



Programming Guide EMI Measurement Application Applicable to RSA5000-EMI/ RSA3000-EMI

Distribution in the UK & Ireland



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Programming Guide

EMI Measurement Application

Applicable to RSA5000-EMI/RSA3000-EMI

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RIGOL (SUZHOU) TECHNOLOGIES, INC.

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Document Overview

This manual introduces how to program and control **RIGOL** RSA series spectrum analyzer (EMI mode) by using SCPI commands through USB and LAN interface.

Main Topics of this Manual:

Chapter 1 Programming Overview

This chapter introduces how to set up remote communication between the spectrum analyzer and the PC, the remote control methods, the syntax, symbols, parameters, and abbreviation rules of the SCPI commands.

Chapter 2 Command System

This chapter introduces the syntax, function, parameters, and usage of each command in EMI mode for the RSA series.

Tip

For the latest version of this manual, download it from the official website of **RIGOL** (www.rigol.com).

Format Conventions in this Manual:

1. Keys:

The keys on the front panel are usually denoted by the format of "Key Name (Bold) + Text Box". For example, **FREQ** denotes the **FREQ** key.

2. Menu keys:

The menu softkeys are usually denoted by the format of "Menu Word (Bold) + Character Shading". For example, **Midspan Freq** denotes the midspan frequency menu item under the **FREQ** function key.

3. Connectors:

The connectors at the front or rear panel are usually denoted by the format of "Connector name (Bold) + square brackets (Bold)". For example, **[Gen Output 50Ω]**.

4. Operation Procedures:

→ indicates the next step of operation. For example, **FREQ** → **Midspan Freq** indicates pressing **FREQ** on the front panel and then pressing the menu softkey **Midspan Freq**.

Content Conventions in this Manual:

The RSA series spectrum analyzer includes the following models. Unless otherwise specified, this manual takes RSA5065 as an example to illustrate the usage of each command of RSA series spectrum analyzer in EMI mode.

Model	Frequency Range	TG
RSA5065	9 kHz to 6.5 GHz	None
RSA5032	9 kHz to 3.2 GHz	None
RSA5065-TG	9 kHz to 6.5 GHz	6.5 GHz
RSA5032-TG	9 kHz to 3.2 GHz	3.2 GHz
RSA3045	9 kHz to 4.5 GHz	None
RSA3030	9 kHz to 3 GHz	None
RSA3045-TG	9 kHz to 4.5 GHz	4.5 GHz
RSA3030-TG	9 kHz to 3 GHz	3 GHz

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Chapter 1 Programming Overview

This chapter introduces how to set up remote communication between the spectrum analyzer and the PC, the remote control methods, the syntax, symbols, parameters, and abbreviation rules of the SCPI commands.

Contents in this chapter:

- ◆ [Build Remote Communication](#)
- ◆ [Remote Control Method](#)
- ◆ [SCPI Command Overview](#)

Build Remote Communication

The RSA series spectrum analyzer can be connected to the PC via the USB or LAN interface to set up communication and realize remote control through the PC. This Chapter introduces in details how to use Ultra Sigma to send commands through the USB interface to control the analyzer.

Operation Procedures:

1. Install Ultra Sigma (PC) software.

You can download Ultra Sigma from the official website of **RIGOL** (www.rigol.com) and install the software according to the installation wizard.

2. Connect the analyzer to the PC and configure the interface parameters for the instrument

RSA supports the USB and LAN interfaces.

