -> Center
 USER Menu -> Marker Search -> Band Marker Y -> Center

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.SPAN

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.SPAN = <double>
 <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.SPAN

Description Sets/reads the span value of bandmarker Y

Variable

	<Double>
Range	0 to 2T
Preset value	2T
Unit	-
Resolution	-

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

USER Menu -> Marker Search -> Band Marker Y -> Span

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.START

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.START = <double>
 <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.START

Description Sets/reads the start value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	-1T
Unit	-
Resolution	-

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

USER Menu -> Marker Search -> Band Marker Y -> Start

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STATe

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STATe = <boolean>
 <boolean> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STATe

Description Turns on/off bandmarker Y

Variable

	Param
True or -1	Set bandmarker Y to 'ON'
False or 0(Preset value)	Set bandmarker Y to 'OFF'

Equivalent key USER Menu -> Marker Function -> Band Marker Y -> Band Marker Y
 USER Menu -> Marker Search -> Band Marker Y -> Band Marker Y

SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STOP

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STOP = <double>
 <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STOP

Description Sets/reads the stop value of bandmarker Y

Variable

	<Double>
Range	-1T to 1T
Preset value	1T
Unit	-
Resolution	-

Equivalent key USER Menu -> Marker Function -> Band Marker Y -> Stop
 USER Menu -> Marker Search -> Band Marker Y -> Stop

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.COPY

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.COPY

Description Copies trace data to the user trace (No Read)

Variable

	<Long>
Range	1 to 8
Preset value	-
Unit	-
Resolution	-

Equivalent key

USER Menu -> Trace View-> Copy to USER -> Copy to USER1
 USER Menu -> Trace View-> Copy to USER -> Copy to USER2
 USER Menu -> Trace View-> Copy to USER -> Copy to USER3
 USER Menu -> Trace View-> Copy to USER -> Copy to USER4
 USER Menu -> Trace View-> Copy to USER -> Copy to USER5
 USER Menu -> Trace View-> Copy to USER -> Copy to USER6
 USER Menu -> Trace View-> Copy to USER -> Copy to USER7
 USER Menu -> Trace View-> Copy to USER -> Copy to USER8

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.FDATA

Syntax

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.FDATA = <variant>
 <variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.FDATA

Description

Sets/reads formatted trace data

Variable

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

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.FMEMory

Syntax

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.FMEMory = <variant>
 <variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.FMEMory

Description

Sets/reads formatted memory data

Variable

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

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.POINTs

Syntax <long> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.POINTs

Description Reads the number of measurement points (Read Only)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.RDATA

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.RDATA = <variant>
 <variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.RDATA

Description Sets/reads the raw data of the user defined window

Variable

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

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.START

Syntax <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.START

Description Reads the start value of the user defined window trace (Read Only)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.STOP

- Syntax** <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.STOP
- Description** Reads the stop value of the user defined window trace (Read Only)
- Equivalent key** No equivalent key is available on the front panel.

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.UDATa

- Syntax** SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.UDATa = <variant>
 <variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.UDATa
- Description** Sets/reads unformatted trace data
- Variable**

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

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.UMEMory

- Syntax** SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.UMEMory = <variant>
 <variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.UMEMory
- Description** Sets/reads unformatted memory data
- Variable**

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

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.XDATA

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.XDATA = <variant>
<variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.XDATA

Description Sets/reads the X data

Variable

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

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTION.DOMa in.X

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTION.DOMain.X = <string>
<string> = SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTION.DOMain.X

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

Variable

	Param
FRANge	Set marker search MINimum to 'Full Range'
BDMarker(Preset value)	Set marker search MINimum to 'Band Marker'

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTION.DOMa in.Y

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTION.DOMain.Y = <string>
<string> = SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTION.DOMain.Y

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

Variable

	Param
FRANge	Set marker search PEAK to 'Full Range'
BDMarker(Preset value)	Set marker search PEAK to 'Band Marker'

Equivalent key

USER Menu -> Marker Function -> Analysis Range (Y)

SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCtion.STATistics.DATA_Q

Syntax

SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCtion.STATistics.DATA_Q mean, std_dev, peak_to_peak

Description

Reads the results of statistical analysis of the trace data (Read Only)

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double
```

```
SCPI.CALCulate.USER.TRACe.FUNCtion.STATistics.DATA_Q mean, s_dev, p_p
```

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCtion.STATistics.MEMory_Q

Syntax

SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCtion.STATistics.MEMory_Q mean, std_dev, peak_to_peak

Description

Reads the results of statistical analysis of the memory trace (Read Only)

Examples

```
Dim meas As Double
Dim s_dev As Double
Dim p_p As Double
```

```
SCPI.CALCulate.USER.TRACe.FUNCtion.STATistics.MEMory_Q mean, s_dev, p_p
```

Equivalent key

No equivalent key is available on the front panel.

SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCtion.TYPE

Syntax

```
SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCtion.TYPE = <string>
<string> = SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCtion.TYPE
```

Description

Selects analysis type

Variable

	Param
OFF(Preset value)	Set marker search TARGet to 'Off'
STATistics	Set marker search TARGet to 'Statistics'

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).HOLD

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).HOLD = <string>
 <string> = SCPI.CALCulate.USER(1-1).TRACe(1-8).HOLD

Description Selects data hold type

Variable

	Param
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

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.FAIL

<boolean> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.FAIL

Description Reads out the limit test result (Read Only)

Variable

	Param
True or -1	The limit test result is fail
False or 0(Preset value)	The limit test result is pass

When the limit test is set to OFF, false or 0 is always read out.

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.LDATa

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.LDATa = <variant>
 <variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.LDATa

Description Sets/reads the lower limit values of all measurement points

Variable

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

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.CLEAr

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.CLEAr

Description Clears the lower limit line (No Read)

Equivalent key USER Menu -> Display -> Limit Test -> Delete Lower Limit Line

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.COUNT

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.COUNT = <long>
 <long> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.COUNT

Description Sets/reads the number of segments in the lower limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.DATA

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.DATA = <variant>
<variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.DATA

Description Sets/reads segment data of the lower limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.REPort.DATA

<variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.REPort.DATA

Description Reads the limit test results of all measurement points in selected traces (Read Only)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.STATe

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.STATe = <boolean>
<boolean> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.STATe

Description Turns on/off the limit test function

Variable

	Param
True or -1	Turn on the limit test function mode
False or 0(Preset value)	Turn off the limit test function mode

Equivalent key USER Menu -> Display -> Limit Test -> Limit Test

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.LDATA

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.LDATA = <variant>
 <variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.LDATA

Description Sets/reads the upper limit values of all measurement points

Variable

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

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.CLEAr

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.CLEAr

Description Clears the upper limit line (No Read)

Equivalent key USER Menu -> Display -> Limit Test -> Delete Upper Limit Line

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.COUNT

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.COUNT = <long>
 <long> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.COUNT

Description Sets/reads the number of segments in the upper limit line

Variable

	<Long>
Range	1 to 100
Preset value	1
Unit	-
Resolution	-

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.DATA

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.DATA = <variant>
<variant> = SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.DATA

Description Sets/reads segment data of the upper limit line

Variable

	<Variant>
Range	1...400
Preset value	-
Unit	-
Resolution	-

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.LPEak

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.LPEak

Description Execute marker peak search left (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.LTARget

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.LTARget

Description Execute marker target search left (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.MAXimum

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.MAXimum

Description Execute marker search maximum (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.MINimum

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.MINimum

Description Execute marker search minimum (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.PEAK

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.PEAK

Description Execute marker peak search (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.RPEak

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.RPEak

Description Execute marker peak search right (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.RTARget

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.RTARget

Description Execute marker target search right (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.TARGet

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.TARGet

Description Execute marker target search (No Read)

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

**SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).S
EARch.PEAK.EXCurSION**

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.PEAK.EXCurSION =
<double>
<double> =
SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.PEAK.EXCurSION

Description Sets/reads the peak excursion value

Variable

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

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

**SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).S
EARch.PEAK.POLarity**

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.PEAK.POLarity =
<string>
<string> =
SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.PEAK.POLarity

Description Sets/reads the marker peak-search polarity

Variable

	Param
POSitive(Preset value)	Set marker-search-peak polarity type to 'Positive'
NEGative	Set marker-search-peak polarity type to 'Negative'
BOTH	Set marker-search-peak polarity type to 'Both'

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TARGet.TRANSition

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TARGet.TRANSition = <string>
 <string> =
 SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TARGet.TRANSition

Description Sets/reads the target transition definition

Variable

	Param
POSitive	Set marker-target transition type to 'Positive'
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 -> Target Transition

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TARGet.Y

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TARGet.Y = <double>
 <double> =
 SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TARGet.Y

Description Sets/reads the marker target value

Variable

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

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

**SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).S
EARCh.TRACKing.TYPE**

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARCh.TRACKing.TYPE =
<string>

<string> =
SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARCh.TRACKing.TYPE

Description Sets/reads the marker tracking type

Variable

	Param
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'
TARGet	Set search tracking type to 'Target'

Equivalent key USER Menu -> Marker Search -> Tracking

**SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).S
TATe**

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).STATe = <boolean>
<boolean> = SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).STATe

Description Turns on/off a marker

Variable

	Param
True or -1	Enable a marker
False or 0(Preset value)	Disable a marker

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).X

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).X = <double>
<double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).X

Description Sets/reads the marker position in X-axis

Variable

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

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).Y

Syntax <double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).Y

Description Reads the marker position in Y-axis (Read Only)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.FUNCtion

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.FUNCtion = <string>

<string> = SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.FUNCtion

Description Selects math operation type

Variable

	Param
NORMAL(Preset value)	Set math operation type to 'Off'
SUBTract	Set math operation type to 'Data - Mem'
DIVide	Set math operation type to 'Data / Mem'
ADD	Set math operation type to 'Data + Mem'
MULTiply	Set math operation type to 'Data * Mem'

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.MEMorize

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.MEMorize

COM Object Reference
SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.OFFSet

Description Copy data to memory (No Read)

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

SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.OFFSet

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.OFFSet = <double>
<double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.OFFSet

Description Sets/Reads the offset value of the trace

Variable

	<Double>
Description	Offset value of the trace
Range	-500 G to 500 G
Preset value	0
Unit	-
Resolution	-

Equivalent key USER Menu -> Trace View -> Offset
USER Menu -> Trace View -> [Marker -> -Offset]

**SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.APE
Rture**

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.APERture = <double>
<double> = SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.APERture

Description Sets/reads smoothing aperture value

Variable

	<Double>
Range	50m to 25
Preset value	1.5
Unit	%
Resolution	10m

Equivalent key USER Menu -> Trace View -> Aperture

SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.STATe

Syntax SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.STATe = <boolean>
 <boolean> = SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.STATe

Description Turns on/off smoothing function

Variable

	Param
True or -1	Set smoothing function to 'ON'
False or 0(Preset value)	Set smoothing function to 'OFF'

Equivalent key USER Menu -> Trace View -> Smoothing

SCPI.CONTRol.HANDler.A.DATA

Syntax SCPI.CONTRol.HANDler.A.DATA

Description Outputs data using port A (No Read)

Variable

	<Long>
Range	0 to 255
Preset value	-
Unit	-
Resolution	-

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

SCPI.CONTRol.HANDler.B.DATA

Syntax SCPI.CONTRol.HANDler.B.DATA

Description Outputs data using port B (No Read)

Variable

	<Long>
Range	0 to 255

COM Object Reference
SCPI.CONTRol.HANDler.C.DATA

	<Long>
Preset value	-
Unit	-
Resolution	-

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

SCPI.CONTRol.HANDler.C.DATA

Syntax SCPI.CONTRol.HANDler.C.DATA = <long>
 <long> = SCPI.CONTRol.HANDler.C.DATA

Description Inputs/Outputs data using port C

Variable

	<Long>
Range	0 to 15
Preset value	-
Unit	-
Resolution	-

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

SCPI.CONTRol.HANDler.C.MODE

Syntax SCPI.CONTRol.HANDler.C.MODE = <string>
 <string> = SCPI.CONTRol.HANDler.C.MODE

Description Selects input/output mode on port C

Variable

	Param
INPut(Preset value)	Specifies input.
OUTPut	Specifies output.

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

SCPI.CONTRol.HANDler.D.DATA

Syntax SCPI.CONTRol.HANDler.D.DATA = <long>
 <long> = SCPI.CONTRol.HANDler.D.DATA

Description Inputs/Outputs data using port D

Variable

	<Long>
Range	0 to 15
Preset value	-
Unit	-
Resolution	-

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

SCPI.CONTRol.HANDler.D.MODE

Syntax SCPI.CONTRol.HANDler.D.MODE = <string>
 <string> = SCPI.CONTRol.HANDler.D.MODE

Description Selects input/output mode on port D

Variable

	Param
INPut(Preset value)	Specifies input.
OUTPut	Specifies output.

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

SCPI.CONTRol.HANDler.E.DATA

Syntax SCPI.CONTRol.HANDler.E.DATA = <long>
 <long> = SCPI.CONTRol.HANDler.E.DATA

Description Inputs/outputs data using port E(port C + port D; 16 bits)

Variable

	<Long>
Range	0 to 255
Preset value	-
Unit	-
Resolution	-

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

SCPI.CONTRol.HANDler.F.DATA

Syntax SCPI.CONTRol.HANDler.F.DATA

Description Inputs/outputs data using port F(port A + port C; 16 bits) (No Read)

Variable

	<Long>
Range	0 to 65535
Preset value	-
Unit	-
Resolution	-

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

SCPI.CONTRol.HANDler.OUTPUT(1-2).DATA

Syntax SCPI.CONTRol.HANDler.OUTPUT(1-2).DATA = <long>

<long> = SCPI.CONTRol.HANDler.OUTPUT(1-2).DATA

Description Sets/Reads OUTPUT1 and/or OUTPUT2

Variable

	<Long>
Range	0 to 1
Preset value	-
Unit	-
Resolution	-

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

SCPI.DISPlay.CLOCK

Syntax SCPI.DISPlay.CLOCK = <boolean>
 <boolean> = SCPI.DISPlay.CLOCK

Description Turns on/off internal clock display

Variable

	Param
True or -1(Preset value)	Set internal clock display mode to 'ON'
False 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

SCPI.DISPlay.COLor(1-2).BACK.VALue[_Q]

Syntax SCPI.DISPlay.COLor(1-2).BACK.VALue red, green, blue
 Data = SCPI.DISPlay.COLor(1-2).BACK.VALue_Q red, green, blue

Description Sets the background color for normal display (COLor:1) and inverted display (COLor:2).

Variable

	Data
Description	<ul style="list-style-type: none"> • <i>red</i> Sets amount of red. • <i>green</i> Sets amount of green. • <i>blue</i> Sets amount of blue.
Data type	Long integer type (Long)
Range	<ul style="list-style-type: none"> • <i>red</i> 0 to 255 • <i>green</i> 0 to 255 • <i>blue</i> 0 to 255
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

COM Object Reference
SCPI.DISPlay.COLOr(1-2).GRATicule(1-2).VALue[_Q]

Equivalent key
 PN Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Background
 SP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Background
 FP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Background
 TR Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Background
 USER Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Background

SCPI.DISPlay.COLOr(1-2).GRATicule(1-2).VALue[_Q]

Syntax
 SCPI.DISPlay.COLOr(1-2).GRATicule(1-2).VALue red, green, blue
 Data = SCPI.DISPlay.COLOr(1-2).GRATicule(1-2).VALue_Q red, green, blue

Description
 Sets the color of the graticule label and the outer frame line of the graph (GRATicule:1) and the color of the grid lines in the graph (GRATicule:2) for normal display (COLor:1) and inverted display (COLor:2).

Variable

	<i>Data</i>
Description	<ul style="list-style-type: none"> • <i>red</i> Sets amount of red. • <i>green</i> Sets amount of green. • <i>blue</i> Sets amount of blue.
Data type	Long integer type (Long)
Range	<ul style="list-style-type: none"> • <i>red</i> 0 to 255 • <i>green</i> 0 to 255 • <i>blue</i> 0 to 255
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

Equivalent key
 PN Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Graticule Main|Graticule Sub
 SP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Graticule Main|Graticule Sub
 FP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Graticule Main|Graticule Sub
 TR Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Graticule Main|Graticule Sub
 USER Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Graticule Main|Graticule Sub

SCPI.DISPlay.COLOr(1-2).LIMit(1-2).VALue[_Q]

Syntax
 SCPI.DISPlay.COLOr(1-2).LIMit(1-2).VALue red, green, blue

Data = SCPI.DISPlay.COLOr(1-2).LIMit(1-2).VALue_Q red, green, blue

Description

Sets the fail display color used for the limit test result , the bandwidth test result, and the ripple test result (LIMit: 1) and the color of the limit line (LIMit: 2) for normal display (COLor: 1) and inverted display (COLor: 2).

Variable

	<i>Data</i>
Description	<ul style="list-style-type: none"> • <i>red</i> Sets amount of red. • <i>green</i> Sets amount of green. • <i>blue</i> Sets amount of blue.
Data type	Long integer type (Long)
Range	<ul style="list-style-type: none"> • <i>red</i> 0 to 255 • <i>green</i> 0 to 255 • <i>blue</i> 0 to 255
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

Equivalent key

PN Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Limit Fail|Limit Line

SP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Limit Fail|Limit Line

FP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Limit Fail|Limit Line

TR Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Limit Fail|Limit Line

USER Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Limit Fail|Limit Line

SCPI.DISPlay.COLOr(1-2).RESet

Syntax

SCPI.DISPlay.COLOr(1-2).RESet

Description

Resets the display color settings for all the items to the factory preset state for normal display (COLor: 1) and inverted display (COLor: 2). (No read)

Equivalent key

PN Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Reset Color -> OK

SP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Reset Color -> OK

FP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Reset Color -> OK

TR Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Reset Color -> OK

USER Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Reset Color -> OK

SCPI.DISPlay.COLOr(1-2).TRACe(1-8).DATA.VALue[_Q]

Syntax SCPI.DISPlay.COLOr(1-2).TRACe(1-8).DATA.VALue red, green, blue
 Data = SCPI.DISPlay.COLOr(1-2).TRACe(1-8).DATA.VALue_Q red, green, blue

Description Sets the color for the data trace of traces 1 to 8 (TRACe: 1 to 8) for normal display (COLOr: 1) and inverted display (COLOr: 2).

Variable

	<i>Data</i>
Description	<ul style="list-style-type: none"> • <i>red</i> Sets amount of red. • <i>green</i> Sets amount of green. • <i>blue</i> Sets amount of blue.
Data type	Long integer type (Long)
Range	<ul style="list-style-type: none"> • <i>red</i> 0 to 255 • <i>green</i> 0 to 255 • <i>blue</i> 0 to 255
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

NOTE This setting is common to all measurement modes, and thus individual setting for each measurement cannot be made.

Equivalent key PN Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Data Trace 1|Data Trace 2|Data Trace 3|Data Trace 4|Data Trace 5|Data Trace 6|Data Trace 7|Data Trace 8
 SP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Data Trace 1|Data Trace 2|Data Trace 3|Data Trace 4|Data Trace 5|Data Trace 6|Data Trace 7|Data Trace 8
 FP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Data Trace 1|Data Trace 2|Data Trace 3|Data Trace 4|Data Trace 5|Data Trace 6|Data Trace 7|Data Trace 8
 TR Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Data Trace 1|Data Trace 2|Data Trace 3|Data Trace 4|Data Trace 5|Data Trace 6|Data Trace 7|Data Trace 8
 USER Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Data Trace 1|Data Trace 2|Data Trace 3|Data Trace 4|Data Trace 5|Data Trace 6|Data Trace 7|Data Trace 8

SCPI.DISPlay.COLOr(1-2).TRACe(1-8).MEMory.VALue[_Q]

Syntax SCPI.DISPlay.COLOr(1-2).TRACe(1-8).MEMory.VALue red, green, blue
 Data = SCPI.DISPlay.COLOr(1-2).TRACe(1-8).MEMory.VALue_Q red, green, blue

Description Sets the color for the memory trace of traces 1 to 8 (TRACe: 1 to 8) for normal display

(COLor: 1) and inverted display (COLor: 2).

Variable

	<i>Data</i>
Description	<ul style="list-style-type: none"> • <i>red</i> Sets amount of red. • <i>green</i> Sets amount of green. • <i>blue</i> Sets amount of blue.
Data type	Long integer type (Long)
Range	<ul style="list-style-type: none"> • <i>red</i> 0 to 255 • <i>green</i> 0 to 255 • <i>blue</i> 0 to 255
Resolution	1
Note	If the specified variable is out of the allowable setup range, the minimum value (if the lower limit of the range is not reached) or the maximum value (if the upper limit of the range is exceeded) is set.

NOTE

This setting is common to all measurement modes, and thus individual setting for each measurement cannot be made.

Equivalent key

PN Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Mem Trace 1|Mem Trace 2|Mem Trace 3|Mem Trace 4|Mem Trace 5|Mem Trace 6|Mem Trace 7|Mem Trace 8
 SP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Mem Trace 1|Mem Trace 2|Mem Trace 3|Mem Trace 4|Mem Trace 5|Mem Trace 6|Mem Trace 7|Mem Trace 8
 FP Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Mem Trace 1|Mem Trace 2|Mem Trace 3|Mem Trace 4|Mem Trace 5|Mem Trace 6|Mem Trace 7|Mem Trace 8
 TR Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Mem Trace 1|Mem Trace 2|Mem Trace 3|Mem Trace 4|Mem Trace 5|Mem Trace 6|Mem Trace 7|Mem Trace 8
 USER Menu -> System -> Misc Setup -> Color Setup -> Normal|Invert -> Mem Trace 1|Mem Trace 2|Mem Trace 3|Mem Trace 4|Mem Trace 5|Mem Trace 6|Mem Trace 7|Mem Trace 8

SCPI.DISPlay.ECHO.ADD

Syntax

SCPI.DISPlay.ECHO.ADD

Description

Adds texts in echo window (No Read)

Variable

	<String>
Range	max 2000 characters
Preset value	-

	<String>
Unit	-
Resolution	-

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

SCPI.DISPlay.ECHO.CLEAr

Syntax SCPI.DISPlay.ECHO.CLEAr

Description Clears echo window (No Read)

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

SCPI.DISPlay.ECHO.DATA

Syntax SCPI.DISPlay.ECHO.DATA = <string>
 <string> = SCPI.DISPlay.ECHO.DATA

Description Sets/reads texts in echo window

Variable

	<String>
Range	max 2000 characters
Preset value	""
Unit	-
Resolution	-

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

SCPI.DISPlay.ECHO.FSIZE

Syntax SCPI.DISPlay.ECHO.FSIZE = <long>
 <long> = SCPI.DISPlay.ECHO.FSIZE

Description Sets/reads the font size in echo window

Variable

	<Long>
Range	9 10 11 12 14 16 18 20 22 24 26 28 36 48 72 96 112
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

SCPI.DISPlay.ECHO.STATe

Syntax

SCPI.DISPlay.ECHO.STATe = <boolean>
 <boolean> = SCPI.DISPlay.ECHO.STATe

Description

Show/Hide echo window

Variable

	Param
True or -1	Show echo window
False or 0(Preset value)	Hide echo window

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

SCPI.DISPlay.ENABLE

Syntax

SCPI.DISPlay.ENABLE = <boolean>
 <boolean> = SCPI.DISPlay.ENABLE

Description

Enable/disable trace update

Variable

	Param
True or -1(Preset value)	Enable trace update
False or 0	Disable trace update

Equivalent key
 PN Menu -> Display -> Update
 SP Menu -> Display -> Update
 FP Menu -> Display -> Update
 TR Menu -> Display -> Update
 USER Menu -> Display -> Update

SCPI.DISPlay.FP(1-1).ALLTrace.PERSistence.CLEAr

Syntax SCPI.DISPlay.FP(1-1).ALLTrace.PERSistence.CLEAr

Description Clears persistence mode in all traces (No Read)

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

SCPI.DISPlay.FP(1-1).ALLTrace.Y.SCALe.AUTO

Syntax SCPI.DISPlay.FP(1-1).ALLTrace.Y.SCALe.AUTO

Description Execute autoscale all (No Read)

Equivalent key FP Menu -> Scale -> Auto Scale All

SCPI.DISPlay.FP(1-1).ANNotation.MARKer.POSition

Syntax SCPI.DISPlay.FP(1-1).ANNotation.MARKer.POSition = <string>
 <string> = SCPI.DISPlay.FP(1-1).ANNotation.MARKer.POSition

Description Sets/reads the marker information position

Variable

	Param
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

SCPI.DISPlay.FP(1-1).ANNOtation.MEASurement.STATe

Syntax SCPI.DISPlay.FP(1-1).ANNOtation.MEASurement.STATe = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).ANNOtation.MEASurement.STATe

Description Turns on/off measurement conditions

Variable

	Param
True or -1(Preset value)	Show measurement conditions
False or 0	Hide measurement conditions

Equivalent key FP Menu -> Display -> Meas Condition

SCPI.DISPlay.FP(1-1).GRATicule.AXIS.Y.RELative

Syntax SCPI.DISPlay.FP(1-1).GRATicule.AXIS.Y.RELative = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).GRATicule.AXIS.Y.RELative

Description Turns on/off relative Y-scale

Variable

	Param
True or -1	Set relative Y-scale mode to 'ON'
False or 0(Preset value)	Set relative Y-scale mode to 'OFF'

Equivalent key FP Menu -> Display -> Relative Y-Scale

SCPI.DISPlay.FP(1-1).GRATicule.AXIS.Y.STATe

Syntax SCPI.DISPlay.FP(1-1).GRATicule.AXIS.Y.STATe = <string>
 <string> = SCPI.DISPlay.FP(1-1).GRATicule.AXIS.Y.STATe

Description Show/Hide Y graticule label

Variable

	Param
OFF	Set Y graticule label to 'OFF'

COM Object Reference
SCPI.DISPlay.FP(1-1).LABel.DATA

	Param
SHORT(Preset value)	Set Y graticule label to '4-digits'
MIDDLE	Set Y graticule label to '8-digits'
LONG	Set Y graticule label to '12-digits'

Equivalent key FP Menu -> Display -> Y # of Digits

SCPI.DISPlay.FP(1-1).LABel.DATA

Syntax SCPI.DISPlay.FP(1-1).LABel.DATA = <string>
 <string> = SCPI.DISPlay.FP(1-1).LABel.DATA

Description Sets/reads the window title label

Variable

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key FP Menu -> Display -> Edit Title Label

SCPI.DISPlay.FP(1-1).LABel.STATe

Syntax SCPI.DISPlay.FP(1-1).LABel.STATe = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).LABel.STATe

Description Show/Hide window title label

Variable

	Param
True or -1	Set window title label to 'ON'
False or 0(Preset value)	Set window title label to 'OFF'

Equivalent key FP Menu -> Display -> Title Label

SCPI.DISPlay.FP(1-1).LIMit.FSIGn

Syntax SCPI.DISPlay.FP(1-1).LIMit.FSIGn = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).LIMit.FSIGn

Description Turns on/off the limit test judgement display

Variable

	Param
True or -1(Preset value)	Turn on the limit test judgement display mode
False or 0	Turn off the limit test judgement display mode

Equivalent key FP Menu -> Display -> Limit Test -> Fail Sign

SCPI.DISPlay.FP(1-1).MAXimize

Syntax SCPI.DISPlay.FP(1-1).MAXimize = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).MAXimize

Description Maximize active trace

Variable

	Param
True or -1	Maximize selected active trace
False or 0(Preset value)	Restore all the trace

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

SCPI.DISPlay.FP(1-1).SPLit

Syntax SCPI.DISPlay.FP(1-1).SPLit = <string>
 <string> = SCPI.DISPlay.FP(1-1).SPLit

Description Sets/reads the trace layout

Variable

	Param
D11_23(Preset value)	Set the trace layout to 'x3'

	Param
D12_34	Set the trace layout to 'x4'

Equivalent key FP Menu -> Display -> Allocate

SCPI.DISPlay.FP(1-1).STATe

Syntax SCPI.DISPlay.FP(1-1).STATe = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).STATe

Description Turns on/off frequency, power, and DC current measurement mode

Variable

	Param
True or -1(Preset value)	Set FP measurement mode to 'ON'
False or 0	Set FP measurement mode 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

SCPI.DISPlay.FP(1-1).TABLE.STATE

Syntax SCPI.DISPlay.FP(1-1).TABLE.STATE = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).TABLE.STATE

Description Turns on/off the marker list

Variable

	Param
True or -1	Show marker list
False or 0(Preset value)	Hide marker list

Equivalent key FP Menu -> Marker -> Marker List

SCPI.DISPlay.FP(1-1).TRACe(1-4).LABel.DATA

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).LABel.DATA = <string>
 <string> = SCPI.DISPlay.FP(1-1).TRACe(1-4).LABel.DATA

Description Edits trace title label

Variable

	<String>
Range	-
Preset value	"Freq"
Unit	-
Resolution	-

Equivalent key FP Menu -> Trace View -> Trace Label

SCPI.DISPlay.FP(1-1).TRACe(1-4).LIMit.LINE

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).LIMit.LINE = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).TRACe(1-4).LIMit.LINE

Description Turns on/off the limit line

Variable

	Param
True or -1(Preset value)	Turn on the limit line mode
False or 0	Turn off the limit line mode

Equivalent key FP Menu -> Display -> Limit Test -> Limit Line

SCPI.DISPlay.FP(1-1).TRACe(1-4).MODE

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).MODE = <string>
 <string> = SCPI.DISPlay.FP(1-1).TRACe(1-4).MODE

Description Sets/reads data and/or memory trace display

Variable

	Param
OFF	Set data and/or memory trace to 'Off'
DATA(Preset value)	Set data and/or memory trace to 'Data'
MEMory	Set data and/or memory trace to 'Memory'
BOTH	Set data and/or memory race to 'Both' (data and memory)

Equivalent key FP Menu -> Trace View -> Display Trace

SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.CLEAr

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.CLEAr

Description Clear persistence mode (No Read)

Equivalent key FP Menu -> Trace View -> Persistence -> Clear Persistent Data

SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.STATe

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.STATe = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.STATe

Description Sets/reads persistence mode

Variable

	Param
True or -1	Set persistence mode to 'ON'
False or 0(Preset value)	Set persistence mode to 'OFF'

Equivalent key FP Menu -> Trace View -> Persistence -> Persistence Mode

SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.AUTO

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.AUTO = <boolean>
 <boolean> = SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.AUTO

Description Sets/Reads automatic setting of the X-axis display range to the stimulus value

Variable

	Param
True or -1(Preset value)	Automatically set the range of the X-axis to the stimulus value
False or 0	Manually set the range of the X-axis

Equivalent key FP Menu -> Scale -> X Axis -> Auto

SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.LEFT

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.LEFT = <double>
 <double> = SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.LEFT

Description Sets/Reads the start value of the X-axis

Variable

	<Double>
Description	Start value of the X-axis
Range	-15 to 1.000999999 k
Preset value	0
Unit	-
Resolution	-

NOTE This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.AUTO” on page 264) is set to OFF.

Equivalent key FP Menu -> Scale -> X Axis -> Left

SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.RIGHt

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.RIGHt = <double>
 <double> = SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.RIGHt

Description Sets/Reads the stop value of the X-axis

Variable

	<Double>
Description	Stop value of the X-axis

	<Double>
Range	-14.999999 to 1.001 k
Preset value	100 μ
Unit	-
Resolution	-

NOTE This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.AUTO” on page 264) is set to OFF.

Equivalent key FP Menu -> Scale -> X Axis -> Right

SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.AUTO

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.AUTO

Description Execute autoscale (No Read)

Equivalent key FP Menu -> Scale -> Auto Scale

SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.PDIVision

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.PDIVision = <double>
 <double> = SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.PDIVision

Description Sets/reads scale per division

Variable

	<Double>
Range	1a to 10G
Preset value	100M
Unit	-
Resolution	-

Equivalent key FP Menu -> Scale -> Scale/Div

SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RLEVel

Syntax SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RLEVel = <double>
 <double> = SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RLEVel

Description Sets/reads the scale reference level

Variable

	<Double>
Range	-500G to 500G
Preset value	1.5G
Unit	-
Resolution	-

Equivalent key

FP Menu -> Scale -> Reference Value
 FP Menu -> Scale -> Marker -> Reference

SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RPOStion

Syntax

SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RPOStion = <long>
 <long> = SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RPOStion

Description

Sets/reads scale reference position

Variable

	<Long>
Range	0 to 30
Preset value	5
Unit	Div
Resolution	-

Equivalent key

FP Menu -> Scale -> Reference Position

SCPI.DISPlay.FP(1-1).Y.SCALe.DIVisions

Syntax

SCPI.DISPlay.FP(1-1).Y.SCALe.DIVisions = <long>
 <long> = SCPI.DISPlay.FP(1-1).Y.SCALe.DIVisions

Description

Sets/reads the number of Y-scale division

Variable

	<Long>
Range	4 to 30
Preset value	10

	<Long>
Unit	-
Resolution	2

Equivalent key FP Menu -> Scale -> Divisions

SCPI.DISPlay.IMAGe

Syntax SCPI.DISPlay.IMAGe = <string>
 <string> = SCPI.DISPlay.IMAGe

Description Sets/Reads the normal display/inverted display

Variable

	Param
True or -1(Preset value)	Set the display to the normal display (default background: black)
False or 0	Set the display to the inverted display (default background: white)

Equivalent key PN Menu -> Display -> Color Type
 SP Menu -> Display -> Color Type
 FP Menu -> Display -> Color Type
 TR Menu -> Display -> Color Type
 USER Menu -> Display -> Color Type

SCPI.DISPlay.MAXimize

Syntax SCPI.DISPlay.MAXimize = <boolean>
 <boolean> = SCPI.DISPlay.MAXimize

Description Maximize active measurement window

Variable

	Param
True or -1(Preset value)	Maximize active measurement window
False or 0	Restore active measurement window'

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

SCPI.DISPlay.MESSage.CLEAr

- Syntax SCPI.DISPlay.MESSage.CLEAr
- Description Clear caution/message (No Read)
- Equivalent key No equivalent key is available on the front panel.

SCPI.DISPlay.PN(1-1).ALLTrace.PERSistence.CLEAr

- Syntax SCPI.DISPlay.PN(1-1).ALLTrace.PERSistence.CLEAr
- Description Clears all persistent traces (No Read)
- Equivalent key No equivalent key is available on the front panel.

SCPI.DISPlay.PN(1-1).ANNotation.MARKer.POSition

- Syntax SCPI.DISPlay.PN(1-1).ANNotation.MARKer.POSition = <string>
 <string> = SCPI.DISPlay.PN(1-1).ANNotation.MARKer.POSition

Description Sets/reads the marker information position

Variable

	Param
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

SCPI.DISPlay.PN(1-1).ANNotation.MEASurement.STATe

- Syntax SCPI.DISPlay.PN(1-1).ANNotation.MEASurement.STATe = <boolean>
 <boolean> = SCPI.DISPlay.PN(1-1).ANNotation.MEASurement.STATe

Description Turns on/off measurement conditions

Variable

	Param
True or -1(Preset value)	Show measurement conditions
False or 0	Hide measurement conditions

Equivalent key PN Menu -> Display -> Meas Condition

SCPI.DISPlay.PN(1-1).GRATicule.AXIS.Y.RELative

Syntax SCPI.DISPlay.PN(1-1).GRATicule.AXIS.Y.RELative = <boolean>
<boolean> = SCPI.DISPlay.PN(1-1).GRATicule.AXIS.Y.RELative

Description Sets/reads the graticule label value relative to the reference value

Variable

	Param
True or -1	Set graticule label mode to 'ON'
False or 0(Preset value)	Set graticule label mode to 'OFF'

Equivalent key PN Menu -> Display -> Relative Y-Scale

SCPI.DISPlay.PN(1-1).GRATicule.AXIS.Y.STATe

Syntax SCPI.DISPlay.PN(1-1).GRATicule.AXIS.Y.STATe = <string>
<string> = SCPI.DISPlay.PN(1-1).GRATicule.AXIS.Y.STATe

Description Show/Hide Y graticule label

Variable

	Param
OFF	Set Y graticule label mode to 'OFF'
SHORT(Preset value)	Set Y graticule label mode to '4-digits'
MIDDLE	Set Y graticule label mode to '8-digits'
LONG	Set Y graticule label mode to '12-digits'

Equivalent key PN Menu -> Display -> Y # of Digits

SCPI.DISPlay.PN(1-1).LABel.DATA

Syntax SCPI.DISPlay.PN(1-1).LABel.DATA = <string>
<string> = SCPI.DISPlay.PN(1-1).LABel.DATA

Description Edits window title label

Variable

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key PN Menu -> Display -> Edit Title Label

SCPI.DISPlay.PN(1-1).LABel.STATe

Syntax SCPI.DISPlay.PN(1-1).LABel.STATe = <boolean>
 <boolean> = SCPI.DISPlay.PN(1-1).LABel.STATe

Description Show/Hide window title label

Variable

	Param
True or -1	Show window title label
False or 0(Preset value)	Hide window title label

Equivalent key PN Menu -> Display -> Title Label

SCPI.DISPlay.PN(1-1).LIMit.FSIGn

Syntax SCPI.DISPlay.PN(1-1).LIMit.FSIGn = <boolean>
 <boolean> = SCPI.DISPlay.PN(1-1).LIMit.FSIGn

Description Turns on/off the limit test judgement display

Variable

	Param
True or -1(Preset value)	Turn on the limit test judgement display mode
False or 0	Turn off the limit test judgement display mode

Equivalent key PN Menu -> Display -> Limit Test -> Fail Sign

SCPI.DISPlay.PN(1-1).MAXimize

Syntax SCPI.DISPlay.PN(1-1).MAXimize = <boolean>
<boolean> = SCPI.DISPlay.PN(1-1).MAXimize

Description Maximize active trace

Variable

	Param
True or -1	Maximize active trace
False or 0(Preset value)	Restore active trace

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

SCPI.DISPlay.PN(1-1).STAtE

Syntax SCPI.DISPlay.PN(1-1).STAtE = <boolean>
<boolean> = SCPI.DISPlay.PN(1-1).STAtE

Description Turns on/off phase noise measurement mode

Variable

	Param
True or -1(Preset value)	Set phase noise measurement mode to 'ON'
False or 0	Set phase noise measurement 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

SCPI.DISPlay.PN(1-1).TABLe.STAtE

Syntax SCPI.DISPlay.PN(1-1).TABLe.STAtE = <boolean>
<boolean> = SCPI.DISPlay.PN(1-1).TABLe.STAtE

Description Turns on/off the marker list

Variable

	Param
True or -1	Show the marker list
False or 0(Preset value)	Hide the marker list

Equivalent key PN Menu -> Marker -> Marker List

SCPI.DISPlay.PN(1-1).TRACe(1-1).LABel.DATA

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).LABel.DATA = <string>
 <string> = SCPI.DISPlay.PN(1-1).TRACe(1-1).LABel.DATA

Description Sets/reads trace title label

Variable

	<String>
Range	-
Preset value	"Phase Noise"
Unit	-
Resolution	-

Equivalent key PN Menu -> Trace View -> Trace Label

SCPI.DISPlay.PN(1-1).TRACe(1-1).LIMit.LINE

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).LIMit.LINE = <boolean>
 <boolean> = SCPI.DISPlay.PN(1-1).TRACe(1-1).LIMit.LINE

Description Turns on/off the limit line

Variable

	Param
True or -1(Preset value)	Turn on the limit line mode
False or 0	Turn off the limit line mode

Equivalent key PN Menu -> Display -> Limit Test -> Limit Line

SCPI.DISPlay.PN(1-1).TRACe(1-1).MODE

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).MODE = <string>
<string> = SCPI.DISPlay.PN(1-1).TRACe(1-1).MODE

Description Sets/reads data and/or memory trace display

Variable

	Param
OFF	Set data and/or memory trace to 'Off'
DATA(Preset value)	Set data and/or memory trace to 'Data'
MEMory	Set data and/or memory trace to 'Mem'
BOTH	Set data and/or memory race to 'Data & Mem' (data and memory)

Equivalent key PN Menu -> Trace View -> Display Trace

SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.CLEAr

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.CLEAr

Description Clears persistent data (No Read)

Equivalent key PN Menu -> Trace View -> Persistence -> Clear Persistent Data

SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.STATe

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.STATe = <boolean>
<boolean> = SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.STATe

Description Sets/reads persistence mode

Variable

	Param
True or -1	Set persistence mode to 'ON'
False or 0(Preset value)	Set persistence mode to 'OFF'

Equivalent key PN Menu -> Trace View -> Persistence -> Persistence Mode

SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.AUTO

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.AUTO = <boolean>
 <boolean> = SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.AUTO

Description Sets/Reads automatic setting of the X-axis display range to the stimulus value

Variable

	Param
True or -1(Preset value)	Automatically set the range of the X-axis to the stimulus value
False or 0	Manually set the range of the X-axis

Equivalent key PN Menu -> Scale -> X Axis -> Auto

SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.LEFT

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.LEFT = <double>
 <double> = SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.LEFT

Description Sets/Reads the start value of the X-axis.

Variable

	<String>
Description	Start value of the X-axis
Range	1 to 39.9999999 M
Preset value	1 k
Unit	-
Resolution	-

NOTE This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.AUTO” on page 275) is set to OFF

Equivalent key PN Menu -> Scale -> X Axis -> Left

SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.RIGHT

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.RIGHt = <double>
 <double> = SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.RIGHt

Description Sets/Reads the stop value of the X-axis

Variable

	<String>
Description	Stop value of the X-axis
Range	1.1 to 40 M
Preset value	10 M
Unit	-
Resolution	-

NOTE This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.AUTO” on page 275) is set to OFF.

Equivalent key PN Menu -> Scale -> X Axis -> Right

SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.AUTO

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.AUTO

Description Execute autoscale (No Read)

Equivalent key PN Menu -> Scale -> Auto Scale

SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.PDIVision

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.PDIVision = <double>
 <double> = SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.PDIVision

Description scale per division

Variable

	<Double>
Range	1a to 10G
Preset value	10
Unit	dB /div
Resolution	-

Equivalent key PN Menu -> Scale -> Scale/Div

SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RLEVel

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RLEVel = <double>

<double> = SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RLEVel

Description scale reference level

Variable

	<Double>
Range	-50G to 50G
Preset value	-20
Unit	dBc/Hz
Resolution	-

Equivalent key PN Menu -> Scale -> Reference Value
 PN Menu -> Scale -> Marker -> Reference

SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RPOStion

Syntax SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RPOStion = <long>
 <long> = SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RPOStion

Description scale reference position

Variable

	<Long>
Range	0 to 30
Preset value	16
Unit	Div
Resolution	-

Equivalent key PN Menu -> Scale -> Reference Position

SCPI.DISPlay.PN(1-1).Y.SCALe.DIVisions

Syntax SCPI.DISPlay.PN(1-1).Y.SCALe.DIVisions = <long>
 <long> = SCPI.DISPlay.PN(1-1).Y.SCALe.DIVisions

Description # of Y division

Variable

	<Long>
Range	4 to 30
Preset value	16
Unit	-
Resolution	2

Equivalent key PN Menu -> Scale -> Divisions

SCPI.DISPlay.SKEY.STATe

Syntax SCPI.DISPlay.SKEY.STATe = <boolean>
 <boolean> = SCPI.DISPlay.SKEY.STATe

Description Show/Hide softkey

Variable

	Param
True or -1 (Preset value)	Show softkeys
False or 0	Hide softkeys

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

SCPI.DISPlay.SP(1-1).ALLTrace.PERSistence.CLEAr

Syntax SCPI.DISPlay.SP(1-1).ALLTrace.PERSistence.CLEAr

Description Clears all persistent traces (No Read)

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

SCPI.DISPlay.SP(1-1).ANNOtation.MARKer.POSition

Syntax SCPI.DISPlay.SP(1-1).ANNOtation.MARKer.POSition = <string>
 <string> = SCPI.DISPlay.SP(1-1).ANNOtation.MARKer.POSition

Description Sets/reads the marker information position

Variable

	Param
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

SCPI.DISPlay.SP(1-1).ANNOtation.MEASurement.STATe

Syntax

SCPI.DISPlay.SP(1-1).ANNOtation.MEASurement.STATe = <boolean>
 <boolean> = SCPI.DISPlay.SP(1-1).ANNOtation.MEASurement.STATe

Description

Turns on/off measurement conditions

Variable

	Param
True or -1(Preset value)	Show measurement conditions
False or 0	Hide measurement conditions

Equivalent key

SP Menu -> Display -> Meas Condition

SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.RELative

Syntax

SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.RELative = <boolean>
 <boolean> = SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.RELative

Description

Turns on/off relative Y-scale

Variable

	Param
True or -1	Set relative Y-scale mode to 'ON'
False or 0(Preset value)	Set relative Y-scale mode to 'OFF'

Equivalent key

SP Menu -> Display -> Relative Y-Scale

SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.STATe

Syntax

SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.STATe = <string>

COM Object Reference
SCPI.DISPlay.SP(1-1).LABel.DATA

<string> = SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.STATe

Description Sets/reads Y graticule label display

Variable

	Param
OFF	Set Y graticule label mode to 'OFF'
SHORT(Preset value)	Set Y graticule label mode to '4-digits'
MIDDLE	Set Y graticule label mode to '8-digits'
LONG	Set Y graticule label mode to '12-digits'

Equivalent key SP Menu -> Display -> Y # of Digits

SCPI.DISPlay.SP(1-1).LABel.DATA

Syntax SCPI.DISPlay.SP(1-1).LABel.DATA = <string>

<string> = SCPI.DISPlay.SP(1-1).LABel.DATA

Description Edits window title label

Variable

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key SP Menu -> Display -> Edit Title Label

SCPI.DISPlay.SP(1-1).LABel.STATe

Syntax SCPI.DISPlay.SP(1-1).LABel.STATe = <boolean>

<boolean> = SCPI.DISPlay.SP(1-1).LABel.STATe

Description Show/Hide window title label

Variable

	Param
True or -1	Show window title label
False or 0(Preset value)	Hide window title label

Equivalent key SP Menu -> Display -> Title Label

SCPI.DISPlay.SP(1-1).LIMit.FSIGn

Syntax SCPI.DISPlay.SP(1-1).LIMit.FSIGn = <boolean>
 <boolean> = SCPI.DISPlay.SP(1-1).LIMit.FSIGn

Description Turns on/off the limit test judgement display

Variable

	Param
True or -1(Preset value)	Turn on the limit test judgement display mode
False or 0	Turn off the limit test judgement display mode

Equivalent key SP Menu -> Display -> Limit Test -> Fail Sign

SCPI.DISPlay.SP(1-1).MAXimize

Syntax SCPI.DISPlay.SP(1-1).MAXimize = <boolean>
 <boolean> = SCPI.DISPlay.SP(1-1).MAXimize

Description Maximize active trace

Variable

	Param
True or -1	Maximize active trace
False or 0(Preset value)	Restore all the traces

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

SCPI.DISPlay.SP(1-1).STATe

Syntax SCPI.DISPlay.SP(1-1).STATe = <boolean>

COM Object Reference
SCPI.DISPlay.SP(1-1).TABLE.STATe

<boolean> = SCPI.DISPlay.SP(1-1).STATe

Description Turns on/off spectrum monitor mode

Variable

	Param
True or -1(Preset value)	Set spectrum monitor mode to 'ON'
False or 0	Set spectrum monitor mode to 'OFF'

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

SCPI.DISPlay.SP(1-1).TABLE.STATe

Syntax SCPI.DISPlay.SP(1-1).TABLE.STATe = <boolean>

<boolean> = SCPI.DISPlay.SP(1-1).TABLE.STATe

Description Turns on/off the marker list

Variable

	Param
True or -1	Show the marker list
False or 0(Preset value)	Show the marker list

Equivalent key SP Menu -> Marker -> Marker List

SCPI.DISPlay.SP(1-1).TRACe(1-1).LABel.DATA

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).LABel.DATA = <string>

<string> = SCPI.DISPlay.SP(1-1).TRACe(1-1).LABel.DATA

Description Sets/reads trace title label

Variable

	<String>
Range	-
Preset value	"Spectrum"
Unit	-
Resolution	-

Equivalent key SP Menu -> Trace View -> Trace Label

SCPI.DISPlay.SP(1-1).TRACe(1-1).LIMit.LINE

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).LIMit.LINE = <boolean>
 <boolean> = SCPI.DISPlay.SP(1-1).TRACe(1-1).LIMit.LINE

Description Turns on/off the limit line

Variable

	Param
True or -1(Preset value)	Turn on the limit line mode
False or 0	Turn off the limit line mode

Equivalent key SP Menu -> Display -> Limit Test -> Limit Line

SCPI.DISPlay.SP(1-1).TRACe(1-1).MODE

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).MODE = <string>
 <string> = SCPI.DISPlay.SP(1-1).TRACe(1-1).MODE

Description Sets/reads data and/or memory trace display

Variable

	Param
OFF	Set data and/or memory trace to 'Off'
DATA(Preset value)	Set data and/or memory trace to 'Data'
MEMory	Set data and/or memory trace to 'Mem'
BOTH	Set data and/or memory trace to 'Data & Mem' (data and memory)

Equivalent key SP Menu -> Trace View -> Display Trace

SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.CLEAr

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.CLEAr

Description Clears persistent data (No Read)

Equivalent key SP Menu -> Trace View -> Persistence -> Clear Persistent Data

SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.STATe

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.STATe = <boolean>

<boolean> = SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.STATe

Description Sets/reads persistence mode

Variable

	Param
True or -1	Set persistence mode to 'ON'
False or 0(Preset value)	Set persistence mode to 'OFF'

Equivalent key SP Menu -> Trace View -> Persistence -> Persistence Mode

SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.AUTO

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.AUTO = <boolean>

<boolean> = SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.AUTO

Description Sets/Reads automatic setting of the X-axis display range to the stimulus value

Variable

	Param
True or -1(Preset value)	Automatically set the range of the X-axis to the stimulus value
False or 0	Manually set the range of the X-axis

Equivalent key SP Menu -> Scale -> X Axis -> Auto

SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.LEFT

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.LEFT = <double>

<double> = SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.LEFT

Description Sets/Reads the start value of the X-axis

Variable

	<Double>
Description	Start value of the X-axis
Range	0 to 499.999999999 G
Preset value	992.5 M
Unit	-
Resolution	-

NOTE This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.AUTO” on page 284) is set to OFF.

Equivalent key SP Menu -> Scale -> X Axis -> Left

SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.RIGHT

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.RIGHT = <double>
 <double> = SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.RIGHT

Description Sets/Reads the stop value of the X-axis

Variable

	<Double>
Description	Stop value of the X-axis
Range	100 to 500 G
Preset value	1.0075 G
Unit	-
Resolution	-

NOTE This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.AUTO” on page 284) is set to OFF.

Equivalent key SP Menu -> Scale -> X Axis -> Right

SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.AUTO

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.AUTO

Description Execute autoscale (No Read)

Equivalent key SP Menu -> Scale -> Auto Scale

SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.PDIVision

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.PDIVision = <double>
<double> = SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.PDIVision

Description Sets/reads scale per division

Variable

	<Double>
Range	1a to 10G
Preset value	10
Unit	-
Resolution	-

Equivalent key SP Menu -> Scale -> Scale/Div

SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RLEVel

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RLEVel = <double>
<double> = SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RLEVel

Description Sets/reads scale reference level

Variable

	<Double>
Range	-50G to 50G
Preset value	10
Unit	-
Resolution	-

Equivalent key SP Menu -> Scale -> Reference Value
SP Menu -> Scale -> Marker -> Reference

SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RPOSition

Syntax SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RPOSition = <long>
 <long> = SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RPOSition

Description Sets/reads scale reference position

Variable

	<Long>
Range	0 to 30
Preset value	10
Unit	Div
Resolution	-

Equivalent key SP Menu -> Scale -> Reference Position

SCPI.DISPlay.SP(1-1).Y.SCALe.DIVisions

Syntax SCPI.DISPlay.SP(1-1).Y.SCALe.DIVisions = <long>
 <long> = SCPI.DISPlay.SP(1-1).Y.SCALe.DIVisions

Description Sets/reads teh number of Y division

Variable

	<Long>
Range	4 to 30
Preset value	10
Unit	-
Resolution	2

Equivalent key SP Menu -> Scale -> Divisions

SCPI.DISPlay.TR(1-1).ALLTrace.PERSistence.CLEAr

Syntax SCPI.DISPlay.TR(1-1).ALLTrace.PERSistence.CLEAr

Description Clear all persistent traces (No Read)

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

SCPI.DISPlay.TR(1-1).ALLTrace.Y.SCALe.AUTO

Syntax SCPI.DISPlay.TR(1-1).ALLTrace.Y.SCALe.AUTO
Description Execute autoscale all (No Read)
Equivalent key TR Menu -> Scale -> Auto Scale All

SCPI.DISPlay.TR(1-1).ANNotation.MARKer.POSition

Syntax SCPI.DISPlay.TR(1-1).ANNotation.MARKer.POSition = <string>
<string> = SCPI.DISPlay.TR(1-1).ANNotation.MARKer.POSition
Description Sets/reads the marker information position
Variable

	Param
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

SCPI.DISPlay.TR(1-1).ANNotation.MEASurement.STATE

Syntax SCPI.DISPlay.TR(1-1).ANNotation.MEASurement.STATE = <boolean>
<boolean> = SCPI.DISPlay.TR(1-1).ANNotation.MEASurement.STATE
Description Turns on/off measurement conditions
Variable

	Param
True or -1(Preset value)	Show measurement conditions
False or 0	Hide measurement conditions

Equivalent key TR Menu -> Display -> Meas Condition

SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.RELative

Syntax SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.RELative = <boolean>
<boolean> = SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.RELative

Description Sets/reads relative Y-scale

Variable

	Param
True or -1	Set relative Y-scale mode to 'ON'
False or 0(Preset value)	Set relative Y-scale mode to 'OFF'

Equivalent key TR Menu -> Display -> Relative Y-Scale

SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.STATe

Syntax SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.STATe = <string>
 <string> = SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.STATe

Description Sets/reads Y graticule label display

Variable

	Param
OFF	Set the number of Y-digits to 'OFF'
SHORT(Preset value)	Set the number of Y-digits to '4-digits'
MIDDLE	Set the number of Y-digits to '8-digits'
LONG	Set the number of Y-digits to '12-digits'

Equivalent key TR Menu -> Display -> Y # of Digits

SCPI.DISPlay.TR(1-1).LABel.DATA

Syntax SCPI.DISPlay.TR(1-1).LABel.DATA = <string>
 <string> = SCPI.DISPlay.TR(1-1).LABel.DATA

Description Edits window title label

Variable

	<String>
Range	-
Preset value	""
Unit	-

	<String>
Resolution	-

Equivalent key TR Menu -> Display -> Edit Title Label

SCPI.DISPlay.TR(1-1).LABel.STATe

Syntax SCPI.DISPlay.TR(1-1).LABel.STATe = <boolean>
 <boolean> = SCPI.DISPlay.TR(1-1).LABel.STATe

Description Turns on/off window title lable

Variable

	Param
True or -1	Set window title lable mode to 'ON'
False or 0(Preset value)	Set window title lable mode to 'OFF'

Equivalent key TR Menu -> Display -> Title Label

SCPI.DISPlay.TR(1-1).LIMit.FSIGn

Syntax SCPI.DISPlay.TR(1-1).LIMit.FSIGn = <boolean>
 <boolean> = SCPI.DISPlay.TR(1-1).LIMit.FSIGn

Description Turns on/off the limit test judgement display

Variable

	Param
True or -1(Preset value)	Turn on the limit test judgement display mode
False or 0	Turn off the limit test judgement display mode

Equivalent key TR Menu -> Display -> Limit Test -> Fail Sign

SCPI.DISPlay.TR(1-1).MAXimize

Syntax SCPI.DISPlay.TR(1-1).MAXimize = <boolean>
 <boolean> = SCPI.DISPlay.TR(1-1).MAXimize

Description Maximize active trace

Variable

	Param
True or -1	Maximize active trace
False or 0(Preset value)	Restore all the traces

Equivalent key

No equivalent key is available on the front panel.

SCPI.DISPlay.TR(1-1).STATE

Syntax

SCPI.DISPlay.TR(1-1).STATE = <boolean>
 <boolean> = SCPI.DISPlay.TR(1-1).STATE

Description

Turns on/off transient measurement mode

Variable

	Param
True or -1(Preset value)	Set transient measurement mode to 'ON'
False or 0	Set transient measurement mode to 'OFF'

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

SCPI.DISPlay.TR(1-1).TABLE.STATE

Syntax

SCPI.DISPlay.TR(1-1).TABLE.STATE = <boolean>
 <boolean> = SCPI.DISPlay.TR(1-1).TABLE.STATE

Description

Turns on/off the marker list

Variable

	Param
True or -1	Show marker list
False or 0(Preset value)	Hide marker list

Equivalent key TR Menu -> Marker -> Marker List

SCPI.DISPlay.TR(1-1).TRACe(1-4).LABel.DATA

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).LABel.DATA = <string>
<string> = SCPI.DISPlay.TR(1-1).TRACe(1-4).LABel.DATA

Description Sets/reads the trace title label

Variable

	<String>
Range	-
Preset value	"WB Freq"
Unit	-
Resolution	-

Equivalent key TR Menu -> Trace View -> Trace Label

SCPI.DISPlay.TR(1-1).TRACe(1-4).LIMit.LINE

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).LIMit.LINE = <boolean>
<boolean> = SCPI.DISPlay.TR(1-1).TRACe(1-4).LIMit.LINE

Description Turns on/off the limit line

Variable

	Param
True or -1(Preset value)	Turn on the limit line mode
False or 0	Turn off the limit line mode

Equivalent key TR Menu -> Display -> Limit Test -> Limit Line

SCPI.DISPlay.TR(1-1).TRACe(1-4).MODE

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).MODE = <string>
<string> = SCPI.DISPlay.TR(1-1).TRACe(1-4).MODE

Description Sets/reads data and/or memory trace display

Variable

	Param
OFF	Set data and/or memory trace to 'Off'
DATA(Preset value)	Set data and/or memory trace to 'Data'
MEMory	Set data and/or memory trace to 'Mem'
BOTH	Set data and/or memory trace to 'Data & Mem' (data and memory)

Equivalent key TR Menu -> Trace View -> Display Trace

SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.CLEAr

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.CLEAr

Description Clears persistent data (No Read)

Equivalent key TR Menu -> Trace View -> Persistence -> Clear Persistent Data

SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.STATe

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.STATe = <boolean>
 <boolean> = SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.STATe

Description Sets/reads persistence mode

Variable

	Param
True or -1	Set persistence mode to 'ON'
False or 0(Preset value)	Set persistence mode to 'OFF'

Equivalent key TR Menu -> Trace View -> Persistence -> Persistence Mode

SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.AUTO

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.AUTO = <boolean>
 <boolean> = SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.AUTO

Description Sets/Reads automatic setting of the X-axis display range to the stimulus value

Variable

	Param
True or -1 (Preset value)	Automatically set the range of the X-axis to the stimulus value
False or 0	Manually set the range of the X-axis

Equivalent key TR Menu -> Scale -> X Axis -> Auto

SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.LEFT

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.LEFT = <double>
 <double> = SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.LEFT

Description Sets/Reads the start value of the X-axis

Variable

	<Double>
Description	Start value of the X-axis
Range	-8 to 10.999999
Preset value	-50 m
Unit	-
Resolution	-

NOTE This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.AUTO” on page 293) is set to OFF.

Equivalent key TR Menu -> Scale -> X Axis -> Left

SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.RIGHT

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.RIGHt = <double>
 <double> = SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.RIGHt

Description Sets/Reads the stop value of the X-axis

Variable

	<Double>
Description	Stop value of the X-axis

	<Double>
Range	-7.999999 to 11
Preset value	50 m
Unit	-
Resolution	-

NOTE

This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.AUTO” on page 293) is set to OFF.

Equivalent key TR Menu -> Scale -> X Axis -> Right

SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.AUTO

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.AUTO

Description Execute autoscale (No Read)

Equivalent key TR Menu -> Scale -> Auto Scale

SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.PDIVision

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.PDIVision = <double>
 <double> = SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.PDIVision

Description scale per division

Variable

	<Double>
Range	1a to 10G
Preset value	80M
Unit	-
Resolution	-

Equivalent key TR Menu -> Scale -> Scale/Div

SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RLEVel

Syntax SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RLEVel = <double>
 <double> = SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RLEVel

Description scale reference level

Variable

	<Double>
Range	-500G to 500G
Preset value	800M
Unit	-
Resolution	-

Equivalent key

TR Menu -> Scale -> Reference Value

TR Menu -> Scale -> Marker -> Reference

SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RPOStion

Syntax

SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RPOStion = <long>

<long> = SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RPOStion

Description

scale reference position

Variable

	<Long>
Range	0 to 30
Preset value	5
Unit	Div
Resolution	-

Equivalent key

TR Menu -> Scale -> Reference Position

SCPI.DISPlay.TR(1-1).Y.SCALe.DIVisions

Syntax

SCPI.DISPlay.TR(1-1).Y.SCALe.DIVisions = <long>

<long> = SCPI.DISPlay.TR(1-1).Y.SCALe.DIVisions

Description

of Y division

Variable

	<Long>
Range	4 to 30
Preset value	10

	<Long>
Unit	-
Resolution	2

Equivalent key TR Menu -> Scale -> Divisions

SCPI.DISPlay.UPDate.IMMediate

Syntax SCPI.DISPlay.UPDate.IMMediate

Description Update display force (No Read)

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

SCPI.DISPlay.USER(1-1).ALLTrace.PERSistence.CLEAr

Syntax SCPI.DISPlay.USER(1-1).ALLTrace.PERSistence.CLEAr

Description clear all stored traces (No Read)

Equivalent key USER Menu -> Trace View -> Persistence -> Clear All Persistent Data

SCPI.DISPlay.USER(1-1).ALLTrace.Y.SCALe.AUTO

Syntax SCPI.DISPlay.USER(1-1).ALLTrace.Y.SCALe.AUTO

Description auto scale all (No Read)

Equivalent key USER Menu -> Scale -> Auto Scale All

SCPI.DISPlay.USER(1-1).ANNotation.MARKer.POSition

Syntax SCPI.DISPlay.USER(1-1).ANNotation.MARKer.POSition = <string>
 <string> = SCPI.DISPlay.USER(1-1).ANNotation.MARKer.POSition

Description Sets/reads the marker information position

Variable

	Param
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

SCPI.DISPlay.USER(1-1).ANNotation.MEASurement.STATe

Syntax SCPI.DISPlay.USER(1-1).ANNotation.MEASurement.STATe = <boolean>
 <boolean> = SCPI.DISPlay.USER(1-1).ANNotation.MEASurement.STATe

Description Turns on/off measurement conditions

Variable

	Param
True or -1 (Preset value)	Show measurement conditions
False or 0	Hide measurement conditions

Equivalent key USER Menu -> Display -> Meas Condition

SCPI.DISPlay.USER(1-1).GRATicule.AXIS.Y.RELative

Syntax SCPI.DISPlay.USER(1-1).GRATicule.AXIS.Y.RELative = <boolean>
 <boolean> = SCPI.DISPlay.USER(1-1).GRATicule.AXIS.Y.RELative

Description Sets/reads the relative Y-label

Variable

	Param
True or -1	Set relative Y-axis label to 'ON'
False or 0 (Preset value)	Set relative Y-axis label to 'OFF'

Equivalent key USER Menu -> Display -> Relative Y-Scale

SCPI.DISPlay.USER(1-1).GRATicule.AXIS.Y.STATe

Syntax SCPI.DISPlay.USER(1-1).GRATicule.AXIS.Y.STATe = <string>
 <string> = SCPI.DISPlay.USER(1-1).GRATicule.AXIS.Y.STATe

Description Sets/reads Y graticule label display

Variable

	Param
OFF	Set Y graticule label to 'OFF'

	Param
SHORT(Preset value)	Set Y graticule label to '4-digits'
MIDDLE	Set Y graticule label to '8-digits'
LONG	Set Y graticule label to '12-digits'

Equivalent key USER Menu -> Display -> Y # of Digits

SCPI.DISPlay.USER(1-1).LABel.DATA

Syntax SCPI.DISPlay.USER(1-1).LABel.DATA = <string>
 <string> = SCPI.DISPlay.USER(1-1).LABel.DATA

Description Sets/reads window title label

Variable

	<String>
Range	-
Preset value	""
Unit	-
Resolution	-

Equivalent key USER Menu -> Display -> Edit Title Label

SCPI.DISPlay.USER(1-1).LABel.STATe

Syntax SCPI.DISPlay.USER(1-1).LABel.STATe = <boolean>
 <boolean> = SCPI.DISPlay.USER(1-1).LABel.STATe

Description Show/Hide window title label

Variable

	Param
True or -1	Show window title label
False or 0(Preset value)	Hide window title label

Equivalent key USER Menu -> Display -> Title Label

SCPI.DISPlay.USER(1-1).LIMit.FSIGn

Syntax SCPI.DISPlay.USER(1-1).LIMit.FSIGn = <boolean>
<boolean> = SCPI.DISPlay.USER(1-1).LIMit.FSIGn

Description Turns on/off the limit test judgement display

Variable

	Param
True or -1(Preset value)	Turn on the limit test judgement display mode
False or 0	Turn off the limit test judgement display mode

Equivalent key USER Menu -> Display -> Limit Test -> Fail Sign

SCPI.DISPlay.USER(1-1).MAXimize

Syntax SCPI.DISPlay.USER(1-1).MAXimize = <boolean>
<boolean> = SCPI.DISPlay.USER(1-1).MAXimize

Description Maximize active trace

Variable

	Param
True or -1	Maximize active trace
False or 0(Preset value)	Restore all the traces

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

SCPI.DISPlay.USER(1-1).STATe

Syntax SCPI.DISPlay.USER(1-1).STATe = <boolean>
<boolean> = SCPI.DISPlay.USER(1-1).STATe

Description Turns on/off user defined window

Variable

	Param
True or -1	Show user defined window

	Param
False 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

SCPI.DISPlay.USER(1-1).TABLE.STATe

Syntax
 SCPI.DISPlay.USER(1-1).TABLE.STATe = <boolean>
 <boolean> = SCPI.DISPlay.USER(1-1).TABLE.STATe

Description
 Turns on/off the marker list

Variable

	Param
True or -1	Show the marker list
False or 0(Preset value)	Hide the marker list

Equivalent key
 USER Menu -> Marker -> Marker List

SCPI.DISPlay.USER(1-1).TRACe(1-8).ANNotation.DATA

Syntax
 SCPI.DISPlay.USER(1-1).TRACe(1-8).ANNotation.DATA = <string>
 <string> = SCPI.DISPlay.USER(1-1).TRACe(1-8).ANNotation.DATA

Description
 Sets/Reads the annotation of the trace

Variable

	<String>
Description	The annotation of the trace
Range	254 character
Preset value	""

Equivalent key
 USER Menu -> Trace View -> Trace Annotation

SCPI.DISPlay.USER(1-1).TRACe(1-8).LABel.DATA

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).LABel.DATA = <string>
<string> = SCPI.DISPlay.USER(1-1).TRACe(1-8).LABel.DATA

Description Sets/reads trace title label

Variable

	<String>
Range	-
Preset value	"Tr1"
Unit	-
Resolution	-

Equivalent key USER Menu -> Trace View -> Trace Label

SCPI.DISPlay.USER(1-1).TRACe(1-8).LIMit.LINE

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).LIMit.LINE = <boolean>
<boolean> = SCPI.DISPlay.USER(1-1).TRACe(1-8).LIMit.LINE

Description Turns on/off the limit line

Variable

	Param
True or -1(Preset value)	Turn on the limit line mode
False or 0	Turn off the limit line mode

Equivalent key USER Menu -> Display -> Limit Test -> Limit Line

SCPI.DISPlay.USER(1-1).TRACe(1-8).MODE

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).MODE = <string>
<string> = SCPI.DISPlay.USER(1-1).TRACe(1-8).MODE

Description Turns on/off data and/or memory trace

Variable

	Param
OFF	Set data and/or memory trace to 'Off'
DATA(Preset value)	Set data and/or memory trace to 'Data'
MEMory	Set data and/or memory trace to 'Mem'
BOTH	Set data and/or memory trace to 'Data & Mem' (data and memory)

Equivalent key

USER Menu -> Trace View -> Display Trace

SCPI.DISPlay.USER(1-1).TRACe(1-8).PERSistence.STATe

Syntax

SCPI.DISPlay.USER(1-1).TRACe(1-8).PERSistence.STATe = <boolean>

<boolean> = SCPI.DISPlay.USER(1-1).TRACe(1-8).PERSistence.STATe

Description

Clears persistent data

Variable

	Param
True or -1	Set Clears persistent data mode to 'ON'
False or 0(Preset value)	Set Clears persistent data mode to 'OFF'

Equivalent key

USER Menu -> Trace View -> Persistence -> Persistence Mode

SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe

Syntax

SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe = <boolean>

<boolean> = SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe

Description

Sets/reads persistence mode

Variable

	Param
True or -1(Preset value)	Set persistence mode to 'ON'
False or 0	Set persistence mode to 'OFF'

Equivalent key

USER Menu -> Trace View -> Enable Trace -> Trace 1

SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.AUTO

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.AUTO = <boolean>
 <boolean> = SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.AUTO

Description Sets/Reads automatic setting of the X-axis display range to the stimulus value

Variable

	Param
True or -1(Preset value)	Automatically set the range of the X-axis to the stimulus value
False or 0	Manually set the range of the X-axis

Equivalent key USER Menu -> Scale -> X Axis -> Auto

SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.LEFT

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.LEFT = <double>
 <double> = SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.LEFT

Description Sets/Reads the start value of the X-axis

Variable

	<Double>
Description	Start value of the X-axis
Range	-500 G to 499.999999999 G
Preset value	0
Unit	-
Resolution	-

NOTE This command is available only when the automatic setting of the X-axis display range (set with “SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.AUTO” on page 304) is set to OFF.

Equivalent key USER Menu -> Scale -> X Axis -> Left

SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.RIGHt

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.RIGHt = <double>
 <double> = SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.RIGHt

Description

Variable

	<Double>
Range	-499.999999999 G to 500 G
Preset value	100
Unit	-
Resolution	-

NOTE

Equivalent key USER Menu -> Scale -> X Axis -> Right

SCPI.DISPlay.USER(1-1).TRACe(1-8).X.TYPE

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).X.TYPE = <string>
 <string> = SCPI.DISPlay.USER(1-1).TRACe(1-8).X.TYPE

Description Sets/reads the display type of the x axis.

Variable

	Param
LINear(Preset value)	Set the display type of the x axis. to 'Linear'
LOGarithmic	Set the display type of the x axis. to 'Logarithmic'

Equivalent key USER Menu -> Scale -> X Axis Type

SCPI.DISPlay.USER(1-1).TRACe(1-8).X.UNIT

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).X.UNIT = <string>
 <string> = SCPI.DISPlay.USER(1-1).TRACe(1-8).X.UNIT

Description Sets/reads X-axis unit

Variable

	<String>
Range	-
Preset value	"U"

	<String>
Unit	-
Resolution	-

Equivalent key USER Menu -> Scale -> X Unit

SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.AUTO

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.AUTO

Description Execute autoscale (No Read)

Equivalent key USER Menu -> Scale -> Auto Scale

SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.PDIVision

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.PDIVision = <double>
 <double> = SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.PDIVision

Description Sets/reads scale per division

Variable

	<Double>
Range	1a to 10G
Preset value	10
Unit	-
Resolution	-

Equivalent key USER Menu -> Scale -> Scale/Div

SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RLEVel

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RLEVel = <double>
 <double> = SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RLEVel

Description Sets/reads the scale reference level

Variable

	<Double>
Range	-500G to 500G

	<Double>
Preset value	-40
Unit	-
Resolution	-

Equivalent key USER Menu -> Scale -> Reference Value
 USER Menu -> Scale -> Marker -> Reference

SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RPOStion

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RPOStion = <long>
 <long> = SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RPOStion

Description Sets/reads the scale reference position

Variable

	<Long>
Range	0 to 30
Preset value	5
Unit	Div
Resolution	-

Equivalent key USER Menu -> Scale -> Reference Position

SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.UNIT

Syntax SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.UNIT = <string>
 <string> = SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.UNIT

Description Sets/reads the Y-axis unit

Variable

	<String>
Range	-
Preset value	"U"
Unit	-
Resolution	-

Equivalent key USER Menu -> Scale -> Y Unit

SCPI.DISPlay.USER(1-1).Y.SCALe.DIVisions

Syntax SCPI.DISPlay.USER(1-1).Y.SCALe.DIVisions = <long>
 <long> = SCPI.DISPlay.USER(1-1).Y.SCALe.DIVisions

Description Sets/reads the number of Y division

Variable

	<Long>
Range	4 to 30
Preset value	10
Unit	-
Resolution	2

Equivalent key USER Menu -> Scale -> Divisions

SCPI.DISPlay.WINDow.ACTive

Syntax SCPI.DISPlay.WINDow.ACTive = <string>
 <string> = SCPI.DISPlay.WINDow.ACTive

Description Selects the active measurement window

Variable

	Param
PN1(Preset value)	Set active instrument window to 'Phase Noise'
SP1	Set active instrument window to 'Spectrum Monitor'
FP1	Set active instrument window to 'Freq & Power'
TR1	Set active instrument window to 'Transient'
USER1	Set active instrument window to 'User'

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

- SP Menu -> Measurement View -> Spectrum Monitor
- SP Menu -> Measurement View -> Freq & Power
- SP Menu -> Measurement View -> Transient
- SP Menu -> Measurement View -> User
- FP Menu -> Measurement View -> Phase Noise
- FP Menu -> Measurement View -> Spectrum Monitor
- FP Menu -> Measurement View -> Freq & Power
- FP Menu -> Measurement View -> Transient
- FP Menu -> Measurement View -> User
- TR Menu -> Measurement View -> Phase Noise
- TR Menu -> Measurement View -> Spectrum Monitor
- TR Menu -> Measurement View -> Freq & Power
- TR Menu -> Measurement View -> Transient
- TR Menu -> Measurement View -> User
- USER Menu -> Measurement View -> Phase Noise
- USER Menu -> Measurement View -> Spectrum Monitor
- USER Menu -> Measurement View -> Freq & Power
- USER Menu -> Measurement View -> Transient
- USER Menu -> Measurement View -> User

SCPI.FORMat.BORDER

Syntax

SCPI.FORMat.BORDER = <string>
 <string> = SCPI.FORMat.BORDER

Description

Sets/reads byte order setting for binary transfer

Variable

	Param
NORMAL(Preset value)	Set byte order so that a byte containing MSB (Most Significant Bit) is transferred first
SWAPped	Set byte order so that a byte containing LSB (Least Significant Bit) is transferred first

Equivalent key

No equivalent key is available on the front panel.

SCPI.FORMat.DATA

Syntax

SCPI.FORMat.DATA = <string>

COM Object Reference
SCPI.HCOPy.ABORT

<string> = SCPI.FORMat.DATA

Description Sets/reads data transfer mode

Variable

	Param
ASCIi(Preset value)	Set data transfer mode to 'ASCIi'
REAL32	Set data transfer mode to 'IEEE 32 floating point binay'
REAL64	Set data transfer mode to 'IEEE 64 floating point binay'

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

SCPI.HCOPy.ABORT

Syntax SCPI.HCOPy.ABORT

Description Aborts printing (No Read)

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

SCPI.HCOPy.IMAGe

Syntax SCPI.HCOPy.IMAGe = <string>
<string> = SCPI.HCOPy.IMAGe

Description Sets/reads inverse color print mode

Variable

	Param
NORMAL(Preset value)	Set inverse color print mode to 'Off'
INVert	Set inverse color print mode to 'On'

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

SCPI.HCOPy.IMMediate

Syntax SCPI.HCOPy.IMMediate
 Description Outputs print (No Read)
 Equivalent key No equivalent key is available on the front panel.

SCPI.IEEE4882.CLS

Syntax SCPI.IEEE4882.CLS
 Description Clears registers (No Read)
 Equivalent key No equivalent key is available on the front panel.

SCPI.IEEE4882.ESE

Syntax SCPI.IEEE4882.ESE = <long>
 <long> = SCPI.IEEE4882.ESE
 Description Sets/reads standard event status enable register

Variable

	<Long>
Range	0 to 255
Preset value	0
Unit	-
Resolution	-

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

SCPI.IEEE4882.ESR

Syntax <long> = SCPI.IEEE4882.ESR
 Description Reads standard event status register value (Read Only)
 Equivalent key No equivalent key is available on the front panel.

SCPI.IEEE4882.IDN

Syntax <string> = SCPI.IEEE4882.IDN

Description Reads product model information (Read Only)

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

SCPI.IEEE4882.OPC

Syntax SCPI.IEEE4882.OPC = <long>
<long> = SCPI.IEEE4882.OPC

Description Sets OPC bit on operation termination

Variable

	<Long>
Range	-
Preset value	1
Unit	-
Resolution	-

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

SCPI.IEEE4882.OPT

Syntax <string> = SCPI.IEEE4882.OPT

Description Reads option information (Read Only)

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

SCPI.IEEE4882.RST

Syntax SCPI.IEEE4882.RST

Description Preset (No Read)

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

SCPI.IEEE4882.SRE

Syntax SCPI.IEEE4882.SRE = <long>
<long> = SCPI.IEEE4882.SRE

Description Sets service request enable register

Variable

	<Long>
Range	0 to 255
Preset value	0
Unit	-
Resolution	-

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

SCPI.IEEE4882.STB

Syntax <long> = SCPI.IEEE4882.STB

Description Reads status byte register (Read Only)

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

SCPI.IEEE4882.TRG

Syntax SCPI.IEEE4882.TRG

Description BUS Trigger (No Read)

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

SCPI.IEEE4882.WAI

Syntax SCPI.IEEE4882.WAI

Description

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

SCPI.INITiate.FP(1-1).CONTInuous

Syntax SCPI.INITiate.FP(1-1).CONTInuous = <boolean>
 <boolean> = SCPI.INITiate.FP(1-1).CONTInuous

Description Sets/reads trigger continuous mode

Variable

	Param
True or -1	Set trigger continuous mode to 'ON'
False or 0(Preset value)	Set trigger continuous mode to 'OFF'

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

SCPI.INITiate.FP(1-1).IMMEDIATE

Syntax SCPI.INITiate.FP(1-1).IMMEDIATE

Description Trigger once then 'HOLD' (No Read)

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

SCPI.INITiate.PN(1-1).CONTINUOUS

Syntax SCPI.INITiate.PN(1-1).CONTINUOUS = <boolean>
<boolean> = SCPI.INITiate.PN(1-1).CONTINUOUS

Description Sets/reads trigger continuous mode

Variable

	Param
True or -1	Set trigger continuous mode to 'ON'
False or 0(Preset value)	Set trigger continuous mode to 'OFF'

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

SCPI.INITiate.PN(1-1).IMMEDIATE

Syntax SCPI.INITiate.PN(1-1).IMMEDIATE

Description Trigger once then 'HOLD' (No Read)

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

SCPI.INITiate.SP(1-1).CONTINUOUS

Syntax SCPI.INITiate.SP(1-1).CONTINUOUS = <boolean>
<boolean> = SCPI.INITiate.SP(1-1).CONTINUOUS

Description Sets/reads trigger continuous mode

Variable

	Param
True or -1	Set trigger continuous mode to 'ON'
False or 0(Preset value)	Set trigger continuous mode to 'OFF'

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

SCPI.INITiate.SP(1-1).IMMEDIATE

Syntax SCPI.INITiate.SP(1-1).IMMEDIATE

Description Trigger once then 'HOLD' (No Read)

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

SCPI.INITiate.TR(1-1).CONTINUOUS

Syntax SCPI.INITiate.TR(1-1).CONTINUOUS = <boolean>
 <boolean> = SCPI.INITiate.TR(1-1).CONTINUOUS

Description Sets/reads trigger continuous mode

Variable

	Param
True or -1	Set trigger continuous mode to 'ON'
False or 0(Preset value)	Set trigger continuous mode to 'OFF'

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

SCPI.INITiate.TR(1-1).IMMEDIATE

Syntax SCPI.INITiate.TR(1-1).IMMEDIATE

Description Trigger once, then 'HOLD' (No Read)

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

SCPI.MMEMory.CATalog_Q dir, list

Syntax SCPI.MMEMory.CATalog_Q dir, list

COM Object Reference
SCPI.MMEMory.COPY src, dst

Description Catalog directory. (Read Only)

Examples