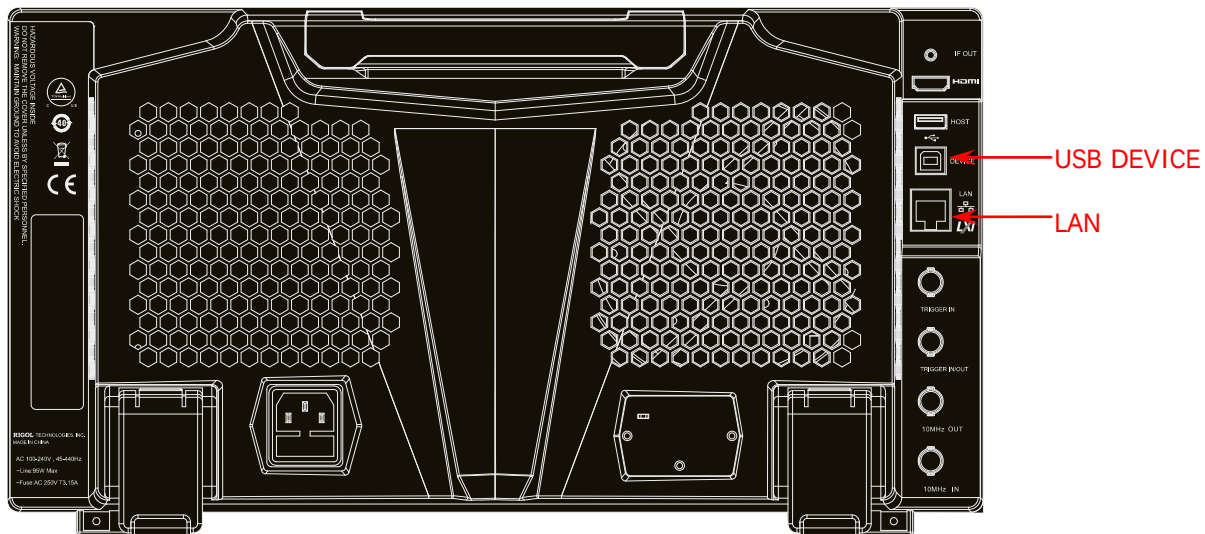


Figure 1-1 RSA5000 Communication Interface

(1) Remote communication via USB:

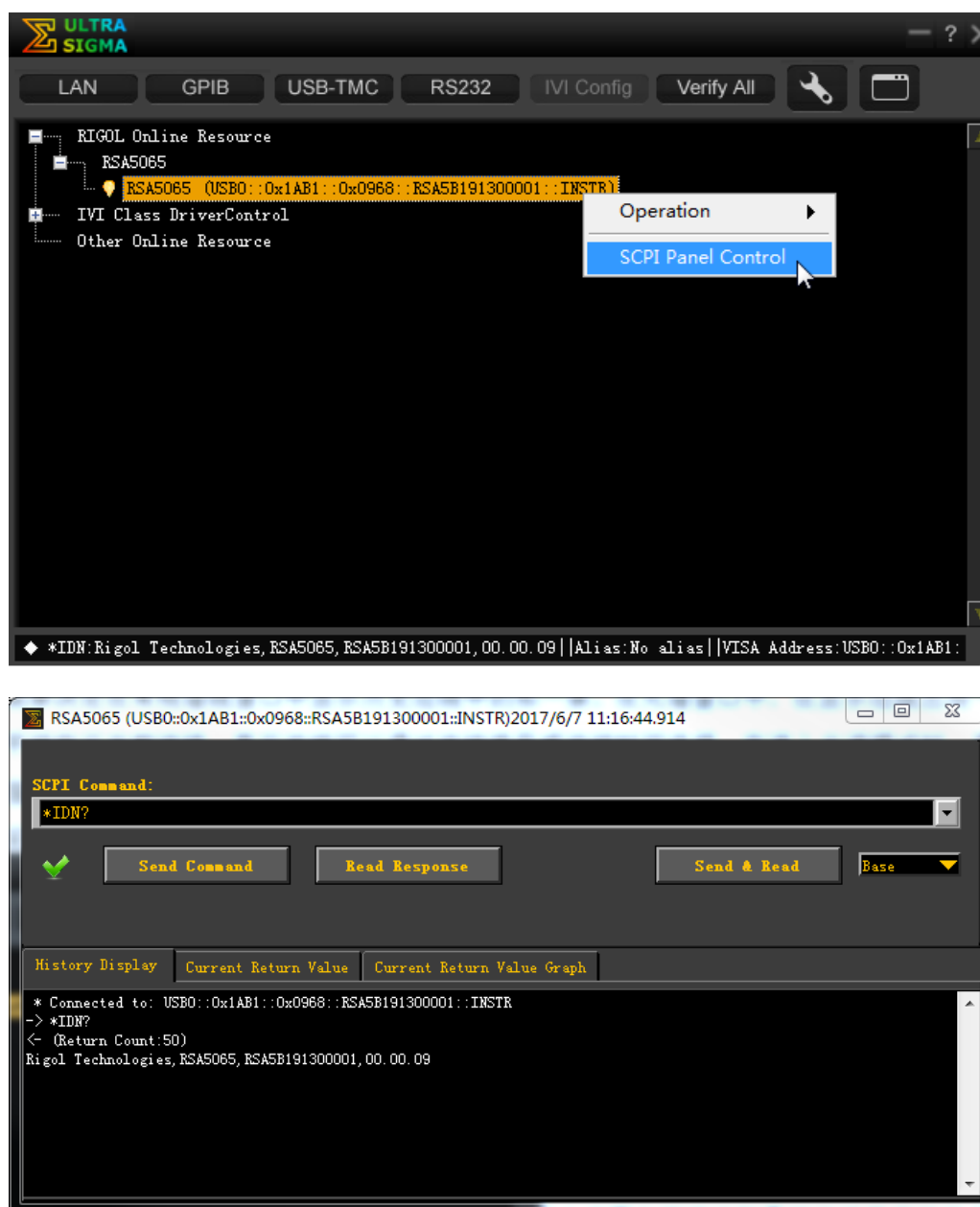
Use the USB cable to connect the rear-panel USB DEVICE interface of RSA5000 to the USB HOST interface of the PC.