```
Dim dir As String
Dim list As String

SCPI.MMEMory.CATalog_Q dir, list
```

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

SCPI.MMEMory.COPY src, dst

Syntax SCPI.MMEMory.COPY src, dst

Description Copy file (No Read)

Variable

	<String 1>
Range	-
Preset value	-
Unit	-
Resolution	-

	<String 2>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.DATA[_Q] file, data

Syntax SCPI.MMEMory.DATA[_Q] file, data

Description Transfer a file through SCPI

The data transfer format when this commands is executed depends on th setting with the **SCPI.FORMat.DATA** command.

Variable

	<String 1>
Range	-

	<String 1>
Preset value	-
Unit	-
Resolution	-

	<Variant >
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.DELeTe

Syntax SCPI.MMEMory.DELeTe

Description Delete file/directory (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.FP(1-1).TRACe(1-4).LOAD.LIMit.LOWer

Syntax SCPI.MMEMory.FP(1-1).TRACe(1-4).LOAD.LIMit.LOWer

Description Reads the lower limit line (No Read)

Variable

	<String>
Range	-

	<String>
Preset value	-
Unit	-
Resolution	-

Equivalent key FP Menu -> Display -> Limit Test -> Import Lower Limit Line...

SCPI.MMEMory.FP(1-1).TRACe(1-4).LOAD.LIMit.UPPer

Syntax SCPI.MMEMory.FP(1-1).TRACe(1-4).LOAD.LIMit.UPPer

Description Reads the upper limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key FP Menu -> Display -> Limit Test -> Import Upper Limit Line...

SCPI.MMEMory.FP(1-1).TRACe(1-4).STORE.DATA

Syntax SCPI.MMEMory.FP(1-1).TRACe(1-4).STORE.DATA

Description Saves trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.FP(1-1).TRACe(1-4).STORE.MEMory

Syntax SCPI.MMEMory.FP(1-1).TRACe(1-4).STORE.MEMory

Description Saves memory trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.LOAD.CORRection.POWer

Syntax SCPI.MMEMory.LOAD.CORRection.POWer = <string>

Description Loads correction data for a specified power (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key

PN Menu -> System -> Instrument Setup -> Correction -> Import Power Correction Table
 SP Menu -> System -> Instrument Setup -> Correction -> Import Power Correction Table
 FP Menu -> System -> Instrument Setup -> Correction -> Import Power Correction Table
 TR Menu -> System -> Instrument Setup -> Correction -> Import Power Correction Table
 USER Menu -> System -> Instrument Setup -> Correction -> Import Power Correction Table

PN Menu -> System -> Instrument Setup -> Correction -> File Dialog ...
 SP Menu -> System -> Instrument Setup -> Correction -> File Dialog ...
 FP Menu -> System -> Instrument Setup -> Correction -> File Dialog ...
 TR Menu -> System -> Instrument Setup -> Correction -> File Dialog ...
 USER Menu -> System -> Instrument Setup -> Correction -> File Dialog ...

SCPI.MMEMory.LOAD.PROGram

Syntax SCPI.MMEMory.LOAD.PROGram

Description Loads VBA project/module (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.LOAD.STATe

Syntax SCPI.MMEMory.LOAD.STATe

Description Recalls settings (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.MDIRectory

Syntax SCPI.MMEMory.MDIRectory

Description Creates a directory (No Read)

Variable

	<String>
Range	-

	<String>
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.LIMit.LOWer

Syntax SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.LIMit.LOWer

Description Reads the lower limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key PN Menu -> Display -> Limit Test -> Import Lower Limit Line...

SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.LIMit.UPPer

Syntax SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.LIMit.UPPer

Description Reads the upper limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key PN Menu -> Display -> Limit Test -> Import Upper Limit Line...

SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.SPURious.THReshold

Syntax SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.SPURious.THReshold

Description Reads the threshold data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key PN Menu -> Trace View -> Spurious -> Import Threshold Table...

SCPI.MMEMory.PN(1-1).TRACe(1-1).STORE.DATA

Syntax SCPI.MMEMory.PN(1-1).TRACe(1-1).STORE.DATA

Description Saves trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.PN(1-1).TRACe(1-1).STORE.MEMory

Syntax SCPI.MMEMory.PN(1-1).TRACe(1-1).STORE.MEMory

Description Saves memory trace data (No Read)

Variable

	<String>
Range	-

	<String>
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.SP(1-1).TRACe(1-1).LOAD.LIMit.LOWer

Syntax SCPI.MMEMory.SP(1-1).TRACe(1-1).LOAD.LIMit.LOWer

Description Reads the lower limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key SP Menu -> Display -> Limit Test -> Import Lower Limit Line...

SCPI.MMEMory.SP(1-1).TRACe(1-1).LOAD.LIMit.UPPer

Syntax SCPI.MMEMory.SP(1-1).TRACe(1-1).LOAD.LIMit.UPPer

Description Reads the upper limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key SP Menu -> Display -> Limit Test -> Import Upper Limit Line...

SCPI.MMEMory.SP(1-1).TRACe(1-1).STORE.DATA

Syntax SCPI.MMEMory.SP(1-1).TRACe(1-1).STORE.DATA

Description Saves trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.SP(1-1).TRACe(1-1).STORE.MEMory

Syntax SCPI.MMEMory.SP(1-1).TRACe(1-1).STORE.MEMory

Description Saves memory trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.STORE.IMAGE

Syntax SCPI.MMEMory.STORE.IMAGE

Description Save screen image (No Read)

Variable

	<String>
Range	-

	<String>
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.STORe.PROGram

Syntax SCPI.MMEMory.STORe.PROGram

Description Save VBA project (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.STORe.STATe

Syntax SCPI.MMEMory.STORe.STATe

Description Save settings (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.STORe.STYPe

Syntax SCPI.MMEMory.STORe.STYPe = <string>
<string> = SCPI.MMEMory.STORe.STYPe

Description Select save state type

Variable

	Param
STATe(Preset value)	Set save state type to 'State Only'
DSTate	Set save state type to 'State & Date'

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

SCPI.MMEMory.TR(1-1).TRACe(1-4).LOAD.LIMit.LOWe r

Syntax SCPI.MMEMory.TR(1-1).TRACe(1-4).LOAD.LIMit.LOWer

Description Reads the lower limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key TR Menu -> Display -> Limit Test -> Import Lower Limit Line...

SCPI.MMEMory.TR(1-1).TRACe(1-4).LOAD.LIMit.UPPer

Syntax SCPI.MMEMory.TR(1-1).TRACe(1-4).LOAD.LIMit.UPPer

Description Reads the upper limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key

TR Menu -> Display -> Limit Test -> Import Upper Limit Line...

SCPI.MMEMory.TR(1-1).TRACe(1-4).STORE.DATA

Syntax

SCPI.MMEMory.TR(1-1).TRACe(1-4).STORE.DATA

Description

Saves trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.MMEMory.TR(1-1).TRACe(1-4).STORE.MEMory

Syntax

SCPI.MMEMory.TR(1-1).TRACe(1-4).STORE.MEMory

Description

Saves memory trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.MMEMory.USER(1-1).TRACe(1-8).LOAD.LIMit.LOWer

Syntax SCPI.MMEMory.USER(1-1).TRACe(1-8).LOAD.LIMit.LOWer

Description Reads the lower limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key USER Menu -> Display -> Limit Test -> Import Lower Limit Line...

SCPI.MMEMory.USER(1-1).TRACe(1-8).LOAD.LIMit.UPPer

Syntax SCPI.MMEMory.USER(1-1).TRACe(1-8).LOAD.LIMit.UPPer

Description Reads the upper limit line (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

Equivalent key USER Menu -> Display -> Limit Test -> Import Upper Limit Line...

SCPI.MMEMory.USER(1-1).TRACe(1-8).STORe.DATA

Syntax SCPI.MMEMory.USER(1-1).TRACe(1-8).STORe.DATA

Description Saves selected trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.MMEMory.USER(1-1).TRACe(1-8).STORE.MEMory

Syntax SCPI.MMEMory.USER(1-1).TRACe(1-8).STORE.MEMory

Description Saves selected memory trace data (No Read)

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.PROGram.CATalog

Syntax <string> = SCPI.PROGram.CATalog

Description List all the executable macro (Read Only)

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

SCPI.PROGram.COM.EVENT

Syntax SCPI.PROGram.COM.EVENT = <boolean>

<boolean> = SCPI.PROGram.COM.EVENT

Description Turns on/off the E5052 VBA event callback function

Variable

	Param
True or -1	Enable the E5052 VBA event callback function
False or 0(Preset value)	Disable the 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

SCPI.PROGram.SELected.NAME

Syntax

SCPI.PROGram.SELected.NAME = <string>
 <string> = SCPI.PROGram.SELected.NAME

Description

Sets/reads the name of the program to be selected

Variable

	<String>
Range	-
Preset value	"E5052.Module1.Main"
Unit	-
Resolution	-

Equivalent key

No equivalent key is available on the front panel.

SCPI.PROGram.SELected.STATe

Syntax

SCPI.PROGram.SELected.STATe = <string>
 <string> = SCPI.PROGram.SELected.STATe

Description

Runs/stops a specified macro program

Variable

	Param
STOP(Preset value)	Stops the macro program

	Param
RUN	Runs the macro program

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

SCPI.PROGRAM.SKEY.ITEM(1-8).ENABLE

Syntax SCPI.PROGRAM.SKEY.ITEM(1-8).ENABLE = <boolean>
 <boolean> = SCPI.PROGRAM.SKEY.ITEM(1-8).ENABLE

Description Turns on/off user defined softkey function

Variable

	Param
True or -1	Set user defined softkey function to 'ON'
False or 0(Preset value)	Set user defined softkey function to 'OFF'

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

SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE

Syntax SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE

Description Execute the macro assigned under the user defined softkey (No Read)

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

SCPI.PROGRAM.SKEY.ITEM(1-8).LABEL

Syntax SCPI.PROGRAM.SKEY.ITEM(1-8).LABEL = <string>
 <string> = SCPI.PROGRAM.SKEY.ITEM(1-8).LABEL

Description Sets/reads the user defined softkey label

Variable

	<String>
Range	30 chars
Preset value	"User Label 1"
Unit	-
Resolution	-

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

SCPI.PROGRAM.VARIABLE.ARRAY(1-10).DATA

Syntax SCPI.PROGRAM.VARIABLE.ARRAY(1-10).DATA = <variant>
 <variant> = SCPI.PROGRAM.VARIABLE.ARRAY(1-10).DATA

Description User defined array data

Variable

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

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

SCPI.PROGRAM.VARIABLE.ARRAY(1-10).POINTS

Syntax SCPI.PROGRAM.VARIABLE.ARRAY(1-10).POINTS = <long>
 <long> = SCPI.PROGRAM.VARIABLE.ARRAY(1-10).POINTS

Description # of points of user defined array

Variable

	<Long>
Range	2 to 1601
Preset value	1601
Unit	-

	<Long>
Resolution	-

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

SCPI.PROGRAM.VARIABLE.DOUBLE(1-10)

Syntax SCPI.PROGRAM.VARIABLE.DOUBLE(1-10) = <double>
 <double> = SCPI.PROGRAM.VARIABLE.DOUBLE(1-10)

Description User defined 64bit floating variable

Variable

	<Double>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.PROGRAM.VARIABLE.INTEGER(1-10)

Syntax SCPI.PROGRAM.VARIABLE.INTEGER(1-10) = <long>
 <long> = SCPI.PROGRAM.VARIABLE.INTEGER(1-10)

Description User defined integer variable

Variable

	<Long>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.PROGram.VARiable.STRING(1-10)

Syntax SCPI.PROGram.VARiable.STRING(1-10) = <string>
 <string> = SCPI.PROGram.VARiable.STRING(1-10)

Description User defined string

Variable

	<String>
Range	-
Preset value	-
Unit	-
Resolution	-

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

SCPI.SENSE.ATTenuation.LEVel

Syntax SCPI.SENSE.ATTenuation.LEVel = <double>
 <double> = SCPI.SENSE.ATTenuation.LEVel

Description Sets/reads the input attenuator level

Variable **When the E5052A is used stand-alone, or with the downconverter turned off, or with the downconverter on and the RF input is set to 'E5052A Direct'**

	<Double>
Range	0 to 35
Preset value	5
Unit	dB
Resolution	5

When the downconverter is turned on and the RF input is set to 'Downconverter'

	<Double>
Range	10
Preset value	10
Unit	dB
Resolution	-

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

SCPI.SENSE.CORRection.POWer.DATA

Syntax
 SCPI.SENSE.CORRection.POWer.DATA = <variant>
 <variant> = SCPI.SENSE.CORRection.POWer.DATA

Description
 Sets/reads the frequency where the correction is performed and the correction values

Variable

	<Variant>
Range	1...2002
Preset value	-
Unit	-
Resolution	-

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

SCPI.SENSE.CORRection.POWer.STATe

Syntax
 SCPI.SENSE.CORRection.POWer.STATe = <boolean>
 <boolean> = SCPI.SENSE.CORRection.POWer.STATe

Description
 Sets user the user calibration on or off or reads its setting

Variable

	Param
True or -1	User calibration 'ON'
False or 0 (Preset value)	User calibration 'OFF'

Equivalent key
 PN Menu -> System -> Instrument Setup -> Correction -> Power Correction
 SP Menu -> System -> Instrument Setup -> Correction -> Power Correction
 FP Menu -> System -> Instrument Setup -> Correction -> Power Correction
 TR Menu -> System -> Instrument Setup -> Correction -> Power Correction

USER Menu -> System -> Instrument Setup -> Correction -> Power Correction

SCPI.SENSE.DCONverter.IDN

- Syntax** <string> = SCPI.SENSE.DCONverter.IDN
- Description** Reads product information of the downconverter (Read Only)
- Equivalent key** No equivalent key is available on the front panel.

SCPI.SENSE.DCONverter.INPUT

- Syntax** SCPI.SENSE.DCONverter.INPUT = <string>
 <string> = SCPI.SENSE.DCONverter.INPUT
- Description** Sets/reads the signal supplied to the RF input port
- Variable**

	Param
DCONverter (Preset value)	Sets the input port to 'Downconverter'
DIrect	Sets the input port to 'E5052A Direct'

- Equivalent key** PN Menu -> Input Port -> Down Converter -> RF Input
 SP Menu -> Input Port -> Down Converter -> RF Input
 FP Menu -> Input Port -> Down Converter -> RF Input
 TR Menu -> Input Port -> Down Converter -> RF Input
 USER Menu -> Input Port -> Down Converter -> RF Input

SCPI.SENSE.DCONverter.MANual.CALCulate.LO_Q harmonic, in_freq, lo1, lo2

- Syntax** <double>,<double>,<double>,<double> =
 SCPI.SENSE.DCONverter.MANual.CALCulate.LO_Q harmonic, in_freq, lo1, lo2
- Description** Reads LO frequency of CH1 and CH2 so that appropriate IF frequency can be obtained

NOTE LO frequencies are not input to the E5052A automatically. It is necessary to set the two returned frequencies to LO1 and LO2 when performing measurement in the phase-noise measurement mode.

Variable

	<harmonic>
Description	Harmonic number
Range	1 to 34
Preset value	-
Unit	-
Resolution	-

	<in_freq>
Description	Input signal frequency
Range	3 G to 327 G
Preset value	-
Unit	-
Resolution	-

Examples

```
Dim harmonic As Long
Dim in_freq As Double
Dim lo1 As Double
Dim lo2 As Double
```

```
harmonic = 5 ' harmonic : 1
in_freq = 100000000000# ' IF frequency : 100 MHz
```

```
SCPI.SENSE.DCONverter.MANual.CALCulate.LO_Q harmonic, in_freq, lo1, lo2
```

Equivalent key

No equivalent key is available on the front panel.

SCPI.SENSE.DCONverter.MANual.IFDelta

Syntax

SCPI.SENSE.DCONverter.MANual.IFDelta = <double>
 <double> = SCPI.SENSE.DCONverter.MANual.IFDelta

Description

Sets/reads the differential frequency between CH1 and CH2 from the external mixer

Variable

	<Double>
Range	-1G to 1G
Preset value	0

COM Object Reference
SCPI.SENSE.DCONverter.MANual.IFGain(1-2)

	<Double>
Unit	Hz
Resolution	1

Equivalent key
 PN Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> $\Delta IF = IF2 - IF1$
 SP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> $\Delta IF = IF2 - IF1$
 FP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> $\Delta IF = IF2 - IF1$
 TR Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> $\Delta IF = IF2 - IF1$
 USER Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> $\Delta IF = IF2 - IF1$

SCPI.SENSE.DCONverter.MANual.IFGain(1-2)

Syntax
 SCPI.SENSE.DCONverter.MANual.IFGain(1-2) = <double>
 <double> = SCPI.SENSE.DCONverter.MANual.IFGain(1-2)

Description
 Sets/reads the IF gain of the external mixer

Variable

	<Double>
Range	0 to 35
Preset value	0
Unit	dB
Resolution	5

Equivalent key
 PN Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> IF Gain 1
 SP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> IF Gain 1
 FP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> IF Gain 1
 TR Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> IF Gain 1
 USER Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> IF Gain 1

SCPI.SENSE.DCONverter.MANual.LO(1-2).FREQUENCY

Syntax
 SCPI.SENSE.DCONverter.MANual.LO(1-2).FREQUENCY = <double>
 <double> = SCPI.SENSE.DCONverter.MANual.LO(1-2).FREQUENCY

Description Sets/reads the LO frequency of the external mixer

Variable

	<Double>
Range	2.975G to 10.025G
Preset value	2.975G
Unit	Hz
Resolution	50M

Equivalent key

PN Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Frequency

SP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Frequency

FP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Frequency

TR Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Frequency

USER Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Frequency

SCPI.SENSE.DCONverter.MANual.LO(1-2).LEVel

Syntax

SCPI.SENSE.DCONverter.MANual.LO(1-2).LEVel = <double>

<double> = SCPI.SENSE.DCONverter.MANual.LO(1-2).LEVel

Description

Sets/reads the LO level of the external mixer

Variable

When LO of the external mixer is between 2.975GHz and 6GHz

	<Double>
Range	10 to 16
Preset value	10
Unit	dBm
Resolution	0.1

When LO of the external mixer is between 6GHz and 10.0256GHz

	<Double>
Range	10
Preset value	10

	<Double>
Unit	dBm
Resolution	-

Equivalent key
 PN Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Level
 SP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Level
 FP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Level
 TR Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Level
 USER Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> LO1 Level

SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.CURRENT

Syntax
 SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.CURRENT = <double>
 <double> = SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.CURRENT

Description
 Sets/reads the bias current to be supplied to the external mixer

Variable

	<Double>
Range	-10m to 10m
Preset value	0
Unit	A
Resolution	10u

Equivalent key
 PN Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Current
 SP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Current
 FP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Current
 TR Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Current
 USER Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Current

SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.STATE

Syntax
 SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.STATE = <boolean>
 <boolean> = SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.STATE

Description
 Sets the bias current supplied to the external mixer on or off and read its settings

Variable

	Param
True or -1	Bias current 'ON'
False or 0 (Preset value)	Bias current 'OFF'

Equivalent key

PN Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Mixer1 Bias

SP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Mixer1 Bias

FP Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Mixer1 Bias

TR Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Mixer1 Bias

USER Menu -> System -> Instrument Setup -> Down Converter Manual Setup -> Mixer1 Bias

SCPI.SENSE.DCONverter.MEXTernal

Syntax

SCPI.SENSE.DCONverter.MEXTernal = <string>

<string> = SCPI.SENSE.DCONverter.MEXTernal

Description

Turns on/off external mixer use

Variable

	Param
ON	Enable external mixer use
OFF (Preset value)	Disable external mixer use

Equivalent key

PN Menu -> Input Port -> Down Converter -> External Mixer

SP Menu -> Input Port -> Down Converter -> External Mixer

FP Menu -> Input Port -> Down Converter -> External Mixer

TR Menu -> Input Port -> Down Converter -> External Mixer

USER Menu -> Input Port -> Down Converter -> External Mixer

SCPI.SENSE.DCONverter.STATE

Syntax

SCPI.SENSE.DCONverter.STATE = <boolean>

<boolean> = SCPI.SENSE.DCONverter.STATE

Description

Turns on/off downconverter use

Variable

	Param
Treu or -1	Enable downconverter use
False or 0 (Preset value)	Disable downconverter use

Equivalent key

PN Menu -> Input Port -> Down Converter -> Down Converter
 SP Menu -> Input Port -> Down Converter -> Down Converter
 FP Menu -> Input Port -> Down Converter -> Down Converter
 TR Menu -> Input Port -> Down Converter -> Down Converter
 USER Menu -> Input Port -> Down Converter -> Down Converter

SCPI.SENSE.FP(1-1).AVERAge.CLEAr

Syntax

SCPI.SENSE.FP(1-1).AVERAge.CLEAr

Description

Restart averaging (No Read)

Equivalent key

FP Menu -> Average -> Averaging Restart

SCPI.SENSE.FP(1-1).AVERAge.COUNT

Syntax

SCPI.SENSE.FP(1-1).AVERAge.COUNT = <long>
 <long> = SCPI.SENSE.FP(1-1).AVERAge.COUNT

Description

Sets/reads averaging count

Variable

	<Long>
Range	1 to 999
Preset value	16
Unit	-
Resolution	-

Equivalent key

FP Menu -> Average -> Avg Factor

SCPI.SENSE.FP(1-1).AVERAge.STATE

Syntax

SCPI.SENSE.FP(1-1).AVERAge.STATE = <boolean>
 <boolean> = SCPI.SENSE.FP(1-1).AVERAge.STATE

Description Turns on/off averaging function

Variable

	Param
True or -1	Set averaging function to 'ON'
False or 0(Preset value)	Set averaging function to 'OFF'

Equivalent key FP Menu -> Average -> Averaging

SCPI.SENSE.FP(1-1).DCONverter.FREQUENCY

Syntax SCPI.SENSE.FP(1-1).DCONverter.FREQUENCY = <double>
 <double> = SCPI.SENSE.FP(1-1).DCONverter.FREQUENCY

Description Sets/reads the input frequency for down converter.

Variable

When the frequency band is 3G - 10GHz

	<Double>
Range	3G to 10G
Preset value	3G
Unit	Hz
Resolution	100m

When the frequency band is 9G - 26.5GHz

	<Double>
Range	9G to 26.5G
Preset value	9G
Unit	Hz
Resolution	100m

Equivalent key FP Menu -> Setup -> Nominal Frequency

SCPI.SENSE.FP(1-1).DCONverter.SSEarch.EXECute

Syntax SCPI.SENSE.FP(1-1).DCONverter.SSEarch.EXECute

Description Search carrier signal (No Read)

Equivalent key FP Menu -> Setup -> Carrier Search

SCPI.SENSE.FP(1-1).FBANd

Syntax SCPI.SENSE.FP(1-1).FBANd = <string>
 <string> = SCPI.SENSE.FP(1-1).FBANd

Description Selects frequency band

Variable **When the E5052A is used stand-alone, or with the downconverter turned off**

	Param
LOW	Set frequency band to '10M - 1.5GHz'
HIGH(Preset value)	Set frequency band to '300M - 7GHz'

When the downconverter is turned on and with the RF input is set to 'E5052A Direct'

	Param
LOW	Set frequency band to '10M - 1.5GHz'
HIGH(Preset value)	Set frequency band to '300M - 3GHz'

When the downconverter is turned on and with the RF input is set to 'Downconverter'

	Param
BAND3 (Preset value)	Set frequency band to '3G - 10GHz'
BAND4	Set frequency band to '9G - 26.5GHz'

Equivalent key FP Menu -> Setup -> Frequency Band

SCPI.SENSE.FP(1-1).FREQuency.RESolution

Syntax SCPI.SENSE.FP(1-1).FREQuency.RESolution = <string>
 <string> = SCPI.SENSE.FP(1-1).FREQuency.RESolution

Description Sets/reads frequency resolution

Variable

	Param
NARRow	Set frequency resolution to '10Hz'
MIDDLE	Set frequency resolution to '1kHz'

	Param
WIDE(Preset value)	Set frequency resolution to '64kHz'

Equivalent key FP Menu -> Setup -> Freq Resolution

SCPI.SENSE.FP(1-1).POWER.INPUT.LEVEL.MAXIMUM

Syntax SCPI.SENSE.FP(1-1).POWER.INPUT.LEVEL.MAXIMUM = <double>
 <string> = SCPI.SENSE.FP(1-1).POWER.INPUT.LEVEL.MAXIMUM

Description Sets/reads the maximum input level of the downconverter in order to determine the IF Gain

Variable

	<Double>
Range	-45 to 30
Preset value	0
Unit	dBm
Resolution	100m

Equivalent key FP Menu -> Setup -> Max Input Level

SCPI.SENSE.FP(1-1).SWEPT.DWELL

Syntax SCPI.SENSE.FP(1-1).SWEPT.DWELL = <double>
 <double> = SCPI.SENSE.FP(1-1).SWEPT.DWELL

Description Sets/reads the point delay value

Variable

	<Double>
Range	0 to 1
Preset value	0
Unit	s
Resolution	100u

Equivalent key FP Menu -> Setup -> Point Delay

SCPI.SENSE.FP(1-1).SWEp.TIME.DATA

Syntax	<double> = SCPI.SENSE.FP(1-1).SWEp.TIME.DATA
Description	Reads the measurement time (Read Only)
Equivalent key	No equivalent key is available on the front panel.

SCPI.SENSE.PN(1-1).AVERAge.CLEAr

Syntax	SCPI.SENSE.PN(1-1).AVERAge.CLEAr
Description	Averaging restart (No Read)
Equivalent key	PN Menu -> Average -> Averaging Restart

SCPI.SENSE.PN(1-1).AVERAge.COUNT

Syntax	SCPI.SENSE.PN(1-1).AVERAge.COUNT = <long> <long> = SCPI.SENSE.PN(1-1).AVERAge.COUNT
--------	----------------------------------------------------------------------------------------

Description Sets/reads average count

Variable

	<Long>
Range	1 to 999
Preset value	16
Unit	-
Resolution	-

Equivalent key PN Menu -> Average -> Avg Factor

SCPI.SENSE.PN(1-1).AVERAge.STATE

Syntax	SCPI.SENSE.PN(1-1).AVERAge.STATE = <boolean> <boolean> = SCPI.SENSE.PN(1-1).AVERAge.STATE
--------	----------------------------------------------------------------------------------------------

Description turns on/off averaging mode

Variable

	Param
True or -1	Set average mode to 'ON'

	Param
False or 0(Preset value)	Set average mode to 'OFF'

Equivalent key PN Menu -> Average -> Averaging

SCPI.SENSE.PN(1-1).CORRelation.COUNT

Syntax SCPI.SENSE.PN(1-1).CORRelation.COUNT = <long>
 <long> = SCPI.SENSE.PN(1-1).CORRelation.COUNT

Description Sets/reads the number of correlation

Variable

	<Long>
Range	1 to 10000 (standard) 1 (option 011, fixed value)
Preset value	1
Unit	-
Resolution	-

Equivalent key PN Menu -> Average -> Correlation *1

SCPI.SENSE.PN(1-1).DCONverter.FREQUENCY

Syntax SCPI.SENSE.PN(1-1).DCONverter.FREQUENCY = <double>
 <double> = SCPI.SENSE.PN(1-1).DCONverter.FREQUENCY

Description Sets/reads the input frequency to be supplied to the downconverter

Variable

When the frequency band is 3G to 10GHz

	<Double>
Range	3G to 10G
Preset value	3G
Unit	Hz
Resolution	100m

*1. The softkey is not available when option 011 is installed.

When the frequency band is 9G to 26.5GHz

	<Double>
Range	9G to 26.5G
Preset value	9G
Unit	Hz
Resolution	100m

Equivalent key PN Menu -> Setup -> Nominal Frequency

SCPI.SENSE.PN(1-1).DCONverter.SSEarch.EXECute

Syntax SCPI.SENSE.PN(1-1).DCONverter.SSEarch.EXECute

Description Searches carrier signal and reflects the result to the input frequency of the downconverter.
 (No Read)

Equivalent key PN Menu -> Setup -> Carrier Search

SCPI.SENSE.PN(1-1).EPRescaler.DIVision

Syntax SCPI.SENSE.PN(1-1).EPRescaler.DIVision = <double>

<double> = SCPI.SENSE.PN(1-1).EPRescaler.DIVision

Description Sets/Reads the frequency-dividing ration of the input signal

Variable

	<Double>
Description	Dividing ration of the input signal
Range	1 2 4 8 16 32 64 128 256
Preset value	1
Unit	-
Resolution	-

Equivalent key PN Menu -> System -> Instrument Setup -> PN Ext. Prescaler -> Division

SCPI.SENSE.PN(1-1).EPRescaler.POWER

Syntax SCPI.SENSE.PN(1-1).EPRescaler.POWER = <double>

<double> = SCPI.SENSE.PN(1-1).EPRescaler.POWER

Description Sets/Reads the output level of the external frequency divider (input level to RF1 IN/RF2 of the E5052A)

Variable

	<Double>
Description	Output level of the frequency divider
Range	-15 to 0
Preset value	0
Unit	dBm
Resolution	-

Equivalent key PN Menu -> System -> Instrument Setup -> PN Ext. Prescaler -> Output Power Level

SCPI.SENSE.PN(1-1).FBAND

Syntax SCPI.SENSE.PN(1-1).FBAND = <string>
 <string> = SCPI.SENSE.PN(1-1).FBAND

Description Sets/reads frequency band

Variable **When the E5052A is used stand-alone, or with the downconverter turned off**

	Param
BAND1	Set frequency band to '10M - 41MHz'
BAND2	Set frequency band to '39M - 101MHz'
BAND3	Set frequency band to '99M - 1.5GHz'
BAND4(Preset value)	Set frequency band to '300M - 7GHz'

When the downconverter is turned on and with the RF input is set to 'E5052A Direct'

	Param
BAND1	Set frequency band to '10M - 41MHz'
BAND2	Set frequency band to '39M - 101MHz'
BAND3	Set frequency band to '99M - 1.5GHz'
BAND4(Preset value)	Set frequency band to '300M - 3GHz'

When the downconverter is turned on and with the RF input is set to

COM Object Reference
SCPI.SENSE.PN(1-1).FREQUENCY.START

'Downconverter'

	Description
BAND5 (Preset Value)	Set frequency band to '3G - 10GHz'
BAND6	Set frequency band to '9G - 26.5GHz'

Equivalent key PN Menu -> Setup -> Frequency Band

SCPI.SENSE.PN(1-1).FREQUENCY.START

Syntax SCPI.SENSE.PN(1-1).FREQUENCY.START = <double>
 <double> = SCPI.SENSE.PN(1-1).FREQUENCY.START

Description Selects start offset frequency

Variable

	<Double>
Range	1 10 100 1k (standard) 10 100 1k (option 011)
Preset value	1k
Unit	Hz
Resolution	-

Equivalent key PN Menu -> Start -> 1Hz*¹
 PN Menu -> Start -> 10Hz
 PN Menu -> Start -> 100Hz
 PN Menu -> Start -> 1kHz
 PN Menu -> Marker To -> Marker -> Start

SCPI.SENSE.PN(1-1).FREQUENCY.STOP

Syntax SCPI.SENSE.PN(1-1).FREQUENCY.STOP = <double>
 <double> = SCPI.SENSE.PN(1-1).FREQUENCY.STOP

Description Selects stop offset frequency

*1. 1 Hz start offset frequency is not available when option 011 is installed.

Variable

	<Double>
Range	100k 1M 5M 10M*1 20M*1 40M*1
Preset value	10M
Unit	Hz
Resolution	-

*1. This cannot be selected when the frequency range is Band 1 (10 M to 41 MHz).

Equivalent key

- PN Menu -> Stop -> 100 kHz
- PN Menu -> Stop -> 1 MHz
- PN Menu -> Stop -> 5 MHz
- PN Menu -> Stop -> 10 MHz
- PN Menu -> Stop -> 20 MHz
- PN Menu -> Stop -> 40 MHz
- PN Menu -> Marker To -> Marker -> Stop

SCPI.SENSE.PN(1-1).IFGain

Syntax

SCPI.SENSE.PN(1-1).IFGain = <double>
 <double> = SCPI.SENSE.PN(1-1).IFGain

Description

Sets/reads IF Gain at 10 dB steps

Variable

When the standard

	<Double>
Range	0 to 50
Preset Value	20
Unit	dB
Resolution	10

When the option 011

	<Double>
Range	0 to 20
Preset Value	10
Unit	dB

	<Double>
Resolution	10

Equivalent key PN Menu -> Setup -> IF Gain

SCPI.SENSE.PN(1-1).LOBandwidth

Syntax SCPI.SENSE.PN(1-1).LOBandwidth = <string>
 <string> = SCPI.SENSE.PN(1-1).LOBandwidth

Description Sets/readst phase noise Local bandwidth optimization

Variable

	Param
NARRow	Set phase noise Local bandwidth optimization to 'L(f) for > 150kHz'
WIDE(Preset value)	Set phase noise Local bandwidth optimization to 'L(f) for < 150kHz'

Equivalent key PN Menu -> Setup -> LO PhNoise Optimize

SCPI.SENSE.PN(1-1).SEGTable.MEASurement.QUALity

Syntax SCPI.SENSE.PN(1-1).SEGTable.MEASurement.QUALity = <string>
 <string> = SCPI.SENSE.PN(1-1).SEGTable.MEASurement.QUALity

Description Sets/reads the quality level

Variable

	Param
NORMal(Preset value)	Set the quality level to 'Normal'
FAST	Set the quality level to 'Fast'

Equivalent key PN Menu -> Setup -> Measurement Quality

SCPI.SENSE.PN(1-1).SWEep.POINts

Syntax <long> = SCPI.SENSE.PN(1-1).SWEep.POINts

Description Reads the number of measurement points (Read Only)

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

SCPI.SENSE.ROSCillator.SOURce

Syntax <string> = SCPI.SENSE.ROSCillator.SOURce

Description Reads the source of reference oscillator (Read Only)

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

SCPI.SENSE.SP(1-1).AVERage.CLEAr

Syntax SCPI.SENSE.SP(1-1).AVERage.CLEAr

Description Restart averaging (No Read)

Equivalent key SP Menu -> Average/BW -> Averaging Restart

SCPI.SENSE.SP(1-1).AVERage.COUNT

Syntax SCPI.SENSE.SP(1-1).AVERage.COUNT = <long>

<long> = SCPI.SENSE.SP(1-1).AVERage.COUNT

Description Sets/reads the averaging count

Variable

	<Long>
Range	1 to 999
Preset value	16
Unit	-
Resolution	-

Equivalent key SP Menu -> Average/BW -> Avg Factor

SCPI.SENSE.SP(1-1).AVERage.STATe

Syntax SCPI.SENSE.SP(1-1).AVERage.STATe = <boolean>

<boolean> = SCPI.SENSE.SP(1-1).AVERage.STATe

Description Turns on/off averaging function

COM Object Reference
SCPI.SENSE.SP(1-1).AVERAge.TYPE

Variable

	Param
True or -1	Set averaging function to 'ON'
False or 0(Preset value)	Set averaging function to 'OFF'

Equivalent key SP Menu -> Average/BW -> Averaging

SCPI.SENSE.SP(1-1).AVERAge.TYPE

Syntax SCPI.SENSE.SP(1-1).AVERAge.TYPE = <string>
 <string> = SCPI.SENSE.SP(1-1).AVERAge.TYPE

Description Sets/reads averaging type

Variable

	Param
RMS	Set averaging type to 'Pwr Avg (RMS)'
LOGarithmic(Preset value)	Set averaging type to 'Log-Pwr Avg'

Equivalent key SP Menu -> Average/BW -> Averaging Type

SCPI.SENSE.SP(1-1).BANDwidth.RESolution

Syntax SCPI.SENSE.SP(1-1).BANDwidth.RESolution = <double>
 <double> = SCPI.SENSE.SP(1-1).BANDwidth.RESolution

Description Sets/reads RBW value

Variable

	<Double>
Range	1.53 to 400k
Preset value	25k
Unit	Hz
Resolution	-

Equivalent key SP Menu -> Average/BW -> RBW

SCPI.SENSE.SP(1-1).CARRIER.FBAND

Syntax SCPI.SENSE.SP(1-1).CARRIER.FBAND = <string>
 <string> = SCPI.SENSE.SP(1-1).CARRIER.FBAND

Description Sets/reads the carrier frequency band

Variable **When the E5052A is used stand-alone, or with the downconverter turned off, or with the downconverter on and the RF input is set to 'E5052A Direct'**

	Param
LOW	Set the carrier frequency band to '10M-1.5GHz'
HIGH (Preset value)	Set the carrier frequency band to '300M-7GHz'

When the downconverter is turned on and the RF input is set to 'Downconverter'

	Param
BAND3 (Preset value)	Set the carrier frequency band to '3G-10GHz'
BAND4	Set the carrier frequency band to '9G-26.5GHz'

Equivalent key SP Menu -> Start/Center -> Carrier To -> Frequency Band
 SP Menu -> Stop/Span -> Carrier To -> Frequency Band

SCPI.SENSE.SP(1-1).CARRIER.FREQUENCY

Syntax SCPI.SENSE.SP(1-1).CARRIER.FREQUENCY = <double>
 <string> = SCPI.SENSE.SP(1-1).CARRIER.FREQUENCY

Description Sets/reads the input frequency for downconverter

Variable **When frequency band is 3G - 10GHz**

	<Double>
Range	3G to 10G
Preset value	3G
Unit	Hz
Resolution	100m

COM Object Reference
SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER

When frequency band is 9G - 26.5GHz

	<Double>
Range	9M to 26.5G
Preset value	9G
Unit	Hz
Resolution	100m

Equivalent key SP Menu -> Start/Center -> Carrier To -> Nominal Frequency
 SP Menu -> Stop/Span -> Carrier To -> Nominal Frequency

SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER

Syntax SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER

Description Changes the center frequency to N times the carrier frequency (No Read)

Variable

	<Double>
Range	1 to 20
Preset value	-
Unit	-
Resolution	1

Equivalent key SP Menu -> Start/Center -> Carrier To -> Carrier -> Center
 SP Menu -> Start/Center -> Carrier To -> Carrier x2 -> Center
 SP Menu -> Start/Center -> Carrier To -> Carrier x3 -> Center
 SP Menu -> Start/Center -> Carrier To -> Carrier x# -> Center
 SP Menu -> Stop/Span -> Carrier To -> Carrier -> Center
 SP Menu -> Stop/Span -> Carrier To -> Carrier x2 -> Center
 SP Menu -> Stop/Span -> Carrier To -> Carrier x3 -> Center
 SP Menu -> Stop/Span -> Carrier To -> Carrier x# -> Center

SCPI.SENSE.SP(1-1).DETECTOR.FUNCTION

Syntax SCPI.SENSE.SP(1-1).DETECTOR.FUNCTION = <string>
 <string> = SCPI.SENSE.SP(1-1).DETECTOR.FUNCTION

Description Sets/reads detector mode

Variable

	Param
POSitive(Preset value)	Set detector mode to 'Positive'
SAMPle	Set detector mode to 'Sample'

Equivalent key

SP Menu -> Format -> Detector Mode

SCPI.SENSE.SP(1-1).FREQUENCY.CENTER

Syntax

SCPI.SENSE.SP(1-1).FREQUENCY.CENTER = <double>
 <double> = SCPI.SENSE.SP(1-1).FREQUENCY.CENTER

Description

Sets/reads the center value of frequency span

Variable

When the E5052A is used stand-alone, or with the downconverter turned off (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	10M to 117G
Preset value	3G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'E5052A Direct'(Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	10M to 113G
Preset value	3G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'Downconverter'

	<Double>
Range	3G to 26.5G

COM Object Reference
SCPI.SENSE.SP(1-1).FREQUENCY.SPAN

	<Double>
Preset value	3G
Unit	Hz
Resolution	100m

Equivalent key SP Menu -> Start/Center -> Center
 SP Menu -> Stop/Span -> Center
 SP Menu -> Marker To -> Marker -> Center

SCPI.SENSE.SP(1-1).FREQUENCY.SPAN

Syntax SCPI.SENSE.SP(1-1).FREQUENCY.SPAN = <double>
 <double> = SCPI.SENSE.SP(1-1).FREQUENCY.SPAN

Description Sets/reads the span value of frequency span

Variable **When the E5052A is used stand-alone, or with the downconverter turned off, or with the downconverter on and the RF input is set to 'E5052A Direct'(Allowable setting range varies depending on whether the frequency offset is on or off , the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)**

	<Double>
Range	100 to 15M
Preset value	15M
Unit	Hz
Resolution	200m

Equivalent key SP Menu -> Start/Center -> Span
 SP Menu -> Stop/Span -> Span

SCPI.SENSE.SP(1-1).FREQUENCY.START

Syntax SCPI.SENSE.SP(1-1).FREQUENCY.START = <double>
 <double> = SCPI.SENSE.SP(1-1).FREQUENCY.START

Description Sets/reads the start value of frequency span

Variable **When the E5052A is used stand-alone, or with the downconverter turned off (Allowable setting range varies depending on whether the frequency offset is on or off , the LO frequency within the frequency offset, and the conversion mode used in the**

frequency offset)

	<Double>
Range	9M to 116.99999995G
Preset value	3G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'E5052A Direct' RF (Allowable setting range varies depending on whether the frequency offset is on or off , the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	9M to 112.99999995G
Preset value	3G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'Downconverter'

	<Double>
Range	2.9925G to 26.49999995G
Preset value	3G
Unit	Hz
Resolution	100m

Equivalent key SP Menu -> Start/Center -> Start
 SP Menu -> Stop/Span -> Start
 SP Menu -> Marker To -> Marker -> Start

SCPI.SENSE.SP(1-1).FREQUENCY.STOP

Syntax SCPI.SENSE.SP(1-1).FREQUENCY.STOP = <double>
 <double> = SCPI.SENSE.SP(1-1).FREQUENCY.STOP

Description Sets/reads the stop value of frequency span

Variable **When the E5052A is used stand-alone, or with the downconverter turned off (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in**

the frequency offset)

	<Double>
Range	10.00005M to 117.0075G
Preset value	1.0075G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'E5052A Direct' (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	10.00005M to 113.0075G
Preset value	3.0075G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'Downconverter'

	<Double>
Range	3.00000005G to 26.5075G
Preset value	3.0075G
Unit	Hz
Resolution	100m

Equivalent key SP Menu -> Start/Center -> Stop
 SP Menu -> Stop/Span -> Stop
 SP Menu -> Marker To -> Marker -> Stop

SCPI.SENSE.SP(1-1).POWER.RLEVEL

Syntax SCPI.SENSE.SP(1-1).POWER.RLEVEL = <double>
 <double> = SCPI.SENSE.SP(1-1).POWER.RLEVEL

Description Sets/reads the reference level of frequency span

Variable

	<Double>
Range	-45 to 30
Preset value	5
Unit	dBm
Resolution	5

Equivalent key SP Menu -> Setup -> Reference Level

SCPI.SENSE.SP(1-1).SWEep.POINTs

Syntax <long> = SCPI.SENSE.SP(1-1).SWEep.POINTs

Description Reads the number of measurement points (Read Only)

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

SCPI.SENSE.TR(1-1).AVERAge.CLEAr

Syntax SCPI.SENSE.TR(1-1).AVERAge.CLEAr

Description Averaging clear (No Read)

Equivalent key TR Menu -> Average -> Averaging Restart

SCPI.SENSE.TR(1-1).AVERAge.COUNT

Syntax SCPI.SENSE.TR(1-1).AVERAge.COUNT = <long>
 <long> = SCPI.SENSE.TR(1-1).AVERAge.COUNT

Description Sets/reads average count

Variable

	<Long>
Range	1 to 999
Preset value	16
Unit	-
Resolution	-

Equivalent key TR Menu -> Average -> Avg Factor

SCPI.SENSE.TR(1-1).AVERAge.STATe

Syntax SCPI.SENSE.TR(1-1).AVERAge.STATe = <boolean>
 <boolean> = SCPI.SENSE.TR(1-1).AVERAge.STATe

Description Turns on/off averaging function

Variable

	Param
True or -1	Set averaging function to 'ON'
False or 0(Preset value)	Set averaging function to 'OFF'

Equivalent key TR Menu -> Average -> Averaging

SCPI.SENSE.TR(1-1).NARRow.FREQuency.PREFeRence

Syntax SCPI.SENSE.TR(1-1).NARRow.FREQuency.PREFeRence = <double>
 <double> = SCPI.SENSE.TR(1-1).NARRow.FREQuency.PREFeRence

Description Sets/reads the phase reference frequency

Variable **When the E5052A is used stand-alone, or with the downconverter turned off (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)**

	<Double>
Range	9.2M to 117G
Preset value	1G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'E5052A Direct'(Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	9.2M to 113.0008G
Preset value	987.2M
Unit	Hz

	<Double>
Resolution	100m

When the downconverter is turned on and the RF input is set to 'Downconverter' (Allowable setting range varies depending on the target frequency and frequency range of the narrow band mode)

	<Double>
Range	3G to 26.5G
Preset value	3G
Unit	Hz
Resolution	100m

Equivalent key TR Menu -> Setup -> Phase Reference
 TR Menu -> Marker To -> Marker -> Phase Reference

SCPI.SENSE.TR(1-1).NARROW.FREQUENCY.RANGE

Syntax SCPI.SENSE.TR(1-1).NARROW.FREQUENCY.RANGE = <string>
 <string> = SCPI.SENSE.TR(1-1).NARROW.FREQUENCY.RANGE

Description Sets/reads the frequency transient range in narrowband mode

Variable

	Param
R25_6(Preset value)	Set frequency span to '25.6MHz'
R1_6	Set frequency span to '1.6MHz'
R0_2	Set frequency span to '200kHz'
R25K	Set frequency span to 'R25K' (25 kHz)
R3K	Set frequency span to 'R3K' (3 kHz)

Equivalent key TR Menu -> Setup -> Freq Range

SCPI.SENSE.TR(1-1).NARROW.FREQUENCY.TARGET

Syntax SCPI.SENSE.TR(1-1).NARROW.FREQUENCY.TARGET = <double>
 <double> = SCPI.SENSE.TR(1-1).NARROW.FREQUENCY.TARGET

Description Sets/reads the target frequency value in narrowband mode.

COM Object Reference
SCPI.SENSE.TR(1-1).NARROW.SWEEP.POINTS

Variable

When the E5052A is used stand-alone, or with the downconverter turned off (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	10 MHz to 117 GHz
Preset value	1G
Unit	Hz
Resolution	-

When the downconverter is turned on and the RF input is set to 'E5052A Direct'(Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	10M to 113G
Preset value	1G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'Downconverter'

	<Double>
Range	3G to 26.5G
Preset value	3G
Unit	Hz
Resolution	100m

Equivalent key

TR Menu -> Setup -> Target Freq
 TR Menu -> Marker To -> Marker -> Target Freq

SCPI.SENSE.TR(1-1).NARROW.SWEEP.POINTS

Syntax

<long> = SCPI.SENSE.TR(1-1).NARROW.SWEEP.POINTS

Description

Sets/reads the number of measurement points (Read Only)

Equivalent key

No equivalent key is available on the front panel.

SCPI.SENSE.TR(1-1).NARROW.TIME.OFFSet

- Syntax** SCPI.SENSE.TR(1-1).NARROW.TIME.OFFSet = <double>
 <double> = SCPI.SENSE.TR(1-1).NARROW.TIME.OFFSet
- Description** Sets/reads the time offset(delay) relative to the reference point
- Variable**

	<Double>
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

SCPI.SENSE.TR(1-1).NARROW.TIME.REFerence

- Syntax** SCPI.SENSE.TR(1-1).NARROW.TIME.REFerence = <string>
 <string> = SCPI.SENSE.TR(1-1).NARROW.TIME.REFerence
- Description** Sets/reads the reference position
- Variable**

	Param
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

SCPI.SENSE.TR(1-1).NARROW.TIME.SPAN

- Syntax** SCPI.SENSE.TR(1-1).NARROW.TIME.SPAN = <double>
 <double> = SCPI.SENSE.TR(1-1).NARROW.TIME.SPAN
- Description** Sets/reads the time span

COM Object Reference
SCPI.SENSE.TR(1-1).POWER.INPUT.LEVEL.MAXIMUM

Variable

	<Double>
Range	0 to 10.0096
Preset value	100m
Unit	s
Resolution	10n

Equivalent key TR Menu -> Time Offset -> Narrow Span
 TR Menu -> Span -> Narrow Span

SCPI.SENSE.TR(1-1).POWER.INPUT.LEVEL.MAXIMUM

Syntax SCPI.SENSE.TR(1-1).POWER.INPUT.LEVEL.MAXIMUM = <double>
 <double> = SCPI.SENSE.TR(1-1).POWER.INPUT.LEVEL.MAXIMUM

Description Sets/reads maximum input level

Variable

	<Double>
Range	-45 to 30
Preset value	0
Unit	dBm
Resolution	100m

Equivalent key TR Menu -> Setup -> Max Input Level

SCPI.SENSE.TR(1-1).WIDE.FREQUENCY.MAXIMUM

Syntax SCPI.SENSE.TR(1-1).WIDE.FREQUENCY.MAXIMUM = <double>
 <double> = SCPI.SENSE.TR(1-1).WIDE.FREQUENCY.MAXIMUM

Description Sets/reads transient frequency range in the wideband mode

Variable **When the E5052A is used stand-alone with the frequency offset is off, or with the downconverter tuened off and the frequency offset is off**

	<Double>
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

	<Double>
Preset value	1.2G
Unit	Hz
Resolution	-

When the E5052A is used stand-alone with the frequency offset is on, or with the downconverter tuened off and the frequency offset is on (Allowable setting range varies depending on whether the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	3.15G to 117G
Preset value	3.15G
Unit	Hz
Resolution	-

When the downconverter is turned on and the RF input is set to 'E5052A Direct' with the frequency offset is off

	<Double>
Range	150M 300M 600m 900M 1.2G 1.5G 1.8G 2.4G 3G
Preset value	1.2G
Unit	Hz
Resolution	-

When the downconverter is turned on and the RF input is set to 'E5052A Direct' with the frequency offset is on (Allowable setting range varies depending on whether the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	3.15G to 113G
Preset value	3.15G
Unit	Hz
Resolution	-

When the downconverter is turned on and the RF input is set to 'Downconverter'

	<Double>
Range	3.5G to 26.5G
Preset value	3.5G
Unit	Hz
Resolution	100m

Equivalent key TR Menu -> Setup -> Wide Max Frequency

SCPI.SENSE.TR(1-1).WIDE.SWEp.POINts

Syntax <long> = SCPI.SENSE.TR(1-1).WIDE.SWEp.POINts

Description Sets/reads the number of measurement points (Read Only)

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

SCPI.SENSE.TR(1-1).WIDE.TIME.OFFSet

Syntax SCPI.SENSE.TR(1-1).WIDE.TIME.OFFSet = <double>

<double> = SCPI.SENSE.TR(1-1).WIDE.TIME.OFFSet

Description Sets/reads the time offset(delay) relative to the reference point

Variable

	<Double>
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

SCPI.SENSE.TR(1-1).WIDE.TIME.REFerence

Syntax SCPI.SENSE.TR(1-1).WIDE.TIME.REFerence = <string>

<string> = SCPI.SENSE.TR(1-1).WIDE.TIME.REFerence

Description Sets/reads the reference position (wideband)

Variable

	Param
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

SCPI.SENSE.TR(1-1).WIDE.TIME.SPAN

Syntax

SCPI.SENSE.TR(1-1).WIDE.TIME.SPAN = <double>

<double> = SCPI.SENSE.TR(1-1).WIDE.TIME.SPAN

Description

Sets/reads the time span

Variable

	<Double>
Range	0 to 10
Preset value	100m
Unit	s
Resolution	10n

Equivalent key

TR Menu -> Time Offset -> Wide Span

TR Menu -> Span -> Wide Span

SCPI.SENSE.UDConverter.HARMonic

Syntax

SCPI.SENSE.UDConverter.HARMonic = <long>

<long> = SCPI.SENSE.UDConverter.HARMonic

Description

Sets/reads the factor of the frequency offset

Variable

	<Long>
Range	1 to 34
Preset value	1

COM Object Reference
SCPI.SENSE.UDConverter.LO

	<Long>
Unit	-
Resolution	1

Equivalent key PN Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Harmonic #

 SP Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Harmonic #

 FP Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Harmonic #

 TR Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Harmonic #

 USER Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Harmonic #

SCPI.SENSE.UDConverter.LO

Syntax SCPI.SENSE.UDConverter.LO = <double>
 <double> = SCPI.SENSE.UDConverter.LO

Description Sets/reads the LO frequency of the frequency offset

Maximum value which can be set is 330/Harmonic (GHz).

Variable **When the conversion mode used in the frequency offset is $RF=N*LO+IF$ (Allowable setting range varies depending on the set value of Harmonic)**

	<Double>
Range	10M to 330G
Preset value	3G
Unit	-
Resolution	100m

When the conversion mode used in the frequency offset is $RF=N*LO+IF$ (Allowable setting range varies depending on the set value of Harmonic)

	<Double>
Range	500M to 330G
Preset value	3G
Unit	-
Resolution	100m

Equivalent key PN Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> LO Frequency
 SP Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> LO Frequency
 FP Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> LO Frequency
 TR Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> LO Frequency
 USER Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> LO Frequency

SCPI.SENSE.UDConverter.MODE

Syntax SCPI.SENSE.UDConverter.MODE = <string>
 <string> = SCPI.SENSE.UDConverter.MODE

Description Sets/reads the conversion mode of the frequency offset

Variable

	Param
USB (Preset value)	Set conversion mode to 'RF = n * LO + IF'
LSB	Set conversion mode to 'RF = n * LO - IF'

Equivalent key PN Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Conversion Mode
 SP Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Conversion Mode
 FP Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Conversion Mode
 TR Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Conversion Mode
 USER Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Conversion Mode

SCPI.SENSE.UDConverter.STATe

Syntax SCPI.SENSE.UDConverter.STATe = <boolean>
 <boolean> = SCPI.SENSE.UDConverter.STATe

Description Turn on/off frequency offset

COM Object Reference
SCPI.SOURce.FP(1-1).SWEep.PARAmeter

Variable

	Parameter
True or -1	Enable frequency offset mode
False or 0 (preset value)	Disable frequency offset mode

Equivalent key

PN Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Frequency Offset
 SP Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Frequency Offset
 FP Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Frequency Offset
 TR Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Frequency Offset
 USER Menu -> System -> Instrument Setup -> Frequency Offset (User Down Conv.) -> Frequency Offset

SCPI.SOURce.FP(1-1).SWEep.PARAmeter

Syntax

SCPI.SOURce.FP(1-1).SWEep.PARAmeter = <string>
 <string> = SCPI.SOURce.FP(1-1).SWEep.PARAmeter

Description

Sets/reads sweep parameter

Variable

	Param
CONTRol(Preset value)	Set sweep parameter to 'Control Voltage'
POWER	Set sweep parameter to 'Power Voltage'

Equivalent key

FP Menu -> Setup -> Sweep Parameter

SCPI.SOURce.FP(1-1).SWEep.POINts

Syntax

SCPI.SOURce.FP(1-1).SWEep.POINts = <long>
 <long> = SCPI.SOURce.FP(1-1).SWEep.POINts

Description

Sets/reads the number of measurement points

Variable

	<Long>
Range	2 to 1001
Preset value	201
Unit	-
Resolution	-

Equivalent key FP Menu -> Setup -> Points

SCPI.SOURce.FP(1-1).VOLTage.CONTRol.CENTer

Syntax SCPI.SOURce.FP(1-1).VOLTage.CONTRol.CENTer = <double>
 <double> = SCPI.SOURce.FP(1-1).VOLTage.CONTRol.CENTer

Description Vcontrol center

Variable

	<Double>
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

SCPI.SOURce.FP(1-1).VOLTage.CONTRol.SPAN

Syntax SCPI.SOURce.FP(1-1).VOLTage.CONTRol.SPAN = <double>
 <double> = SCPI.SOURce.FP(1-1).VOLTage.CONTRol.SPAN

Description Vcontrol span

Variable

	<Double>
Range	0 to 50
Preset value	100u

COM Object Reference
SCPI.SOURce.FP(1-1).VOLTage.CONTRol.START

	<Double>
Unit	V
Resolution	100u

Equivalent key FP Menu -> Start/Center -> DC Control Span
 FP Menu -> Stop/Span -> DC Control Span

SCPI.SOURce.FP(1-1).VOLTage.CONTRol.STARTt

Syntax SCPI.SOURce.FP(1-1).VOLTage.CONTRol.STARTt = <double>
 <double> = SCPI.SOURce.FP(1-1).VOLTage.CONTRol.STARTt

Description Vcontrol start

Variable

	<Double>
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

SCPI.SOURce.FP(1-1).VOLTage.CONTRol.STOP

Syntax SCPI.SOURce.FP(1-1).VOLTage.CONTRol.STOP = <double>
 <double> = SCPI.SOURce.FP(1-1).VOLTage.CONTRol.STOP

Description Vcontrol stop

Variable

	<Double>
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

SCPI.SOURce.FP(1-1).VOLTage.POWer.CENTer

Syntax SCPI.SOURce.FP(1-1).VOLTage.POWer.CENTer = <double>
 <double> = SCPI.SOURce.FP(1-1).VOLTage.POWer.CENTer

Description Vpower center

Variable

	<Double>
Range	0 to 16
Preset value	500u
Unit	V
Resolution	500u

Equivalent key FP Menu -> Start/Center -> DC Power Center
 FP Menu -> Stop/Span -> DC Power Center

SCPI.SOURce.FP(1-1).VOLTage.POWer.SPAN

Syntax SCPI.SOURce.FP(1-1).VOLTage.POWer.SPAN = <double>
 <double> = SCPI.SOURce.FP(1-1).VOLTage.POWer.SPAN

Description Vpower span

Variable

	<Double>
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

SCPI.SOURce.FP(1-1).VOLTage.POWer.STARt

Syntax SCPI.SOURce.FP(1-1).VOLTage.POWer.STARt = <double>

COM Object Reference
SCPI.SOURce.FP(1-1).VOLTage.POWer.STOP

<double> = SCPI.SOURce.FP(1-1).VOLTage.POWer.STARt

Description Vpower start

Variable

	<Double>
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

SCPI.SOURce.FP(1-1).VOLTage.POWer.STOP

Syntax SCPI.SOURce.FP(1-1).VOLTage.POWer.STOP = <double>

<double> = SCPI.SOURce.FP(1-1).VOLTage.POWer.STOP

Description Vpower stop

Variable

	<Double>
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

SCPI.SOURce.VOLTage.CONTRol.AFC.FBANd

Syntax SCPI.SOURce.VOLTage.CONTRol.AFC.FBANd = <string>

<string> = SCPI.SOURce.VOLTage.CONTRol.AFC.FBANd

Description Sets/reads the frequency band in the auto frequency control function

Variable

When the E5052A is used stand-alone, or with the downconverter turned off

	Param
LOW	Set the frequency band in the auto frequency control function to '10M-1.5GHz'
HIGH(Preset value)	Set the frequency band in the auto frequency control function to '300M-7GHz'

When the downconverter is turned on and the RF input is set to 'E5052A Direct'

	Param
LOW	Set the frequency band in the auto frequency control function to '10M-1.5GHz'
HIGH(Preset value)	Set the frequency band in the auto frequency control function to '300M-3GHz'

When the downconverter is turned on and the RF input is set to 'Downconverter'

	Param
BAND3	Set the frequency band in the auto frequency control function to '3G-10GHz'
BAND4	Set the frequency band in the auto frequency control function to '9G-26.5GHz'

Equivalent key

PN Menu -> DC Control Voltage -> Auto Freq Control -> Frequency Band
 SP Menu -> DC Control Voltage -> Auto Freq Control -> Frequency Band
 FP Menu -> DC Control Voltage -> Auto Freq Control -> Frequency Band
 TR Menu -> DC Control Voltage -> Auto Freq Control -> Frequency Band
 USER Menu -> DC Control Voltage -> Auto Freq Control -> Frequency Band

SCPI.SOURce.VOLTage.CONTRol.AFC.IMMEDIATE

Syntax

SCPI.SOURce.VOLTage.CONTRol.AFC.IMMEDIATE

Description

Executes the auto frequency control once. (No Read)

Equivalent key

PN Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status
 SP Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status
 FP Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status
 TR Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status
 USER Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status

SCPI.SOURce.VOLTage.CONTRol.AFC.INPut.LEVel.MAXimum

Syntax SCPI.SOURce.VOLTage.CONTRol.AFC.INPut.LEVel.MAXimum = <double>
 <double> = SCPI.SOURce.VOLTage.CONTRol.AFC.INPut.LEVel.MAXimum

Description Sets/reads the maximum input level in order to determine the IF Gain of the downconverter.

Variable

	<Double>
Range	-45 to30
Preset value	0
Unit	dBm
Resolution	100m

Equivalent key PN Menu -> DC Control Voltage -> Auto Freq Control -> Max Input Level
 SP Menu -> DC Control Voltage -> Auto Freq Control -> Max Input Level
 FP Menu -> DC Control Voltage -> Auto Freq Control -> Max Input Level
 TR Menu -> DC Control Voltage -> Auto Freq Control -> Max Input Level
 USER Menu -> DC Control Voltage -> Auto Freq Control -> Max Input Level

SCPI.SOURce.VOLTage.CONTRol.AFC.ITERation

Syntax SCPI.SOURce.VOLTage.CONTRol.AFC.ITERation = <long>
 <long> = SCPI.SOURce.VOLTage.CONTRol.AFC.ITERation

Description Sets/reads the maximum number of iterations for the DC control voltage-setting loops

Variable

	<Long>
Range	1 to 99
Preset value	10
Unit	-
Resolution	-

Equivalent key PN Menu -> DC Control Voltage -> Auto Freq Control -> Max Iteration
 SP Menu -> DC Control Voltage -> Auto Freq Control -> Max Iteration
 FP Menu -> DC Control Voltage -> Auto Freq Control -> Max Iteration

TR Menu -> DC Control Voltage -> Auto Freq Control -> Max Iteration
 USER Menu -> DC Control Voltage -> Auto Freq Control -> Max Iteration

SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.HIGH

Syntax SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.HIGH = <double>
 <double> = SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.HIGH

Description Sets/reads the maximum DC control voltage limit

Variable

	<Double>
Range	-15 to 35
Preset value	35
Unit	V
Resolution	100u

Equivalent key PN Menu -> DC Control Voltage -> Auto Freq Control -> Max Ctrl Voltage Limit
 SP Menu -> DC Control Voltage -> Auto Freq Control -> Max Ctrl Voltage Limit
 FP Menu -> DC Control Voltage -> Auto Freq Control -> Max Ctrl Voltage Limit
 TR Menu -> DC Control Voltage -> Auto Freq Control -> Max Ctrl Voltage Limit
 USER Menu -> DC Control Voltage -> Auto Freq Control -> Max Ctrl Voltage Limit

SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.LOW

Syntax SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.LOW = <double>
 <double> = SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.LOW

Description Sets/reads the minimum DC control voltage limit

Variable

	<Double>
Range	-15 to 35
Preset value	-15
Unit	V
Resolution	100u

Equivalent key PN Menu -> DC Control Voltage -> Auto Freq Control -> Min Ctrl Voltage Limit
 SP Menu -> DC Control Voltage -> Auto Freq Control -> Min Ctrl Voltage Limit

COM Object Reference
SCPI.SOURce.VOLTage.CONTRol.AFC.SENSitivity

FP Menu -> DC Control Voltage -> Auto Freq Control -> Min Ctrl Voltage Limit
TR Menu -> DC Control Voltage -> Auto Freq Control -> Min Ctrl Voltage Limit
USER Menu -> DC Control Voltage -> Auto Freq Control -> Min Ctrl Voltage Limit

SCPI.SOURce.VOLTage.CONTRol.AFC.SENSitivity

Syntax SCPI.SOURce.VOLTage.CONTRol.AFC.SENSitivity = <double>
<double> = SCPI.SOURce.VOLTage.CONTRol.AFC.SENSitivity

Description Sets/reads the tuning sensitivity

Variable

	<Double>
Range	-5G to 5G
Preset value	10M
Unit	Hz/V
Resolution	1

Equivalent key PN Menu -> DC Control Voltage -> Auto Freq Control -> Sensitivity
SP Menu -> DC Control Voltage -> Auto Freq Control -> Sensitivity
FP Menu -> DC Control Voltage -> Auto Freq Control -> Sensitivity
TR Menu -> DC Control Voltage -> Auto Freq Control -> Sensitivity
USER Menu -> DC Control Voltage -> Auto Freq Control -> Sensitivity

SCPI.SOURce.VOLTage.CONTRol.AFC.STATE

Syntax SCPI.SOURce.VOLTage.CONTRol.AFC.STATE = <boolean>
<boolean> = SCPI.SOURce.VOLTage.CONTRol.AFC.STATE

Description Turns on/off the auto frequency control function

Variable

	Param
True or -1	Turn on the auto frequency control function mode
False or 0(Preset value)	Turn off the auto frequency control function mode

Equivalent key PN Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status
SP Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status

FP Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status
 TR Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status
 USER Menu -> DC Control Voltage -> Auto Freq Control -> AFC Status

SCPI.SOURce.VOLTage.CONTRol.AFC.TARGET

Syntax

SCPI.SOURce.VOLTage.CONTRol.AFC.TARGET = <double>
 <double> = SCPI.SOURce.VOLTage.CONTRol.AFC.TARGET

Description

Sets/reads the target frequency in the auto frequency control function

Variable

When the E5052A is used stand-alone, or with the downconverter turned off (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	10M to 117G
Preset value	1G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'E5052A Direct' (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, and the conversion mode used in the frequency offset)

	<Double>
Range	10M to 113G
Preset value	3G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'Downconverter'

	<Double>
Range	3G to 26.5G
Preset value	3G
Unit	Hz
Resolution	100m

COM Object Reference
SCPI.SOURce.VOLTage.CONTRol.AFC.TOLerance

Equivalent key PN Menu -> DC Control Voltage -> Auto Freq Control -> Target
SP Menu -> DC Control Voltage -> Auto Freq Control -> Target
FP Menu -> DC Control Voltage -> Auto Freq Control -> Target
TR Menu -> DC Control Voltage -> Auto Freq Control -> Target
USER Menu -> DC Control Voltage -> Auto Freq Control -> Target

SCPI.SOURce.VOLTage.CONTRol.AFC.TOLerance

Syntax SCPI.SOURce.VOLTage.CONTRol.AFC.TOLerance = <double>
<double> = SCPI.SOURce.VOLTage.CONTRol.AFC.TOLerance

Description Sets/reads the tolerance limit

Variable

	<Double>
Range	20 to 10M
Preset value	1k
Unit	Hz
Resolution	100m

Equivalent key PN Menu -> DC Control Voltage -> Auto Freq Control -> Tolerance
SP Menu -> DC Control Voltage -> Auto Freq Control -> Tolerance
FP Menu -> DC Control Voltage -> Auto Freq Control -> Tolerance
TR Menu -> DC Control Voltage -> Auto Freq Control -> Tolerance
USER Menu -> DC Control Voltage -> Auto Freq Control -> Tolerance

SCPI.SOURce.VOLTage.CONTRol.CORRection.COLLect.ACQuire

Syntax SCPI.SOURce.VOLTage.CONTRol.CORRection.COLLect.ACQuire

Description Execute DC CTRL DRIFT CAL (No Read)

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

SCPI.SOURce.VOLTage.CONTRol.CORRection.STATe

Syntax SCPI.SOURce.VOLTage.CONTRol.CORRection.STATe = <boolean>
<boolean> = SCPI.SOURce.VOLTage.CONTRol.CORRection.STATe

Description DC CTRL DRIFT CAL state

Variable

	Param
True or -1	Set DC CTRL DRIFT CAL state to 'ON'
False or 0(Preset value)	Set DC CTRL DRIFT CAL state to 'OFF'

Equivalent key

No equivalent key is available on the front panel.

SCPI.SOURce.VOLTage.CONTRol.DELay

Syntax

SCPI.SOURce.VOLTage.CONTRol.DELay = <double>
 <double> = SCPI.SOURce.VOLTage.CONTRol.DELay

Description

DC Control delay(sec)

Variable

	<Double>
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

SCPI.SOURce.VOLTage.CONTRol.LEVel.AMPLitude

Syntax

SCPI.SOURce.VOLTage.CONTRol.LEVel.AMPLitude = <double>
 <double> = SCPI.SOURce.VOLTage.CONTRol.LEVel.AMPLitude

Description

fixed Vcontrol value at Vpower sweep

Variable

	<Double>
Range	-15 to 35

COM Object Reference
SCPI.SOURce.VOLTage.CONTRol.LEVel.STATE

	<Double>
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

SCPI.SOURce.VOLTage.CONTRol.LEVel.STATE

Syntax SCPI.SOURce.VOLTage.CONTRol.LEVel.STATE = <boolean>
 <boolean> = SCPI.SOURce.VOLTage.CONTRol.LEVel.STATE

Description fixed Vcontrol On/Off at Vpower sweep

Variable

	Param
True or -1	Set fixed Vcontrol On/Off at Vpower sweep mode 'ON'
False or 0(Preset value)	Set fixed Vcontrol On/Off at Vpower sweep mode '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

SCPI.SOURce.VOLTage.CONTRol.LIMit.HIGH

Syntax SCPI.SOURce.VOLTage.CONTRol.LIMit.HIGH = <double>
 <double> = SCPI.SOURce.VOLTage.CONTRol.LIMit.HIGH

Description fixed Vcontrol high limit, Resolution 0.1mV

Variable

	<Double>
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

SCPI.SOURce.VOLTage.CONTRol.LIMit.LOW

Syntax

SCPI.SOURce.VOLTage.CONTRol.LIMit.LOW = <double>
 <double> = SCPI.SOURce.VOLTage.CONTRol.LIMit.LOW

Description

fixed Vcontrol low limit, Resolution 0.1mdV

Variable

	<Double>
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

SCPI.SOURce.VOLTage.POWer.DELay

Syntax

SCPI.SOURce.VOLTage.POWer.DELay = <double>
 <double> = SCPI.SOURce.VOLTage.POWer.DELay

COM Object Reference
SCPI.SOURce.VOLTage.POWER.LEVel.AMPLitude

Description Src Power setting delay(sec)

Variable

	<Double>
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

SCPI.SOURce.VOLTage.POWER.LEVel.AMPLitude

Syntax
 SCPI.SOURce.VOLTage.POWER.LEVel.AMPLitude = <double>
 <double> = SCPI.SOURce.VOLTage.POWER.LEVel.AMPLitude

Description fixed Vpower value at Vcontrol sweep

Variable

	<Double>
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

SCPI.SOURce.VOLTage.POWER.LEVel.STATE

Syntax
 SCPI.SOURce.VOLTage.POWER.LEVel.STATE = <boolean>

<boolean> = SCPI.SOURce.VOLTage.POWer.LEVel.STATe

Description fixed Vpower On/Off at Vcontrol sweep

Variable

	Param
True or -1	Set fixed Vpower On/Off at Vcontrol sweep mode 'ON'
False or 0(Preset value)	Set fixed Vpower On/Off at Vcontrol sweep mode '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

SCPI.SOURce.VOLTage.POWer.LIMit.HIGH

Syntax
 SCPI.SOURce.VOLTage.POWer.LIMit.HIGH = <double>
 <double> = SCPI.SOURce.VOLTage.POWer.LIMit.HIGH

Description fixed Vpower high limit, Resolution 1mV

Variable

	<Double>
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

SCPI.SOURce.VOLTage.POWer.LIMit.LOW

Syntax
 SCPI.SOURce.VOLTage.POWer.LIMit.LOW = <double>

COM Object Reference
SCPI.STATus.OPERation.BIT12.CLEAr

<double> = SCPI.SOURce.VOLTage.POWer.LIMit.LOW

Description fixed Vpower low limit, Resolution 1mdV

Variable

	<Double>
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

SCPI.STATus.OPERation.BIT12.CLEAr

Syntax SCPI.STATus.OPERation.BIT12.CLEAr = <long>

Description Clears operation-program status condition register (No Read)

Variable

	<Long>
Range	0 to 14
Preset value	-
Unit	-
Resolution	-

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

SCPI.STATus.OPERation.BIT12.CONDition

Syntax <long> = SCPI.STATus.OPERation.BIT12.CONDition

Description Reads operation-program status register (Read Only)

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

SCPI.STATus.OPERation.BIT12.ENABLE

Syntax SCPI.STATus.OPERation.BIT12.ENABLE = <long>
 <long> = SCPI.STATus.OPERation.BIT12.ENABLE

Description Sets/reads operation-program status enable register

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.OPERation.BIT12.EVENT

Syntax <long> = SCPI.STATus.OPERation.BIT12.EVENT

Description Reads operation-program status event register (Read Only)

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

SCPI.STATus.OPERation.BIT12.NTRansition

Syntax SCPI.STATus.OPERation.BIT12.NTRansition = <long>
 <long> = SCPI.STATus.OPERation.BIT12.NTRansition

Description Sets/reads operation-program status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.OPERation.BIT12.PTRansition

Syntax SCPI.STATus.OPERation.BIT12.PTRansition = <long>
<long> = SCPI.STATus.OPERation.BIT12.PTRansition

Description Sets/reads operation-program status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767
Unit	-
Resolution	-

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

SCPI.STATus.OPERation.BIT12.SET

Syntax SCPI.STATus.OPERation.BIT12.SET = <long>

Description Sets operation-program status condition register (No Read)

Variable

	<Long>
Range	0 to 14
Preset value	-
Unit	-
Resolution	-

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

SCPI.STATus.OPERation.CONDition

Syntax <long> = SCPI.STATus.OPERation.CONDition

Description Reads operation status conditional register value (Read Only)

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

SCPI.STATus.OPERation.ENABLE

Syntax SCPI.STATus.OPERation.ENABLE = <long>
 <long> = SCPI.STATus.OPERation.ENABLE

Description Set/reads operation status enable register

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.OPERation.EVENT

Syntax <long> = SCPI.STATus.OPERation.EVENT

Description Reads operation status event register (Read Only)

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

SCPI.STATus.OPERation.NTRansition

Syntax SCPI.STATus.OPERation.NTRansition = <long>
 <long> = SCPI.STATus.OPERation.NTRansition

Description Sets/reads operation status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.OPERation.PTRansition

Syntax SCPI.STATus.OPERation.PTRansition = <long>
<long> = SCPI.STATus.OPERation.PTRansition

Description Sets/reads operation status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767
Unit	-
Resolution	-

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

SCPI.STATus.PRESet

Syntax SCPI.STATus.PRESet

Description Reset status registers (No Read)

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

SCPI.STATus.QUEStionable.CONDItion

Syntax <long> = SCPI.STATus.QUEStionable.CONDItion

Description Reads questionable status conditional register value (Read Only)

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

SCPI.STATus.QUEStionable.CURRent.ENABLE

Syntax SCPI.STATus.QUEStionable.CURRent.ENABLE = <long>
<long> = SCPI.STATus.QUEStionable.CURRent.ENABLE

Description Sets/reads questionable-current status enable register

Variable

	<Long>
Range	0 to 65535

	<Long>
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.CURRent.EVENT

Syntax <long> = SCPI.STATus.QUEStionable.DCONverter.EVENT

Description Reads questionable downconverter status event register value. (Read Only)

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

SCPI.STATus.QUEStionable.DCONverter.ENABLE

Syntax SCPI.STATus.QUEStionable.DCONverter.ENABLE = <long>

<long> = SCPI.STATus.QUEStionable.DCONverter.ENABLE

Description Sets/reads questionable downconverter status enable register value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.DCONverter.EVENT

Syntax <long> = SCPI.STATus.QUEStionable.DCONverter.EVENT

Description Reads questionable-downconverter status event register value (Read Only)

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

SCPI.STATus.QUEStionable.ENABLE

Syntax SCPI.STATus.QUEStionable.ENABLE = <long>

COM Object Reference
SCPI.STATus.QUEStionable.EVENT

<long> = SCPI.STATus.QUEStionable.ENABLE

Description Sets/reads questionable status enable register

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.EVENT

Syntax <long> = SCPI.STATus.QUEStionable.EVENT

Description Reads questionable status event register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.CONDITION

<long> = SCPI.STATus.QUEStionable.LIMit.CONDITION

Description Reads the questionable limit conditional register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.ENABLE

Syntax SCPI.STATus.QUEStionable.LIMit.ENABLE = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.ENABLE

Description Sets/reads the questionable limit status enable value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.EVENT

<long> = SCPI.STATus.QUEStionable.LIMit.EVENT

Description Reads the questionable limit status event register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.FP(1-1).CONDition

<long> = SCPI.STATus.QUEStionable.LIMit.FP(1-1).CONDition

Description Reads the questionable limit FP conditional register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.FP(1-1).ENABLE

Syntax SCPI.STATus.QUEStionable.LIMit.FP(1-1).ENABLE = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.FP(1-1).ENABLE

Description Sets/reads the questionable limit FP status enable value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.FP(1-1).EVENT

<long> = SCPI.STATus.QUEStionable.LIMit.FP(1-1).EVENT

Description Reads the questionable limit FP status event register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.FP(1-1).NTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.FP(1-1).NTRansition = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.FP(1-1).NTRansition

COM Object Reference
SCPI.STATus.QUEStionable.LIMit.FP(1-1).PTRansition

Description Sets/reads the questionable limit FP status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.FP(1-1).PTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.FP(1-1).PTRansition = <long>
<long> = SCPI.STATus.QUEStionable.LIMit.FP(1-1).PTRansition

Description Sets/reads the questionable limit FP status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.NTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.NTRansition = <long>
<long> = SCPI.STATus.QUEStionable.LIMit.NTRansition

Description Sets/reads the questionable limit status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0

	<Long>
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.PN(1-1).CONDition

<long> = SCPI.STATus.QUEStionable.LIMit.PN(1-1).CONDition

Description Reads the questionable limit PN conditional register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.PN(1-1).ENABLE

Syntax SCPI.STATus.QUEStionable.LIMit.PN(1-1).ENABLE = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.PN(1-1).ENABLE

Description Sets/reads the questionable limit PN status enable value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.PN(1-1).EVENT

<long> = SCPI.STATus.QUEStionable.LIMit.PN(1-1).EVENT

Description Reads the questionable limit PN status event register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.PN(1-1).NTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.PN(1-1).NTRansition = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.PN(1-1).NTRansition

COM Object Reference
SCPI.STATus.QUEStionable.LIMit.PN(1-1).PTRansition

Description Sets/reads the questionable limit PN status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.PN(1-1).PTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.PN(1-1).PTRansition = <long>
<long> = SCPI.STATus.QUEStionable.LIMit.PN(1-1).PTRansition

Description Sets/reads the questionable limit PN status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.PTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.PTRansition = <long>
<long> = SCPI.STATus.QUEStionable.LIMit.PTRansition

Description Sets/reads the questionable limit status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767

	<Long>
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.SP(1-1).CONDition

<long> = SCPI.STATus.QUEStionable.LIMit.SP(1-1).CONDition

Description Reads the questionable limit SP conditional register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.SP(1-1).ENABLE

Syntax SCPI.STATus.QUEStionable.LIMit.SP(1-1).ENABLE = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.SP(1-1).ENABLE

Description Sets/reads the questionable limit SP status enable value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.SP(1-1).EVENT

<long> = SCPI.STATus.QUEStionable.LIMit.SP(1-1).EVENT

Description Reads the questionable limit SP status event register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.SP(1-1).NTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.SP(1-1).NTRansition = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.SP(1-1).NTRansition

COM Object Reference
SCPI.STATus.QUEStionable.LIMit.SP(1-1).PTRansition

Description Sets/reads the questionable limit SP status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.SP(1-1).PTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.SP(1-1).PTRansition = <long>
<long> = SCPI.STATus.QUEStionable.LIMit.SP(1-1).PTRansition

Description Sets/reads the questionable limit SP status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.TR(1-1).CONDition

<long> = SCPI.STATus.QUEStionable.LIMit.TR(1-1).CONDition

Description Reads the questionable limit TR conditional register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.TR(1-1).ENABle

Syntax SCPI.STATus.QUEStionable.LIMit.TR(1-1).ENABle = <long>
<long> = SCPI.STATus.QUEStionable.LIMit.TR(1-1).ENABle

Description Sets/reads the questionable limit TR status enable value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.TR(1-1).EVENT

<long> = SCPI.STATus.QUEStionable.LIMit.TR(1-1).EVENT

Description Reads the questionable limit TR status event register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.TR(1-1).NTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.TR(1-1).NTRansition = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.TR(1-1).NTRansition

Description Sets/reads the questionable limit TR status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.TR(1-1).PTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.TR(1-1).PTRansition = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.TR(1-1).PTRansition

Description Sets/reads the questionable limit TR status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.USER(1-1).CONDition

<long> = SCPI.STATus.QUEStionable.LIMit.USER(1-1).CONDition

Description Reads the questionable limit USER conditional register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.USER(1-1).ENABLE

Syntax SCPI.STATus.QUEStionable.LIMit.USER(1-1).ENABLE = <long>

<long> = SCPI.STATus.QUEStionable.LIMit.USER(1-1).ENABLE

Description Sets/reads the questionable limit USER status enable value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.USER(1-1).EVENT

<long> = SCPI.STATus.QUEStionable.LIMit.USER(1-1).EVENT

Description Reads the questionable limit USER status event register value (Read Only)

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

SCPI.STATus.QUEStionable.LIMit.USER(1-1).NTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.USER(1-1).NTRansition = <long>
 <long> = SCPI.STATus.QUEStionable.LIMit.USER(1-1).NTRansition

Description Sets/reads the questionable limit USER status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.LIMit.USER(1-1).PTRansition

Syntax SCPI.STATus.QUEStionable.LIMit.USER(1-1).PTRansition = <long>
 <long> = SCPI.STATus.QUEStionable.LIMit.USER(1-1).PTRansition

Description Sets/reads the questionable limit USER status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.MISC.ENABLE

Syntax SCPI.STATus.QUEStionable.MISC.ENABLE = <long>
 <long> = SCPI.STATus.QUEStionable.MISC.ENABLE

Description Sets/reads questionable-misc status enable register

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.MISC.EVENT

Syntax <long> = SCPI.STATus.QUEStionable.MISC.EVENT

Description Reads questionable-misc status event register value (Read Only)

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

SCPI.STATus.QUEStionable.NTRansition

Syntax SCPI.STATus.QUEStionable.NTRansition = <long>

<long> = SCPI.STATus.QUEStionable.NTRansition

Description Sets/reads questionable status negative transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.PHASE.ENABLE

Syntax SCPI.STATus.QUEStionable.PHASE.ENABLE = <long>

<long> = SCPI.STATus.QUEStionable.PHASE.ENABLE

Description Sets/reads questionable-phase status enable register

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.PHASE.EVENT

Syntax <long> = SCPI.STATus.QUEStionable.PHASE.EVENT

Description Reads questionable-phase status event register (Read Only)

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

SCPI.STATus.QUEStionable.POWER.ENABLE

Syntax SCPI.STATus.QUEStionable.POWER.ENABLE = <long>

<long> = SCPI.STATus.QUEStionable.POWER.ENABLE

Description Sets/reads questionable-power status enable register

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATus.QUEStionable.POWER.EVENT

Syntax <long> = SCPI.STATus.QUEStionable.POWER.EVENT

Description Reads questionable-power status event register value (Read Only)

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

SCPI.STATUS.QUESTIONABLE.PTRANSITION

Syntax SCPI.STATUS.QUESTIONABLE.PTRANSITION = <long>
<long> = SCPI.STATUS.QUESTIONABLE.PTRANSITION

Description Sets/reads questionable status positive transition filter value

Variable

	<Long>
Range	0 to 65535
Preset value	32767
Unit	-
Resolution	-

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

SCPI.STATUS.QUESTIONABLE.REFERENCE.ENABLE

Syntax SCPI.STATUS.QUESTIONABLE.REFERENCE.ENABLE = <long>
<long> = SCPI.STATUS.QUESTIONABLE.REFERENCE.ENABLE

Description Sets/reads questionable-reference signal status enable register

Variable

	<Long>
Range	0 to 65535
Preset value	0
Unit	-
Resolution	-

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

SCPI.STATUS.QUESTIONABLE.REFERENCE.EVENT

Syntax <long> = SCPI.STATUS.QUESTIONABLE.REFERENCE.EVENT

Description Reads questionable-reference signal status event register value (Read Only)

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

SCPI.SYSTem.BACKlight.STATe

Syntax SCPI.SYSTem.BACKlight.STATe = <boolean>
 <boolean> = SCPI.SYSTem.BACKlight.STATe

Description Turns on/off backlight

Variable

	Param
True or -1(Preset value)	Turns on the LCD's backlight
False or 0	Turns off the LCD's backlight

Equivalent key PN Menu -> System -> Backlight
 SP Menu -> System -> Backlight
 FP Menu -> System -> Backlight
 TR Menu -> System -> Backlight
 USER Menu -> System -> Backlight

SCPI.SYSTem.BEEPer.COMPLete.IMMEDIATE

Syntax SCPI.SYSTem.BEEPer.COMPLete.IMMEDIATE

Description Makes beep sound for operation completion (No Read)

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

SCPI.SYSTem.BEEPer.COMPLete.STATe

Syntax SCPI.SYSTem.BEEPer.COMPLete.STATe = <boolean>
 <boolean> = SCPI.SYSTem.BEEPer.COMPLete.STATe

Description Turns on/off the beep for operation completion

Variable

	Param
True or -1(Preset value)	Set the beep for operation completion to 'ON'

	Param
False or 0	Set the beep for operation completion 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

SCPI.SYSTem.BEEPer.WARning.IMMediate

Syntax SCPI.SYSTem.BEEPer.WARning.IMMediate

Description Makes beep sound for warning (No Read)

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

SCPI.SYSTem.BEEPer.WARning.STATe

Syntax SCPI.SYSTem.BEEPer.WARning.STATe = <boolean>
 <boolean> = SCPI.SYSTem.BEEPer.WARning.STATe

Description Turns on/off the beep for warning

Variable

	Param
True or -1	Set the beep for warning to 'ON'
False or 0(Preset value)	Set the beep for warning 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

SCPI.SYSTem.DATE[_Q] year, month, day

Syntax SCPI.SYSTem.DATE_Q year, month, day (Query)
 SCPI.SYSTem.DATE year, month, day (Set)

Description Sets/reads system date

Variable

	<Long >
Range	1980 to 2030
Preset value	-
Unit	-
Resolution	-

	<Long >
Range	1 to 12
Preset value	-
Unit	-
Resolution	-

	<Long >
Range	1 to 31
Preset value	-
Unit	-
Resolution	-

Examples