(2) Use the LAN interface:

- Make sure that your PC has been accessed to the local area network.
- Check whether the local area network where your PC resides supports DHCP or auto IP mode. If not, you need to obtain the available network interface parameters, including the IP address, subnet mask, default gateway, and DNS.
- Connect RSA5000 to the local area network by using the network cable.
- Press **System** → **Interface** → **LAN** to configure the IP address, subnet mask, default gateway, and DNS for the instrument.

3. Check whether the connection is successful

Run Ultra Sigma. Search the resource and right-click the resource name. In the displayed menu, select "SCPI Panel Control". In the SCPI command control panel, input a correct command. After that, click **Send Command** first and then click **Read Response**. Or you can also directly click **Send & Read** to verify whether the connection works properly. The following figure takes USB interface as an example to illustrate it.



Remote Control Method

1. User-defined programming

You can refer to the SCPI (Standard Commands for Programmable Instruments) commands listed in Chapter 2 in this manual to control RSA by programming in LabVIEW, Visual C++, and other development environments. For details, refer to descriptions in Chapter 3 in *RSA5000 Programming Guide* and *RSA3000 Programming Guide*.

2. Send SCPI commands via the PC software

You can use the PC software to send commands to control RSA remotely. **RIGOL** Ultra Sigma is recommended. You can download the software from **RIGOL** official website (www.rigol.com).

SCPI Command Overview

SCPI (Standard Commands for Programmable Instruments) is a standardized instrument programming language that is built upon the existing standard IEEE 488.1 and IEEE 488.2 and conforms to various standards, such as the floating point operation rule in IEEE 754 standard, ISO 646 7-bit coded character set for information interchange (equivalent to ASCII programming). This chapter introduces the syntax, symbols, parameters, and abbreviation rules of the SCPI commands.

Syntax

The SCPI commands provide a hierarchical tree structure, and consist of multiple subsystems. Each command subsystem consists of one root keyword and one or more sub-keywords. The command line usually starts with ":", the keywords are separated by ":" and are followed by the parameter settings available; "?" is added at the end of the command line to indicate a query; the commands and parameters are separated by space.