```
Dim yy As Long
Dim mm As Long
Dim dd As Long

SCPI.SYSTem.DATE 2004, 6, 1
SCPI.SYSTem.DATE_Q yy, mm, dd
```

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

SCPI.SYSTem.ERROR.NEXT_Q err_no, err_desc

Syntax SCPI.SYSTem.ERROR.NEXT_Q err_no, err_desc

Description Get error code & description (Read Only)

COM Object Reference
SCPI.SYSTem.KLOCK.KBD

Examples

```
Dim err_no As long  
Dim err_desc As String  
  
SCPI.SYSTem.ERROR.NEXT_Q err_no, err_desc
```

Equivalent key

No equivalent key is available on the front panel.

SCPI.SYSTem.KLOCK.KBD

Syntax

SCPI.SYSTem.KLOCK.KBD = <boolean>
<boolean> = SCPI.SYSTem.KLOCK.KBD

Description

Sets/reads front panel and keyboard lock state

Variable

	Param
True or -1	Set front panel and keyboard lock state to 'ON'
False or 0(Preset value)	Set front panel and keyboard lock state to 'OFF'

Equivalent key

No equivalent key is available on the front panel.

SCPI.SYSTem.KLOCK.MOUSe

Syntax

SCPI.SYSTem.KLOCK.MOUSe = <boolean>
<boolean> = SCPI.SYSTem.KLOCK.MOUSe

Description

Set/Get touch screen and mouse lock state

Variable

	Param
True or -1	Set touch screen and mouse lock state to 'ON'
False or 0(Preset value)	Set touch screen and mouse lock state to 'OFF'

Equivalent key

No equivalent key is available on the front panel.

SCPI.SYSTem.POFF

Syntax

SCPI.SYSTem.POFF

Description

Power off the instrument (No Read)

Equivalent key

No equivalent key is available on the front panel.

SCPI.SYSTem.PRESet

Syntax	SCPI.SYSTem.PRESet
Description	Preset instrument state. same as '*RST;:INIT:instr:CONT ON'('instr' is all instrument). (No Read)
Equivalent key	No equivalent key is available on the front panel.

SCPI.SYSTem.SECurity.LEVel

Syntax	SCPI.SYSTem.SECurity.LEVel = <string> <string> = SCPI.SYSTem.SECurity.LEVel
Description	Sets/recalls the security level
Variable	

	Param
NONE (Preset value)	Set the security level to 'None'
LOW	Set the security level to 'Frequency Blank'
HIGH	Set the security level to 'All Numeric Blank'

Equivalent key	PN Menu -> Display -> Security Level SP Menu -> Display -> Security Level FP Menu -> Display -> Security Level TR Menu -> Display -> Security Level USER Menu -> Display -> Security Level
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SCPI.SYSTem.TIME[_Q] hour, minute, second

Syntax	SCPI.SYSTem.TIME_Q hour, minute, second (Query) SCPI.SYSTem.TIME hour, minute, second (Set)
Description	Sets/reads system time
Variable	

	<Long >
Range	0 to 23
Preset value	-
Unit	-

COM Object Reference
SCPI.TRIGger.AVERage

	<Long >
Resolution	-

	<Long >
Range	0 to 59
Preset value	-
Unit	-
Resolution	-

	<Long >
Range	0 to 59
Preset value	-
Unit	-
Resolution	-

Examples

```
Dim hh As Long
Dim mm As Long
Dim ss As Long

SCPI.SYSTem.TIME 18, 25, 40
SCPI.SYSTem.TIME_Q hh, mm, ss
```

Equivalent key

No equivalent key is available on the front panel.

SCPI.TRIGger.AVERage

Syntax

SCPI.TRIGger.AVERage = <boolean>
 <boolean> = SCPI.TRIGger.AVERage

Description

Turns on/off averaging trigger mode

Variable

	Param
True or -1	Set averaging trigger mode to 'ON'
False or 0(Preset value)	Set averaging trigger mode to 'OFF'

Equivalent key

PN Menu -> Trigger -> Average Trigger
 SP Menu -> Trigger -> Average Trigger

FP Menu -> Trigger -> Average Trigger
 TR Menu -> Trigger -> Average Trigger

SCPI.TRIGger.EXternal.SLOPe

Syntax SCPI.TRIGger.EXternal.SLOPe = <string>
 <string> = SCPI.TRIGger.EXternal.SLOPe

Description External trigger polarity

Variable

	Param
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

SCPI.TRIGger.FP(1-1).MODE

Syntax SCPI.TRIGger.FP(1-1).MODE = <string>
 <string> = SCPI.TRIGger.FP(1-1).MODE

Description Sets/reads the trigger mode in the frequency, power, and DC current mode

Variable *1

	Param
ANALyzer(Preset value)	Set trigger mode to 'Analyzer'
TESTer	Set trigger mode to 'Tester'

Equivalent key *2 FP Menu -> Trigger -> Mode

*1. "Option not installed" error message is generated when setting the trigger mode to the analyzer mode with the option 011 instrument.

*2. The softkey is not available when option 011 is installed.

SCPI.TRIGger.FP(1-1).SOURce

Syntax SCPI.TRIGger.FP(1-1).SOURce = <string>
<string> = SCPI.TRIGger.FP(1-1).SOURce

Description Selects trigger source

Variable

	Param
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

SCPI.TRIGger.MODE

Syntax SCPI.TRIGger.MODE = <string>
<string> = SCPI.TRIGger.MODE

Description Selects the active measurement mode

Variable

	Param
PN1(Preset value)	Set measurement mode to 'Trigger to Phase Noise'
SP1	Set measurement mode to 'Trigger to Spectrum Monitor'
FP1	Set measurement mode to 'Trigger to Freq & Power'
TR1	Set measurement mode to 'Trigger to Transient'

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

SCPI.TRIGger.PN(1-1).SOURce

Syntax SCPI.TRIGger.PN(1-1).SOURce = <string>

<string> = SCPI.TRIGger.PN(1-1).SOURce

Description Selects trigger source

Variable

	Param
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

SCPI.TRIGger.SOPC

Syntax SCPI.TRIGger.SOPC = <boolean>

<boolean> = SCPI.TRIGger.SOPC

Description Reads/Sets SCPI.IEEE4882.OPC, SCPI.IEEE4882.WAI

Variable

	Param
True or -1	Enable SCPI.IEEE4882.OPC, SCPI.IEEE4882.WAI
False or 0(Preset value)	Disable SCPI.IEEE4882.OPC, SCPI.IEEE4882.WAI

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

SCPI.TRIGger.SP(1-1).SOURce

Syntax SCPI.TRIGger.SP(1-1).SOURce = <string>

<string> = SCPI.TRIGger.SP(1-1).SOURce

Description Selects trigger source

Variable

	Param
INTernal(Preset value)	Set trigger source to 'Internal'

COM Object Reference
SCPI.TRIGger.TR(1-1).ETTAdjust

	Param
EXTernal	Set trigger source to 'External'
MANual	Set trigger source to 'Manual'
BUS	Set trigger source to 'Bus'

Equivalent key SP Menu -> Trigger -> Source

SCPI.TRIGger.TR(1-1).ETTAdjust

Syntax SCPI.TRIGger.TR(1-1).ETTAdjust = <double>
 <double> = SCPI.TRIGger.TR(1-1).ETTAdjust

Description Sets/Reads the offset for the waiting time of the external trigger source

Variable

	<Double>
Description	Waiting time of the external trigger source
Range	0 to 1 μ
Preset value	0
Unit	s
Resolution	10 n

Equivalent key TR Menu -> Trigger -> Ext Trig Timing Adj.

SCPI.TRIGger.TR(1-1).NARRow.VIDeo.FREQuency.CENTer

Syntax SCPI.TRIGger.TR(1-1).NARRow.VIDeo.FREQuency.CENTer = <double>
 <double> = SCPI.TRIGger.TR(1-1).NARRow.VIDeo.FREQuency.CENTer

Description Sets/reads the video trigger frequency value for narrowband mode in the transient measurement

Variable **When the E5052A is used stand-alone, or with the downconverter turned off (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, the conversion mode used in the frequency offset, the target frequency and frequency range of the narrow band mode)**

	<Double>
Range	9.2M to 117G

	<Double>
Preset value	1G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'E5052A Direct' (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, the conversion mode used in the frequency offset, the target frequency and frequency range of the narrowband mode)

	<Double>
Range	9.2M to 113.0128G
Preset value	1G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'Downconverter' (Allowable setting range varies depending on the target frequency and frequency range of the narrowband mode)

	<Double>
Range	3G to 26.0128G
Preset value	3G
Unit	Hz
Resolution	100m

Equivalent key TR Menu -> Setup -> Video Trigger -> Narrow Freq

SCPI.TRIGger.TR(1-1).NARRow.VIDeo.THReshold

Syntax SCPI.TRIGger.TR(1-1).NARRow.VIDeo.THReshold = <double>
 <double> = SCPI.TRIGger.TR(1-1).NARRow.VIDeo.THReshold

Description Sets/reads video trigger threshold level relative to max input level

Variable

	<Double>
Range	-100 to 0
Preset value	-20

COM Object Reference
SCPI.TRIGger.TR(1-1).SOURce

	<Double>
Unit	dB
Resolution	1

Equivalent key TR Menu -> Setup -> Video Trigger -> Minimum Power Level

SCPI.TRIGger.TR(1-1).SOURce

Syntax SCPI.TRIGger.TR(1-1).SOURce = <string>
 <string> = SCPI.TRIGger.TR(1-1).SOURce

Description Selects trigger source

Variable

	Param
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 'Wide Video'
NVIDeo	Set trigger source to 'Narrow Video'

Equivalent key TR Menu -> Trigger -> Source

SCPI.TRIGger.TR(1-1).WIDE.VIDeo.FREQuency.CENTer

Syntax SCPI.TRIGger.TR(1-1).WIDE.VIDeo.FREQuency.CENTer = <double>
 <double> = SCPI.TRIGger.TR(1-1).WIDE.VIDeo.FREQuency.CENTer

Description Sets/reads the video trigger frequency value for wideband mode in the transient measurement

Variable **When the E5052A is used stand-alone, or with the downconverter turned off (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, the conversion mode used in the frequency offset, and the transient frequency range of the wideband mode)**

	<Double>
Range	50M to 117G
Preset value	1G

	<Double>
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'E5052A Direct' (Allowable setting range varies depending on whether the frequency offset is on or off, the LO frequency within the frequency offset, the conversion mode used in the frequency offset, and the transient frequency range of the wideband mode)

	<Double>
Range	50M to 113G
Preset value	1G
Unit	Hz
Resolution	100m

When the downconverter is turned on and the RF input is set to 'Downconverter' (Allowable setting range varies depending on the transient frequency range of the wideband mode)

	<Double>
Range	3G to 26.5G
Preset value	3G
Unit	Hz
Resolution	100m

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	COM object
24Bit I/O control	Outputs data using port A	SCPI.CONTRol.HANDler.A.DATA
	Outputs data using port B	SCPI.CONTRol.HANDler.B.DATA
	Inputs/Outputs data using port C	SCPI.CONTRol.HANDler.C.DATA
	Selects input/output mode on port C	SCPI.CONTRol.HANDler.C.MODE
	Inputs/Outputs data using port D	SCPI.CONTRol.HANDler.D.DATA
	Selects input/output mode on port D	SCPI.CONTRol.HANDler.D.MODE
	Inputs/outputs data using port E(port C + port D; 16 bits)	SCPI.CONTRol.HANDler.E.DATA
	Inputs/outputs data using port F(port A + port C; 16 bits)	SCPI.CONTRol.HANDler.F.DATA
	Sets/Reads OUTPUT1 and/or OUTPUT2	SCPI.CONTRol.HANDler.OUTPUT(1-2).DATA
Auto Frequency Control	Turns on/off the auto frequency control function	SCPI.SOURce.VOLTage.CONTRol.AFC.STATe
	Executes the auto frequency control once.	SCPI.SOURce.VOLTage.CONTRol.AFC.IMMediate
	Sets/reads the frequency band in the auto frequency control function	SCPI.SOURce.VOLTage.CONTRol.AFC.FBAND
	Sets/reads the maximum number of iterations for the DC control voltage-setting loops	SCPI.SOURce.VOLTage.CONTRol.AFC.ITERation
	Sets/reads the maximum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.HIGH
	Sets/reads the minimum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.LOW
	Sets/reads the maximum input level of the downconverter in order to determine the IF Gain	SCPI.SOURce.VOLTage.CONTRol.AFC.INPut.LEVeL.MAXimum
	Sets/reads the tuning sensitivity	SCPI.SOURce.VOLTage.CONTRol.AFC.SENSitivity
	Sets/reads the target frequency in the auto frequency control function	SCPI.SOURce.VOLTage.CONTRol.AFC.TARGet
	Sets/reads the tolerance limit	SCPI.SOURce.VOLTage.CONTRol.AFC.TOLerance
Beeper	Makes beep sound for operation completion	SCPI.SYSTem.BEEPer.COMPLete.IMMediate
	Turns on/off the beep for operation completion	SCPI.SYSTem.BEEPer.COMPLete.STATe
	Makes beep sound for warning	SCPI.SYSTem.BEEPer.WARNing.IMMediate
	Turns on/off the beep for warning	SCPI.SYSTem.BEEPer.WARNing.STATe

Function	Setting/Execution item	COM object
DC sources	Execute DC CTRL DRIFT CAL	SCPI.SOURce.VOLTage.CONTRol.CORRection.COLLe ct.ACQuire
	DC CTRL DRIFT CAL state	SCPI.SOURce.VOLTage.CONTRol.CORRection.STATe
	Src Control setting delay(sec)	SCPI.SOURce.VOLTage.CONTRol.DELay
	fixed Vcontrol value at Vpower sweep	SCPI.SOURce.VOLTage.CONTRol.LEVel.AMPLitude
	fixed Vcontrol On/Off at Vpower sweep	SCPI.SOURce.VOLTage.CONTRol.LEVel.STATe
	fixed Vcontrol high limit, Resolution 0.1mV	SCPI.SOURce.VOLTage.CONTRol.LIMit.HIGH
	fixed Vcontrol low limit, Resolution 0.1mdV	SCPI.SOURce.VOLTage.CONTRol.LIMit.LOW
	Src Power setting delay(sec)	SCPI.SOURce.VOLTage.POWer.DELay
	fixed Vpower value at Vcontrol sweep	SCPI.SOURce.VOLTage.POWer.LEVel.AMPLitude
	fixed Vpower On/Off at Vcontrol sweep	SCPI.SOURce.VOLTage.POWer.LEVel.STATe
	fixed Vpower high limit, Resolution 1mV	SCPI.SOURce.VOLTage.POWer.LIMit.HIGH
	fixed Vpower low limit, Resolution 1mdV	SCPI.SOURce.VOLTage.POWer.LIMit.LOW
Display	Turns on/off internal clock display	SCPI.DISPlay.CLOCK
	Adds texts in echo window	SCPI.DISPlay.ECHO.ADD
	Clears echo window	SCPI.DISPlay.ECHO.CLEAr
	text in echo window. accept LineFeed(0x0a, vbLF) character. Other non-printable characters will be converted to a space charcter.	SCPI.DISPlay.ECHO.DATA
	font size in echo window	SCPI.DISPlay.ECHO.FSIZE
	Show/Hide echo window	SCPI.DISPlay.ECHO.STATe
	Enable/disable trace update	SCPI.DISPlay.ENABLE
	maximize active instrument window	SCPI.DISPlay.MAXimize
	Show/Hide soft key	SCPI.DISPlay.SKEY.STATe
	Update display force	SCPI.DISPlay.UPDate.IMMEDIATE
	set the specified window visible and active	SCPI.DISPlay.WINDow.ACTive
	Sets/Reads the normal display/inverted display	SCPI.DISPlay.IMAGe
	Sets the background color for normal display and inverted display	SCPI.DISPlay.COLor(1-2).BACK.VAlue[_Q]
	Sets the color of the graticule label and the outer frame line of the graph and the color of the grid lines in the graph for normal display and inverted display	SCPI.DISPlay.COLor(1-2).GRATicule(1-2).VAlue[_Q]
	Sets/Reads the fail display color used for the limit test result and the color of the limit line for normal display and inverted display	SCPI.DISPlay.COLor(1-2).LIMit(1-2).VAlue[_Q]
Set the color of the data trace of trace 1 to trace 8 for normal display and inverted display	SCPI.DISPlay.COLor(1-2).TRACe(1-8).DATA.VAlue[_Q]	

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Display (Continued)	Sets the color of the memory trace of trace 1 to trace 8 for normal display and inverted display	SCPI.DISPlay.COLOr(1-2).TRACe(1-8).MEMory.VALue[_Q]
	Resets the display color settings for all items to the factory preset state for normal display and inverted display	SCPI.DISPlay.COLOr(1-2).RESet
Downconverter selection	Sets downconverter on or off, or reads its settings	SCPI.SENSE.DCONverter.STATe
	Sets/reads the signal supplied to the RF input port	SCPI.SENSE.DCONverter.INPut
	Sets the use of the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MEXTernal
External mixer support	Sets/reads the differential frequency between CH1 and CH2 from the external mixer	SCPI.SENSE.DCONverter.MANual.IFDelta
	Sets/reads the IF gain of the external mixer	SCPI.SENSE.DCONverter.MANual.IFGain(1-2)
	Sets/reads the LO frequency of the external mixer	SCPI.SENSE.DCONverter.MANual.LO(1-2).FREQuency
	Sets/reads the LO level of the external mixer	SCPI.SENSE.DCONverter.MANual.LO(1-2).LEVel
	Sets/reads the bias current to be supplied to the external mixer	SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.CURRent
	Sets the bias current supplied to the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.STATe
	Calculates LO frequencies of CH1 and CH2 so that appropriate IF frequencies can be obtained based on input signal frequencies to the external mixer and harmonic order.	SCPI.SENSE.DCONverter.MANual.CALCulate.LO_Q harmonic, in_freq, lo1, lo2
File operation	Catalog directory	SCPI.MMEMory.CATalog_Q dir, list
	Copy file	SCPI.MMEMory.COpy src, dst
	file transfer through SCPI	SCPI.MMEMory.DATA[_Q] file, data
	Delete file/directory	SCPI.MMEMory.DELeTe
	Loads program	SCPI.MMEMory.LOAd.PROGram
	Recalls settings	SCPI.MMEMory.LOAd.STATe
	Creates a directory	SCPI.MMEMory.MDIRectory
	Save screen image	SCPI.MMEMory.STORe.IMAGe
	Save VBA project	SCPI.MMEMory.STORe.PROGram
	Save settings	SCPI.MMEMory.STORe.STATe
	Select save state type	SCPI.MMEMory.STORe.STYPe
Frequency Offset	Sets/reads the frequency offset factor	SCPI.SENSE.UDConverter.HARMonic
	Sets/reads the LO frequency of the frequency offset	SCPI.SENSE.UDConverter.LO
	Sets/reads the conversion mode of the frequency offset	SCPI.SENSE.UDConverter.MODE
	Sets/reads the frequency offset	SCPI.SENSE.UDConverter.STATe

Function	Setting/Execution item	COM object
Frequency, RF power and DC current measurement - Display	Selects active trace	SCPI.CALCulate.FP(1-1).ALLTrace.ACTive
	Data hold	SCPI.CALCulate.FP(1-1).TRACe(1-4).HOLD
	Sets/reads math operation type	SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.FUNCTion
	Copy data to memory	SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.MEMorize
	Sensitivity Aperture	SCPI.CALCulate.FP(1-1).TRACe(1-4).SAPerture
	Smoothing aperture	SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.APErture
	Turns on/off smoothing function	SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.STATe
	Clears all stored traces	SCPI.DISPlay.FP(1-1).ALLTrace.PERSistence.CLEar
	Execute autoscale all	SCPI.DISPlay.FP(1-1).ALLTrace.Y.SCALe.AUTO
	Turns on/off measurement conditions	SCPI.DISPlay.FP(1-1).ANNotation.MEASurement.STATe
	Turns on/off relative Y-scale	SCPI.DISPlay.FP(1-1).GRATicule.AXIS.Y.RELative
	Show/Hide Y graticule label	SCPI.DISPlay.FP(1-1).GRATicule.AXIS.Y.STATe
	Window title label	SCPI.DISPlay.FP(1-1).LABel.DATA
	Show/Hide Window Title Label	SCPI.DISPlay.FP(1-1).LABel.STATe
	maximize active trace	SCPI.DISPlay.FP(1-1).MAXimize
	measurement display on/off. At least one meas window must be turned on.	SCPI.DISPlay.FP(1-1).STATe
	Edits trace title label	SCPI.DISPlay.FP(1-1).TRACe(1-4).LABel.DATA
	Shows data and/or memory trace	SCPI.DISPlay.FP(1-1).TRACe(1-4).MODE
	Clear persistence mode	SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.CLEar
	Sets/reads persistence mode	SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.STATe
	Execute autoscale	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.AUTO
	Sets/reads scale per division	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.PDIVision
	Sets/reads scale reference level	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RLEVel
	Sets/reads scale reference position	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RPOSITion
	Sets/reads number of Y division	SCPI.DISPlay.FP(1-1).Y.SCALe.DIVisions
	Copies trace data to the user trace	SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.COPY
	Sets/reads the trace layout	SCPI.DISPlay.FP(1-1).SPLit
	FP-frequency format	SCPI.CALCulate.FP(1-1).TRACe(1-4).FORMat.FREQuency
	Sets/reads the frequency reference.	SCPI.CALCulate.FP(1-1).TRACe(1-4).REFerence.FREQuency

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Frequency, RF power and DC current measurement - Display (Continued)	Reads the trace parameter.	SCPI.CALCulate.FP(1-1).TRACe(1-4).PARAmeter
	Sets/Reads the offset value of trace data	SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.OFFSet
	Sets/Reads automatic setting of the X-axis display range of the graph of trace data to the stimulus value	SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.AUTO
	Sets/Reads the start value of the X-axis of the graph display of trace data	SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.LEFT
	Sets/Reads the stop value of the X-axis of the graph display of trace data	SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.RIGHt
Frequency, RF power and DC current measurement - Downconverter settings	Sets/reads the input frequency to be supplied to the downconverter	SCPI.SENSE.FP(1-1).DCONverter.FREQuency
	Searches carrier signal and reflects the result to the input frequency of the downconverter	SCPI.SENSE.FP(1-1).DCONverter.SSEArch.EXECute
	Sets/reads the maximum input level of the downconverter in order to determine the IF Gain	SCPI.SENSE.FP(1-1).POWer.INPut.LEVel.MAXimum
Frequency, RF power and DC current measurement - File operation	Saves trace data	SCPI.MMEMory.FP(1-1).TRACe(1-4).STORe.DATA
	Saves memory trace data	SCPI.MMEMory.FP(1-1).TRACe(1-4).STORe.MEMory
Frequency, RF power and DC current measurement - Limit Test	Reads out the limit test result	SCPI.CALCulate.FP(1-1).ALLTrace.LIMit.FAIL
	Turns on/off the limit test function	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.STATe
	Sets/reads the number of segments in the upper limit line	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.COUNt
	Sets/reads the number of segments in the lower limit line	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.COUNt
	Sets/reads segment data of the upper limit line	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.DATA
	Sets/reads segment data of the lower limit line	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.DATA
	Clears the upper limit line	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.CLEAr
	Clears the lower limit line	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.CLEAr
	Sets/reads the upper limit values of all measurement points	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.LDAtA
	Sets/reads the lower limit values of all measurement points	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.LDAtA
	Reads out the limit test result	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.FAIL
	Reads the limit test results of all measurement points in selected traces	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.REPort.DAtA

Function	Setting/Execution item	COM object
Frequency, RF power and DC current measurement - Limit Test (Continued)	Turns on/off the limit line	SCPI.DISPlay.FP(1-1).TRACe(1-4).LIMit.LINE
	Turns on/off the limit test judgement display	SCPI.DISPlay.FP(1-1).LIMit.FSIGn
	Reads the upper limit line	SCPI.MMEMory.FP(1-1).TRACe(1-4).LOAD.LIMit.UP Per
	Reads the lower limit line	SCPI.MMEMory.FP(1-1).TRACe(1-4).LOAD.LIMit.LO Wer
Frequency, RF power and DC current measurement - Marker/analysis	Turns on/off bandmarker coupling function	SCPI.CALCulate.FP(1-1).ALLTrace.BDMarker.X.COUP le.STATe
	Turns on/of marker coupling function	SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.COUPle.S TATe
	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.DISCrete. STATe
	Sets/reads marker reference number	SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.REFerenc e.NUMBer
	Turns on/off delta marker mode	SCPI.CALCulate.FP(1-1).ALLTrace.MARKer.REFerenc e.STATe
	Selects active marker	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.ACT ive
	Sets/reads marker search range (X-axis)	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEA Rh.DOMain.X
	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEA Rh.DOMain.Y
	Execute marker search all	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEA Rh.PEAK
	Sets/reads the center value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.CE NTer
	Sets/reads the span value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.SPA N
	Sets/reads the start value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STA Rt
	Turns on/off bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STA Te
	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.ST OP
	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.CE NTer
	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.SPA N
	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STA Rt
	Turns on/off bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STA Te

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Frequency, RF power and DC current measurement - Marker/analysis (Continued)	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STOP
	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.DOMain.X
	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.DOMain.Y
	Reads the results of statistical analysis for the data trace	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.STATistics.DATA_Q mean, std_dev, peak_to_peak
	Reads the results of statistical analysis for the memory trace	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.STATistics.MEMory_Q mean, std_dev, peak_to_peak
	Sets/reads analysis type	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTION.TYPE
	Execute marker peak search left	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LPEak
	Execute marker target search left	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LTARget
	Execute marker search maximum	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.MAXimum
	Execute marker search minimum	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.MINimum
	Execute marker peak search	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.PEAK
	Execute marker peak search right	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RPEak
	Execute marker target search right	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RTARget
	Execute marker target search	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.TARGet
	Sets/reads the peak excursion value	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.EXCursion
	Sets/reads the marker peak-search polarity	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.POLarity
	Sets/reads the target transition definition	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.TRANSition
	Sets/reads the marker target value	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.Y
	Sets/reads the marker tracking type	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TRACKing.TYPE
	Turns on/off markers	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe
	Sets/reads the marker X value	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).X
	Reads the marker Y value	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).Y
Sets/reads the marker information position	SCPI.DISPlay.FP(1-1).ANNotation.MARKer.POSition	

Function	Setting/Execution item	COM object
Frequency, RF power and DC current measurement - Marker/analysis (Continued)	Turns on/off the marker list	SCPI.DISPlay.FP(1-1).TABLE.STATE
	Calculates regression line coefficient (a and b of $Y = aX + b$) for the trace data and reads the result	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNction.LREGression.DATA_Q a, b
	Calculates regression line coefficient (a and b of $Y = aX + b$) for the trace memory and reads the result	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNction.LREGression.MEMory_Q a, b
	Sets/Reads the a value of the line equation ($Y = aX + b$) for the linearity evaluation of the trace data	SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.A
	Sets/Reads the b value of the line equation ($Y = aX + b$) for the linearity evaluation of the trace data	SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.B
	Sets to trace memory the line which is the result of the line equation ($Y = aX + b$) for the linearity evaluation of the trace data	SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.MEMory
Frequency, RF power and DC current measurement - Measurement	always move to waiting-for-trigger state after measuring	SCPI.INITiate.FP(1-1).CONTinuous
	move once to waiting-for-trigger state	SCPI.INITiate.FP(1-1).IMMediate
	trigger mode (Not available when option 011 is installed)	SCPI.TRIGger.FP(1-1).MODE
	trigger source	SCPI.TRIGger.FP(1-1).SOURce
Frequency, RF power and DC current measurement - Measurement conditions	Restart averaging	SCPI.SENSE.FP(1-1).AVERAge.CLEAr
	Sets/reads averaging count	SCPI.SENSE.FP(1-1).AVERAge.COUNt
	Turns on/off averaging function	SCPI.SENSE.FP(1-1).AVERAge.STATe
	Selects frequency band	SCPI.SENSE.FP(1-1).FBANd
	Sets/reads frequency resolution	SCPI.SENSE.FP(1-1).FREQuency.RESolution
	Sets/reads the point delay value	SCPI.SENSE.FP(1-1).SWEep.DWELI
	Sets/reads sweep parameter	SCPI.SOURce.FP(1-1).SWEep.PARAmeter
	Sets/reads the number of measurement points	SCPI.SOURce.FP(1-1).SWEep.POINts
	Vcontrol center	SCPI.SOURce.FP(1-1).VOLTage.CONTRol.CENTer
	Vcontrol span	SCPI.SOURce.FP(1-1).VOLTage.CONTRol.SPAN
	Vcontrol start	SCPI.SOURce.FP(1-1).VOLTage.CONTRol.STARt
	Vcontrol stop	SCPI.SOURce.FP(1-1).VOLTage.CONTRol.STOP
	Vpower center	SCPI.SOURce.FP(1-1).VOLTage.POWer.CENTer
	Vpower span	SCPI.SOURce.FP(1-1).VOLTage.POWer.SPAN
	Vpower start	SCPI.SOURce.FP(1-1).VOLTage.POWer.STARt
	Vpower stop	SCPI.SOURce.FP(1-1).VOLTage.POWer.STOP

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Frequency, RF power and DC current measurement - Reads/writes the data	Sets/reads raw data	SCPI.CALCulate.FP(1-1).DATA.RDATA
	Sets/reads tester mode data	SCPI.CALCulate.FP(1-1).DATA.TDATA
	Reads X-axis data	SCPI.CALCulate.FP(1-1).DATA.XDATA
	Set/Get formatted trace data	SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FDATA
	Set/Get formatted memory data	SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.FMEMory
	Set/Get unformatted trace data	SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.UDATA
	Set/Get unformatted memory data	SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.UMEMory
	Reads the measurement time	SCPI.SENSE.FP(1-1).SWEp.TIME.DATA
Internal clock	Set/Get system date	SCPI.SYSTem.DATE[_Q] year, month, day
	Set/Get system time	SCPI.SYSTem.TIME[_Q] hour, minute, second
Measurement	Abort measurement	SCPI.ABORt
	BUS Trigger	SCPI.IEEE4882.TRG
	Input Attenuator level on 5dB Step	SCPI.SENSE.ATTenuation.LEVel
	External trigger polarity	SCPI.TRIGger.EXTernal.SLOPe
	select measurement mode	SCPI.TRIGger.MODE
	Sets/Reads the averaging trigger mode	SCPI.TRIGger.AVERAge
	Turns on/off of the *OPC, *OPC?, and *WAI commands	SCPI.TRIGger.SOPC
Operations	Set/Get front panel and keyboard lock state	SCPI.SYSTem.KLOCK.KBD
	Set/Get touch screen and mouse lock state	SCPI.SYSTem.KLOCK.MOUSe
Others	Clear caution/message	SCPI.DISPlay.MESSage.CLEar
	Reads product model information	SCPI.IEEE4882.IDN
	Reads option information	SCPI.IEEE4882.OPT
	Preset	SCPI.IEEE4882.RST
	Reads product information of the downconverter	SCPI.SENSE.DCONverter.IDN
	Get source of reference oscillator	SCPI.SENSE.ROSCillator.SOURce
	Turns on/off backlight	SCPI.SYSTem.BACKlight.STATe
	Get error code & description	SCPI.SYSTem.ERRor.NEXT_Q err_no, err_desc
	Power off the instrument	SCPI.SYSTem.POFF
	Preset instrument state. same as *RST;:INIT:instr:CONT ON('instr' is all instrument).	SCPI.SYSTem.PRESet
	Sets/recalls the security level	SCPI.SYSTem.SECurity.LEVel

Function	Setting/Execution item	COM object
Phase noise measurement - Display	data hold	SCPI.CALCulate.PN(1-1).TRACe(1-1).HOLD
	Selects math operation type	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.FUNCTio n
	Copy data to memory	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.MEMoriz e
	Smoothing aperture	SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.APE Rture
	Smoothing on/off	SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.STA Te
	Spurious display omission ON/OFF	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.OMIS sion
	Clears all persistent traces	SCPI.DISPlay.PN(1-1).ALLTrace.PERSistence.CLEar
	Turns on/off measurement conditions	SCPI.DISPlay.PN(1-1).ANNotation.MEASurement.STA Te
	force graticule label notation relative. If OFF, absolute notaion is used if possible.	SCPI.DISPlay.PN(1-1).GRATicule.AXIS.Y.RELative
	Show/Hide Y graticule label	SCPI.DISPlay.PN(1-1).GRATicule.AXIS.Y.STATe
	Edits window title label	SCPI.DISPlay.PN(1-1).LABel.DATA
	Show/Hide Window Title Label	SCPI.DISPlay.PN(1-1).LABel.STATe
	maximize active trace	SCPI.DISPlay.PN(1-1).MAXimize
	Turns on/off phase noise measurement mode	SCPI.DISPlay.PN(1-1).STATe
	Trace Title Label	SCPI.DISPlay.PN(1-1).TRACe(1-1).LABel.DATA
	show data and/or memory trace	SCPI.DISPlay.PN(1-1).TRACe(1-1).MODE
	Clears persistent data	SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.CLEar
	Sets/reads persistence mode	SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.STATe
	Execute autoscale	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.AUTO
	scale per division	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.PDIVision
	scale reference level	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RLEVel
	scale reference position	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RPOSition
	Sets/reads # of Y division	SCPI.DISPlay.PN(1-1).Y.SCALe.DIVisions
	Copies trace data to the user trace	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.COPY
	Sets/Reads the offset value of the trace data	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.OFFSet
	Sets/Reads the automatic setting of the X-axis display range of the graph of trace data to the stimulus value	SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.AUTO
	Sets/Reads the start value of the X-axis of the graph display of trace data	SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.LEFT
	Sets/Reads the stop value of the X-axis of the graph display of trace data	SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.RIGHt

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Phase noise measurement - Downconverter settings	Sets/reads input frequency of the downconverter	SCPI.SENSE.PN(1-1).DCONverter.FREQuency
	Searches carrier signal and reflects the result to the input frequency of the downconverter	SCPI.SENSE.PN(1-1).DCONverter.SSEarch.EXECute
Phase noise measurement - File operation	Saves trace data	SCPI.MMEMory.PN(1-1).TRACe(1-1).STORE.DATA
	Saves memory trace data	SCPI.MMEMory.PN(1-1).TRACe(1-1).STORE.MEMory
Phase noise measurement - Limit Test	Reads out the limit test result	SCPI.CALCulate.PN(1-1).ALLTrace.LIMit.FAIL
	Turns on/off the limit test function	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.STATe
	Sets/reads the number of segments in the upper limit line	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.COUNt
	Sets/reads the number of segments in the lower limit line	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.COUNt
	Sets/reads segment data of the upper limit line	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.DATA
	Sets/reads segment data of the lower limit line	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.DATA
	Clears the upper limit line	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.CLEAr
	Clears the lower limit line	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.CLEAr
	Sets/reads the upper limit values of all measurement points	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.LDAtA
	Sets/reads the lower limit values of all measurement points	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.LDAtA
	Reads out the limit test result	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.FAIL
	Reads the limit test results of all measurement points in selected traces	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.REPort.DAtA
	Turns on/off the limit line	SCPI.DISPlay.PN(1-1).TRACe(1-1).LIMit.LINE
	Turns on/off the limit test judgement display	SCPI.DISPlay.PN(1-1).LIMit.FSIGn
	Reads the upper limit line	SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.LIMit.UPPer
	Reads the lower limit line	SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.LIMit.LOWer

Function	Setting/Execution item	COM object
Phase noise measurement - Marker/analysis	Turns on/off marker coupling function	SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.COUPle.STATE
	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.DISCrete.STATE
	Sets/reads marker reference number	SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFERenc.e.NUMBer
	Turns on/off delta marker mode	SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFERenc.e.STATE
	Selects active marker	SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.ACTive
	Sets/reads marker search range (X-axis)	SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEA Rch.DOMain.X
	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEA Rch.DOMain.Y
	Execute marker search all	SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEA Rch.PEAK
	Sets/reads the center value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.CE NTer
	Sets/reads the span value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.SP AN
	Sets/reads the start value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.ST ARt
	Turns on/off bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.ST ATe
	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.ST OP
	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.CE NTer
	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.SP AN
	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.ST ARt
	Turns on/off bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.ST ATe
	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.ST OP
	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.DOM ain.X
	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.DOM ain.Y
	Reads the results of statistical analysis for the data trace	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.STATi stics.DATA_Q mean, std_dev, peak_to_peak
	Reads the results of statistical analysis for the memory trace	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNCTion.STATi stics.MEMory_Q mean, std_dev, peak_to_peak

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Phase noise measurement - Marker/analysis (Continued)	Sets/reads analysis type	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNctIon.TYPE
	Execute marker peak search left	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LPEak
	Execute marker target search left	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LTARget
	Execute marker search maximum	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum
	Execute marker search minimum	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MINimum
	Execute marker peak search	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.PEAK
	Execute marker peak search right	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RPEak
	Execute marker target search right	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RTARget
	execute marker target search	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.TARGet
	Sets/reads the peak excursion value	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion
	Sets/reads the marker peak-search polarity	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity
	Sets/reads the target transition definition	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.TRANsition
	Sets/reads the marker target value	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.Y
	Sets/reads the marker tracking type	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACking.TYPE
	Turns on/off markers	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).STATe
	Sets/reads the marker X value	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).X
	Reads the marker Y value	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).Y
	Sets/reads the marker information position	SCPI.DISPlay.PN(1-1).ANNotation.MARKer.POSition
	Turns on/off the marker list	SCPI.DISPlay.PN(1-1).TABLe.STATe
	Reads the integrated phase noise, frequency range, RMS noise, RMS jitter, and residual FM of trace data.	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNctIon.INTeg ral.DATA_Q integ_noise, freq_range, rms_rad, rms_deg, jitter, residual_fm
Reads the integrated phase noise, frequency range, RMS noise, RMS jitter, and residual FM of memory data.	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNctIon.INTeg ral.MEMory_Q integ_noise, freq_range, rms_rad, rms_deg, jitter, residual_fm	

Function	Setting/Execution item	COM object
Phase noise measurement - Marker/analysis (Continued)	Reads specified average time, Allan avariance, and jitter at cut-off frequency from trace data	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNction.AVARiance.DATA_Q avg_time, fcutoff, avariance, jitter
	Reads specified average time, Allan avariance, and jitter at cut-off frequency from memory data	SCPI.CALCulate.PN(1-1).TRACe(1-1).FUNction.AVARiance.MEMory_Q avg_time, fcutoff, avariance, jitter
Phase noise measurement - Measurement	always move to waiting-for-trigger state after measuring	SCPI.INITiate.PN(1-1).CONTinuous
	move once to waiting-for-trigger state	SCPI.INITiate.PN(1-1).IMMEDIATE
	trigger source	SCPI.TRIGger.PN(1-1).SOURce
Phase noise measurement - Measurement conditions	Averaging restart	SCPI.SENSE.PN(1-1).AVERAge.CLEAr
	Sets/reads the number of averaging	SCPI.SENSE.PN(1-1).AVERAge.COUNT
	Turns on/off averaging	SCPI.SENSE.PN(1-1).AVERAge.STATe
	Sets/reads the number of correlation (Not available when option 011 is installed)	SCPI.SENSE.PN(1-1).CORRelation.COUNT
	Sets/reads frequency band	SCPI.SENSE.PN(1-1).FBANd
	Sets/reads start frequency (The minimum value is limited down to 10 when option 011 is installed)	SCPI.SENSE.PN(1-1).FREQuency.START
	Sets/reads stop frequency	SCPI.SENSE.PN(1-1).FREQuency.STOP
	Sets/reads IF Gain at 10dB Step (The value is fixed as 10 when option 011 is installed)	SCPI.SENSE.PN(1-1).IFGain
	Sets/readst phase noise Local bandwidth optimization.	SCPI.SENSE.PN(1-1).LOBandwidth
	Reads the number of measurement points	SCPI.SENSE.PN(1-1).SWEep.POINts
	Sets/reads the quality level	SCPI.SENSE.PN(1-1).SEGTable.MEASurement.QUALitY
	Sets/Reads the frequency-dividing ratio of the input signal divided by the external frequency divider	SCPI.SENSE.PN(1-1).EPRescaler.DIVision
	Sets/Reads output level of the frequency divider (input level to RF IN/RF2 IN port) when the input signal divided by the external frequency divider is input from RF1 IN/RF2 IN port of the E5052A.	SCPI.SENSE.PN(1-1).EPRescaler.POWer

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Phase noise measurement - Reads/writes the data	Sets/reads the carrier frequency/power data in phase noise measurement	SCPI.CALCulate.PN(1-1).DATA.CARRier
	Sets/reads the measurement raw data	SCPI.CALCulate.PN(1-1).DATA.RDATA
	Reads the X data	SCPI.CALCulate.PN(1-1).DATA.XDATA
	Set/Get formatted trace data	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.FDATA
	Set/Get formatted memory data	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.FMEMory
	Set/Get unformatted trace data	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.UDATA
	Set/Get unformatted memory data	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.UMEMor y
Phase noise measurement - Spurious display	Turns on/off the spurious power value display	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.POWe r
	Sets/reads the raw power data (dBc)	SCPI.CALCulate.PN(1-1).DATA.PDATA
	Sets/reads unformatted trace power data (dBc)	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PDATA
	Sets/reads unformatted memory power data (dBc)	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.PMEMory
	Reads the spurious judgement results (0/1) of trace data	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.SDATA
	Reads the spurious judgement results (0/1) of memory data.	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.SMEMory
	Clears the threshold data	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THRe shold.TABLe.CLEar
	Sets/reads the number of segments in the threshold data	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THRe shold.TABLe.COUNT
	Sets/reads the threshold data	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THRe shold.TABLe.DATA
	Reads the threshold data	SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.SPURious .THReshold
	Sets/Reads the minimum spurious level	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THRe shold.LEVel.MINimum
Power correction	Loads correction data for a specified power	SCPI.MMEMory.LOAD.CORRection.POWer
	Sets/reads the frequency where the correction is performed and the correction values	SCPI.SENSE.CORRection.POWer.DATA
	Sets the user calibration on or off, or reads its settings	SCPI.SENSE.CORRection.POWer.STATe
Print	Aborts printing	SCPI.HCOPy.ABORT
	Selects print mode	SCPI.HCOPy.IMAGe
	Outputs print	SCPI.HCOPy.IMMediate

Function	Setting/Execution item	COM object
Reads/writes the data	Sets/reads byte order setting for binary transfer	SCPI.FORMat.BORDER
	Sets/reads data transfer mode	SCPI.FORMat.DATA
	User defined array data	SCPI.PROGram.VARiable.ARRay(1-10).DATA
	# of points of user defined array	SCPI.PROGram.VARiable.ARRay(1-10).POINts
	User defined 64bit floating variable	SCPI.PROGram.VARiable.DOUBLE(1-10)
	User defined integer variable	SCPI.PROGram.VARiable.INTeger(1-10)
	User defined string	SCPI.PROGram.VARiable.STRING(1-10)
Spectrum monitor - Display	SP format	SCPI.CALCulate.SP(1-1).TRACe(1-1).FORMat
	data hold	SCPI.CALCulate.SP(1-1).TRACe(1-1).HOLD
	Selects math operation type	SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.FUNCTion
	Copy data to memory	SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.MEMorize
	Smoothing aperture	SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.APErture
	Smoothing on/off	SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.STATe
	Clears all persistent traces	SCPI.DISPlay.SP(1-1).ALLTrace.PERSistence.CLEar
	Turns on/off measurement conditions	SCPI.DISPlay.SP(1-1).ANNotation.MEASurement.STATe
	Turns on/off relative Y-scale	SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.RELative
	Show/Hide Y graticule label	SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.STATe
	Edits window title label	SCPI.DISPlay.SP(1-1).LABel.DATA
	Show/Hide Window Title Label	SCPI.DISPlay.SP(1-1).LABel.STATe
	maximize active trace	SCPI.DISPlay.SP(1-1).MAXimize
	Turns on/off spectrum monitor mode	SCPI.DISPlay.SP(1-1).STATe
	Trace Title Label	SCPI.DISPlay.SP(1-1).TRACe(1-1).LABel.DATA
	show data and/or memory trace	SCPI.DISPlay.SP(1-1).TRACe(1-1).MODE
	Clears persistent data	SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.CLEar
	Sets/reads persistence mode	SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.STATe
	Execute autoscale	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.AUTO
	scale per division	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.PDIVision
	scale reference level	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RLEVel

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Spectrum monitor - Display	scale reference position	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RPOStion
	Sets/reads # of Y division	SCPI.DISPlay.SP(1-1).Y.SCALe.DIVisions
	Copies trace data to the user trace	SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.COPIY
	Sets/Reads the offset value of the trace data	SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.OFFSet
	Sets/Reads the automatic setting of the X-axis display range of the graph of trace data to the stimulus value	SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.AUTO
	Sets/Reads the start value of the X-axis of the graph display of trace data	SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.LEFT
	Sets/Reads the stop value of the X-axis of the graph display of trace data	SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.RIGHt
Spectrum monitor - File operation	Saves trace data	SCPI.MMEMory.SP(1-1).TRACe(1-1).STORe.DATA
	Saves memory trace data	SCPI.MMEMory.SP(1-1).TRACe(1-1).STORe.MEMory
Spectrum monitor - Harmonics	Sets/reads the carrier frequency band	SCPI.SENSE.SP(1-1).CARRier.FBANd
	Changes the center frequency to N times the carrier frequency	SCPI.SENSE.SP(1-1).CARRier.SET.CENTer
Spectrum monitor - Limit Test	Reads out the limit test result	SCPI.CALCulate.SP(1-1).ALLTrace.LIMit.FAIL
	Turns on/off the limit test function	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.STATe
	Sets/reads the number of segments in the upper limit line	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.COUNt
	Sets/reads the number of segments in the lower limit line	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.COUNt
	Sets/reads segment data of the upper limit line	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.DATA
	Sets/reads segment data of the lower limit line	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.DATA
	Clears the upper limit line	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.CLEAr
	Clears the lower limit line	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.CLEAr
	Sets/reads the upper limit values of all measurement points	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.LDAtA
	Sets/reads the lower limit values of all measurement points	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.LDAtA
	Reads out the limit test result	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.FAIL
	Reads the limit test results of all measurement points in selected traces	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.REPort.DAtA
	Turns on/off the limit line	SCPI.DISPlay.SP(1-1).TRACe(1-1).LIMit.LINE
	Turns on/off the limit test judgement display	SCPI.DISPlay.SP(1-1).LIMit.FSIGN

Function	Setting/Execution item	COM object
Spectrum monitor - Limit Test (Continued)	Reads the upper limit line	SCPI.MMEMory.SP(1-1).TRACe(1-1).LOAD.LIMit.UPPer
	Reads the lower limit line	SCPI.MMEMory.SP(1-1).TRACe(1-1).LOAD.LIMit.LOWer
Spectrum monitor - Marker/Analysis	Turns on/off marker coupling function	SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.COUPle.STATE
	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.DISCrete.STATE
	Sets/reads marker reference number	SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.REFERenc.e.NUMBer
	Turns on/off delta marker mode	SCPI.CALCulate.SP(1-1).ALLTrace.MARKer.REFERenc.e.STATE
	Selects active marker	SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.ACTive
	Sets/reads marker search range (X-axis)	SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEAReh.DOMain.X
	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEAReh.DOMain.Y
	Execute marker search all	SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEAReh.PEAK
	Sets/reads the center value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.CENTer
	Sets/reads the span value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.SPAN
	Sets/reads the start value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STARt
	Turns on/off bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STATE
	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STOP
	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.CENTer
	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.SPAN
	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STARt
	Turns on/off bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STATE
	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STOP
	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTION.DOMain.X
	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTION.DOMain.Y

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Spectrum monitor - Marker/Analysis (Continued)	Reads the results of statistical analysis for the data trace	SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.STATistics.DATA_Q mean, std_dev, peak_to_peak
	Reads the results of statistical analysis for the memory trace	SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.STATistics.MEMory_Q mean, std_dev, peak_to_peak
	Sets/reads analysis type	SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.TYPE
	Execute marker peak search left	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LPEak
	Execute marker target search left	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LTARget
	Execute marker search maximum	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum
	Execute marker search minimum	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MINimum
	execute marker peak search	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.PEAK
	Execute marker peak search right	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RPEak
	Execute marker target search right	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RTARget
	Execute marker target search	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.TARGet
	Sets/reads the peak excursion value	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion
	Sets/reads the marker peak-search polarity	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity
	Sets/reads the target transition definition	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.TRANSition
	Sets/reads the marker target value	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.Y
	Sets/reads the marker tracking type	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE
	Turns on/off markers	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe
	Sets/reads the marker X value	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).X
	Reads the marker Y value	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).Y
	Sets/reads the marker information position	SCPI.DISPlay.SP(1-1).ANNotation.MARKer.POSition
Turns on/off the marker list	SCPI.DISPlay.SP(1-1).TABLE.STATe	
Spectrum monitor - Measurement	always move to waiting-for-trigger state after measuring	SCPI.INITiate.SP(1-1).CONTinuous
	move once to waiting-for-trigger state	SCPI.INITiate.SP(1-1).IMMediate
	trigger source	SCPI.TRIGger.SP(1-1).SOURce

Function	Setting/Execution item	COM object
Spectrum monitor - Measurement conditions	Restart averaging	SCPI.SENSE.SP(1-1).AVERAge.CLEAr
	Sets/reads the averaging count	SCPI.SENSE.SP(1-1).AVERAge.COUNT
	Turns on/off averaging function	SCPI.SENSE.SP(1-1).AVERAge.STATe
	Sets/reads averaging type	SCPI.SENSE.SP(1-1).AVERAge.TYPE
	Sets/reads RBW value	SCPI.SENSE.SP(1-1).BANDwidth.RESolution
	Sets/reads detector mode	SCPI.SENSE.SP(1-1).DETEctor.FUNCTion
	Sets/reads the center value of frequency span	SCPI.SENSE.SP(1-1).FREQuency.CENTer
	Sets/reads the span value of frequency span	SCPI.SENSE.SP(1-1).FREQuency.SPAN
	Sets/reads the start value of frequency span	SCPI.SENSE.SP(1-1).FREQuency.START
	Sets/reads the stop value of frequency span	SCPI.SENSE.SP(1-1).FREQuency.STOP
	Sets/reads the reference level of frequency span	SCPI.SENSE.SP(1-1).POWer.RLEVel
Spectrum monitor - Reads/writes the data	Sets/reads the raw data	SCPI.CALCulate.SP(1-1).DATA.RDATA
	Reads X-axis data	SCPI.CALCulate.SP(1-1).DATA.XDATA
	Sets/reads formatted trace data	SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.FDATA
	Sets/reads formatted memory data	SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.FMEMory
	Sets/reads unformatted trace data	SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.UDATA
	Sets/reads unformatted memory data	SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.UMEMory
	Reads the number of measurement points	SCPI.SENSE.SP(1-1).SWEep.POINts
Status report system	Clears registers	SCPI.IEEE4882.CLS
	Sets/reads standard event status enable register	SCPI.IEEE4882.ESE
	Reads standard event status register value	SCPI.IEEE4882.ESR
	Sets OPC bit on operation termination	SCPI.IEEE4882.OPC
	Sets service request enable register	SCPI.IEEE4882.SRE
	Reads status byte register	SCPI.IEEE4882.STB
	Clears operation-program status condition register	SCPI.STATus.OPERation.BIT12.CLEAr
	Reads operation-program status register	SCPI.STATus.OPERation.BIT12.CONDItion
	Sets/reads operation-program status enable register	SCPI.STATus.OPERation.BIT12.ENABLE
	Reads operation-program status event register	SCPI.STATus.OPERation.BIT12.EVENT
	Sets/reads operation-program status negative transition filter value	SCPI.STATus.OPERation.BIT12.NTRAnsiion
	Sets/reads operation-program status positive transition filter value	SCPI.STATus.OPERation.BIT12.PTRAnsiion
	Sets operation-program status condition register	SCPI.STATus.OPERation.BIT12.SET
	Reads operation status conditional register value	SCPI.STATus.OPERation.CONDItion

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Status report system (Continued)	Set/reads operation status enable register	SCPI.STATus.OPERation.ENABLE
	Reads operation status event register	SCPI.STATus.OPERation.EVENT
	Sets/reads operation status negative transition filter value	SCPI.STATus.OPERation.NTRansition
	Sets/reads operation status positive transition filter value	SCPI.STATus.OPERation.PTRansition