For example,

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion <rel_ampl>  
:CALCulate:FSCan:MARKer:PEAK:EXCursion?
```

CALCulate is the root keyword of the command. FSCan is the second-level keyword, MARKer is the third-level keyword, PEAK is the fourth-level keyword, and EXCursion is the fifth-level keyword. The command line starts with ":", and a colon is also used to separate the multiple-level keywords. <rel_ampl> represents the parameters available for setting. "?" represents query. The command :CALCulate:FSCan:MARKer:PEAK:EXCursion and the parameter <rel_ampl> are separated by a space.

In some commands with parameters, "," is often used to separate each parameter. For example,
:SYSTem:DATE <year>,<month>,<day>.

Symbol Description

The following four symbols are not part of the SCPI command, and they are not sent with the commands, but taken as delimiters to better describe the parameters in the command.

1. Braces { }

The parameters enclosed in the braces are optional. You do not have to set it, also you can set for one or more times.

2. Vertical Bar |

The vertical bar is used to separate multiple parameters. When using the command, you must select one of the parameters. For example,
In the command :SYSTem:COMMunicate:LAN[:SELF]:AUTOip:STATe OFF|ON|0|1, you can select any of the four available parameters: OFF, ON, 0, or 1.

3. Square Brackets []

The contents (command keywords) in the square brackets can be omitted. If the keyword is omitted, it will be set to the default. For example,
for the [:SENSe]:POWeR[:RF]:ATTenuation? command, sending any of the four commands below can generate the same effect:
:POWeR:ATTenuation?
:POWeR:RF:ATTenuation?
:SENSe:POWeR:ATTenuation?
:SENSe:POWeR:RF:ATTenuation?

4. Angle Brackets < >

When sending the command, the parameter enclosed in the angle-bracket must contain an effective value. For example, send the :SENSe:FREQuency:CENTer 1000 command in [:SENSe]:FREQuency:CENTer <freq> format.

Parameter Type

The command parameters introduced in this manual include 6 types: Bool, Keyword, Integer, Consecutive Real Number, Discrete, and ASCII String.

1. Bool

The parameter can be set to OFF (0) or ON (1).

2. Keyword

The parameter can be any of the values listed.

3. Integer

Unless otherwise specified, the parameter can be any integer within the effective value range. Note: Do not set the parameter to a decimal, otherwise, errors will occur.

4. Consecutive Real Number

Unless otherwise specified, the parameter could be any value within the effective value range according to the accuracy requirement (by default, there are 9 digits after the decimal points).

5. Discrete

The parameter could only be one of the specified values and these values are discontinuous.

6. ASCII String

The parameter can be the combinations of ASCII characters.

Command Abbreviation

All the commands are case-insensitive. They can all be written in upper case or in lower case. For abbreviations, you only need to input all the upper-case letters in the command. For example, :CALCulate:FSCan:MARKer:PEAK:EXCursion? can be abbreviated as :CALC:FSC:MARK:PEAK:EXC? or :calc:fsc:mark:peak:exc?

Chapter 2 Command System

This chapter introduces the commands of the RSA series spectrum analyzer in EMI mode.

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- ◆ [:CALCulate Commands](#)
- ◆ [:CALibration Commands](#)
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- ◆ [:UNIT Command](#)

Remarks:

1. For the command set, unless otherwise specified, the query command returns "N/A" (without quotations in its return format) if no specified option is installed. If the queried function is disabled or improper type match is found, the query command will return "error" (without quotations in its return format).
2. This manual takes RSA5065 as an example to illustrate the range of the parameters in each command.

:CALCulate Commands

Command List:

- ◆ [:CALCulate:EMI:SLIST:DELeTe](#)
- ◆ [:CALCulate:FSCan:MAMarker\[:SET\]:SLIST](#)
- ◆ [:CALCulate:FSCan:MARKer:AOff](#)
- ◆ [:CALCulate:FSCan:MARKer:COUPle\[:STATe\]](#)
- ◆ [:CALCulate:FSCan:MARKer:PEAK:EXCursion](#)
- ◆ [:CALCulate:FSCan:MARKer:PEAK:EXCursion:STATe](#)
- ◆ [:CALCulate:FSCan:MARKer:PEAK:SEARch:MODE](#)
- ◆ [:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold](#)
- ◆ [:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold:STATe](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:FUNCTION:MAMarker?](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:MAXimum](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:MAXimum:LEFT](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:MAXimum:NEXT](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:MAXimum:RIGHT](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:MINimum](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:MODE](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:REFerence](#)
- ◆ [:CALCulate:FSCan:MARKer<n>\[:SET\]:SLIST](#)
- ◆ [:CALCulate:FSCan:MARKer<n>\[:SET\]:METer](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:TO:METer](#)
- ◆ [:CALCulate:FSCan:MARKer<n>:TRACe](#)
- ◆ [:CALCulate:FSCan:SLIST:APPend:METer](#)
- ◆ [:CALCulate:FSCan:SLIST:DELeTe:SIGNAL](#)
- ◆ [:CALCulate:FSCan:SLIST:MARK:ALL](#)
- ◆ [:CALCulate:FSCan:SLIST:MARK:CLEar:ALL](#)
- ◆ [:CALCulate:FSCan:SLIST:MARK:CLEar:SIGNAL](#)
- ◆ [:CALCulate:FSCan:SLIST:MARK:SIGNAL](#)
- ◆ [:CALCulate:FSCan:SLIST:REPLace:METer](#)
- ◆ [:CALCulate:FSCan:SLIST:SET:METer](#)
- ◆ [:CALCulate:FSCan:SLIST:SORT:AUTO](#)
- ◆ [:CALCulate:FSCan:SLIST:SORT:DAMPLitude](#)
- ◆ [:CALCulate:FSCan:SLIST:SORT:DLDelta](#)
- ◆ [:CALCulate:FSCan:SLIST:SORT:ORDer](#)
- ◆ [:CALCulate:FSCan:SLIST:SORT:TYPE](#)
- ◆ [:CALCulate:FSCan:SLIST:ZOOM](#)
- ◆ [:CALCulate:FSCan:SLIST:ZOOM:OUT](#)

- ◆ [:CALCulate:LLINe:ALL:DELeTe](#)
- ◆ [:CALCulate:LLINe:TEST](#)
- ◆ [:CALCulate:LLINe<n>:AMPLitude:CMODE:RELative](#)
- ◆ [:CALCulate:LLINe<n>:BUIlD](#)
- ◆ [:CALCulate:LLINe<n>:CONTRol:INTerpolate:TYPE](#)
- ◆ [:CALCulate:LLINe<n>:COPY](#)
- ◆ [:CALCulate:LLINe<n>:DATA](#)
- ◆ [:CALCulate:LLINe<n>:DELeTe](#)
- ◆ [:CALCulate:LLINe<n>:DISPlay](#)
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- ◆ [:CALCulate:LLINe<n>:FREQuency:CMODE:RELative](#)
- ◆ [:CALCulate:LLINe<n>:MARGIn](#)
- ◆ [:CALCulate:LLINe<n>:MARGIn:STATe](#)
- ◆ [:CALCulate:LLINe<n>:OFFSet:X](#)
- ◆ [:CALCulate:LLINe<n>:OFFSet:Y](#)
- ◆ [:CALCulate:LLINe<n>:TRACe](#)
- ◆ [:CALCulate:MARKer:PEAK:SEARCh:THReshold:LINE](#)
- ◆ [:CALCulate:MARKer<n>:LINes\[:STATe\]](#)
- ◆ [:CALCulate:MARKer<n>:STATe](#)
- ◆ [:CALCulate:MARKer<n>:X](#)
- ◆ [:CALCulate:MARKer<n>:Y?](#)
- ◆ [:CALCulate:METER:LIMit:ALL:FAIL?](#)
- ◆ [:CALCulate:METER:POWER\[:CURRent\]?](#)
- ◆ [:CALCulate:METER:POWER:PEAK?](#)
- ◆ [:CALCulate:METER<n>:LIMit\[:DATA\]](#)
- ◆ [:CALCulate:METER<n>:LIMit:FAIL?](#)
- ◆ [:CALCulate:METER<n>:LIMit:STATe](#)

:CALCulate:EMI:SLIST:DELeTe

Syntax

:CALCulate:EMI:SLIST:DELeTe ALL|CURRent|MARKed|UNMarked

Description

Sets the signal type to be deleted.

Parameter

Name	Type	Range	Default
--	Discrete	ALL CURRent MARKed UNMarked	CURRent

Remarks

ALL: deletes all the signals in the signal table.

CURRent: deletes the currently selected signal from the signal table.

MARKed: deletes all the marked signals from the signal table.

UNMarked: deletes all the unmarked signals from the signal table.

Example

The following command deletes all the signals in the signal table.

```
:CALCulate:EMI:SLIST:DELeTe ALL
```

:CALCulate:FSCan:MAMarker[:SET]:SLIST

Syntax

:CALCulate:FSCan:MAMarker[:SET]:SLIST

Description

Adds the current measurement results to the signal table.

:CALCulate:FSCan:MARKer:AOff

Syntax

:CALCulate:FSCan:MARKer:AOff

Description

Turns off all the enabled markers.

:CALCulate:FSCan:MARKer:COUPle[:STATe]

Syntax

:CALCulate:FSCan:MARKer:COUPle[:STATe] OFF|ON|0|1

:CALCulate:FSCan:MARKer:COUPle[:STATe]?

Description

Enables or disables the couple marker function.

Queries the state of the couple marker function.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Remarks

When you enable the couple marker function, moving any marker will enable other markers (except the Off marker) to move with it.

Return Format

The query returns 0 or 1.

Example

The following command disables the couple marker function.

```
:CALCulate:FSCan:MARKer:COUPle:STATe OFF or :CALCulate:FSCan:MARKer:COUPle:STATe 0
```

The following query returns 0.

```
:CALCulate:FSCan:MARKer:COUPle:STATe?
```

:CALCulate:FSCan:MARKer:PEAK:EXCursion**Syntax**

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion <rel_ampl>
```

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion?
```

Description

Sets the peak excursion. The unit is dB.

Queries the peak excursion.

Parameter

Name	Type	Range	Default
<rel_ampl>	Consecutive Real Number	0 dB to 100 dB	6 dB

Return Format

The query returns the peak excursion in scientific notation.

Example

The following command sets the peak excursion to 12 dB.

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion 12
```

The following query returns 1.200000000e+01.

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion?
```

:CALCulate:FSCan:MARKer:PEAK:EXCursion:STATe**Syntax**

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion:STATe OFF|ON|0|1
```

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion:STATe?
```

Description

Enables or disables the peak excursion function.

Queries the status of the peak excursion function.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the peak excursion function.

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion:STATe ON  
or :CALCulate:FSCan:MARKer:PEAK:EXCursion:STATe 1
```

The following query returns 1.

```
:CALCulate:FSCan:MARKer:PEAK:EXCursion:STATe?
```

:CALCulate:FSCan:MARKer:PEAK:SEARch:MODE**Syntax**

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:MODE PARAmeter|MAXimum  
:CALCulate:FSCan:MARKer:PEAK:SEARch:MODE?
```

Description

Sets the peak search mode.

Queries the peak search mode.

Parameter

Name	Type	Range	Default
--	Keyword	PARAmeter MAXimum	MAXimum

Remarks

PARAmeter: indicates parameter. If "parameter" is selected under Search Mode, the system will search for the peak of the specified parameter on the trace.

MAXimum: indicates maximum. If "Max" is selected under Search Mode, the system will search for the maximum value on the trace.

The command is only valid for the peak search executed by sending the [:CALCulate:FSCan:MARKer<n>:MAXimum](#) command. Other items under the peak search menu such as Next Peak, Next Peak Right, Next Peak Left, and Minimum Peak are all searched based on "parameter".

Return Format

The query returns PAR or MAX.

Example

The following command sets the peak search mode to PARAmeter.

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:MODE PARAmeter
```

The following query returns PAR.