	Reset status registers	SCPI.STATus.PRESet
	Reads questionable status conditional register value	SCPI.STATus.QUEStionable.CONDITION
	Sets/reads questionable-current status enable register	SCPI.STATus.QUEStionable.CURRent.ENABLE
	Reads questionable-current status event register value	SCPI.STATus.QUEStionable.CURRent.EVENT
	Sets/reads questionable downconverter status enable register value	SCPI.STATus.QUEStionable.DCONverter.ENABLE
	Read questionable downconverter status event register value	SCPI.STATus.QUEStionable.DCONverter.EVENT
	Sets/reads questionable status enable register	SCPI.STATus.QUEStionable.ENABLE
	Reads questionable status event register value	SCPI.STATus.QUEStionable.EVENT
	Sets/reads questionable-misc status enable register	SCPI.STATus.QUEStionable.MISC.ENABLE
	Reads questionable-misc status event register value	SCPI.STATus.QUEStionable.MISC.EVENT
	Sets/reads questionable status negative transition filter value	SCPI.STATus.QUEStionable.NTRansition
	Sets/reads questionable-phase status enable register	SCPI.STATus.QUEStionable.PHASE.ENABLE
	Reads questionable-phase status event register	SCPI.STATus.QUEStionable.PHASE.EVENT
	Sets/reads questionable-power status enable register	SCPI.STATus.QUEStionable.POWER.ENABLE
	Reads questionable-power status event register value	SCPI.STATus.QUEStionable.POWER.EVENT
	Sets/reads questionable status positive transition filter value	SCPI.STATus.QUEStionable.PTRansition
	Sets/reads questionable-reference signal status enable register	SCPI.STATus.QUEStionable.REFERENCE.ENABLE
	Reads questionable-reference signal status event register value	SCPI.STATus.QUEStionable.REFERENCE.EVENT
	Reads the questionable limit conditional register value	SCPI.STATus.QUEStionable.LIMIT.CONDITION
	Sets/reads the questionable limit status enable value	SCPI.STATus.QUEStionable.LIMIT.ENABLE
	Reads the questionable limit status event register value	SCPI.STATus.QUEStionable.LIMIT.EVENT
	Sets/reads the questionable limit status positive transition filter value	SCPI.STATus.QUEStionable.LIMIT.PTRansition
	Sets/reads the questionable limit status negative transition filter value	SCPI.STATus.QUEStionable.LIMIT.NTRansition

Function	Setting/Execution item	COM object
Status report system (Continued)	Reads the questionable limit conditional register value (FP)	SCPI.STATus.QUEStionable.LIMit.FP(1-1).CONDition
	Sets/reads the questionable limit status enable value (FP)	SCPI.STATus.QUEStionable.LIMit.FP(1-1).ENABLE
	Reads the questionable limit status event register value (FP)	SCPI.STATus.QUEStionable.LIMit.FP(1-1).EVENT
	Sets/reads the questionable limit status positive transition filter value (FP)	SCPI.STATus.QUEStionable.LIMit.FP(1-1).PTRansition
	Sets/reads the questionable limit status negative transition filter value (FP)	SCPI.STATus.QUEStionable.LIMit.FP(1-1).NTRansition
	Reads the questionable limit conditional register value (PN)	SCPI.STATus.QUEStionable.LIMit.PN(1-1).CONDition
	Sets/reads the questionable limit status enable value (PN)	SCPI.STATus.QUEStionable.LIMit.PN(1-1).ENABLE
	Reads the questionable limit status event register value (PN)	SCPI.STATus.QUEStionable.LIMit.PN(1-1).EVENT
	Sets/reads the questionable limit status positive transition filter value (PN)	SCPI.STATus.QUEStionable.LIMit.PN(1-1).PTRansition
	Sets/reads the questionable limit status negative transition filter value (PN)	SCPI.STATus.QUEStionable.LIMit.PN(1-1).NTRansition
	Reads the questionable limit conditional register value (SP)	SCPI.STATus.QUEStionable.LIMit.SP(1-1).CONDition
	Sets/reads the questionable limit status enable value (SP)	SCPI.STATus.QUEStionable.LIMit.SP(1-1).ENABLE
	Reads the questionable limit status event register value (SP)	SCPI.STATus.QUEStionable.LIMit.SP(1-1).EVENT
	Sets/reads the questionable limit status positive transition filter value (SP)	SCPI.STATus.QUEStionable.LIMit.SP(1-1).PTRansition
	Sets/reads the questionable limit status negative transition filter value (SP)	SCPI.STATus.QUEStionable.LIMit.SP(1-1).NTRansition
	Reads the questionable limit conditional register value (TR)	SCPI.STATus.QUEStionable.LIMit.TR(1-1).CONDition
	Sets/reads the questionable limit status enable value (TR)	SCPI.STATus.QUEStionable.LIMit.TR(1-1).ENABLE
	Reads the questionable limit status event register value (TR)	SCPI.STATus.QUEStionable.LIMit.TR(1-1).EVENT
	Sets/reads the questionable limit status positive transition filter value (TR)	SCPI.STATus.QUEStionable.LIMit.TR(1-1).PTRansition
	Sets/reads the questionable limit status negative transition filter value (TR)	SCPI.STATus.QUEStionable.LIMit.TR(1-1).NTRansition
	Reads the questionable limit conditional register value (USER)	SCPI.STATus.QUEStionable.LIMit.USER(1-1).CONDition
	Sets/reads the questionable limit status enable value (USER)	SCPI.STATus.QUEStionable.LIMit.USER(1-1).ENABLE

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Status report system (Continued)	Reads the questionable limit status event register value (USER)	SCPI.STATus.QUEStionable.LIMit.USER(1-1).EVENT
	Sets/reads the questionable limit status positive transition filter value (USER)	SCPI.STATus.QUEStionable.LIMit.USER(1-1).PTRansition
	Sets/reads the questionable limit status negative transition filter value (USER)	SCPI.STATus.QUEStionable.LIMit.USER(1-1).NTRansition
Transient measurement - Display	Selects active trace	SCPI.CALCulate.TR(1-1).ALLTrace.ACTive
	Selects phase format on transient measurement	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.UNIT
	Turns on/off wrap-phase	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.WRAP
	Sets/reads data hold	SCPI.CALCulate.TR(1-1).TRACe(1-4).HOLD
	Selects math operation type	SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.FUNCTioN
	Copy data to memory	SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.MEMorize
	Smoothing aperture	SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.APErture
	Smoothing on/off	SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.STATe
	clear all stored traces	SCPI.DISPlay.TR(1-1).ALLTrace.PERSistence.CLEar
	auto scale all	SCPI.DISPlay.TR(1-1).ALLTrace.Y.SCALe.AUTO
	Turns on/off measurement conditions	SCPI.DISPlay.TR(1-1).ANNotation.MEASurement.STATe
	Sets/reads relative Y-scale	SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.RELative
	Sets/reads the number of Y-digits	SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.STATe
	Edits window title label	SCPI.DISPlay.TR(1-1).LABel.DATA
	Turns on/off window title lable	SCPI.DISPlay.TR(1-1).LABel.STATe
	maximize active trace	SCPI.DISPlay.TR(1-1).MAXimize
	Turns on/off transient measurement mode	SCPI.DISPlay.TR(1-1).STATe
	Trace Title Label	SCPI.DISPlay.TR(1-1).TRACe(1-4).LABel.DATA
	show data and/or memory trace	SCPI.DISPlay.TR(1-1).TRACe(1-4).MODE
	Clears persistent data	SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.CLEar
	Sets/reads persistence mode	SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.STATe
	Execute autoscale	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.AUTO
	scale per division	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.PDIVision
scale reference level	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RLEVel	

Function	Setting/Execution item	COM object
Transient measurement - Display (Continued)	scale reference position	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RPOStion
	Sets/reads # of Y division	SCPI.DISPlay.TR(1-1).Y.SCALe.DIVisions
	Copies trace data to the user trace	SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.COPIY
	Sets/reads the frequency format	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.FREQuency
	Sets/reads the reference frequency	SCPI.CALCulate.TR(1-1).TRACe(1-4).REFerence.FREQuency
	Reads the trace parmeter.	SCPI.CALCulate.TR(1-1).TRACe(1-4).REFerence.PARa meter
	Sets/Reads the offset value of the trace data	SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.OFFSet
	Sets/Reads the stimulus value that is set as phase reference (0 degree reference) of the trace data	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.XREFerence
	Sets/Reads the automatic setting of the X-axis display range of the graph of trace data to the stimulus value	SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.AUTO
	Sets/Reads the start value of the X-axis of the graph display of trace data	SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.LEFT
	Sets/Reads the stop value of the X-axis of the graph display of trace data	SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.RIGHt
Transient measurement - File operation	Saves trace data	SCPI.MMEMory.TR(1-1).TRACe(1-4).STORE.DATA
	Saves memory trace data	SCPI.MMEMory.TR(1-1).TRACe(1-4).STORE.MEMory

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Transient measurement - Limit Test	Reads out the limit test result	SCPI.CALCulate.TR(1-1).ALLTrace.LIMit.FAIL
	Turns on/off the limit test function	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.STATe
	Sets/reads the number of segments in the upper limit line	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.COUNt
	Sets/reads the number of segments in the lower limit line	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.COUNt
	Sets/reads segment data of the upper limit line	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.DATA
	Sets/reads segment data of the lower limit line	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.DATA
	Clears the upper limit line	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.CLEAr
	Clears the lower limit line	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.CLEAr
	Sets/reads the upper limit values of all measurement points	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.LDAtA
	Sets/reads the lower limit values of all measurement points	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.LDAtA
	Reads out the limit test result	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.FAIL
	Reads the limit test results of all measurement points in selected traces	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.REPort.DAtA
	Turns on/off the limit line	SCPI.DISPlay.TR(1-1).TRACe(1-4).LIMit.LINE
	Turns on/off the limit test judgement display	SCPI.DISPlay.TR(1-1).LIMit.FSIGN
	Reads the upper limit line	SCPI.MMEMory.TR(1-1).TRACe(1-4).LOAD.LIMit.UPPer
	Reads the lower limit line	SCPI.MMEMory.TR(1-1).TRACe(1-4).LOAD.LIMit.LOWer

Function	Setting/Execution item	COM object
Transient measurement - Marker/analysis	Turns on/off bandmarker coupling function	SCPI.CALCulate.TR(1-1).ALLTrace.BDMarker.X.COUPle.STATe
	Turns on/off marker coupling function	SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.COUPle.STATe
	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.DISCrete.STATe
	Sets/reads marker reference number	SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFERenc.e.NUMBer
	Turns on/off delta marker mode	SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFERenc.e.STATe
	Selects active marker	SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.ACTive
	Sets/reads marker search range (X-axis)	SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARech.DOMain.X
	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARech.DOMain.Y
	Execute marker search all	SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARech.PEAK
	Sets/reads the center value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.CENTer
	Sets/reads the span value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.SPAN
	Sets/reads the start value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STARt
	Turn on/off bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STATe
	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STOP
	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.CENTer
	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.SPAN
	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STARt
	Turn on/off bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STATe
	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STOP
	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNctio.n.DOMain.X
	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNctio.n.DOMain.Y
	Reads the result of statistical analysis for the data trace	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNctio.n.STATi.stics.DATA_Q mean, std_dev, peak_to_peak

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Transient measurement - Marker/analysis (Continued)	Reads the result of statistical analysis for the memory trace	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.STATistics.MEMory_Q mean, std_dev, peak_to_peak
	Sets/reads analysis type	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.TYPE
	Execute marker peak search left	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LPEak
	Execute marker target search left	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LTARget
	Execute marker search maximum	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.MAXimum
	Execute marker search minimum	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.MINimum
	Execute marker peak search	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.PEAK
	Execute marker peak search right	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RPEak
	Execute marker target search right	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RTARget
	Execute marker target search	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.TARGet
	Sets/reads the peak excursion value	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.EXCursion
	Sets/reads the marker peak-search polarity	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.POLarity
	Sets/reads the target transition definition	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.TRANsition
	Sets/reads the marker target value	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.Y
	Sets/reads the marker tracking type	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TRACKing.TYPE
	Turns on/off markers	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STATe
	Sets/reads the marker X value	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).X
	Reads the marker Y value	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).Y
	Sets/reads the marker information position	SCPI.DISPlay.TR(1-1).ANNotation.MARKer.POSition
	Turns on/off the marker list	SCPI.DISPlay.TR(1-1).TABLe.STATe

Function	Setting/Execution item	COM object
Transient measurement - Marker/analysis (Continued)	Calculates regression line coefficient (a and b of $Y = aX + b$) for the trace data and reads the result	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCTION.LREGression.DATA_Q a, b
	Calculates regression line coefficient (a and b of $Y = aX + b$) for the trace memory and reads the result	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCTION.LREGression.MEMory_Q a, b
	Sets/Reads the a value of the line equation ($Y = aX + b$) for the linearity evaluation of the trace data	SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.A
	Sets/Reads the b value of the line equation ($Y = aX + b$) for the linearity evaluation of the trace data	SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.B
	Sets to trace memory the line which is the result of the line equation ($Y = aX + b$) for the linearity evaluation of the trace data	SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.MEMory
Transient measurement - Measurement	always move to waiting-for-trigger state after measuring	SCPI.INITiate.TR(1-1).CONTinuous
	move once to waiting-for-trigger state	SCPI.INITiate.TR(1-1).IMMEDIATE

COM Object Reference
List by function

Function	Setting/Execution item	COM object
Transient measurement - Measurement conditions	average clear	SCPI.SENSE.TR(1-1).AVERAge.CLEAr
	average count	SCPI.SENSE.TR(1-1).AVERAge.COUNT
	average ON/OFF	SCPI.SENSE.TR(1-1).AVERAge.STATe
	phase reference frequency	SCPI.SENSE.TR(1-1).NARRow.FREQUency.PREFErenc e
	frequency span	SCPI.SENSE.TR(1-1).NARRow.FREQUency.RANGE
	target frequency	SCPI.SENSE.TR(1-1).NARRow.FREQUency.TARGET
	offset for reference point	SCPI.SENSE.TR(1-1).NARRow.TIME.OFFSet
	reference position for span	SCPI.SENSE.TR(1-1).NARRow.TIME.REFerence
	time span	SCPI.SENSE.TR(1-1).NARRow.TIME.SPAN
	Max Input Level	SCPI.SENSE.TR(1-1).POWer.INPut.LEVel.MAXimum
	Set/get transient frequency range in the wideband mode	SCPI.SENSE.TR(1-1).WIDE.FREQUency.MAXimum
	offset for reference point	SCPI.SENSE.TR(1-1).WIDE.TIME.OFFSet
	reference position for span	SCPI.SENSE.TR(1-1).WIDE.TIME.REFerence
	time span	SCPI.SENSE.TR(1-1).WIDE.TIME.SPAN
	narrow video trigger frequency	SCPI.TRIGger.TR(1-1).NARRow.VIDeo.FREQUency.C ENTer
	video trigger threshold level relative to max input level	SCPI.TRIGger.TR(1-1).NARRow.VIDeo.THREShold
	trigger source	SCPI.TRIGger.TR(1-1).SOURce
	wide video trigger frequency	SCPI.TRIGger.TR(1-1).WIDE.VIDeo.FREQUency.CEN Ter
	Sets/reads the offset value of the phase reference frequency	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHAsE. PREFErencE.OFFSet
	Sets/Reads the delay value of the external trigger source	SCPI.TRIGger.TR(1-1).ETTAAdjust

Function	Setting/Execution item	COM object
Transient measurement - Reads/writes the data	measurement raw data	SCPI.CALCulate.TR(1-1).NARRow.DATA.RDATA
	X axis data	SCPI.CALCulate.TR(1-1).NARRow.DATA.XDATA
	Sets/reads formatted trace data	SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FDATA
	Sets/reads formatted memory data	SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.FMEMory
	Sets/reads unformatted trace data	SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.UDATA
	Sets/reads unformatted memory data	SCPI.CALCulate.TR(1-1).TRACe(1-4).DATA.UMEMor y
	measurement raw data	SCPI.CALCulate.TR(1-1).WIDE.DATA.RDATA
	X axis data	SCPI.CALCulate.TR(1-1).WIDE.DATA.XDATA
	# of points	SCPI.SENSE.TR(1-1).NARRow.SWEep.POINts
	# of points	SCPI.SENSE.TR(1-1).WIDE.SWEep.POINts
User defined window - Display	Selects active trace	SCPI.CALCulate.USER(1-1).ALLTrace.ACTive
	Selects math operation type	SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.FUNCtion
	Copy data to memory	SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.MEMorize
	Smoothing aperture	SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.APERTure
	Smoothing on/off	SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.STATE
	clear all stored traces	SCPI.DISPlay.USER(1-1).ALLTrace.PERSistence.CLEar
	auto scale all	SCPI.DISPlay.USER(1-1).ALLTrace.Y.SCALE.AUTO
	Turns on/off measurement conditions	SCPI.DISPlay.USER(1-1).ANNotation.MEASurement.STATE
	ossible.	SCPI.DISPlay.USER(1-1).GRATICule.AXIS.Y.RELative
	Show/Hide Y graticule label	SCPI.DISPlay.USER(1-1).GRATICule.AXIS.Y.STATE
	Window Title Label	SCPI.DISPlay.USER(1-1).LABel.DATA
	Show/Hide Window Title Label	SCPI.DISPlay.USER(1-1).LABel.STATE
	maximize active trace	SCPI.DISPlay.USER(1-1).MAXimize
	Turns on/off user defined window	SCPI.DISPlay.USER(1-1).STATE
	Trace Title Label	SCPI.DISPlay.USER(1-1).TRACe(1-8).LABel.DATA
	show data and/or memory trace	SCPI.DISPlay.USER(1-1).TRACe(1-8).MODE
	Clears persistent data	SCPI.DISPlay.USER(1-1).TRACe(1-8).PERSistence.STATE
	Sets/reads persistence mode	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATE
	X axis unit	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.UNIT

COM Object Reference
List by function

Function	Setting/Execution item	COM object
User defined window - Display (Continued)	Execute autoscale	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.AUTO
	scale per division	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.PDIVis ion
	scale reference level	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RLEVe l
	scale reference position	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RPOSit ion
	Y axis unit	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.UNIT
	Sets/reads # of Y division	SCPI.DISPlay.USER(1-1).Y.SCALe.DIVisions
	Sets/reads the display type of the x axis.	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.TYPE
	Copies trace data to the user trace	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.COPY
	Sets/Reads the offset value of the trace data	SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.OFFS et
	Sets/Reads the automatic setting of the X-axis display range of the graph of trace data to the stimulus value	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.AUTO
	Sets/Reads the start value of the X-axis of the graph display of trace data	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.LEFT
	Sets/Reads the stop value of the X-axis of the graph display of trace data	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.RIGHT
	Sets/Reads annotation strings of the trace data	SCPI.DISPlay.USER(1-1).TRACe(1-8).ANNotation.DAT A
User defined window - File operation	Saves selected trace data	SCPI.MMEMory.USER(1-1).TRACe(1-8).STORe.DATA
	Saves selected memory trace data	SCPI.MMEMory.USER(1-1).TRACe(1-8).STORe.MEM ory

Function	Setting/Execution item	COM object
User defined window - Limit Test	Reads out the limit test result	SCPI.CALCulate.USER(1-1).ALLTrace.LIMit.FAIL
	Turns on/off the limit test function	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.STATe
	Sets/reads the number of segments in the upper limit line	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.COUNt
	Sets/reads the number of segments in the lower limit line	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.COUNt
	Sets/reads segment data of the upper limit line	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.DATA
	Sets/reads segment data of the lower limit line	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.DATA
	Clears the upper limit line	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.CLEAr
	Clears the lower limit line	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.CLEAr
	Sets/reads the upper limit values of all measurement points	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.LDATA
	Sets/reads the lower limit values of all measurement points	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.LDATA
	Reads out the limit test result	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.FAIL
	Reads the limit test results of all measurement points in selected traces	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.REPort.DATA
	Turns on/off the limit line	SCPI.DISPlay.USER(1-1).TRACe(1-8).LIMit.LINE
	Turns on/off the limit test judgement display	SCPI.DISPlay.USER(1-1).LIMit.FSIGn
	Reads the upper limit line	SCPI.MMEMory.USER(1-1).TRACe(1-8).LOAD.LIMit.UPPer
	Reads the lower limit line	SCPI.MMEMory.USER(1-1).TRACe(1-8).LOAD.LIMit.LOWer

COM Object Reference
List by function

Function	Setting/Execution item	COM object
User defined window - Marker/analysis	Turns on/off bandmarker coupling function	SCPI.CALCulate.USER(1-1).ALLTrace.BDMarker.X.COUPle.STATe
	Turns on/off marker coupling function	SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.COUPle.STATe
	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.DISCr ete.STATe
	Sets/reads marker reference number	SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.NUMBer
	Turns on/off delta marker mode	SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.STATe
	active marker	SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.ACTive
	marker search X range source	SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEARch.DOMain.X
	marker search Y range source	SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEARch.DOMain.Y
	search peak all	SCPI.CALCulate.USER(1-1).TRACe(1-8).ALLMarker.SEARch.PEAK
	band marker X center	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.CENTer
	band marker X span	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.SPAN
	band marker X start	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STARt
	band marker visible on/off	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STATe
	band marker X stop	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.X.STOP
	band marker Y center	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.CENTer
	band marker Y span	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.SPAN
	band marker Y start	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STARt
	band marker visible on/off	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STATe
	band marker Y stop	SCPI.CALCulate.USER(1-1).TRACe(1-8).BDMarker.Y.STOP
	Sets/reads analysis/search range(x-axis)	SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTion.DOMain.X
Sets/reads analysis/search range(y-axis)	SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTion.DOMain.Y	
trace data statistics	SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTion.STATistics.DATA_Q mean, std_dev, peak_to_peak	

Function	Setting/Execution item	COM object
User defined window - Marker/analysis (Continued)	memory data statistics	SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTioN.STATistics.MEMory_Q mean, std_dev, peak_to_peak
	analysis type	SCPI.CALCulate.USER(1-1).TRACe(1-8).FUNCTioN.TYPE
	data hold	SCPI.CALCulate.USER(1-1).TRACe(1-8).HOLD
	Execute marker peak search left	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.LPEak
	Execute marker target search left	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.LTARget
	Execute marker search maximum	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.MAXimum
	Execute marker search minimum	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.MINimum
	Execute marker search peak	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.PEAK
	Execute marker peak search right	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.RPEak
	Execute marker target search right	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.RTARget
	Execute marker target search	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.EXECute.TARGet
	Sets/reads the peak excursion value	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.PEAK.EXCURsion
	Sets/reads the marker peak-search polarity	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.PEAK.POLarity
	Sets/reads the target transition definition	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TARGet.TRANsition
	Sets/reads the marker target value	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TARGet.Y
	Sets/reads the marker tracking type	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).SEARch.TRACking.TYPE
	marker visible on/off	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).STATe
	marker x position	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).X
	marker y position	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).Y
	Sets/reads the marker information position	SCPI.DISPlay.USER(1-1).ANNotation.MARKer.POSitioN
Turns on/off the marker list	SCPI.DISPlay.USER(1-1).TABLe.STATe	

COM Object Reference
List by function

Function	Setting/Execution item	COM object
User defined window - Reads/writes the data	Sets/reads formatted trace data	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.FDATA
	Sets/reads formatted memory data	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.FMEMORY
	Reads the number of measurement points	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.POINTS
	Sets/reads raw data	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.RDATA
	start frequency	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.START
	stop frequency	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.STOP
	Sets/reads unformatted trace data	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.UDATA
	Sets/reads unformatted memory data	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.UMEMORY
	Sets/reads the X data	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.XDATA
VBA Macro	List all the executable macro	SCPI.PROGRAM.CATALOG
	Turns on/off the E5052 VBA event callback function	SCPI.PROGRAM.COM.EVENT
	Sets/reads the name of the program to be selected	SCPI.PROGRAM.SELECTED.NAME
	Set/reads the state of the selected program	SCPI.PROGRAM.SELECTED.STATE
	Turns on/off user defined softkey function	SCPI.PROGRAM.SKEY.ITEM(1-8).ENABLE
	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
	Sets/reads the user defined softkey label	SCPI.PROGRAM.SKEY.ITEM(1-8).LABEL

Commands with Variable Parameters and/or Setting Ranges Depending on Device Configuration

The table below lists the commands that have variable parameters and/or setting ranges depending on the device configuration.

Table 7-2 SCPI Commands with Variable Parameters and/or Setting Ranges Depending on Device Configuration

Command	Description
SCPI.SENSE.ATTenuation.LEVel	Sets/reads the input attenuator level
SCPI.SENSE.DCONverter.INPut	Sets/reads the signal supplied to the RF input port
SCPI.SENSE.DCONverter.MANual.IFDelta	Sets/reads the differential frequency between CH1 and CH2 from the external mixer
SCPI.SENSE.DCONverter.MANual.IFGain(1-2)	Sets/reads the IF gain of the external mixer
SCPI.SENSE.DCONverter.MANual.LO(1-2).FREQuency	Sets/reads the LO frequency of the external mixer
SCPI.SENSE.DCONverter.MANual.LO(1-2).LEVel	Sets/reads the LO level of the external mixer
SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.CURRent	Sets/reads the bias current to be supplied to the external mixer
SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.STATe	Sets the bias current supplied to the external mixer on or off and reads its settings
SCPI.SENSE.DCONverter.MEXTernal	Sets the use of the external mixer on or off and reads its settings
SCPI.SENSE.FP(1-1).DCONverter.FREQuency	Sets/reads the input frequency to be supplied to the downconverter
SCPI.SENSE.FP(1-1).DCONverter.SSEarch.EXECute	Searches carrier signal and reflects the result to the input frequency of the downconverter (No Read)
SCPI.SENSE.FP(1-1).FBANd	Sets/reads frequency band
SCPI.SENSE.FP(1-1).POWer.INPut.LEVel.MAXimum	Sets/reads the maximum input level of the downconverter in order to determine the IF Gain
SCPI.SENSE.PN(1-1).DCONverter.FREQuency	Sets/reads input frequency of the downconverter
SCPI.SENSE.PN(1-1).DCONverter.SSEarch.EXECute	Searches carrier signal and reflects the result to the input frequency of the downconverter (No Read)
SCPI.SENSE.PN(1-1).FBANd	Sets/reads frequency band
SCPI.SENSE.SP(1-1).CARRier.FBANd	Sets/reads the carrier frequency band
SCPI.SENSE.SP(1-1).FREQuency.CENTer	Sets/reads the center value
SCPI.SENSE.SP(1-1).FREQuency.STARt	Sets/reads the start value
SCPI.SENSE.SP(1-1).FREQuency.STOP	Sets/reads the stop value
SCPI.SENSE.TR(1-1).NARRow.FREQuency.PREFeRence	Sets/reads the phase reference frequency of the narrowband mode
SCPI.SENSE.TR(1-1).NARRow.FREQuency.TARGet	Sets/reads the target frequency of the narrowband mode

Table 7-2 SCPI Commands with Variable Parameters and/or Setting Ranges Depending on Device Configuration

Command	Description
SCPI.SENSE.TR(1-1).WIDE.FREQUENCY.MAXIMUM	Set/reads transient frequency range in the wideband mode
SCPI.SENSE.UDConverter.HARMONIC	Sets/reads the frequency offset factor
SCPI.SENSE.UDConverter.LO	Sets/reads the LO frequency of the frequency offset
SCPI.SENSE.UDConverter.MODE	Sets/reads the conversion mode of the frequency offset
SCPI.SENSE.UDConverter.STATE	Sets/reads the frequency offset
SCPI.SOURCE.VOLTAGE.CONTROL.AFC.FBAND	Sets/reads the frequency band in the auto frequency control function
SCPI.SOURCE.VOLTAGE.CONTROL.AFC.INPUT.LEVEL.MAXIMUM	Sets/reads the maximum input level of the downconverter in order to determine the IF Gain
SCPI.SOURCE.VOLTAGE.CONTROL.AFC.TARGET	Sets/reads the target frequency
SCPI.TRIGGER.TR(1-1).NARROW.VIDEO.FREQUENCY.CENTER	Sets/reads video trigger frequency value of the narrowband mode
SCPI.TRIGGER.TR(1-1).WIDE.VIDEO.FREQUENCY.CENTER	Sets/reads video trigger frequency value of the wideband mode

List by softkey

Bellow table shows the COM object list by measurement window and softkey.

FP Menu

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level on 5dB Step	SCPI.SENSE.ATTenuation.LEVel
Average		
Averaging	Turns on/off averaging function	SCPI.SENSE.FP(1-1).AVERAge.STATe
Averaging Restart	Restart averaging	SCPI.SENSE.FP(1-1).AVERAge.CLEAr
Avg Factor	Sets/reads the number of averaging	SCPI.SENSE.FP(1-1).AVERAge.COUNt
DC Control Voltage		
Auto Freq Control		
AFC Status	Turns on/off the auto frequency control function. Executes the auto frequency control once.	SCPI.SOURce.VOLTage.CONTRoL.AFC.STATe SCPI.SOURce.VOLTage.CONTRoL.AFC.IMMediate
Frequency Band	Sets/reads the frequency band in the auto frequency control function	SCPI.SOURce.VOLTage.CONTRoL.AFC.FBANd
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRoL.AFC.LIMit.HIGH
Max Input Level	Sets/reads the maximum input level	SCPI.SOURce.VOLTage.CONTRoL.AFC.INPut.LEVel.MAXimum
Max Iteration	Sets/reads the maximum number of iterations for the DC control voltage-setting loops	SCPI.SOURce.VOLTage.CONTRoL.AFC.ITERation
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRoL.AFC.LIMit.LOW
Sensitivity	Sets/reads the tuning sensitivity	SCPI.SOURce.VOLTage.CONTRoL.AFC.SENSitivity
Target	Sets/reads the target frequency in the auto frequency control function	SCPI.SOURce.VOLTage.CONTRoL.AFC.TARGeT
Tolerance	Sets/reads the tolerance limit	SCPI.SOURce.VOLTage.CONTRoL.AFC.TOLerance
Control Voltage Cal	Enables DC Control voltage calibration	SCPI.SOURce.VOLTage.CONTRoL.CORRection.STATe
DC Control Delay	Sets/reads DC Control delay(sec)	SCPI.SOURce.VOLTage.CONTRoL.DELay

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
DC Control Output	Turns on/off DC Control voltage	SCPI.SOURce.VOLTage.CONTRoI.LEVel.STATe
DC Control Voltage	Sets/reads DC Control voltage	SCPI.SOURce.VOLTage.CONTRoI.LEVel.AMPLitude
Execute Control Voltage Cal	Execute DC Control voltage calibration	SCPI.SOURce.VOLTage.CONTRoI.CORRection.COLLEct.ACQuire
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRoI.LIMit.HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRoI.LIMit.LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay(sec)	SCPI.SOURce.VOLTage.POWer.DELay
DC Power Output	Turns on/off DC Power voltage	SCPI.SOURce.VOLTage.POWer.LEVel.STATe
DC Power Voltage	Sets/reads DC Power voltage	SCPI.SOURce.VOLTage.POWer.LEVel.AMPLitude
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	SCPI.SOURce.VOLTage.POWer.LIMit.HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	SCPI.SOURce.VOLTage.POWer.LIMit.LOW
Display		
Allocate	Sets/reads the trace layout	SCPI.DISPlay.FP(1-1).SPLit
Edit Title Label	Edit the measurement window title label	SCPI.DISPlay.FP(1-1).LABel.DA TA
Color Type	Sets/Reads the display type of the display (normal/inverted)	SCPI.DISPlay.IMAGe
Limit Test		
Delete Lower Limit Line	Clears the lower limit line	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.CLear
Delete Upper Limit Line	Clears the upper limit line	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.CLEar
Explorer		
Fail Sign	Turns on/off the limit test judgement display	SCPI.DISPlay.FP(1-1).LIMit.FSI Gn
Import Lower Limit Line ...	Reads the lower limit line	SCPI.MMEMory.FP(1-1).TRACe(1-4).LOAD.LIMit.LOWer
Import Upper Limit Line ...	Reads the upper limit line	SCPI.MMEMory.FP(1-1).TRACe(1-4).LOAD.LIMit.UPPer

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object	
	Limit Line	Turns on/off the limit line	SCPI.DISPlay.FP(1-1).TRACe(1-4).LIMit.LINE
	Limit Test	Turns on/off the limit test function	SCPI.CALCulate.FP(1-1).TRACe(1-4).LIMit.STATe
	Marker Information	Sets/reads the marker information position	SCPI.DISPlay.FP(1-1).ANNotatio.n.MARKer.POSition
	Meas Condition	Turns on/off measurement conditions	SCPI.DISPlay.FP(1-1).ANNotatio.n.MEASurement.STATe
	Relative Y-Scale	Turns on/off relative Y-scale	SCPI.DISPlay.FP(1-1).GRATICule.AXIS.Y.RELative
	Security Level	Sets/recalls the security level	SCPI.SYSTem.SECurity.LEVel
	Title Label	Turns on/off the measurement window title label	SCPI.DISPlay.FP(1-1).LABel.STATe
	Update	Turns on/off the trace update	SCPI.DISPlay.ENABLE
	Y # of Digits	Selects the number of digits(Y-axis)	SCPI.DISPlay.FP(1-1).GRATICule.AXIS.Y.STATe
Format			
	Frequency Format	FP-frequency format	SCPI.CALCulate.FP(1-1).TRACe(1-4).FORMat.FREQuency
	Frequency Reference	Sets/reads the frequency reference	SCPI.CALCulate.FP(1-1).TRACe(1-4).REFerence.FREQuency
	Sensitivity Aperture	Sensitivity Aperture	SCPI.CALCulate.FP(1-1).TRACe(1-4).SAPerture
Input Port			
	Downconverter		
	Downconverter	Sets the use of the downconverter on or off, or reads its setting	SCPI.SENSE.DCONverter.STATe
	RF Input	Sets/reads the signal supplied to the RF input port	SCPI.SENSE.DCONverter.INPut
	External Mixer	Sets the use of the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MEXTernal
Macro Setup			
	Application		
	Jitter	Executes clock jitter analysis (VBA)	
	mmWave	Executes phase-noise measurement (VBA)	

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
E5052 Event	Turns on/off the E5052 VBA event callback function	SCPI.PROGRAM.COM.EVENT
Echo Window Menu		
Clear Echo	Clears echo window	SCPI.DISPLAY.ECHO.CLEAR
Echo Font Size	Sets/reads the font size in Echo window	SCPI.DISPLAY.ECHO.FSIZE
Echo Window	Turns on/off the Echo window	SCPI.DISPLAY.ECHO.STATE
Load & Run	Load and execute the macro selected on file names	
Select Macro	Sets/reads the name of the program to be selected	SCPI.PROGRAM.SELECTED.NAME
Stop	Set/reads the state of the selected program	SCPI.PROGRAM.SELECTED.STATE
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
User Label 2	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
User Label 3	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
User Label 4	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
User Label 5	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
User Label 6	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
User Label 7	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
User Label 8	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMEDIATE
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	SCPI.MMEMORY.LOAD.PROGRAM
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	SCPI.MMEMORY.STORE.PROGRAM

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off markers 1	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off markers 10	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe
Couple	Turns on/of marker coupling function	SCPI.CALCulate.FP(1-1).ALLTraCe.MARKer.COUPle.STATe
Marker 1	Turns on/off markers 1	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe
:		
:		
Marker 6	Turns on/off markers 6	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe
Marker List	Turns on/off the marker list	SCPI.DISPlay.FP(1-1).TABLe.STATe
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.FP(1-1).ALLTraCe.MARKer.DISCrete.STATe
Ref Marker	Sets/reads marker reference number	SCPI.CALCulate.FP(1-1).ALLTraCe.MARKer.REFerence.NUMBer
Ref Marker Mode	Turns on/off delta marker mode	SCPI.CALCulate.FP(1-1).ALLTraCe.MARKer.REFerence.STATe
More Markers		
Marker 7	Turns on/off markers 7	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off markers 10	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).STATe
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.DOMain.X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.DOMain.Y
Analysis Type	Sets/reads analysis type	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNCTion.TYPE

7. COM Object Reference

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Band Marker X		
Band Marker X	Turns on/off bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STARt
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STARt
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STOP
Couple	Turns on/off bandmarker coupling function	SCPI.CALCulate.FP(1-1).ALLTraCe.BDMarker.X.COUPLe.STATe
Marker Search		
Band Marker X		
Band Marker X	Turns on/off bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STARt
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.X.STOP

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STARt
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.FP(1-1).TRACe(1-4).BDMarker.Y.STOP
Couple	Turns on/off bandmarker coupling function	SCPI.CALCulate.FP(1-1).ALLTraCe.BDMarker.X.COUPle.STATe
Peak		
Peak Excursion	Sets/reads the peak excursion value	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.PEAK.EXCursion
Peak Polarity	Sets/reads the marker peak-search polarity	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.PEAK.POLarity
Search Left	Execute marker peak search left	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.LPEak
Search Peak	Execute marker peak search	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.PEAK
Search Peak All	Execute marker search all	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARCh.PEAK
Search Right	Execute marker peak search right	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.RPEak
Search Max	Execute marker search maximum	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.MAXimum
Search Min	Execute marker search minimum	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARCh.EXECute.MINimum
Search Range (X)	Sets/reads marker search range (X-axis)	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.X
Search Range (Y)	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.FP(1-1).TRACe(1-4).ALLMarker.SEARCh.DOMain.Y

7. COM Object Reference

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Target		
Search Left	Execute marker target search left	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.LTARget
Search Right	Execute marker target search right	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.RTARget
Search Target	Execute marker target search	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECute.TARGet
Target Transition	Sets/reads the target transition definition	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.TRANSition
Target Value	Sets/reads the marker target value	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGet.Y
Tracking	Sets/reads the marker tracking type	SCPI.CALCulate.FP(1-1).TRACe(1-4).MARKer(1-10).SEARch.TRACking.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	SCPI.SOURce.FP(1-1).VOLTage.CONTrol.CENTer SCPI.SOURce.FP(1-1).VOLTage.POWer.CENTer
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	SCPI.SOURce.FP(1-1).VOLTage.CONTrol.STARt SCPI.SOURce.FP(1-1).VOLTage.POWer.STARt
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	SCPI.SOURce.FP(1-1).VOLTage.CONTrol.STOP SCPI.SOURce.FP(1-1).VOLTage.POWer.STOP

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Measurement View		
Freq & Power	Selects frequency, power & DC current measurement window	SCPI.DISPlay.WINDow.ACTive
Phase Noise	Selects phase noise measurement window	SCPI.DISPlay.WINDow.ACTive
Show Window		
Freq & Power	Turns on/off frequency, power and DC current measurement mode	SCPI.DISPlay.FP(1-1).STATe
Phase Noise	Turns on/off phase noise measurement mode	SCPI.DISPlay.PN(1-1).STATe
Spectrum Monitor	Turns on/off spectrum monitor mode	SCPI.DISPlay.SP(1-1).STATe
Transient	Turns on/off transient measurement mode	SCPI.DISPlay.TR(1-1).STATe
User	Turns on/off user defined window	SCPI.DISPlay.USER(1-1).STATe
Spectrum Monitor	Selects spectrum monitor mode	SCPI.DISPlay.WINDow.ACTive
Transient	Selects transient measurement mode	SCPI.DISPlay.WINDow.ACTive
User	Select user defined window	SCPI.DISPlay.WINDow.ACTive
Preset		
Factory	Preset instrument to the initial setup state	SCPI.SYSTem.PRESet
User	Preset instrument and recalls the Autorec.sta in the F drive	
Save/Recall		
Explorer...	Open windows explorer	
Recall by filename	Recalls state file by file name	SCPI.MMEMory.LOAD.STATe
Recall State		
Autorec	Recalls settings	SCPI.MMEMory.LOAD.STATe
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	SCPI.MMEMory.LOAD.STATe
State02	Recalls state file from register 2	SCPI.MMEMory.LOAD.STATe
State03	Recalls state file from register 3	SCPI.MMEMory.LOAD.STATe
State04	Recalls state file from register 4	SCPI.MMEMory.LOAD.STATe
State05	Recalls state file from register 5	SCPI.MMEMory.LOAD.STATe
State06	Recalls state file from register 6	SCPI.MMEMory.LOAD.STATe
Save Data Trace	Saves trace data	SCPI.MMEMory.FP(1-1).TRACe (1-4).STORe.DATA
Save Memory Trace	Saves memory trace data	SCPI.MMEMory.FP(1-1).TRACe (1-4).STORe.MEMory

7. COM Object Reference

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Save State		
Autorec	Save settings	SCPI.MMEMory.STORe.STATe
File Dialog...	Open file dialog	
Save Type	Selects instrument state type (Entire or instrument state only)	SCPI.MMEMory.STORe.STYPe
State01	Save state file to register 1	SCPI.MMEMory.STORe.STATe
State02	Save state file to register 2	SCPI.MMEMory.STORe.STATe
State03	Save state file to register 3	SCPI.MMEMory.STORe.STATe
State04	Save state file to register 4	SCPI.MMEMory.STORe.STATe
State05	Save state file to register 5	SCPI.MMEMory.STORe.STATe
State06	Save state file to register 6	SCPI.MMEMory.STORe.STATe
Scale		
Auto Scale	Execute autoscale	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.AUTO
Auto Scale All	Execute autoscale for all traces on frequency, power and DC current measurement window	SCPI.DISPlay.FP(1-1).ALLTrace.Y.SCALe.AUTO
Divisions	Sets/reads Y-scale divisions	SCPI.DISPlay.FP(1-1).Y.SCALe.DIVisions
Marker -> Reference	Set the marker value to the frference level	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RLEVel
Reference Position	Sets/reads reference position	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RPOSITION
Reference Value	Sets/reads the reference level value	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.RLEVel
Scale/Div	Sets/reads scale per division	SCPI.DISPlay.FP(1-1).TRACe(1-4).Y.SCALe.PDIVision
X Axis		
Auto	Sets/Reads automatic setting of the X-axis display range to the stimulus value	SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.AUTO
Band Marker -> X Axis	Sets the X-axis band marker range to the X-axis display range of a graph	SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.LEFT SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.RIGHt
Left	Sets/Reads the start value of the X-axis display range	SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.LEFT
Right	Sets/Reads the stop value of the X-axis display range	SCPI.DISPlay.FP(1-1).TRACe(1-4).X.SCALe.RIGHt

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Setup		
Carrier Search	Searches carrier signal and reflects the result to the input frequency of the downconverter	SCPI.SENSE.FP(1-1).DConvert.r.SSEarch.EXECute
Freq Resolution	Sets/reads frequency resolution	SCPI.SENSE.FP(1-1).FREQUency.RESolution
Frequency Band	Selects frequency band	SCPI.SENSE.FP(1-1).FBANd
Max Input Level	Sets/reads the maximum input level of the downconverter in order to determine the IF Gain	SCPI.SENSE.FP(1-1).POWer.INP ut.LEV el.MAXimum
Nominal Frequency	Sets/reads the input frequency to be supplied to the downconverter	SCPI.SENSE.FP(1-1).DConvert.r.FREQUency
Point Delay	Sets/reads the point delay value	SCPI.SENSE.FP(1-1).SWEep.DW ELI
Points	Sets/reads the number of measurement points	SCPI.SOURce.FP(1-1).SWEep.P OINts
Sweep Parameter	Sets/reads sweep parameter	SCPI.SOURce.FP(1-1).SWEep.P ARameter
Start/Center		
DC Control Center	Vcontrol center	SCPI.SOURce.FP(1-1).VOLTag.e.CONTRol.CENTer
DC Control Span	Vcontrol span	SCPI.SOURce.FP(1-1).VOLTag.e.CONTRol.SPAN
DC Control Start	Vcontrol start	SCPI.SOURce.FP(1-1).VOLTag.e.CONTRol.STARt
DC Control Stop	Vcontrol stop	SCPI.SOURce.FP(1-1).VOLTag.e.CONTRol.STOP
DC Power Center	Vpower center	SCPI.SOURce.FP(1-1).VOLTag.e.POWer.CENTer
DC Power Span	Vpower span	SCPI.SOURce.FP(1-1).VOLTag.e.POWer.SPAN
DC Power Start	Vpower start	SCPI.SOURce.FP(1-1).VOLTag.e.POWer.STARt
DC Power Stop	Vpower stop	SCPI.SOURce.FP(1-1).VOLTag.e.POWer.STOP
Stop/Span		
DC Control Center	Vcontrol center	SCPI.SOURce.FP(1-1).VOLTag.e.CONTRol.CENTer
DC Control Span	Vcontrol span	SCPI.SOURce.FP(1-1).VOLTag.e.CONTRol.SPAN
DC Control Start	Vcontrol start	SCPI.SOURce.FP(1-1).VOLTag.e.CONTRol.STARt

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
DC Control Stop	Vcontrol stop	SCPI.SOURce.FP(1-1).VOLTage. CONTrol.STOP
DC Power Center	Vpower center	SCPI.SOURce.FP(1-1).VOLTage. POWer.CENTer
DC Power Span	Vpower span	SCPI.SOURce.FP(1-1).VOLTage. POWer.SPAN
DC Power Start	Vpower start	SCPI.SOURce.FP(1-1).VOLTage. POWer.START
DC Power Stop	Vpower stop	SCPI.SOURce.FP(1-1).VOLTage. POWer.STOP
System		
Abort Printing	Aborts printing	SCPI.HCOPy.ABORt
Backlight	Turns on/off backlight	SCPI.SYSTem.BACKlight.STATe
Instrument Setup		
Correction		
File Dialog ...	Loads correction data for a specified power	SCPI.MMEMory.LOAD.CORREc tion.POWer
Import Power Correction Table	Loads correction data for a specified power	SCPI.MMEMory.LOAD.CORREc tion.POWer
Power Correction	Sets user the user calibration on or off or reads its setting	SCPI.SENSE.CORREction.POWer .STATe
Downconverter Manual Setup		
Current	Sets/reads the bias current to be supplied to the external mixer	SCPI.SENSE.DCONverter.MANu al.MEXTernal(1-2).BIAS.CURRE nt
IF Gain 1 IF Gain 2	Sets/reads the IF gain of the external mixer	SCPI.SENSE.DCONverter.MANu al.IFGain(1-2)
LO1 Frequency LO2 Frequency	Sets/reads the LO frequency of the external mixer	SCPI.SENSE.DCONverter.MANu al.LO(1-2).FREQuency
LO1 Level LO2 Level	Sets/reads the LO level of the external mixer	SCPI.SENSE.DCONverter.MANu al.LO(1-2).LEVel
Mixer 1 Bias Mixer 2 Bias	Sets the bias current supplied to the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MANu al.MEXTernal(1-2).BIAS.STATe
ΔIF = IF2 - IF1	Sets/reads the differential frequency between CH1 and CH2 from the external mixer	SCPI.SENSE.DCONverter.MANu al.IFDelta

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Frequency Offset (User Downconv.)		
Conversion Mode	Sets/reads the conversion mode of the frequency offset	SCPI.SENSE.UDConverter.MODE
Frequency Offset	Sets/reads the frequency offset	SCPI.SENSE.UDConverter.STATE
Harmonic #	Sets/reads the frequency offset factor	SCPI.SENSE.UDConverter.Harmonic
LO Frequency	Sets/reads the LO frequency of the frequency offset	SCPI.SENSE.UDConverter.LO
Dump Screen Image	Save screen image	SCPI.MMEMORY.STORE.IMAGE
Invert Image	Selects print mode	SCPI.HCOPY.IMAGE
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	SCPI.SYSTEM.BEEPER.COMplete.STATE
Beep Warning	Turns on/off the beep for warning	SCPI.SYSTEM.BEEPER.WARning.STATE
Test Beep Complete	Makes beep sound for operation completion	SCPI.SYSTEM.BEEPER.COMplete.IMMediate
Test Beep Warning	Makes beep sound for warning	SCPI.SYSTEM.BEEPER.WARning.IMMediate
Clock Setup		
Set Date and Time	Set/reads system time Set/reads system date	SCPI.SYSTEM.TIME[_Q] hour, minute, second SCPI.SYSTEM.DATE[_Q] year, month, day
Show Clock	Turns on/off internal clock display	SCPI.DISPLAY.CLOCK
Color Setup		
Invert	Sets each color when the inverted display is selected	
Background	Sets/Reads the background color	SCPI.DISPLAY.COLOR(2).BACK.VALUE[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPLAY.COLOR(2).TRACe(1).DATA.VALUE[_Q]
: :		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPLAY.COLOR(2).TRACe(8).DATA.VALUE[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPLAY.COLOR(2).GRATicule(1).VALUE[_Q]

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPlay.COLOr(2).GRATicule(2).VALue[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPlay.COLOr(2).LIMit(1).VALue[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPlay.COLOr(2).LIMit(2).VALue[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace of trace 1	SCPI.DISPlay.COLOr(2).TRACe(1).MEMory.VALue[_Q]
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPlay.COLOr(2).TRACe(8).MEMory.VALue[_Q]
Reset Color	Resets the display color to the factory preset setting	SCPI.DISPlay.COLOr(2).RESet
Normal	Sets each color when the normal display is selected	
Background	Sets/Reads the background color	SCPI.DISPlay.COLOr(1).BACK.VALue[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPlay.COLOr(1).TRACe(1).DATA.VALue[_Q]
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPlay.COLOr(1).TRACe(8).DATA.VALue[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPlay.COLOr(1).GRATicule(1).VALue[_Q]
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPlay.COLOr(1).GRATicule(2).VALue[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPlay.COLOr(1).LIMit(1).VALue[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPlay.COLOr(1).LIMit(2).VALue[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace of trace 1	SCPI.DISPlay.COLOr(1).TRACe(1).MEMory.VALue[_Q]
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPlay.COLOr(1).TRACe(8).MEMory.VALue[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPlay.COLOr(1).RESet

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Control Panel ...	Open control panel	
 GPIB Setup		
System Controller Configuration	Turns on/off system controloer 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	SCPI.SYSTem.KLOCK.KBD
Touch Screen & Mouse Lock	Disables from mouse/touch screen operations	SCPI.SYSTem.KLOCK.MOUSe