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:MODE?
```

:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold**Syntax**

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold <ampl>  
:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold?
```

Description

Sets the peak threshold.

Queries the peak threshold.

Parameter

Name	Type	Range	Default
<ampl>	Consecutive Real Number	-200 dBm to 0 dBm	-90 dBm

Return Format

The query returns the peak threshold in scientific notation.

Example

The following command sets the peak threshold to -100 dBm.

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold -100
```

The following query returns -1.000000e+02.

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold?
```

:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold:STATe**Syntax**

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold:STATe OFF|ON|0|1
```

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold:STATe?
```

Description

Enables or disables the peak threshold function.

Queries the status of the peak threshold function.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the peak threshold function.

```
:CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold:STATe ON
```

or :CALCulate:FSCan:MARKer:PEAK:SEARch:THReshold:STATe 1

The following query returns 1.

```
:CALCulate:FSCan:MARKer:PEAK:THReshold:STATe?
```

:CALCulate:FSCan:MARKer<n>:FUNCTion:MAMarker?**Syntax**

```
:CALCulate:FSCan:MARKer<n>:FUNCTion:MAMarker?
```

Description

Queries the result measured at the marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Return Format

The query returns the result measured at the marker in scientific notation, including detector 1 amplitude value, detector 2 amplitude value, detector 3 amplitude value and frequency value at the marker. The return values are separated by commas. If the detector is disabled or the measurement is not completed, the query returns -1.700000000e+02.

Example

The following command returns the result measured at Marker 1

```
-1.700000000e+02,-1.700000000e+02,-1.700000000e+02,5.150000000e+08.
```

```
:CALCulate:FSCan:MARKer1:FUNctio:n:MAMarker?
```

:CALCulate:FSCan:MARKer<n>:MAXimum**Syntax**

```
:CALCulate:FSCan:MARKer<n>:MAXimum
```

Description

Performs one peak search based on the search mode set by

the [:CALCulate:FSCan:MARKer:PEAK:SEARCh:MODE](#) command and marks it with the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Remarks

When no peak is found, a prompt message "No peak found" is displayed on the screen.

Example

The following command performs one peak search, and marks with Marker 2.

```
:CALCulate:FSCan:MARKer2:MAXimum:MAX
```

:CALCulate:FSCan:MARKer<n>:MAXimum:LEFT**Syntax**

```
:CALCulate:FSCan:MARKer<n>:MAXimum:LEFT
```

Description

Searches for and marks the nearest peak which is located at the left side of the current peak and meets the peak search condition.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Remarks

When no peak is found, a prompt message "No peak found" is displayed on the screen.

Example

The following command performs one left peak search, and marks with Marker 2.

```
:CALCulate:FSCan:MARKer2:MAXimum:LEFT
```

:CALCulate:FSCan:MARKer<n>:MAXimum:NEXT**Syntax**

```
:CALCulate:FSCan:MARKer<n>:MAXimum:NEXT
```

Description

Searches for and marks the peak whose amplitude on the trace is next to that of the current peak and which meets the peak search condition.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Remarks

When no peak is found, a prompt message "No peak found" is displayed on the screen.

Example

The following command performs one next peak search, and marks with Marker 2.

```
:CALCulate:FSCan:MARKer2:MAXimum:NEXT
```

:CALCulate:FSCan:MARKer<n>:MAXimum:RIGHT**Syntax**

```
:CALCulate:FSCan:MARKer<n>:MAXimum:RIGHT
```

Description

Searches for and marks the nearest peak which is located at the right side of the current peak and meets the peak search condition.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Remarks

When no peak is found, a prompt message "No peak found" is displayed on the screen.

Example

The following command performs one right peak search, and marks with Marker 2.

```
:CALCulate:FSCan:MARKer2:MAXimum:RIGHT
```

:CALCulate:FSCan:MARKer<n>:MINimum**Syntax**

```
:CALCulate:FSCan:MARKer<n>:MINimum
```

Description

Searches for and marks the peak with the minimum amplitude on the trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Remarks

When no peak is found, a prompt message "No peak found" is displayed on the screen.

Example

The following command performs one minimum search, and marks it with Marker 2.

```
:CALCulate:FSCan:MARKer2:MINimum
```

:CALCulate:FSCan:MARKer<n>:MODE

Syntax

```
:CALCulate:FSCan:MARKer<n>:MODE POSition|DELta|OFF
:CALCulate:FSCan:MARKer<n>:MODE?
```

Description

Sets the type of the specified marker.
Queries the type of the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--
--	Keyword	POSition DELta OFF	POSition

Remarks

POSition: indicates the normal marker.
DELta: indicates difference between two data points.
OFF: turns off the selected marker.

Return Format

The query returns POS, DELT, or OFF.

Example

The following command sets the type of Marker 1 to Position.
:CALCulate:FSCan:MARKer1:MODE POSition

The following query returns POS.
:CALCulate:FSCan:MARKer1:MODE?

:CALCulate:FSCan:MARKer<n>:REFeRence

Syntax

```
:CALCulate:FSCan:MARKer<n>:REFeRence <integer>
:CALCulate:FSCan:MARKer<n>:REFeRence?
```

Description

Sets the reference marker for the specified marker.
Queries the reference marker for the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--
<integer>	Integer	1 to 8	By default, the reference marker is the marker next to it.

Remarks

Each marker can have another marker to be its reference marker.
If the current marker is a Delta marker, the measurement result of the marker will be determined by the reference marker.
Any marker cannot have itself to be the reference marker.

Example

The following command sets the reference marker for the Marker 1 to 2.
:CALCulate:FSCan:MARKer1:REFeRence 2

The following query returns 2.

```
:CALCulate:FSCan:MARKer1:REFeRence?
```

:CALCulate:FSCan:MARKer<n>[:SET]:SLISt

Syntax

```
:CALCulate:FSCan:MARKer<n>[:SET]:SLISt
```

Description

Adds the frequency at the specified marker to the signal table.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Example

The following command adds the frequency at the Marker 1 (Position) to the signal table.

```
:CALCulate:FSCan:MARKer1:SET:SLISt
```

:CALCulate:FSCan:MARKer<n>[:SET]:METer

Syntax

```
:CALCulate:FSCan:MARKer<n>[:SET]:METer
```

Description

Sets the frequency at the currently selected marker to the frequency of the meter.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Example

The following command sets the frequency at Marker 1 to the frequency of the meter.

```
:CALCulate:FSCan:MARKer1:SET:METer
```

:CALCulate:FSCan:MARKer<n>:TO:METer

Syntax

```
:CALCulate:FSCan:MARKer<n>:TO:METer
```

Description

Sets the frequency of the meter to the frequency at the currently selected marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

Example

The following command sets the frequency of the meter to the frequency at Marker 1.

```
:CALCulate:FSCan:MARKer1:TO:METer
```

:CALCulate:FSCan:MARKer<n>:TRACe

Syntax

:CALCulate:FSCan:MARKer<n>:TRACe <integer>

:CALCulate:FSCan:MARKer<n>:TRACe?

Description

Sets the marker trace for the specified marker.

Queries the marker trace for the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--
<integer>	Discrete	1 2 3	1

Remarks

<integer> indicates the marker trace, and its range is from Trace 1 to Trace 3.

Return Format

The query returns any integer from 1 to 3.

Example

The following command sets the marker trace of Marker 1 to be Trace 2.

```
:CALCulate:FSCan:MARKer1:TRACe 2
```

The following query returns 2.

```
:CALCulate:FSCan:MARKer1:TRACe?
```

:CALCulate:FSCan:SLISt:APPend:METer

Syntax

:CALCulate:FSCan:MARKer<n>[:SET]:SLISt

Description

Adds the frequency of the meter to the signal table.

:CALCulate:FSCan:SLISt:DElete:SIGNal

Syntax

:CALCulate:FSCan:SLISt:DElete:SIGNal <integer>

Description

Deletes the selected signal(s) from the signal table.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 2,000	--

Example

The following command deletes Signal 20 from the signal table.

```
:CALCulate:FSCan:SLISt:DElete:SIGNal 20
```

:CALCulate:FSCan:SLIST:MARK:ALL**Syntax**

:CALCulate:FSCan:SLIST:MARK:ALL

Description

Marks all the signals in the signal table.

:CALCulate:FSCan:SLIST:MARK:CLEAR:ALL**Syntax**

:CALCulate:FSCan:SLIST:MARK:CLEAR:ALL

Description

Clears all the marks in the signal table.

:CALCulate:FSCan:SLIST:MARK:CLEAR:SIGNAL**Syntax**

:CALCulate:FSCan:SLIST:MARK:CLEAR:SIGNAL <integer>

Description

Clears the mark of the specified signal.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 2,000	--

Example

The following command clears the mark of Signal 20 in the signal table.