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	SCPI.HCOPy.IMMEDIATE
Printer Setup ...	Execute printer setup	
Service Menu		
Administrator Menu	Displays softkeys associated with Administrator Menu. This function is not available to general users	
Error Log		
Clear Error Log	Clears the error log	
View Error Log ...	Displays the error log	
Install Option License		
Jitter	Enters the license for clock jitter analysis	

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Service Function	Displays softkeys associated with Service Menu. This function is not available to general users	
Test Menu		
Power On Test	Performs internal test	
Display Test	Performs display test	
Front Panel	Performs front panel key (hard key) test	
Adjust Touch Screen	Performs touch screen calibration	
E5053A Test	Displays the connection status of E5053A	
Product Information	Reads product information	
Trace View		
Aperture	Sets/reads smoothing aperture	SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.APERture
Clear Persistent Data	Clear persistence mode	SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.CLEar
Copy to User	Copies trace data to the user trace	SCPI.CALCulate.FP(1-1).TRACe(1-4).DATA.COPY
Data -> Mem	Copy data trace to memory trace	SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.MEMorize
Data Hold	Data hold	SCPI.CALCulate.FP(1-1).TRACe(1-4).HOLD
Data Math	Sets/reads math operation type	SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.FUNcTion
Display Trace	Shows data and/or memory trace	SCPI.DISPlay.FP(1-1).TRACe(1-4).MODE
Marker -> -Offset	Sets sign-inverted data value of the data trace's active marker to the offset value	SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.OFFSet
Memory Trace		
Line (Y = AX + B)		
A	Sets/Reads regression line coefficient a (slope)	SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.A
B	Sets/Reads regression line coefficient b (intercept)	SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.B
Data Trace -> A, B	Assigns the measurement results to regression line coefficients (a, b)	SCPI.CALCulate.FP(1-1).TRACe(1-4).FUNcTion.LREGression.DA TA_Q a, b SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.A SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.B

Table 7-3 FP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Set Line to Memory	Sets the obtained regression line to the memory trace	SCPI.CALCulate.FP(1-1).TRACe(1-4).LINE.MEMory
Offset	Sets/Reads the offset value of the data trace	SCPI.CALCulate.FP(1-1).TRACe(1-4).MATH.OFFSet
Persistence		
Clear Persistent Data	Clears persistent mode	SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.CLEAr
Persistence Mode	Sets/reads persistent mode	SCPI.DISPlay.FP(1-1).TRACe(1-4).PERSistence.STATe
Smoothing	Turns on/off smoothing	SCPI.CALCulate.FP(1-1).TRACe(1-4).SMOothing.STATe
Trace Label	Edits trace title label	SCPI.DISPlay.FP(1-1).TRACe(1-4).LABel.DATA
Trigger		
Average Trigger	Sets/Reads the averaging trigger function	SCPI.TRIGger.AVERAge
Continuous	Sets trigger mode to continuous mode	SCPI.INITiate.FP(1-1).CONTInuous SCPI.INITiate.FP(1-1).IMMediate
Ext Trig Polarity	Sets/reads external trigger polarity	SCPI.TRIGger.EXTernal.SLOPe
Hold	Sets trigger mode to hold	SCPI.INITiate.FP(1-1).IMMediate
Manual Trigger	Execute trigger manually	SCPI.INITiate.FP(1-1).IMMediate
Mode	Sets/reads trigger mode either analyzer mode or tester mode (Analyzer mode is not available when option 011 is installed)	SCPI.TRIGger.FP(1-1).MODE
Restart	Restart trigger	SCPI.INITiate.FP(1-1).IMMediate
Single	Execute trigger once	SCPI.INITiate.FP(1-1).CONTInuous SCPI.INITiate.FP(1-1).IMMediate
Source	Selects trigger source	SCPI.TRIGger.FP(1-1).SOURce
Trigger to Freq & Power	Selects measurement mode to Frequency and power analyzer mode	SCPI.TRIGger.MODE

7. COM Object Reference

PN Menu

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level on 5dB Step	SCPI.SENSE.ATTenuation.LEVel
Average		
Averaging	Turns on/off averaging function	SCPI.SENSE.PN(1-1).AVERAge.S TATe
Averaging Restart	Restart averaging	SCPI.SENSE.PN(1-1).AVERAge. CLEar
Avg Factor	Sets/reads average count	SCPI.SENSE.PN(1-1).AVERAge. COUNT
Correlation	Sets/reads the number of correlation	SCPI.SENSE.PN(1-1).CORRelati on.COUNT
DC Control Voltage		
Auto Freq Control		
AFC Status	Turns on/off the auto frequency control function. Executes the auto frequency control once	SCPI.SOURce.VOLTage.CONTRo l.AFC.STATe SCPI.SOURce.VOLTage.CONTRo l.AFC.IMMediate
Frequency Band	Sets/reads the frequency band in the auto frequency control function	SCPI.SOURce.VOLTage.CONTRo l.AFC.FBAND
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRo l.AFC.LIMit.HIGH
Max Input Level	Sets/reads the maximum input level	SCPI.SOURce.VOLTage.CONTRo l.AFC.INPut.LEVel.MAXimum
Max Iteration	Sets/reads the maximum number of iterations for the DC control voltage-setting loops	SCPI.SOURce.VOLTage.CONTRo l.AFC.ITERation
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRo l.AFC.LIMit.LOW
Sensitivity	Sets/reads the tuning sensitivity	SCPI.SOURce.VOLTage.CONTRo l.AFC.SENSitivity
Target	Sets/reads the target frequency in the auto frequency control function	SCPI.SOURce.VOLTage.CONTRo l.AFC.TARGet
Tolerance	Sets/reads the tolerance limit	SCPI.SOURce.VOLTage.CONTRo l.AFC.TOLerance
Control Voltage Cal	Enables DC Control voltage calibration	SCPI.SOURce.VOLTage.CONTRo l.CORRection.STATe
DC Control Delay	Sets/reads DC Control delay (sec)	SCPI.SOURce.VOLTage.CONTRo l.DELay
DC Control Output	Turns on/off DC Control voltage	SCPI.SOURce.VOLTage.CONTRo l.LEVel.STATe

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
DC Control Voltage	Sets/reads DC Control voltage	SCPI.SOURce.VOLTage.CONTroI.LEVel.AMPLitude
Execute Control Voltage Cal	Execute DC control voltage calibration	SCPI.SOURce.VOLTage.CONTroI.CORRection.COLLECT.ACQUIRE
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	SCPI.SOURce.VOLTage.CONTroI.LIMit.HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	SCPI.SOURce.VOLTage.CONTroI.LIMit.LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	SCPI.SOURce.VOLTage.POWER.DELay
DC Power Output	Turns on/off DC Power voltage	SCPI.SOURce.VOLTage.POWER.LEVel.STATe
DC Power Voltage	Sets/reads DC Power voltage	SCPI.SOURce.VOLTage.POWER.LEVel.AMPLitude
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	SCPI.SOURce.VOLTage.POWER.LIMit.HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	SCPI.SOURce.VOLTage.POWER.LIMit.LOW
Display		
Edit Title Label	Edit the measurement window title label	SCPI.DISPlay.PN(1-1).LABel.DATa
Color Type	Sets/Reads the display type of the display (normal/inverted)	SCPI.DISPlay.IMAGe
Limit Test		
Delete Lower Limit Line	Clears the lower limit line	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.CLEAr
Delete Upper Limit Line	Clears the upper limit line	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.CLEAr
Explorer		
Fail Sign	Turns on/off the limit test judgement display	SCPI.DISPlay.PN(1-1).LIMit.FSIgn
Import Lower Limit Line ...	Reads the lower limit line	SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.LIMit.LOWer
Import Upper Limit Line ...	Reads the upper limit line	SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.LIMit.UPPer
Limit Line	Turns on/off the limit line	SCPI.DISPlay.PN(1-1).TRACe(1-1).LIMit.LINE
Limit Test	Turns on/off the limit test function	SCPI.CALCulate.PN(1-1).TRACe(1-1).LIMit.STATe

7. COM Object Reference

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Marker Information	Sets/reads the marker information position	SCPI.DISPlay.PN(1-1).ANNotati on.MARKer.POSition
Meas Condition	Turns on/off measurement conditions	SCPI.DISPlay.PN(1-1).ANNotati on.MEASurement.STATe
Relative Y-Scale	Turns on/off relative Y-scale	SCPI.DISPlay.PN(1-1).GRATicul e.AXIS.Y.RELative
Security Level	Sets/recalls the security level	SCPI.SYSTem.SECurity.LEVel
Title Label	Turns on/off the measurement window title label	SCPI.DISPLay.PN(1-1).LABel.S TATe
Update	Turns on/off the trace updates	SCPI.DISPlay.ENABLE
Y # of Digits	Selects the number of digits (Y-axis)	SCPI.DISPlay.PN(1-1).GRATicul e.AXIS.Y.STATe
Input Port		
Downconverter		
Downconverter	Sets the use of the downconverter on or off, or reads its setting	SCPI.SENSE.DCONverter.STATe
RF Input	Sets/reads the signal supplied to the RF input port	SCPI.SENSE.DCONverter.INPut
External Mixer	Sets the use of the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MEXT ernal
Macro Setup		
Application		
Jitter	Executes clock jitter analysis (VBA)	
mmWave	Executes phase-noise measurement (VBA)	
E5052 Event	Turns on/off the E5052 VBA event callback function	SCPI.PROGram.COM.EVENTt
Echo Window Menu		
Clear Echo	Clears echo window	SCPI.DISPlay.ECHO.CLEAr
Echo Font Size	Sets/reads the font size on Echo window	SCPI.DISPlay.ECHO.FSIZE
Echo Window	Turns on./off the Echo window	SCPI.DISPlay.ECHO.STATe
Load & Run	Load and execute the macro selected on file names.	
Select Macro	Sets/reads the name of the program to be selected	SCPI.PROGram.SELected.NAM E
Stop	Set/reads the state of the selected program	SCPI.PROGram.SELected.STATe
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMEDIATE
User Label 2	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMEDIATE

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
User Label 3	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMEDIATE
User Label 4	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMEDIATE
User Label 5	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMEDIATE
User Label 6	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMEDIATE
User Label 7	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMEDIATE
User Label 8	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMEDIATE
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	SCPI.MMEMory.LOAD.PROGram
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	SCPI.MMEMory.STORe.PROGram
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off marker 1	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off marker 10	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).STATe
Marker 1	Turns on/off marker 1	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).STATe
:		
:		
Marker 6	Turns on/off marker 6	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).STATe
Marker List	Turns on/off the marker list	SCPI.DISPlay.PN(1-1).TABLe.STATe

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.DISCrete.STATe
Ref Marker	Sets/reads marker reference number	SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFerence.NUMBe r
Ref Marker Mode	Turns on/off delta marker mode	SCPI.CALCulate.PN(1-1).ALLTrace.MARKer.REFerence.STATe
More Markers		
Marker 7	Turns on/off marker 7	SCPI.CALCulate.PN(1-1).TRACe (1-1).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off marker 10	SCPI.CALCulate.PN(1-1).TRACe (1-1).MARKer(1-10).STATe
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.PN(1-1).TRACe (1-1).FUNCTion.DOMain.X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.PN(1-1).TRACe (1-1).FUNCTion.DOMain.Y
Analysis Type	Sets/reads analysis type	SCPI.CALCulate.PN(1-1).TRACe (1-1).FUNCTion.TYPE
Band Marker X		
Band Marker X	Turns on/off bandmarker X	SCPI.CALCulate.PN(1-1).TRACe (1-1).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe (1-1).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe (1-1).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe (1-1).BDMarker.X.STARt
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe (1-1).BDMarker.X.STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe (1-1).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe (1-1).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe (1-1).BDMarker.Y.SPAN

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.START
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STOP
Marker Search		
Band Marker X		
Band Marker X	Turns on/off bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.START
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.X.STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.START
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.PN(1-1).TRACe(1-1).BDMarker.Y.STOP
Peak		
Peak Excursion	Sets/reads the peak excursion value	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.EXCursion
Peak Polarity	Sets/reads the marker peak-search polarity	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.PEAK.POLarity
Search Left	Execute marker peak search left	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LPEak
Search Peak	Execute marker peak search	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.PEAK
Search Peak All	Execute marker search all	SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARch.PEAK

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Search Right	Execute marker peak search right	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RPEak
Search Max	Execute marker search maximum	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum
Search Min	Execute marker search minimum	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MINimum
Search Range (X)	Sets/reads marker search range (X-axis)	SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARch.DOMain.X
Search Range (Y)	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.PN(1-1).TRACe(1-1).ALLMarker.SEARch.DOMain.Y
Target		
Search Left	Execute marker target search left	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LTARget
Search Right	Execute marker target search right	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RTARget
Search Target	Execute marker target search	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.TARGet
Target Transition	Sets/reads the target transition definition	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.TRANSition
Target Value	Sets/reads the marker target value	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.Y
Tracking	Sets/reads the marker tracking type	SCPI.CALCulate.PN(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE
Marker To		
Marker -> Start	Sets/reads the marker value to the start value	SCPI.SENSE.PN(1-1).FREQuency.STARt
Marker -> Stop	Sets/reads the marker value to the stop value	SCPI.SENSE.PN(1-1).FREQuency.STOP

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Measurement View		
Freq & Power	Selects frequency, power and DC current measurement window	SCPI.DISPLAY.WINDOW.ACTIVE
Phase Noise	Selects phase noise measurement window	SCPI.DISPLAY.WINDOW.ACTIVE
Show Window		
Freq & Power	Turns on/off frequency, power and DC current measurement mode	SCPI.DISPLAY.FP(1-1).STATE
Phase Noise	Turns on/off phase noise measurement mode	SCPI.DISPLAY.PN(1-1).STATE
Spectrum Monitor	Turns on/off spectrum monitor mode	SCPI.DISPLAY.SP(1-1).STATE
Transient	Turns on/off transient measurement mode	SCPI.DISPLAY.TR(1-1).STATE
User	Turns on/off user defined window	SCPI.DISPLAY.USER(1-1).STATE
Spectrum Monitor	Selects spectrum monitor mode	SCPI.DISPLAY.WINDOW.ACTIVE
Transient	Selects transient measurement mode	SCPI.DISPLAY.WINDOW.ACTIVE
User	Selects user defined window	SCPI.DISPLAY.WINDOW.ACTIVE
Preset		
Factory	Preset instrument to the initial setup state	SCPI.SYSTEM.PRESET
User	Preset instrument and recalls the Autorec.sta in the F drive	
Save/Recall		
Explorer...	Open windows explorer	
Recall by filename	Recalls state file by file name	SCPI.MMEMORY.LOAD.STATE
Recall State		
Autorec	Recalls settings	SCPI.MMEMORY.LOAD.STATE
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	SCPI.MMEMORY.LOAD.STATE
State02	Recalls state file from register 2	SCPI.MMEMORY.LOAD.STATE
State03	Recalls state file from register 3	SCPI.MMEMORY.LOAD.STATE
State04	Recalls state file from register 4	SCPI.MMEMORY.LOAD.STATE
State05	Recalls state file from register 5	SCPI.MMEMORY.LOAD.STATE
State06	Recalls state file from register 6	SCPI.MMEMORY.LOAD.STATE
Save Data Trace	Saves trace data	SCPI.MMEMORY.PN(1-1).TRACE(1-1).STORE.DATA
Save Memory Trace	Saves memory trace data	SCPI.MMEMORY.PN(1-1).TRACE(1-1).STORE.MEMORY

7. COM Object Reference

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Save State		
Autorec	Save settings	SCPI.MMEMory.STORe.STATe
File Dialog...	Open file dialog	
Save Type	Select instrument state type (Entire or instrument state only)	SCPI.MMEMory.STORe.STYPe
State01	Save state file to register 1	SCPI.MMEMory.STORe.STATe
State02	Save state file to register 2	SCPI.MMEMory.STORe.STATe
State03	Save state file to register 3	SCPI.MMEMory.STORe.STATe
State04	Save state file to register 4	SCPI.MMEMory.STORe.STATe
State05	Save state file to register 5	SCPI.MMEMory.STORe.STATe
State06	Save state file to register 6	SCPI.MMEMory.STORe.STATe
Scale		
Auto Scale	Execute autoscale	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.AUTO
Divisions	Sets/reads Y-scale divisions	SCPI.DISPlay.PN(1-1).Y.SCALe.DIVisions
Marker -> Reference	Sets the marker value to the reference level	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RLEVel
Reference Position	Sets/reads reference position	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RPOsition
Reference Value	Sets/reads the reference level value	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.RLEVel
Scale/Div	Sets/reads scale per division	SCPI.DISPlay.PN(1-1).TRACe(1-1).Y.SCALe.PDIVision
X Axis		
Auto	Sets/Reads automatic setting of the X-axis display range to the stimulus value	SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.AUTO
Band Marker -> X Axis	Sets the X-axis band marker range to the X-axis display range of a graph	SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.LEFT SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.RIGHt
Left	Sets/Reads the start value of the X-axis display range	SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.LEFT
Right	Sets/Reads the stop value of the X-axis display range	SCPI.DISPlay.PN(1-1).TRACe(1-1).X.SCALe.RIGHt

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Setup		
Carrier Search	Searches carrier signal and reflects the result to the input frequency of the downconverter	SCPI.SENSE.PN(1-1).DCONverter.SSEarch.EXECute
Frequency Band	Selects frequency band	SCPI.SENSE.PN(1-1).FBANd
IF Gain	Sets/reads the IF Gain	SCPI.SENSE.PN(1-1).IFGain
LO PhNoise Optimize	Sets/reads phase noise Local bandwidth optimization	SCPI.SENSE.PN(1-1).LOBandwidth
Measurement Quality	Sets/reads the quality level	SCPI.SENSE.PN(1-1).SEGTable.MEASurement.QUALity
Nominal Frequency	Sets/reads input frequency of the downconverter	SCPI.SENSE.PN(1-1).DCONverter.FREQUENCY
Start		
100Hz	Sets 100Hz to the start frequency	SCPI.SENSE.PN(1-1).FREQUENCY.START
10Hz	Sets 10Hz to the start frequency	SCPI.SENSE.PN(1-1).FREQUENCY.START
1Hz	Sets 1Hz to the start frequency	SCPI.SENSE.PN(1-1).FREQUENCY.START
1kHz	Sets 1kHz to the start frequency	SCPI.SENSE.PN(1-1).FREQUENCY.START
Stop		
100kHz	Sets 100kHz to the stop frequency	SCPI.SENSE.PN(1-1).FREQUENCY.STOP
10MHz	Sets 10MHz to the stop frequency	SCPI.SENSE.PN(1-1).FREQUENCY.STOP
1MHz	Sets 1MHz to the stop frequency	SCPI.SENSE.PN(1-1).FREQUENCY.STOP
20MHz	Sets 20MHz to the stop frequency	SCPI.SENSE.PN(1-1).FREQUENCY.STOP
40MHz	Sets 40MHz to the stop frequency	SCPI.SENSE.PN(1-1).FREQUENCY.STOP
5MHz	Sets 5MHz to the stop frequency	SCPI.SENSE.PN(1-1).FREQUENCY.STOP
System		
Abort Printing	Aborts printing	SCPI.HCOPY.ABORt
Backlight	Turns on/off backlight	SCPI.SYSTem.BACKlight.STATe
Dump Screen Image	Save screen image	SCPI.MMEMory.STORe.IMAGe

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Instrument Setup		
Correction		
File Dialog ...	Loads correction data for a specified power	SCPI.MMEMory.LOAD.CORRec tion.POWer
Import Power Correction Table	Loads correction data for a specified power	SCPI.MMEMory.LOAD.CORRec tion.POWer
Power Correction	Sets user the user calibration on or off or reads its setting	SCPI.SENSE.CORRection.POWer .STATe
Downconverter Manual Setup		
Current	Sets/reads the bias current to be supplied to the external mixer	SCPI.SENSE.DCONverter.MANu al.MEXTernal(1-2).BIAS.CURRE nt
IF Gain 1 IF Gain 2	Sets/reads the IF gain of the external mixer	SCPI.SENSE.DCONverter.MANu al.IFGain(1-2)
LO1 Frequency LO2 Frequency	Sets/reads the LO frequency of the external mixer	SCPI.SENSE.DCONverter.MANu al.LO(1-2).FREQuency
LO1 Level LO2 Level	Sets/reads the LO level of the external mixer	SCPI.SENSE.DCONverter.MANu al.LO(1-2).LEVel
Mixer 1 Bias Mixer 2 Bias	Sets the bias current supplied to the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MANu al.MEXTernal(1-2).BIAS.STATe
$\Delta IF = IF2 - IF1$	Sets/reads the differential frequency between CH1 and CH2 from the external mixer	:SENS:DCON:MAN:IFD
Frequency Offset (User Downconv.)		
Conversion Mode	Sets/reads the conversion mode of the frequency offset	SCPI.SENSE.UDConverter.MOD E
Frequency Offset	Sets/reads the frequency offset	SCPI.SENSE.UDConverter.STATe
Harmonic #	Sets/reads the frequency offset factor	SCPI.SENSE.UDConverter.HAR Monic
LO Frequency	Sets/reads the LO frequency of the frequency offset	SCPI.SENSE.UDConverter.LO
PN Ext. Prescaler		
Division	Sets/Reads the frequency-dividing ratio	SCPI.SENSE.PN(1-1).EPRescaler. DIVision

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Output Power Level	Sets/Reads the output level of the frequency divider	SCPI.SENSE.PN(1-1).EPRescaler.POWER
Invert Image	Selects print mode	SCPI.HCOpy.IMAGe
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	SCPI.SYSTem.BEEPer.COMPLete.STATe
Beep Warning	Turns on/off the beep for warning	SCPI.SYSTem.BEEPer.WARNing.STATe
Test Beep Complete	Makes beep sound for operation completion	SCPI.SYSTem.BEEPer.COMPLete.IMMEDIATE
Test Beep Warning	Makes beep sound for warning	SCPI.SYSTem.BEEPer.WARNing.IMMEDIATE
Clock Setup		
Set Date and Time	Set/reads system time Set/reads system date	SCPI.SYSTem.TIME[_Q] hour , minute , second SCPI.SYSTem.DATE[_Q] year , month , day
Show Clock	Turns on/off internal clock display	SCPI.DISPlay.CLOCK
Color Setup		
Invert	Sets each color when the inverted display is selected	
Background	Sets/Reads the background color	SCPI.DISPlay.COLOr(2).BACK.VAlue[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPlay.COLOr(2).TRACe(1).DATA.VAlue[_Q]
:		
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPlay.COLOr(2).TRACe(8).DATA.VAlue[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPlay.COLOr(2).GRATicule(1).VAlue[_Q]
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPlay.COLOr(2).GRATicule(2).VAlue[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPlay.COLOr(2).LIMit(1).VAlue[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPlay.COLOr(2).LIMit(2).VAlue[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace of trace 1	SCPI.DISPlay.COLOr(2).TRACe(1).MEMory.VAlue[_Q]

7. COM Object Reference

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
:		
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPlay.COLOr(2).TRACe(8).MEMory.VALue[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPlay.COLOr(2).RESet
Normal	Sets each color when the normal display is selected	
Background	Sets/Reads the background color	SCPI.DISPlay.COLOr(1).BACK.VALue[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPlay.COLOr(1).TRACe(1).DATA.VALue[_Q]
:		
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPlay.COLOr(1).TRACe(8).DATA.VALue[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPlay.COLOr(1).GRATicule(1).VALue[_Q]
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPlay.COLOr(1).GRATicule(2).VALue[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPlay.COLOr(1).LIMit(1).VALue[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPlay.COLOr(1).LIMit(2).VALue[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace of trace 1	SCPI.DISPlay.COLOr(1).TRACe(1).MEMory.VALue[_Q]
:		
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPlay.COLOr(1).TRACe(8).MEMory.VALue[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPlay.COLOr(1).RESet
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	SCPI.SYStem.KLOCK.KBD

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Touch Screen & Mouse Lock	Disables from touch screen/mouse operations	SCPI.SYSTem.KLOCK.MOUSE
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	SCPI.HCOPy.IMMEDIATE
Printer Setup ...	Executes printer setup	
Product Information	Reads product information	
Service Menu		
Administrator Menu	Displays softkeys associated with Administrator Menu. This function is not available to general users	
Error Log		
Clear Error Log	Clears the error log	
View Error Log ...	Displays the error log	
Install Option License		
Jitter	Enters the license for clock jitter analysis	
Service Function	Displays softkeys associated with Service Menu. This function is not available to general users	
Test Menu		
Power On Test	Performs internal test	
Display Test	Performs display test	
Front Panel	Performs front panel key (hard key) test	
Adjust Touch Screen	Performs touch screen calibration	

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
E5053A Test	Displays the connection status of E5053A	
Trace View		
Aperture	Smoothing aperture	SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.APERture
Copy to User	Copies trace data to the user trace	SCPI.CALCulate.PN(1-1).TRACe(1-1).DATA.COPY
Data -> Mem	Copy data to memory	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.MEMorize
Data Hold	Data hold	SCPI.CALCulate.PN(1-1).TRACe(1-1).HOLD
Data Math	Sets/reads math operation type	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.FUNCtion
Display Trace	Shows data and/or memory trace	SCPI.DISPlay.PN(1-1).TRACe(1-1).MODE
Marker -> -Offset	Sets sign-inverted data value of the data trace's active marker to the offset value	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.OFFSet
Offset	Sets/Reads the offset value of the data trace	SCPI.CALCulate.PN(1-1).TRACe(1-1).MATH.OFFSet
Persistence		
Clear Persistent Data	Clears persistent mode	SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.CLEAr
Persistence Mode	Sets/reads persistent mode	SCPI.DISPlay.PN(1-1).TRACe(1-1).PERSistence.STATE
Smoothing	Smoothing on/off	SCPI.CALCulate.PN(1-1).TRACe(1-1).SMOothing.STATE
Spurious		
Clear Threshold Table	Clears the threshold data	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.TABLe.CLEAr
Import Threshold Table ...	Reads the threshold data	SCPI.MMEMory.PN(1-1).TRACe(1-1).LOAD.SPURious.THReshold
Minimum Spur Level	Sets/Reads the minimum spurious level	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.THReshold.LEVeL.MINimum
Normalized (dBc/Hz)	Disables the spurious power value display	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.POWer SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.OMISSion
Omit	Enables the spurious display omission	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.OMISSion

Table 7-4 PN Menu

Front panel key (Operation)	Function	Corresponding COM Object
Power (dBc)	Enables the spurious power value display	SCPI.CALCulate.PN(1-1).TRACe(1-1).SPURious.POWer
Spurious List	Display the spurious data	
Trace Label	Edit trace title label	SCPI.DISPlay.PN(1-1).TRACe(1-1).LABel.DATA
Trigger		
Average Trigger	Sets/Reads the averaging trigger function	SCPI.TRIGger.AVERAge
Continuous	Sets trigger mode to continuous mode	SCPI.INITiate.PN(1-1).CONTInuous SCPI.INITiate.PN(1-1).IMMediat e
Ext Trig Polarity	Sets/reads external trigger polarity	SCPI.TRIGger.EXTernal.SLOPe
Hold	Sets trigger mode to hold	SCPI.INITiate.PN(1-1).IMMediat e
Manual Trigger	Execute trigger manually	SCPI.INITiate.PN(1-1).IMMediat e
Restart	Restart trigger	SCPI.INITiate.PN(1-1).IMMediat e
Single	Execute trigger once	SCPI.INITiate.PN(1-1).CONTInuous SCPI.INITiate.PN(1-1).IMMediat e
Source	Sets/reads trigger source	SCPI.TRIGger.PN(1-1).SOURce
Trigger to Phase Noise	Sets measurement mode to phase noise mode	SCPI.TRIGger.MODE

SP Menu

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level at 5dB Step	SCPI.SENSE.ATTenuation.LEVEL
Average/BW		
Averaging	Turns on/off averaging function	SCPI.SENSE.SP(1-1).AVERAGE.STATE
Averaging Restart	Restart averaging	SCPI.SENSE.SP(1-1).AVERAGE.CLEAR
Averaging Type	Sets/reads averaging type	SCPI.SENSE.SP(1-1).AVERAGE.TYPE
Avg Factor	Sets/reads the averaging count	SCPI.SENSE.SP(1-1).AVERAGE.COUNT
RBW	Sets/reads RBW value	SCPI.SENSE.SP(1-1).BANDwidth.RESolution
DC Control Voltage		
Auto Freq Control		
AFC Status	Turns on/off the auto frequency control function. Executes the auto frequency control once	SCPI.SOURCE.VOLTage.CONTROL.AFC.STATE SCPI.SOURCE.VOLTage.CONTROL.AFC.IMMEDIATE
Frequency Band	Sets/reads the frequency band in the auto frequency control function	SCPI.SOURCE.VOLTage.CONTROL.AFC.FBAND
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	SCPI.SOURCE.VOLTage.CONTROL.AFC.LIMIT.HIGH
Max Input Level	Sets/reads the maximum input level	SCPI.SOURCE.VOLTage.CONTROL.AFC.INPUT.LEVEL.MAXIMUM
Max Iteration	Sets/reads the maximum number of iterations for the DC control voltage-setting loops	SCPI.SOURCE.VOLTage.CONTROL.AFC.ITERATION
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	SCPI.SOURCE.VOLTage.CONTROL.AFC.LIMIT.LOW
Sensitivity	Sets/reads the tuning sensitivity	SCPI.SOURCE.VOLTage.CONTROL.AFC.SENSITIVITY
Target	Sets/reads the target frequency in the auto frequency control function	SCPI.SOURCE.VOLTage.CONTROL.AFC.TARGET
Tolerance	Sets/reads the tolerance limit	SCPI.SOURCE.VOLTage.CONTROL.AFC.TOLERANCE
Control Voltage Cal	Enables DC Control voltage calibration	SCPI.SOURCE.VOLTage.CONTROL.CORRECTION.STATE
DC Control Delay	Sets/reads DC Control delay (sec)	SCPI.SOURCE.VOLTage.CONTROL.DELAY

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
DC Control Output	Turns on/off DC Control voltage	SCPI.SOURce.VOLTage.CONTroI.LEVeL.STATe
DC Control Voltage	Sets/reads DC Control voltage	SCPI.SOURce.VOLTage.CONTroI.LEVeL.AMPLitude
Execute Control Voltage Cal	Execute DC Control voltage calibration	SCPI.SOURce.VOLTage.CONTroI.CORRection.COLLECT.ACQUIRE
Max Ctrl Voltage Limit	Sets/reads the maximum DC Control voltage limit	SCPI.SOURce.VOLTage.CONTroI.LIMit.HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC Control voltage limit	SCPI.SOURce.VOLTage.CONTroI.LIMit.LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	SCPI.SOURce.VOLTage.POWer.DELay
DC Power Output	Turns on/off DC Power voltage	SCPI.SOURce.VOLTage.POWer.LEVeL.STATe
DC Power Voltage	Sets/reads DC Power voltage	SCPI.SOURce.VOLTage.POWer.LVeL.AMPLitude
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	SCPI.SOURce.VOLTage.POWer.LIMit.HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	SCPI.SOURce.VOLTage.POWer.LIMit.LOW
Display		
Edit Title Label	Edits the measurement window title label	SCPI.DISPlay.SP(1-1).LABel.DATa
Color Type	Sets/Reads the display type of the display (normal/inverted)	SCPI.DISPlay.IMAGe
Limit Test		
Delete Lower Limit Line	Clears the lower limit line	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.LOWer.SEGMent.CLEAR
Delete Upper Limit Line	Clears the upper limit line	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.UPPer.SEGMent.CLEAR
Explorer		
Fail Sign	Turns on/off the limit test judgement display	SCPI.DISPlay.SP(1-1).LIMit.FSIgn
Import Lower Limit Line ...	Reads the lower limit line	SCPI.MMEMory.SP(1-1).TRACe(1-1).LOAD.LIMit.LOWer
Import Upper Limit Line ...	Reads the upper limit line	SCPI.MMEMory.SP(1-1).TRACe(1-1).LOAD.LIMit.UPPer
Limit Line	Turns on/off the limit line	SCPI.DISPlay.SP(1-1).TRACe(1-1).LIMit.LINE

7. COM Object Reference

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Limit Test	Turns on/off the limit test function	SCPI.CALCulate.SP(1-1).TRACe(1-1).LIMit.STATe
Marker Information	Sets/reads the marker information position	SCPI.DISPlay.SP(1-1).ANNotation.MARKer.POSition
Meas Condition	Turns on/off measurement conditions	SCPI.DISPlay.SP(1-1).ANNotation.MEASurement.STATe
Relative Y-Scale	Turns on/off relative Y-scale	SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.RELative
Security Level	Sets/recalls the security level	SCPI.SYSTem.SECurity.LEVel
Title Label	Turns on/off measurement window title label	SCPI.DISPlay.SP(1-1).LABel.STATe
Update	Turns on/off trace updates	SCPI.DISPlay.ENABLE
Y # of Digits	Selects the number of digits (Y-axis)	SCPI.DISPlay.SP(1-1).GRATicule.AXIS.Y.STATe
Format		
Detector Mode	Sets/reads the detector mode	SCPI.SENSE.SP(1-1).DETECTOR.FUNCTION
Format	Sets/reads Y-axis unit on spectrum monitor mode	SCPI.CALCulate.SP(1-1).TRACe(1-1).FORMat
Input Port		
Downconverter		
Downconverter	Sets the use of the downconverter on or off, or reads its setting	SCPI.SENSE.DCONverter.STATe
RF Input	Sets/reads the signal supplied to the RF input port	SCPI.SENSE.DCONverter.INPut
External Mixer	Sets the use of the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MEXTernal
Macro Setup		
Application		
Jitter	Executes clock jitter analysis (VBA)	
mmWave	Executes phase-noise measurement (VBA)	
E5052 Event	Turns on/off the E5052 VBA event callback function	SCPI.PROGram.COM.EVENT
Echo Window Menu		
Clear Echo	Clears Echo window	SCPI.DISPlay.ECHO.CLEAr
Echo Font Size	Sets/reads the font size on Echo window	SCPI.DISPlay.ECHO.FSIZE
Echo Window	Turns on/off the Echo window	SCPI.DISPlay.ECHO.STATe

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Load & Run	Load and execute the macro selected on file names	
Select Macro	Sets/reads the name of the program to be selected	SCPI.PROGram.SELected.NAM E
Stop	Set/reads the state of the selected program	SCPI.PROGram.SELected.STATe
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
User Label 2	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
User Label 3	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
User Label 4	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
User Label 5	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
User Label 6	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
User Label 7	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
User Label 8	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	SCPI.MMEMory.LOAD.PROGra m
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	SCPI.MMEMory.STORe.PROGra m
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off marker 1	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off marker 10	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Marker 1	Turns on/off marker 1	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe
:		
:		
Marker 6	Turns on/off marker 6	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe
Marker List	Turns on/off the marker list	SCPI.DISPlay.SP(1-1).TABLe.STATe
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.SP(1-1).ALLTraCe.MARKer.DISCrete.STATe
Ref Marker	Sets/reads marker reference number	SCPI.CALCulate.SP(1-1).ALLTraCe.MARKer.REFerence.NUMBer
Ref Marker Mode	Turns on/off delta marker mode	SCPI.CALCulate.SP(1-1).ALLTraCe.MARKer.REFerence.STATe
More Markers		
Marker 7	Turns on/off marker 7	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off marker 10	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).STATe
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.DOMain.X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.DOMain.Y
Analysis Type	Sets/reads analysis type	SCPI.CALCulate.SP(1-1).TRACe(1-1).FUNCTion.TYPE
Band Marker X		
Band Marker X	Turns on/off bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STARt
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STOP

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STARt
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STOP
Marker Search		
Band Marker X		
Band Marker X	Turns on/off bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STARt
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.X.STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STARt
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.SP(1-1).TRACe(1-1).BDMarker.Y.STOP
Peak		
Peak Excursion	Sets/reads the peak excursion value	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARCh.PEAK.EXCursion
Peak Polarity	Sets/reads the marker peak-search polarity	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARCh.PEAK.POLarity

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Search Left	Execute marker peak search left	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LPEak
Search Peak	Execute marker peak search	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.PEAK
Search Peak All	Execute marker search all	SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.PEAK
Search Right	Execute marker peak search right	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer.(1-6).SEAch.EXECute.RPEak
Search Max	Execute marker search maximum	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MAXimum
Search Min	Execute marker search minimum	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.MINimum
Search Range (X)	Sets/reads marker search range (X-axis)	SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.DOMa in.X
Search Range (Y)	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.SP(1-1).TRACe(1-1).ALLMarker.SEARch.DOMa in.Y
Target		
Search Left	Execute marker target search left	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.LTARget
Search Right	Execute marker target search right	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.RTARget
Search Target	Execute marker target search	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.EXECute.TARGet
Target Transition	Sets/reads the target transition definition	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.TRANSition
Target Value	Sets/reads the marker target value	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TARGet.Y
Tracking	Sets/reads the marker tracking type	SCPI.CALCulate.SP(1-1).TRACe(1-1).MARKer(1-10).SEARch.TRACKing.TYPE

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Marker To		
Marker -> Center	Sets/reads the center value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.CENTer
Marker -> Start	Sets/reads the start value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.START
Marker -> Stop	Sets/reads the stop value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.STOP
Measurement View		
Freq & Power	Selects frequency, power and DC current measurement window	SCPI.DISPLAY.WINDOW.ACTive
Phase Noise	Selects phase noise measurement window	SCPI.DISPLAY.WINDOW.ACTive
Show Window		
Freq & Power	Turn on/off frequency, power and DC current measurement mode	SCPI.DISPLAY.FP(1-1).STATE
Phase Noise	Turns on/off phase noise measurement mode	SCPI.DISPLAY.PN(1-1).STATE
Spectrum Monitor	Turns on/off spectrum monitor mode	SCPI.DISPLAY.SP(1-1).STATE
Transient	Turns on/off transient measurement mode	SCPI.DISPLAY.TR(1-1).STATE
User	Turns on/off user defined window	SCPI.DISPLAY.USER(1-1).STATE
Spectrum Monitor	Selects spectrum monitor mode	SCPI.DISPLAY.WINDOW.ACTive
Transient	Selects transient measurement mode	SCPI.DISPLAY.WINDOW.ACTive
User	Selects user defined window	SCPI.DISPLAY.WINDOW.ACTive
Preset		
Factory	Preset instrument to the initial setup state	SCPI.SYSTEM.PRESet
User	Preset instrument and recalls the Autorec.sta in the F drive	
Save/Recall		
Explorer...	Open windows explorer	
Recall by filename	Recalls state file by file name	SCPI.MMEMORY.LOAD.STATE
Recall State		
Autorec	Recalls settings	SCPI.MMEMORY.LOAD.STATE
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	SCPI.MMEMORY.LOAD.STATE
State02	Recalls state file from register 2	SCPI.MMEMORY.LOAD.STATE
State03	Recalls state file from register 3	SCPI.MMEMORY.LOAD.STATE
State04	Recalls state file from register 4	SCPI.MMEMORY.LOAD.STATE
State05	Recalls state file from register 5	SCPI.MMEMORY.LOAD.STATE

7. COM Object Reference

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
State06	Recalls state file from register 6	SCPI.MMEMemory.LOAD.STATe
Save Data Trace	Saves trace data	SCPI.MMEMemory.SP(1-1).TRACe(1-1).STORe.DATA
Save Memory Trace	Saves memory trace data	SCPI.MMEMemory.SP(1-1).TRACe(1-1).STORe.MEMory
Save State		
Autorec	Save settings	SCPI.MMEMemory.STORe.STATe
File Dialog...	Open file dialog	
Save Type	Select instrument state type (Entire or instrument state only)	SCPI.MMEMemory.STORe.STYPe
State01	Save state file to register 1	SCPI.MMEMemory.STORe.STATe
State02	Save state file to register 2	SCPI.MMEMemory.STORe.STATe
State03	Save state file to register 3	SCPI.MMEMemory.STORe.STATe
State04	Save state file to register 4	SCPI.MMEMemory.STORe.STATe
State05	Save state file to register 5	SCPI.MMEMemory.STORe.STATe
State06	Save state file to register 6	SCPI.MMEMemory.STORe.STATe
Scale		
Auto Scale	Execute autoscale	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.AUTO
Divisions	Sets/reads Y-scale divisions	SCPI.DISPlay.SP(1-1).Y.SCALe.DIVisions
Marker -> Reference	Sets the marker value to the reference level	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RLEVel
Reference Position	Sets/reads the reference position	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RPOSITION
Reference Value	Sets/reads the reference level value	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.RLEVel
Scale/Div	Sets/reads scale per division	SCPI.DISPlay.SP(1-1).TRACe(1-1).Y.SCALe.PDIVision
X Axis		
Auto	Sets/Reads automatic setting of the X-axis display range to the stimulus value	SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.AUTO
Band Marker -> X Axis	Sets the X-axis band marker range to the X-axis display range of a graph	SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.LEFT SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.RIGHt
Left	Sets/Reads the start value of the X-axis display range	SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.LEFT
Right	Sets/Reads the stop value of the X-axis display range	SCPI.DISPlay.SP(1-1).TRACe(1-1).X.SCALe.RIGHt

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Setup		
Reference Level	Sets/reads the reference level of frequency span	SCPI.SENSE.SP(1-1).POWER.RLEVel
Start/Center		
Carrier To		
Carrier -> Center	Changes the center frequency to the carrier frequency	SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER
Carrier x 2 -> Center	Changes the center frequency to 2 times the carrier frequency	SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER
Carrier x 3 -> Center	Changes the center frequency to 3 times the carrier frequency	SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER
Carrier x # -> Center	Changes the center frequency to # times the carrier frequency (The # is assigned by Harmonic # key)	SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER
Frequency Band	Sets/reads the carrier frequency band	SCPI.SENSE.SP(1-1).CARRIER.FBAND
Harmonic #	Sets the magnification of carrier frequency when center frequency is set	
Center	Sets/reads the center value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.CENTER
Span	Sets/reads the span value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.SPAN
Start	Sets/reads the start value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.START
Stop	Sets/reads the stop value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.STOP
Stop/Span		
Carrier To		
Carrier -> Center	Changes the center frequency to the carrier frequency	SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER
Carrier x 2 -> Center	Changes the center frequency to 2 times the carrier frequency	SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER
Carrier x 3 -> Center	Changes the center frequency to 3 times the carrier frequency	SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER
Carrier x # -> Center	Changes the center frequency to # times the carrier frequency (The # is assigned by Harmonic # key)	SCPI.SENSE.SP(1-1).CARRIER.SET.CENTER
Frequency Band	Sets/reads the carrier frequency band	SCPI.SENSE.SP(1-1).CARRIER.FBAND
Harmonic #	Sets the magnification of carrier frequency when center frequency is set	
Center	Sets/reads the center value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.CENTER

7. COM Object Reference

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Span	Sets/reads the span value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.SPAN
Start	Sets/reads the start value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.START
Stop	Sets/reads the stop value of frequency span	SCPI.SENSE.SP(1-1).FREQUENCY.STOP
System		
Abort Printing	Aborts printing	SCPI.HCOPY.ABORT
Backlight	Turns on/off backlight	SCPI.SYSTEM.BACKLIGHT.STATE
Dump Screen Image	Save screen image	SCPI.MEMORY.STORE.IMAGE
Instrument Setup		
Correction		
File Dialog ...	Loads correction data for a specified power	SCPI.MEMORY.LOAD.CORRECTION.POWER
Import Power Correction Table	Loads correction data for a specified power	SCPI.MEMORY.LOAD.CORRECTION.POWER
Power Correction	Sets user the user calibration on or off or reads its setting	SCPI.SENSE.CORRECTION.POWER.STATE
Downconverter Manual Setup		
Current	Sets/reads the bias current to be supplied to the external mixer	SCPI.SENSE.DCONVERTER.MANUAL.MIXTERNA(1-2).BIAS.CURRENT
IF Gain 1 IF Gain 2	Sets/reads the IF gain of the external mixer	SCPI.SENSE.DCONVERTER.MANUAL.IFGAIN(1-2)
LO1 Frequency LO2 Frequency	Sets/reads the LO frequency of the external mixer	SCPI.SENSE.DCONVERTER.MANUAL.LO(1-2).FREQUENCY
LO1 Level LO2 Level	Sets/reads the LO level of the external mixer	SCPI.SENSE.DCONVERTER.MANUAL.LO(1-2).LEVEL
Mixer 1 Bias Mixer 2 Bias	Sets the bias current supplied to the external mixer on or off and reads its settings	SCPI.SENSE.DCONVERTER.MANUAL.MIXTERNA(1-2).BIAS.STATE
$\Delta IF = IF2 - IF1$	Sets/reads the differential frequency between CH1 and CH2 from the external mixer	SCPI.SENSE.DCONVERTER.MANUAL.IFDelta

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Frequency Offset (User Downconv.)		
Conversion Mode	Sets/reads the conversion mode of the frequency offset	SCPI.SENSE.UDConverter.MODE
Frequency Offset	Sets/reads the frequency offset	SCPI.SENSE.UDConverter.STATE
Harmonic #	Sets/reads the frequency offset factor	SCPI.SENSE.UDConverter.Harmonic
LO Frequency	Sets/reads the LO frequency of the frequency offset	SCPI.SENSE.UDConverter.LO
Invert Image	Selects print mode	SCPI.HCOPy.IMAGE
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	SCPI.SYSTem.BEEPer.COMplete.STATE
Beep Warning	Turns on/off the beep for warning	SCPI.SYSTem.BEEPer.WARning.STATE
Test Beep Complete	Makes beep sound for operation completion	SCPI.SYSTem.BEEPer.COMplete.IMMediate
Test Beep Warning	Makes beep sound for warning	SCPI.SYSTem.BEEPer.WARning.IMMediate
Clock Setup		
Set Date and Time	Set/reads system time Set/reads system date	SCPI.SYSTem.TIME[_Q] hour , minute , second SCPI.SYSTem.DATE[_Q] year , month , day
Show Clock	Turns on/off internal clock display	SCPI.DISPlay.CLOCK
Color Setup		
Invert	Sets each color when the inverted display is selected	
Background	Sets/Reads the background color	SCPI.DISPlay.COLOr(2).BACK.VALue[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPlay.COLOr(2).TRACe(1).DATA.VALue[_Q]
:		
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPlay.COLOr(2).TRACe(8).DATA.VALue[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPlay.COLOr(2).GRATicule(1).VALue[_Q]

7. COM Object Reference

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPlay.COLOr(2).GRATicule(2).VALue[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPlay.COLOr(2).LIMit(1).VALue[_Q]
Limit Line	Sets/Readsthe color of the limit line	SCPI.DISPlay.COLOr(2).LIMit(2).VALue[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace of trace 1	SCPI.DISPlay.COLOr(2).TRACe(1).MEMory.VALue[_Q]
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPlay.COLOr(2).TRACe(8).MEMory.VALue[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPlay.COLOr(2).RESet
Normal	Sets each color when the normal display is selected	
Background	Sets/Reads the background color	SCPI.DISPlay.COLOr(1).BACK.VALue[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPlay.COLOr(1).TRACe(1).DATA.VALue[_Q]
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPlay.COLOr(1).TRACe(8).DATA.VALue[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPlay.COLOr(1).GRATicule(1).VALue[_Q]
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPlay.COLOr(1).GRATicule(2).VALue[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPlay.COLOr(1).LIMit(1).VALue[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPlay.COLOr(1).LIMit(2).VALue[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace to trace 1	SCPI.DISPlay.COLOr(1).TRACe(1).MEMory.VALue[_Q]
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPlay.COLOr(1).TRACe(8).MEMory.VALue[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPlay.COLOr(1).RESet
Control Panel ...	Open control panel	

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
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	SCPI.SYSTem.KLOCK.KBD
Touch Screen & Mouse Lock	Disables from touch screen / mouse operations	SCPI.SYSTem.KLOCK.MOUSe
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	SCPI.HCOPy.IMMEDIATE
Printer Setup ...	Execute printer setup	
Product Information	Reads product information	
Service Menu		
Administrator Menu	Displays softkeys associated with Administrator Menu. This function is not available to general users	
Error Log		
Clear Error Log	Clears the error log	
View Error Log ...	Displays the error log	
Install Option License		
Jitter	Enters the license for clock jitter analysis (VBA)	

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Service Function	Displays softkeys associated with Service Menu. This function is not available to general users	
Test Menu		
Power On Test	Performs internal test	
Display Test	Performs display test	
Front Panel	Performs front panel key (hard key) test	
Adjust Touch Screen	Performs touch screen calibration	
E5053A Test	Displays the connection status of E5053A	
Trace View		
Aperture	Smoothing aperture	SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.APERture
Copy to User	Copies trace data to the user trace	SCPI.CALCulate.SP(1-1).TRACe(1-1).DATA.COPY
Data -> Mem	Copy data to memory	SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.MEMorize
Data Hold	Data hold	SCPI.CALCulate.SP(1-1).TRACe(1-1).HOLD
Data Math	Sets/reads math operation type	SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.FUNCTION
Display Trace	Shows data and/or memory trace	SCPI.DISPlay.SP(1-1).TRACe(1-1).MODE
Marker -> -Offset	Sets sign-inverted data value of the data trace's active marker to the offset value	SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.OFFSet
Offset	Sets/Reads the offset value of the data trace	SCPI.CALCulate.SP(1-1).TRACe(1-1).MATH.OFFSet
Persistence		
Clear Persistent Data	Clears persistent mode	SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.CLEAr
Persistence Mode	Sets/reads persistent mode	SCPI.DISPlay.SP(1-1).TRACe(1-1).PERSistence.STATe
Smoothing	Smoothing on/off	SCPI.CALCulate.SP(1-1).TRACe(1-1).SMOothing.STATe
Trace Label	Edits trace title label	SCPI.DISPlay.SP(1-1).TRACe(1-1).LAbel.DATA

Table 7-5 SP Menu

Front panel key (Operation)	Function	Corresponding COM Object
Trigger		
Average Trigger	Sets/Reads the averaging trigger function	SCPI.TRIGger.AVERage
Continuous	Sets/reads trigger mode to continuous mode	SCPI.INITiate.SP(1-1).CONTinuous SCPI.INITiate.SP(1-1).IMMediate
Ext Trig Polarity	Sets/reads external trigger polarity	SCPI.TRIGger.EXTernal.SLOPe
Hold	Sets trigger mode to hold	SCPI.INITiate.SP(1-1).IMMediate
Manual Trigger	Execute a trigger manually	SCPI.INITiate.SP(1-1).IMMediate
Restart	Restart trigger	SCPI.INITiate.SP(1-1).IMMediate
Single	Execute trigger once	SCPI.INITiate.SP(1-1).CONTinuous SCPI.INITiate.SP(1-1).IMMediate
Source	Selects trigger source	SCPI.TRIGger.SP(1-1).SOURce
Trigger to Spectrum Monitor	Sets measurement mode to spectrum monitor mode	SCPI.TRIGger.MODE

TR Menu

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level at 5dB Step	SCPI.SENSE.ATTenuation.LEVel
Average		
Averaging	Turn on/off averaging function	SCPI.SENSE.TR(1-1).AVERAge.ST ATe
Averaging Restart	Restart averaging	SCPI.SENSE.TR(1-1).AVERAge.CL Ear
Avg Factor	Sets/reads averaging count	SCPI.SENSE.TR(1-1).AVERAge.CO UNt
DC Control Voltage		
Auto Freq Control		
AFC Status	Turns on/off the auto frequency control function. Executes the auto frequency control once	SCPI.SOURce.VOLTage.CONTrol. AFC.STATe SCPI.SOURce.VOLTage.CONTrol. AFC.IMMediate
Frequency Band	Sets/reads the frequency band in the auto frequency control function	SCPI.SOURce.VOLTage.CONTrol. AFC.FBANd
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	SCPI.SOURce.VOLTage.CONTrol. AFC.LIMit.HIGH
Max Input Level	Sets/reads the maximum input level	SCPI.SOURce.VOLTage.CONTrol. AFC.INPut.LEVel.MAXimum
Max Iteration	Sets/reads the maximum number of iterations for the DC control voltage-setting loops	SCPI.SOURce.VOLTage.CONTrol. AFC.ITERation
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	SCPI.SOURce.VOLTage.CONTrol. AFC.LIMit.LOW
Sensitivity	Sets/reads the tuning sensitivity	SCPI.SOURce.VOLTage.CONTrol. AFC.SENSitivity
Target	Sets/reads the target frequency in the auto frequency control function	SCPI.SOURce.VOLTage.CONTrol. AFC.TARGeT
Tolerance	Sets/reads the tolerance limit	SCPI.SOURce.VOLTage.CONTrol. AFC.TOLerance
Control Voltage Cal	Enables DC Control voltage calibration	SCPI.SOURce.VOLTage.CONTrol. CORRection.STATe
DC Control Delay	Sets/reads DC Control delay (sec)	SCPI.SOURce.VOLTage.CONTrol. DELay
DC Control Output	Turns on/off DC Control voltage	SCPI.SOURce.VOLTage.CONTrol.L EVel.STATe
DC Control Voltage	Sets/reads DC Control voltage	SCPI.SOURce.VOLTage.CONTrol.L EVel.AMPLitude

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Execute Control Voltage Cal	Execute DC Control voltage calibration	SCPI.SOURce.VOLTage.CONTrol.CORRection.COLLEct.ACQUIRE
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	SCPI.SOURce.VOLTage.CONTrol.LIMit.HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	SCPI.SOURce.VOLTage.CONTrol.LIMit.LOW
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	SCPI.SOURce.VOLTage.POWer.DE Lay
DC Power Output	Turns on/off DC Power voltage	SCPI.SOURce.VOLTage.POWer.LE Vel.STATE
DC Power Voltage	Sets/reads DC Power voltage	SCPI.SOURce.VOLTage.POWer.LE Vel.AMPLitude
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	SCPI.SOURce.VOLTage.POWer.LI Mit.HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	SCPI.SOURce.VOLTage.POWer.LI Mit.LOW
Display		
Edit Title Label	Edits the measurement window title label	SCPI.DISPlay.TR(1-1).LABel.DAT A
Color Type	Sets/Reads the display type of the display (normal/inverted)	SCPI.DISPlay.IMAGe
Limit Test		
Delete Lower Limit Line	Clears the lower limit line	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.LOWer.SEGMent.CLEar
Delete Upper Limit Line	Clears the upper limit line	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.UPPer.SEGMent.CLEar
Explorer		
Fail Sign	Turns on/off the limit test judgement display	SCPI.DISPlay.TR(1-1).LIMit.FSIGn
Import Lower Limit Line ...	Reads the lower limit line	SCPI.MMEMory.TR(1-1).TRACe(1-4).LOAD.LIMit.LOWer
Import Upper Limit Line ...	Reads the upper limit line	SCPI.MMEMory.TR(1-1).TRACe(1-4).LOAD.LIMit.UPPer
Limit Line	Turns on/off the limit line	SCPI.DISPlay.TR(1-1).TRACe(1-4).LIMit.LINE
Limit Test	Turns on/off the limit test function	SCPI.CALCulate.TR(1-1).TRACe(1-4).LIMit.STATE
Marker Information	Sets/reads the marker information position	SCPI.DISPlay.TR(1-1).ANNotation.MARKer.POSition
Meas Condition	Turns on/off measurement conditions	SCPI.DISPlay.TR(1-1).ANNotation.MEASurement.STATE

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Relative Y-Scale	Turns on/off relative Y-scale	SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.RELative
Security Level	Sets/recalls the security level	SCPI.SYSTem.SECurity.LEVel
Title Label	Turns on/off the measurement window title lable	SCPI.DISPlay.TR(1-1).LABel.STATe
Update	Turns on/off trace updates	SCPI.DISPlay.ENABle
Y # of Digits	Selects the number of digits (Y-axis)	SCPI.DISPlay.TR(1-1).GRATicule.AXIS.Y.STATe
Format		
Frequency Format	Sets/reads the frequency format	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.FREQuency
Frequency Reference	Sets/reads the reference frequency	SCPI.CALCulate.TR(1-1).TRACe(1-4).REFerence.FREQuency
Marker -> Phase X Reference	Sets/Reads the data value of the active marker's position to 0 degree reference of phase	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.XREFerence
Phase Unit	Selects phase format on transient measurement	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.UNIT
Phase X Reference	Sets/Reads the data value of the active trace's specified X-axis position to 0 degree reference of phase	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.XREFerence
Wrap Phase	Turns on/off wrap-phase	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.WRAP
Input Port		
Downconverter		
Downconverter	Sets the use of the downconverter on or off, or reads its setting	SCPI.SENSE.DCONverter.STATe
RF Input	Sets/reads the signal supplied to the RF input port	SCPI.SENSE.DCONverter.INPut
External Mixer	Sets the use of the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MEXTernal
Macro Setup		
Application		
Jitter	Executes clock jitter analysis (VBA)	
mmWave	Executes phase-noise measurement (VBA)	
E5052 Event	Turns on/off the E5052 VBA event callback function	SCPI.PROGram.COM.EVENT
Echo Window Menu		
Clear Echo	Clears Echo window	SCPI.DISPlay.ECHO.CLEAr
Echo Font Size	Sets/reads the font size on Echo window	SCPI.DISPlay.ECHO.FSIZE
Echo Window	Turns on/off the Echo window	SCPI.DISPlay.ECHO.STATe

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Load & Run	Load and execute the macro selected on file names	
Select Macro	Sets/reads the name of the program to be selected	SCPI.PROGRAM.SELected.NAME
Stop	Set/reads the state of the selected program	SCPI.PROGRAM.SELected.STATe
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 2	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 3	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 4	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 5	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 6	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 7	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 8	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	SCPI.MMEMory.LOAD.PROGRAM
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	SCPI.MMEMory.STORe.PROGRAM
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off marker 1	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off marker 10	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STATe

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Couple	Turns on/off marker coupling function	SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.COUPle.STATe
Marker 1	Turns on/off marker 1	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STATe
:		
:		
Marker 6	Turns on/off marker 6	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STATe
Marker List	Turns on/off the marker list	SCPI.DISPlay.TR(1-1).TABLe.STATe
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.DISCrete.STATe
Ref Marker	Sets/reads marker reference number	SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFerence.NUMBer
Ref Marker Mode	Turns on/off delta marker mode	SCPI.CALCulate.TR(1-1).ALLTrace.MARKer.REFerence.STATe
More Markers		
Marker 7	Turns on/off marker 7	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off marker 10	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).STATe
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.DOMain.X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.DOMain.Y
Analysis Type	Sets/reads analysis type	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNction.TYPE
Band Marker X		
Band Marker X	Turn on/off bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STARt

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STOP
Band Marker Y		
Band Marker Y	Turn on/off bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STARt
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STOP
Couple	Turns on/off bandmarker coupling function	SCPI.CALCulate.TR(1-1).ALLTrace.BDMarker.X.COUPle.STATe
Marker Search		
Band Marker X		
Band Marker X	Turn on/off bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STARt
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.X.STOP
Band Marker Y		
Band Marker Y	Turn on/off bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STARt
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.TR(1-1).TRACe(1-4).BDMarker.Y.STOP

7. COM Object Reference

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Couple	Turns on/off bandmarker coupling function	SCPI.CALCulate.TR(1-1).ALLTrace.BDMarker.X.COUPle.STATe
Peak		
Peak Excursion	Sets/reads the peak excursion value	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.EXCursion
Peak Polarity	Sets/reads the marker peak-search polarity	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.PEAK.POLarity
Search Left	Execute marker peak search left	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECu te.LPEak
Search Peak	Execute marker peak search	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECu te.PEAK
Search Peak All	Execute marker search all	SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARch.PEAK
Search Right	Execute marker peak search right	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECu te.RPEak
Search Max	Execute marker search maximum	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECu te.MAXimum
Search Min	Execute marker search minimum	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECu te.MINimum
Search Range (X)	Sets/reads marker search range (X-axis)	SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARch.DOMain.X
Search Range (Y)	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.TR(1-1).TRACe(1-4).ALLMarker.SEARch.DOMain.Y
Target		
Search Left	Execute marker target search left	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECu te.LTARget
Search Right	Execute marker target search right	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECu te.RTARget
Search Target	Execute marker target search	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.EXECu te.TARGet
Target Transition	Sets/reads the target transition definition	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARch.TARGe t.TRANSition

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Target Value	Sets/reads the marker target value	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.TARGe t.Y
Tracking	Sets/reads the marker tracking type	SCPI.CALCulate.TR(1-1).TRACe(1-4).MARKer(1-10).SEARCh.TRACKing.TYpe
Marker To		
Marker -> Phase Reference	Sets phase reference frequency to the marker value in the frequency-over-time trace	SCPI.SENSE.TR(1-1).NARRow.FR EQuency.PREFerence
Marker -> Target Freq	Sets target frequency to the marker value in the frequency-over-time trace	SCPI.SENSE.TR(1-1).NARRow.FR EQuency.TARGe t
Measurement View		
Freq & Power	Selects frequency, power and DC current measurement window	SCPI.DISPlay.WINDow.ACTive
Phase Noise	Selects phase noise measurement window	SCPI.DISPlay.WINDow.ACTive
Show Window		
Freq & Power	Turns on/off frequency, power and DC current measurement mode	SCPI.DISPlay.FP(1-1).STATe
Phase Noise	Turns on/off phase noise measurement mode	SCPI.DISPlay.PN(1-1).STATe
Spectrum Monitor	Turns on/off spectrum monitor mode	SCPI.DISPlay.SP(1-1).STATe
Transient	Turns on/off transient measurement mode	SCPI.DISPlay.TR(1-1).STATe
User	Turns on/off user defined window	SCPI.DISPlay.USER(1-1).STATe
Spectrum Monitor	Selects spectrum monitor mode	SCPI.DISPlay.WINDow.ACTive
Transient	Selects transient measurement mode	SCPI.DISPlay.WINDow.ACTive
User	Selects user defined window	SCPI.DISPlay.WINDow.ACTive
Preset		
Factory	Preset instrument to the initial setup state	SCPI.SYStem.PRESet
User	Preset instrument and recalls the Autorec.sta in the F drive	
Save/Recall		
Explorer...	Open windows explorer	
Recall by filename	Recalls state file by file name	SCPI.MMEMory.LOAD.STATe
Recall State		
Autorec	Recalls settings	SCPI.MMEMory.LOAD.STATe
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	SCPI.MMEMory.LOAD.STATe
State02	Recalls state file from register 2	SCPI.MMEMory.LOAD.STATe

7. COM Object Reference

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
State03	Recalls state file from register 3	SCPI.MMEMory.LOAD.STATE
State04	Recalls state file from register 4	SCPI.MMEMory.LOAD.STATE
State05	Recalls state file from register 5	SCPI.MMEMory.LOAD.STATE
State06	Recalls state file from register 6	SCPI.MMEMory.LOAD.STATE
Save Data Trace	Saves trace data	SCPI.MMEMory.TR(1-1).TRACe(1-4).STORe.DATA
Save Memory Trace	Saves memory trace data	SCPI.MMEMory.TR(1-1).TRACe(1-4).STORe.MEMory
Save State		
Autorec	Save settings	SCPI.MMEMory.STORe.STATE
File Dialog...	Open file dialog	
Save Type	Selects instrument state type (Entire or instrument state only)	SCPI.MMEMory.STORe.STYPe
State01	Save state file to register 1	SCPI.MMEMory.STORe.STATE
State02	Save state file to register 2	SCPI.MMEMory.STORe.STATE
State03	Save state file to register 3	SCPI.MMEMory.STORe.STATE
State04	Save state file to register 4	SCPI.MMEMory.STORe.STATE
State05	Save state file to register 5	SCPI.MMEMory.STORe.STATE
State06	Save state file to register 6	SCPI.MMEMory.STORe.STATE
Scale		
Auto Scale	Execute autoscale	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.AUTO
Auto Scale All	Execute autoscale for all traces on transient measurement window	SCPI.DISPlay.TR(1-1).ALLTrace.Y.SCALe.AUTO
Divisions	Sets/reads Y-scale divisions	SCPI.DISPlay.TR(1-1).Y.SCALe.DI Visions
Marker -> Reference	Sets the marker value to the reference level	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RLEVel
Reference Position	Sets/reads reference position	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RPOSition
Reference Value	Sets/reads reference level value	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RLEVel
Scale/Div	Sets/reads scale per division	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.PDIVision
Trigger Freq -> Reference	Sets the trigger frequency to the reference level	SCPI.DISPlay.TR(1-1).TRACe(1-4).Y.SCALe.RLEVel

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
X Axis		
Auto	Sets/Reads automatic setting of the X-axis display range to the stimulus value	SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.AUTO
Band Marker -> X Axis	Sets the X-axis band marker range to the X-axis display range of a graph	SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.LEFT SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.RIGHt
Left	Sets/Reads the start value of the X-axis display range	SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.LEFT
Right	Sets/Reads the stop value of the X-axis display range	SCPI.DISPlay.TR(1-1).TRACe(1-4).X.SCALe.RIGHt
Setup		
Freq Range	Sets/reads frequency transient range (Narrowband)	SCPI.SENSE.TR(1-1).NARRow.FR EQUency.RANGe
Max Input Level	Sets/reads maximum input level	SCPI.SENSE.TR(1-1).POWer.INPut.LEVel.MAXimum
Phase Reference	Sets/reads phase reference frequency	SCPI.SENSE.TR(1-1).NARRow.FR EQUency.PREFErence
Recalc Phase Reference		
Phase Ref. Offset	Sets/reads the offset value of the phase reference frequency	SCPI.CALCulate.TR(1-1).TRACe(1-4).FORMat.PHASE.PREFErence.OFFSet
Target Freq	Sets/reads target frequency	SCPI.SENSE.TR(1-1).NARRow.FR EQUency.TARGet
Video Trigger		
Minimum Power Level	Sets/reads video trigger threshold level relative to max input level	SCPI.TRIGger.TR(1-1).NARRow.VIDeo.THREShold
Narrow Freq	Sets/reads video trigger frequency value (Narrowband)	SCPI.TRIGger.TR(1-1).NARRow.VIDeo.FREQUency.CENTer
Wide Freq	Sets/reads video trigger frequency value (Wideband)	SCPI.TRIGger.TR(1-1).WIDE.VIDeo.FREQUency.CENTer
Wide Freq Range	Sets/reads transient frequency range (Wideband)	SCPI.SENSE.TR(1-1).WIDE.FREQUency.MAXimum
Wide Max Frequency	Set/get transient frequency range in the wideband mode	SCPI.SENSE.TR(1-1).WIDE.FREQUency.MAXimum
Span		
Narrow Ref Position	Sets/reads reference position for time span	SCPI.SENSE.TR(1-1).NARRow.TI ME.REFErence
Narrow Settings -> Wide	Sets narrowband mode settings to wideband mode settings	

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Narrow Span	Sets/reads time span (Narrowband)	SCPI.SENSE.TR(1-1).NARRow.TIME.SPAN
Narrow Time Offset	Sets/reads time offset(delay) relative to the reference point	SCPI.SENSE.TR(1-1).NARRow.TIME.OFFSet
Wide Ref Position	Sets/reads reference position	SCPI.SENSE.TR(1-1).WIDE.TIME.REFerence
Wide Settings -> Narrow	Sets wideband mode settings to narrowband mode settings	
Wide Span	Sets/reads time span (Wideband)	SCPI.SENSE.TR(1-1).WIDE.TIME.SPAN
Wide Time Offset	Sets/reads time offset(delay) relative to the reference point	SCPI.SENSE.TR(1-1).WIDE.TIME.OFFSet
System		
Abort Printing	Aborts printing	SCPI.HCOPy.ABORt
Backlight	Turns on/off backlight	SCPI.SYSTem.BACKlight.STATe
Dump Screen Image	Save screen image	SCPI.MMEMory.STORe.IMAGe
Instrument Setup		
Correction		
File Dialog ...	Loads correction data for a specified power	SCPI.MMEMory.LOAD.CORRection.POWer
Import Power Correction Table	Loads correction data for a specified power	SCPI.MMEMory.LOAD.CORRection.POWer
Power Correction	Sets user the user calibration on or off or reads its setting	SCPI.SENSE.CORRection.POWer.STATe
Downconverter Manual Setup		
Current	Sets/reads the bias current to be supplied to the external mixer	SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.CURRENT
IF Gain 1 IF Gain 2	Sets/reads the IF gain of the external mixer	SCPI.SENSE.DCONverter.MANual.IFGain(1-2)
LO1 Frequency LO2 Frequency	Sets/reads the LO frequency of the external mixer	SCPI.SENSE.DCONverter.MANual.LO(1-2).FREQuency
LO1 Level LO2 Level	Sets/reads the LO level of the external mixer	SCPI.SENSE.DCONverter.MANual.LO(1-2).LEVel
Mixer 1 Bias Mixer 2 Bias	Sets the bias current supplied to the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.STATe

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
$\Delta IF = IF2 - IF1$	Sets/reads the differential frequency between CH1 and CH2 from the external mixer	SCPI.SENSE.DCONverter.MANual.IFDelta
Frequency Offset (User Downconv.)		
Conversion Mode	Sets/reads the conversion mode of the frequency offset	SCPI.SENSE.UDConverter.MODE
Frequency Offset	Sets/reads the frequency offset	SCPI.SENSE.UDConverter.STATE
Harmonic #	Sets/reads the frequency offset factor	SCPI.SENSE.UDConverter.HARMo nic
LO Frequency	Sets/reads the LO frequency of the frequency offset	SCPI.SENSE.UDConverter.LO
Invert Image	Selects print mode	SCPI.HCOPy.IMAGe
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	SCPI.SYSTem.BEEPer.COMPLete.S TATe
Beep Warning	Turns on/off the beep for warning	SCPI.SYSTem.BEEPer.WARNIng.S TATe
Test Beep Complete	Makes beep sound for operation completion	SCPI.SYSTem.BEEPer.COMPLete.I MMediate
Test Beep Warning	Makes beep sound for warning	SCPI.SYSTem.BEEPer.WARNIng.I MMediate
Clock Setup		
Set Date and Time	Set/reads system time Set/reads system date	SCPI.SYSTem.TIME[_Q] hour, minute, second SCPI.SYSTem.DATE[_Q] year, month, day
Show Clock	Turns on/off internal clock display	SCPI.DISPlay.CLOCK
Color Setup		
Invert	Sets each color when the inverted display is selected	
Backgroun d	Sets/Reads the background color	SCPI.DISPlay.COLOr(2).BACK.VA Lue[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPlay.COLOr(2).TRACe(1). DATA.VALue[_Q]
:		
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPlay.COLOr(2).TRACe(8). DATA.VALue[_Q]

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPLAY.COLOR(2).GRATICULE(1).VALUE[_Q]
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPLAY.COLOR(2).GRATICULE(2).VALUE[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPLAY.COLOR(2).LIMIT(1).VALUE[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPLAY.COLOR(2).LIMIT(2).VALUE[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace of trace 1	SCPI.DISPLAY.COLOR(2).TRACE(1).MEMORY.VALUE[_Q]
:		
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPLAY.COLOR(2).TRACE(8).MEMORY.VALUE[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPLAY.COLOR(2).RESET
Normal	Sets each color when the normal display is selected	
Background	Sets/Reads the background color	SCPI.DISPLAY.COLOR(1).BACKGROUND.VALUE[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPLAY.COLOR(1).TRACE(1).DATA.VALUE[_Q]
:		
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPLAY.COLOR(1).TRACE(8).DATA.VALUE[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPLAY.COLOR(1).GRATICULE(1).VALUE[_Q]
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPLAY.COLOR(1).GRATICULE(2).VALUE[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPLAY.COLOR(1).LIMIT(1).VALUE[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPLAY.COLOR(1).LIMIT(2).VALUE[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace of trace 1	SCPI.DISPLAY.COLOR(1).TRACE(1).MEMORY.VALUE[_Q]
:		
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPLAY.COLOR(1).TRACE(8).MEMORY.VALUE[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPLAY.COLOR(1).RESET

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
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	SCPI.SYSTem.KLOCK.KBD
Touch Screen & Mouse Lock	Disables touch screen / mouse operations	SCPI.SYSTem.KLOCK.MOUsE
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	SCPI.HCOPy.IMMediate
Printer Setup ...	Execute printer setup	
Product Information	Reads product information	
Service Menu		
Administrator Menu	Displays softkeys associated with Administrator Menu. This function is not available to general users	
Error Log		
Clear Error Log	Clears the error log	
View Error Log ...	Displays the error log	

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Install Option License		
Jitter	Enters the license for clock jitter analysis	
Service Function	Displays softkeys associated with Service Menu. This function is not available to general users	
Test Menu		
Power On Test	Performs internal test	
Display Test	Performs display test	
Front Panel	Performs front panel key (hard key) test	
Adjust Touch Screen	Performs touch screen calibration	
E5053A Test	Displays the connection status of E5053A	
Time Offset		
Narrow Ref Position	Sets/reads reference position for time span (Narrowband mode)	SCPI.SENSE.TR(1-1).NARROW.TIME.REFERENCE
Narrow Settings -> Wide	Sets narrowband mode settings to wideband mode settings	
Narrow Span	Sets/reads time span (Narrowband mode)	SCPI.SENSE.TR(1-1).NARROW.TIME.SPAN
Narrow Time Offset	Sets/reads time offset(delay) relative to the reference point	SCPI.SENSE.TR(1-1).NARROW.TIME.OFFSET
Wide Ref Position	Sets/reads reference position for time span (Wideband mode)	SCPI.SENSE.TR(1-1).WIDE.TIME.REFERENCE
Wide Settings -> Narrow	Sets wideband mode settings to narrowband mode settings	
Wide Span	Sets/reads time span (Wideband mode)	SCPI.SENSE.TR(1-1).WIDE.TIME.SPAN
Wide Time Offset	Sets/reads time offset(delay) relative to the reference point	SCPI.SENSE.TR(1-1).WIDE.TIME.OFFSET
Trace View		
Aperture	Sets/reads smoothing aperture value	SCPI.CALCULATE.TR(1-1).TRACE(1-4).SMOOTHING.APERTURE
Copy to User	Copies trace data to the user trace	SCPI.CALCULATE.TR(1-1).TRACE(1-4).DATA.COPY
Data -> Mem	Copy data to memory	SCPI.CALCULATE.TR(1-1).TRACE(1-4).MATH.MEMORIZE
Data Hold	Selects data hold type	SCPI.CALCULATE.TR(1-1).TRACE(1-4).HOLD

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Data Math	Sets/reads math operation type	SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.FUNCtion
Display Trace	Shows data and/or memory trace	SCPI.DISPlay.TR(1-1).TRACe(1-4).MODE
Marker -> -Offset	Sets sign-inverted data value of the data trace's active marker to the offset value	SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.OFFSet
Memory Trace		
Line (Y = AX + B)		
A	Sets/Reads regression line coefficient a (slope)	SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.A
B	Sets/Reads regression line coefficient b (intercept)	SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.B
Data Trace -> A, B	Assigns the measurement results to regression line coefficients (a, b)	SCPI.CALCulate.TR(1-1).TRACe(1-4).FUNCtion.LREGression.DATA_Q a, b SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.A SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.B
Set Line to Memory	Sets the obtained regression line to the memory trace	SCPI.CALCulate.TR(1-1).TRACe(1-4).LINE.MEMory
Offset	Sets/Reads the offset value of the data trace	SCPI.CALCulate.TR(1-1).TRACe(1-4).MATH.OFFSet
Persistence		
Clear Persistent Data	Clears persistent mode	SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.CLEar
Persistence Mode	Sets/reads persistent mode	SCPI.DISPlay.TR(1-1).TRACe(1-4).PERSistence.STATe
Smoothing	Turns on/off smoothing function	SCPI.CALCulate.TR(1-1).TRACe(1-4).SMOothing.STATe
Trace Label	Edits trace title label	SCPI.DISPlay.TR(1-1).TRACe(1-4).LABel.DATA
Trigger		
Average Trigger	Sets/Reads the averaging trigger function	SCPI.TRIGger.AVERAge
Continuous	Sets/reads trigger continuous mode	SCPI.INITiate.TR(1-1).CONTinuous SCPI.INITiate.TR(1-1).IMMediate
Ext Trig Adj.	Sets/Reads the waiting time for external trigger	SCPI.TRIGger.TR(1-1).ETTAdjust
Ext Trig Polarity	Sets/reads external trigger polarity	SCPI.TRIGger.EXTernal.SLOPe
Hold	Sets trigger mode to 'HOLD'	SCPI.INITiate.TR(1-1).IMMediate
Manual Trigger	Manual Trigger	SCPI.INITiate.TR(1-1).IMMediate

Table 7-6 TR Menu

Front panel key (Operation)	Function	Corresponding COM Object
Restart	Trigger restart	SCPI.INITiate.TR(1-1).IMMediate
Single	Trigger once to the selected measurement mode, then set trigger mode to 'HOLD'	SCPI.INITiate.TR(1-1).CONTinuous SCPI.INITiate.TR(1-1).IMMediate
Source	Selects trigger source	SCPI.TRIGger.TR(1-1).SOURce
Trigger to Transient	Selects measurement mode to be triggered	SCPI.TRIGger.MODE

USER Menu

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Attenuator		
Input Attenuator	Sets/reads Input Attenuator level on 5dB Step	SCPI.SENSE.ATTenuation.LEVel
DC Control Voltage		
Auto Freq Control		
AFC Status	Turns on/off the auto frequency control function Executes the auto frequency control once	SCPI.SOURce.VOLTage.CONTRol.AFC.STATe SCPI.SOURce.VOLTage.CONTRol.AFC.IMMediate
Frequency Band	Sets/reads the frequency band in the auto frequency control function	SCPI.SOURce.VOLTage.CONTRol.AFC.FBANd
Max Ctrl Voltage Limit	Sets/reads the maximum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.HIGH
Max Input Level	Sets/reads the maximum input level	SCPI.SOURce.VOLTage.CONTRol.AFC.INPut.LEVel.MAXimum
Max Iteration	Sets/reads the maximum number of iterations for the DC control voltage-setting loops	SCPI.SOURce.VOLTage.CONTRol.AFC.ITERation
Min Ctrl Voltage Limit	Sets/reads the minimum DC control voltage limit	SCPI.SOURce.VOLTage.CONTRol.AFC.LIMit.LOW
Sensitivity	Sets/reads the tuning sensitivity	SCPI.SOURce.VOLTage.CONTRol.AFC.SENSitivity
Target	Sets/reads the target frequency in the auto frequency control function	SCPI.SOURce.VOLTage.CONTRol.AFC.TARGet
Tolerance	Sets/reads the tolerance limit	SCPI.SOURce.VOLTage.CONTRol.AFC.TOLerance
Control Voltage Cal	Enables DC Control voltage calibration	SCPI.SOURce.VOLTage.CONTRol.CORRection.STATe
DC Control Delay	Sets/reads DC Control delay (sec)	SCPI.SOURce.VOLTage.CONTRol.DELay
DC Control Output	Turns on/off DC Control voltage	SCPI.SOURce.VOLTage.CONTRol.LEVel.STATe
DC Control Voltage	Sets/reads DC Control voltage	SCPI.SOURce.VOLTage.CONTRol.LEVel.AMPLitude
Execute Control Voltage Cal	Execute DC Control voltage calibration	SCPI.SOURce.VOLTage.CONTRol.CORRection.COLLECT.ACQUIRE
Max Ctrl Voltage Limit	Sets/reads the maximum DC Control voltage limit	SCPI.SOURce.VOLTage.CONTRol.LIMit.HIGH
Min Ctrl Voltage Limit	Sets/reads the minimum DC Control voltage limit	SCPI.SOURce.VOLTage.CONTRol.LIMit.LOW

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
DC Power Voltage		
DC Power Delay	Sets/reads DC Power delay (sec)	SCPI.SOURce.VOLTage.POWER.DELay
DC Power Output	Turns on/off DC Power voltage	SCPI.SOURce.VOLTage.POWER.LEVel.STATe
DC Power Voltage	Sets/reads DC Power voltage	SCPI.SOURce.VOLTage.POWER.LEVel.AMPLitude
Max Pwr Voltage Limit	Sets/reads the maximum DC Power voltage limit	SCPI.SOURce.VOLTage.POWER.LIMit.HIGH
Min Pwr Voltage Limit	Sets/reads the minimum DC Power voltage limit	SCPI.SOURce.VOLTage.POWER.LIMit.LOW
Display		
Edit Title Label	Edit the measurement window title label	SCPI.DISPlay.USER(1-1).LABel.DATA
Color Type	Sets/Reads the display type of the display (normal/inverted)	SCPI.DISPlay.IMAGe
Limit Test		
Delete Lower Limit Line	Clears the lower limit line	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.LOWer.SEGMent.CLEAr
Delete Upper Limit Line	Clears the upper limit line	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.UPPer.SEGMent.CLEAr
Explorer		
Fail Sign	Turns on/off the limit test judgement display	SCPI.DISPlay.USER(1-1).LIMit.FSIgn
Import Lower Limit Line ...	Reads the lower limit line	SCPI.MMEMory.USER(1-1).TRACe(1-8).LOAD.LIMit.LOWer
Import Upper Limit Line ...	Reads the upper limit line	SCPI.MMEMory.USER(1-1).TRACe(1-8).LOAD.LIMit.UPPer
Limit Line	Turns on/off the limit line	SCPI.DISPlay.USER(1-1).TRACe(1-8).LIMit.LINE
Limit Test	Turns on/off the limit test function	SCPI.CALCulate.USER(1-1).TRACe(1-8).LIMit.STATe
Marker Information	Sets/reads the marker information position	SCPI.DISPlay.USER(1-1).ANNotatiOn.MARKer.POSitiOn
Meas Condition	Turns on/off measurement conditions	SCPI.DISPlay.USER(1-1).ANNotatiOn.MEASurement.STATe
Relative Y-Scale	Turns on/off relative Y-scale	SCPI.DISPlay.USER(1-1).GRATiculE.AXIS.Y.RELative
Security Level	Sets/recalls the security level	SCPI.SYSTem.SECurity.LEVel

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Title Label	Turns on/off the measurement window title label	SCPI.DISPlay.USER(1-1).LABel.STATe
Update	Turns on/off the trace updates	SCPI.DISPlay.ENABLE
Y # of Digits	Selects the number of digits (Y-axis)	SCPI.DISPlay.USER(1-1).GRATiculate.AXIS.Y.STATe
Input Port		
Downconverter		
Downconverter	Sets the use of the downconverter on or off, or reads its setting	SCPI.SENSE.DCONverter.STATe
RF Input	Sets/reads the signal supplied to the RF input port	SCPI.SENSE.DCONverter.INPut
External Mixer	Sets the use of the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MEXTernal
Macro Setup		
Application		
Jitter	Executes clock jitter analysis (VBA)	
mmWave	Executes phase-noise measurement (VBA)	
E5052 Event	Turns on/off the E5052 VBA event callback function	SCPI.PROGRAM.COM.EVENT
Echo Window Menu		
Clear Echo	Clears Echo window	SCPI.DISPlay.ECHO.CLEAR
Echo Font Size	Sets/reads the font size on Echo window	SCPI.DISPlay.ECHO.FSIZE
Echo Window	Turn on/off the Echo window	SCPI.DISPlay.ECHO.STATe
Load & Run	Load and execute the macro selected on file names	
Select Macro	Sets/reads the name of the program to be selected	SCPI.PROGRAM.SELected.NAME
Stop	Sets/reads the state of the selected program	SCPI.PROGRAM.SELected.STATe
User Menu		
User Label 1	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 2	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 3	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 4	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 5	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate
User Label 6	Execute the macro assigned under the user defined softkey	SCPI.PROGRAM.SKEY.ITEM(1-8).IMMediate

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
User Label 7	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
User Label 8	Execute the macro assigned under the user defined softkey	SCPI.PROGram.SKEY.ITEM(1-8).IMMediate
VBA Editor Menu		
Close Editor	Close VBA editor	
Load Project	Loads program	SCPI.MMEMory.LOAD.PROGram
New Project	Open new VBA project	
Open Editor	Open VBA editor	
Save Project	Save VBA project	SCPI.MMEMory.STORe.PROGram
Marker		
Clear Marker Menu		
All OFF	Clears all the markers	
Marker 1	Turns on/off marker 1	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).STATe
:		
:		
Marker 10	Turns on/off marker 10	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).STATe
Couple	Turns on/off marker coupling function	SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.COUPle.STATe
Marker 1	Turns on/off marker 1	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).STATe
:		
:		
Marker 6	Turns on/off marker 6	SCPI.CALCulate.USER(1-1).TRACe(1-8).MARKer(1-10).STATe
Marker List	Turns on/off the marker list	SCPI.DISPlay.USER(1-1).TABLe.STATe
More Functions		
Discrete	Sets/reads marker movement (Continuous/Discrete)	SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.DISCrete.STATe
Ref Marker	Sets/reads marker reference number	SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.NUMBer
Ref Marker Mode	Turns on/off delta marker mode	SCPI.CALCulate.USER(1-1).ALLTrace.MARKer.REFerence.STATe

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
More Markers		
Marker 7	Turns on/off marker 7	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).STATE
:		
:		
Marker 10	Turns on/off marker 10	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).STATE
Marker Function		
Analysis Range (X)	Sets/reads analysis/search range (X-axis)	SCPI.CALCulate.USER(1-1).TRACE(1-8).FUNCTION.DOMain.X
Analysis Range (Y)	Sets/reads analysis/search range (Y-axis)	SCPI.CALCulate.USER(1-1).TRACE(1-8).FUNCTION.DOMain.Y
Analysis Type	Sets/reads analysis type	SCPI.CALCulate.USER(1-1).TRACE(1-8).FUNCTION.TYPE
Band Marker X		
Band Marker X	Turns on/off bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.STATE
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.START
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.STATE
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.START
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.STOP
Couple	Turns on/off bandmarker coupling function	SCPI.CALCulate.USER(1-1).ALLTrace.BDMarker.X.COUPle.STATE

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Marker Search		
Band Marker X		
Band Marker X	Turns on/off bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.STATe
Center	Sets/reads the center value of bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.CENTer
Span	Sets/reads the span value of bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.SPAN
Start	Sets/reads the start value of bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.STARt
Stop	Sets/reads the stop value of bandmarker X	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.X.STOP
Band Marker Y		
Band Marker Y	Turns on/off bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.STATe
Center	Sets/reads the center value of bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.CENTer
Span	Sets/reads the span value of bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.SPAN
Start	Sets/reads the start value of bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.STARt
Stop	Sets/reads the stop value of bandmarker Y	SCPI.CALCulate.USER(1-1).TRACE(1-8).BDMarker.Y.STOP
Couple	Turns on/off bandmarker coupling function	SCPI.CALCulate.USER(1-1).ALLTrace.BDMarker.X.COUPle.STATe
Peak		
Peak Excursion	Sets/reads the peak excursion value	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARch.PEAK.EXCursion
Peak Polarity	Sets/reads the marker peak-search polarity	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARch.PEAK.POLarity
Search Left	Execute marker peak search left	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARch.EXECute.LPEak
Search Peak	Execute marker peak search	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARch.EXECute.PEAK
Search Peak All	Execute marker search all	SCPI.CALCulate.USER(1-1).TRACE(1-8).ALLMarker.SEARch.PEAK

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Search Right	Execute marker peak search right	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.EXECute.RPEak
Search Max	Execute marker search maximum	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.EXECute.MAXimum
Search Min	Execute marker search minimum	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.EXECute.MINimum
Search Range (X)	Sets/reads marker search range (X-axis)	SCPI.CALCulate.USER(1-1).TRACE(1-8).ALLMarker.SEARCH.DOMain.X
Search Range (Y)	Sets/reads marker search range (Y-axis)	SCPI.CALCulate.USER(1-1).TRACE(1-8).ALLMarker.SEARCH.DOMain.Y
Target		
Search Left	Execute marker target search left	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.EXECute.LTARget
Search Right	Execute marker target search right	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.EXECute.RTARget
Search Target	Execute marker target search	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.EXECute.TARGet
Target Transition	Sets/reads the target transition definition	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.TARGet.TRANsition
Target Value	Sets/reads the marker target value	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.TARGet.Y
Tracking	Sets/reads the marker tracking type	SCPI.CALCulate.USER(1-1).TRACE(1-8).MARKer(1-10).SEARCH.TRACking.TYPE
Measurement View		
Freq & Power	Selects frequency, power and DC current measurement window	SCPI.DISPlay.WINDow.ACTive
Phase Noise	Selects phase noise measurement window	SCPI.DISPlay.WINDow.ACTive
Show Window		
Freq & Power	Turns on/off frequency, power and DC current measurement mode	SCPI.DISPlay.FP(1-1).STATe
Phase Noise	Turns on/off phase noise measurement mode	SCPI.DISPlay.PN(1-1).STATe
Spectrum Monitor	Turns on/off spectrum monitor mode	SCPI.DISPlay.SP(1-1).STATe
Transient	Turns on/off transient measurement mode	SCPI.DISPlay.TR(1-1).STATe

7. COM Object Reference

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
User	Turns on/off user defined window	SCPI.DISPlay.USER(1-1).STATe
Spectrum Monitor	Selects spectrum monitor mode	SCPI.DISPlay.WINDow.ACTive
Transient	Selects transient measurement mode	SCPI.DISPlay.WINDow.ACTive
User	Selects user defined window	SCPI.DISPlay.WINDow.ACTive
Preset		
Factory	Preset instrument to the initial setup state	SCPI.SYSTem.PRESet
User	Preset instrument and recalls the Autorec.sta in the F drive	
Save/Recall		
Explorer...	Open windows explorer	
Recall by filename	Recalls state file by file name	SCPI.MMEMory.LOAD.STATe
Recall State		
Autorec	Recalls settings	SCPI.MMEMory.LOAD.STATe
File Dialog...	Open file dialog	
State01	Recalls state file from register 1	SCPI.MMEMory.LOAD.STATe
State02	Recalls state file from register 2	SCPI.MMEMory.LOAD.STATe
State03	Recalls state file from register 3	SCPI.MMEMory.LOAD.STATe
State04	Recalls state file from register 4	SCPI.MMEMory.LOAD.STATe
State05	Recalls state file from register 5	SCPI.MMEMory.LOAD.STATe
State06	Recalls state file from register 6	SCPI.MMEMory.LOAD.STATe
Save Data Trace	Saves trace data	SCPI.MMEMory.USER(1-1).TRACe(1-8).STORe.DATA
Save Memory Trace	Saves memory trace data	SCPI.MMEMory.USER(1-1).TRACe(1-8).STORe.MEMory
Save State		
Autorec	Save settings	SCPI.MMEMory.STORe.STATe
File Dialog...	Open file dialog	
Save Type	Selects instrument state type (Entire or instrument state only)	SCPI.MMEMory.STORe.STYPe
State01	Save state file to register 1	SCPI.MMEMory.STORe.STATe
State02	Save state file to register 2	SCPI.MMEMory.STORe.STATe
State03	Save state file to register 3	SCPI.MMEMory.STORe.STATe
State04	Save state file to register 4	SCPI.MMEMory.STORe.STATe
State05	Save state file to register 5	SCPI.MMEMory.STORe.STATe
State06	Save state file to register 6	SCPI.MMEMory.STORe.STATe

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Scale		
Auto Scale	Execute autoscale	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.AUTO
Auto Scale All	Execute autoscale for all traces on user defined window	SCPI.DISPlay.USER(1-1).ALLTrace.Y.SCALe.AUTO
Divisions	Sets/reads Y-scale divisions	SCPI.DISPlay.USER(1-1).Y.SCALe.DIVisions
Marker -> Reference	Sets the marker value to the reference level	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RLEVel
Reference Position	Sets/reads reference position	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RPOSition
Reference Value	Sets/reads the reference level value	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.RLEVel
Scale/Div	Sets/reads scale per division	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.SCALe.PDIVision
X Axis		
Auto	Sets/Reads automatic setting of the X-axis display range to the stimulus value	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.AUTO
Band Marker -> X Axis	Sets the X-axis band marker range to the X-axis display range of a graph	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.LEFT SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.RIGHT
Left	Sets/Reads the start value of the X-axis display range	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.LEFT
Right	Sets/Reads the stop value of the X-axis display range	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.SCALe.RIGHT
X Axis Type	Sets/reads the display type of the x axis.	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.TYPE
X Unit	Sets/reads X-axis unit	SCPI.DISPlay.USER(1-1).TRACe(1-8).X.UNIT
Y Unit	Sets/reads Y-axis unit	SCPI.DISPlay.USER(1-1).TRACe(1-8).Y.UNIT
System		
Abort Printing	Aborts printing	SCPI.HCOPy.ABORT
Backlight	Turns on/off backlight	SCPI.SYSTem.BACKlight.STATE
Dump Screen Image	Save screen image	SCPI.MMEMory.STORe.IMAGE

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Instrument Setup		
Correction		
File Dialog ...	Loads correction data for a specified power	SCPI.MMEMemory.LOAD.CORRection.POWer
Import Power Correction Table	Loads correction data for a specified power	SCPI.MMEMemory.LOAD.CORRection.POWer
Power Correction	Sets user the user calibration on or off or reads its setting	SCPI.SENSE.CORRection.POWer.STATE
Downconverter Manual Setup		
Current	Sets/reads the bias current to be supplied to the external mixer	SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.CURRent
IF Gain 1 IF Gain 2	Sets/reads the IF gain of the external mixer	SCPI.SENSE.DCONverter.MANual.IFGain(1-2)
LO1 Frequency LO2 Frequency	Sets/reads the LO frequency of the external mixer	SCPI.SENSE.DCONverter.MANual.LO(1-2).FREQuency
LO1 Level LO2 Level	Sets/reads the LO level of the external mixer	SCPI.SENSE.DCONverter.MANual.LO(1-2).LEVel
Mixer 1 Bias Mixer 2 Bias	Sets the bias current supplied to the external mixer on or off and reads its settings	SCPI.SENSE.DCONverter.MANual.MEXTernal(1-2).BIAS.STATE
ΔIF = IF2 - IF1	Sets/reads the differential frequency between CH1 and CH2 from the external mixer	SCPI.SENSE.DCONverter.MANual.IFDelta
Frequency Offset (User Downconv.)		
Conversion Mode	Sets/reads the conversion mode of the frequency offset	SCPI.SENSE.UDCONverter.MODE
Frequency Offset	Sets/reads the frequency offset	SCPI.SENSE.UDCONverter.STATE
Harmonic #	Sets/reads the frequency offset factor	SCPI.SENSE.UDCONverter.HARMonic
LO Frequency	Sets/reads the LO frequency of the frequency offset	SCPI.SENSE.UDCONverter.LO

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Invert Image	Selects print mode	SCPI.HCOpy.IMAGe
Misc Setup		
Beeper		
Beep Complete	Turns on/off the beep for operation completion	SCPI.SYSTem.BEEPer.COMPLete.S TATe
Beep Warning	Turns on/off the beep for warning	SCPI.SYSTem.BEEPer.WARNIng.S TATe
Test Beep Complete	Makes beep sound for operation completion	SCPI.SYSTem.BEEPer.COMPLete.I MMediate
Test Beep Warning	Makes beep sound for warning	SCPI.SYSTem.BEEPer.WARNIng.I MMediate
Clock Setup		
Set Date and Time	Set/reads system time Set/reads system date	SCPI.SYSTem.TIME[_Q] hour, minute, second SCPI.SYSTem.DATE[_Q] year, month, day
Show Clock	Turns on/off internal clock display	SCPI.DISPlay.CLOCK
Color Setup		
Invert	Sets each color when the inverted display is selected	
Background	Sets/Reads the background color	SCPI.DISPlay.COLor(2).BACK.VA Lue[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPlay.COLor(2).TRACe(1). DATA.VALue[_Q]
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPlay.COLor(2).TRACe(8). DATA.VALue[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPlay.COLor(2).GRATICule (1).VALue[_Q]
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPlay.COLor(2).GRATICule (2).VALue[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPlay.COLor(2).LIMit(1).V ALue[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPlay.COLor(2).LIMit(2).V ALue[_Q]
Mem Trace 1	Sets/Reads the color of the memory trace of trace 1	SCPI.DISPlay.COLor(2).TRACe(1). MEMory.VALue[_Q]
:		
:		

7. COM Object Reference

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPLAY.COLOR(2).TRACE(8).MEMORY.VALUE[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPLAY.COLOR(2).RESET
Normal	Sets each color when the normal display is selected	
Background	Sets/Reads the background color	SCPI.DISPLAY.COLOR(1).BACKGROUND.VALUE[_Q]
Data Trace 1	Sets/Reads the color of the data trace of trace 1	SCPI.DISPLAY.COLOR(1).TRACE(1).DATA.VALUE[_Q]
:		
:		
Data Trace 8	Sets/Reads the color of the data trace of trace 8	SCPI.DISPLAY.COLOR(1).TRACE(8).DATA.VALUE[_Q]
Graticule Main	Sets/Reads the color of the graph	SCPI.DISPLAY.COLOR(1).GRATICULE(1).VALUE[_Q]
Graticule Sub	Sets/Reads the color of the grid lines in the graph	SCPI.DISPLAY.COLOR(1).GRATICULE(2).VALUE[_Q]
Limit Fail	Sets/Reads the limit display color	SCPI.DISPLAY.COLOR(1).LIMIT(1).VALUE[_Q]
Limit Line	Sets/Reads the color of the limit line	SCPI.DISPLAY.COLOR(1).LIMIT(2).VALUE[_Q]
Mem Trace 1	Sets/Read the color of the memory trace of trace 1	SCPI.DISPLAY.COLOR(1).TRACE(1).MEMORY.VALUE[_Q]
:		
:		
Mem Trace 8	Sets/Reads the color of the memory trace of trace 8	SCPI.DISPLAY.COLOR(1).TRACE(8).MEMORY.VALUE[_Q]
Reset Color	Resets the display color to the factory preset default setting	SCPI.DISPLAY.COLOR(1).RESET
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	

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Key Lock		
Front Panel & Keyboard Lock	Disables from panel / keyboard operations	SCPI.SYSTem.KLOCK.KBD
Touch Screen & Mouse Lock	Disables touch screen / mouse operations	SCPI.SYSTem.KLOCK.MOUsE
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	SCPI.HCOpy.IMMediate
Printer Setup ...	Execute printer setup	
Product Information	Reads product information	
Trace View		
Service Menu		
Administrator Menu	Displays softkeys associated with Administrator Menu. This function is not available to general users	
Error Log		
Clear Error Log	Clears the error log	
View Error Log ...	Displays the error log	
Install Option License		
Jitter	Enters the license for clock jitter analysis (VBA)	
Service Function	Displays softkeys associated with Service Menu. This function is not available to general users	

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Test Menu		
Power On Test	Performs internal test	
Display Test	Performs display test	
Front Panel	Performs front panel key (hard key) test	
Adjust Touch Screen	Performs touch screen calibration	
E5053A Test	Displays the connection status of E5053A	
Aperture	Smoothing aperture	SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.APERture
Clear All Persistent Data	clear all persistence mode	SCPI.DISPlay.USER(1-1).ALLTrace.PERSistence.CLEar
Copy to User	Copies trace data to the user trace	SCPI.CALCulate.USER(1-1).TRACe(1-8).DATA.COPY
Data -> Mem	Copy data to memory	SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.MEMorize
Data Hold	Data hold	SCPI.CALCulate.USER(1-1).TRACe(1-8).HOLD
Data Math	Sets/reads math operation type	SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.FUNcTion
Display Trace	Shows data and/or memory trace	SCPI.DISPlay.USER(1-1).TRACe(1-8).MODE
Enable Trace		
Trace 1	Enables/disables data trace 1	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe
Trace 2	Enables/disables data trace 2	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe
Trace 3	Enables/disables data trace 3	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe
Trace 4	Enables/disables data trace 4	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe
Trace 5	Enables/disables data trace 5	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe
Trace 6	Enables/disables data trace 6	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe
Trace 7	Enables/disables data trace 7	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe
Trace 8	Enables/disables data trace 8	SCPI.DISPlay.USER(1-1).TRACe(1-8).STATe

Table 7-7 User Menu

Front panel key (Operation)	Function	Corresponding COM Object
Marker -> -Offset	Sets the sign-inverted data value of the data trace's active marker to the offset value	SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.OFFSet
Offset	Sets/Reads the offset value of the data trace	SCPI.CALCulate.USER(1-1).TRACe(1-8).MATH.OFFSet
Persistence		
Clear All Persistent Data	Clears the persistent data of all traces	SCPI.DISPlay.USER(1-1).ALLTrace.PERSistence.CLEAr
Persistence Mode		SCPI.DISPlay.USER(1-1).TRACe(1-8).PERSistence.STATe
Smoothing	Smoothing on/off	SCPI.CALCulate.USER(1-1).TRACe(1-8).SMOothing.STATe
Trace Annotation	Edits trace annotation	SCPI.DISPlay.USER(1-1).TRACe(1-8).ANNotation.DATA
Trace Label	Edits trace title label	SCPI.DISPlay.USER(1-1).TRACe(1-8).LABel.DATA

COM Object Reference
List by softkey

A **Manual Changes**

This appendix contains the information required to adapt this manual to the versions or configurations of the Agilent E5052A which were manufactured earlier than the printing date of this manual.

Manual Changes

The information in this manual applies directly to your Agilent E5052A model that has the applicable firmware version and serial number prefix listed on the title page of this manual. If your model is not listed there, this manual is not applicable to it as is written. To adapt this manual to your 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
MY442 or later	Change 4

Table A-2 Manual Changes by Firmware Version

Version	Make Manual Changes
A.01.10 or later	Change 1
A.01.50 or later	Change 2
A.02.00 or later	Change 3
A.02.50 or later	Change 5

The ten-character serial number is stamped on the serial number plate (Figure A-1) on the rear panel.

Figure A-1

Serial Number Plate (Example)



e5052apj029

Change 5

The following functions are newly integrated into the firmware version A.02.50 onward. They are not supported by firmware version A.02.00 or earlier.

- Allan variance and jitter calculation in phase noise measurement (PN)
- Addition of 20 MHz to the offset stop frequency in phase noise measurement (PN)
- Addition of 25 kHz and 3.125 kHz to the test frequency range of the narrow band in transient measurement (TR)
- Y-axis offset setting
- Function to make 0 degree reference variable when measuring phase in transient measurement (TR)
- Averaging trigger function
- Function to detect the end of measurement using the *OPC? command (except for VBA)
- Function to invert display color of a LCD display and color setting
- The number of markers changed from six to ten
- Function to set the minimum value and maximum value of X-axis
- Annotation in the user window and function that frequency and signal level are copied to the user window when traces of the phase noise measurement are copied to the user window.
- Linearity evaluation of FM chirp signal
- Timing control of external trigger in transient measurement (TR)
- Function to have the 11970 external mixer which equals to or is more than 26.5 Ghz correspond to this instrument by VBA
- Clock jitter measurement by VBA (E5001A)
- Setting the minimum level for spurious judgement
- User recovery function *1
- Expansion of the maximum number of display characters in the eco window up to 2000
- Expansion of the frequency offset setting range when using downconverter to 330 GHz, and the setting range of harmonic to 34

Change 4

The equipment with prefix MY441 or earlier does not support the USB (USBTMC) interface port nor the removable hard disk function.

*1. This function is available when the volume label on the C drive is CL250 or higher.

Change 3

The following functions are integrated newly into the firmware version A.01.50 onward. They are not supported by the firmware version A.02.00 or earlier.

- E5053A Control function
- UserCAL executive function of power measurement
- Frequency blanking
- Frequency offset function
- External mixer support
- Carrier signal search function
- Support of USB(USBTMC) interface port

Change 2

The following functions are integrated newly into the firmware version A.01.50 onward. They are not supported by the firmware version A.01.10 or earlier.

- Limit test function
- Auto frequency control function
- X-axis divisions
- Selectable preset
- Copy function of measurement result to user window
- Recall function of state file from softkey
- Selectable trace layout in frequency/power measurement mode.
- Integral phase noise, jitter and residual FM measurement in phase noise measurement
- Selectable quality level during phase noise measurement
- Display the progress of phase noise measurement
- Display spurious power value in phase noise measurement
- Moving function of harmonics to the center during spectrum monitor measurement
- Supporting $\Delta\text{Hz},\%$ and ppm data formats in frequency measurement
- Supporting 200kHz frequency range in transient measurement
- Offset adding function to phase reference frequency in transient measurement

Change 1

The functions listed below are limited when option 011 is installed.

Table A-3 Limited functions when option 011 is installed

Functions	Limitations
[PN] Start frequency	Minimum value is 10 Hz
[PN] Correlation	Not Available (The value is fixed as 1)
[PN] IF Gain	Not Available (The value is fixed as 10 dB)
[FP] Trigger Mode	Tester mode only

The SCPI commands that related the limited functions above have also the limitations on the initial values and the range of parameters.

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Manual Changes

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