:CALCulate:FSCan:SLIST:MARK:CLEAR:SIGNAL 20

:CALCulate:FSCan:SLIST:MARK:SIGNAL**Syntax**

:CALCulate:FSCan:SLIST:MARK:SIGNAL <integer>

Description

Marks the specified signal.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 2,000	--

Example

The following command marks Signal 20 in the signal table.

:CALCulate:FSCan:SLIST:MARK:SIGNAL 20

:CALCulate:FSCan:SLIST:REPLace:METER

Syntax

:CALCulate:FSCan:SLIST:REPLace:METER <integer>

Description

Replaces the frequency of the currently selected signal with the currently set frequency of the meter, and marks this signal.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 2,000	--

Example

The following command replaces the frequency of Signal 20 with the frequency of the meter, and marks this signal.

:CALCulate:FSCan:SLIST:REPLace:METER 20

:CALCulate:FSCan:SLIST:SET:METER

Syntax

:CALCulate:FSCan:SLIST:SET:METER <integer>

Description

Sets the frequency of the meter to the frequency of the specified signal.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 2,000	--

Example

The following command sets the frequency of the meter to the frequency of Signal 20.

:CALCulate:FSCan:SLIST:SET:METER 20

:CALCulate:FSCan:SLIST:SORT:AUTO

Syntax

:CALCulate:FSCan:SLIST:SORT:AUTO OFF|ON|0|1

:CALCulate:FSCan:SLIST:SORT:AUTO?

Description

Enables or disables the auto sort function.

Queries the status of the auto sort function.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command disables the auto sort function.

:CALCulate:FSCan:SLIST:SORT:AUTO OFF or :CALCulate:FSCan:SLIST:SORT:AUTO 0

The following query returns 0.

```
:CALCulate:FSCan:SLIST:SORT:AUTO?
```

:CALCulate:FSCan:SLIST:SORT:DAMplitude

Syntax

```
:CALCulate:FSCan:SLIST:SORT:DAMplitude DET1|DET2|DET3
```

```
:CALCulate:FSCan:SLIST:SORT:DAMplitude?
```

Description

Sets the detector amplitude sorting mode for the signal.

Queries the detector amplitude sorting mode for the signal.

Parameter

Name	Type	Range	Default
--	Keyword	DET1 DET2 DET3	--

Return Format

The query returns DET1, DET2, or DET3.

Example

The following command sets the detector amplitude sorting mode for the signal to DET1.

```
:CALCulate:FSCan:SLIST:SORT:DAMplitude DET1
```

The following query returns DET1.

```
:CALCulate:FSCan:SLIST:SORT:DAMplitude?
```

:CALCulate:FSCan:SLIST:SORT:DLDelta

Syntax

```
:CALCulate:FSCan:SLIST:SORT:DLDelta DET1|DET2|DET3
```

```
:CALCulate:FSCan:SLIST:SORT:DLDelta?
```

Description

Sets the detector limit delta amplitude mode for the signal.

Queries the detector limit delta amplitude mode for the signal.

Parameter

Name	Type	Range	Default
--	Keyword	DET1 DET2 DET3	--

Return Format

The query returns DET1, DET2, or DET3.

Example

The following command sets the limit delta amplitude mode for the signal to DET1.

```
:CALCulate:FSCan:SLIST:SORT:DLDelta DET1
```

The following query returns DET1.

```
:CALCulate:FSCan:SLIST:SORT:DLDelta?
```


:CALCulate:FSCan:SLIST:SORT:ORDER

Syntax

:CALCulate:FSCan:SLIST:SORT:ORDER ASCending|DESCending
:CALCulate:FSCan:SLIST:SORT:ORDER?

Description

Sets the sort order of the signal.

Queries the sort order of the signal.

Parameter

Name	Type	Range	Default
--	Discrete	ASCending DESCending	ASCending

Return Format

The query returns ASC or DESC.

Example

The following command sets the sort order of the signal to ASCending.

:CALCulate:FSCan:SLIST:SORT:ORDER ASCending

The following query returns ASC.

:CALCulate:FSCan:SLIST:SORT:ORDER?

:CALCulate:FSCan:SLIST:SORT:TYPE

Syntax

:CALCulate:FSCan:SLIST:SORT:TYPE FREQuency|DAMPlitude|DLDelta
:CALCulate:FSCan:SLIST:SORT:TYPE?

Description

Sets the sort mode of the signal.

Queries the sort mode of the signal.

Parameter

Name	Type	Range	Default
--	Keyword	FREQuency DAMPlitude DLDelta	FREQuency

Remarks

FREQuency: indicates the frequency.

DAMPlitude: indicates the detector amplitude.

DLDelta: indicates the detector limit delta amplitude.

Return Format

The query returns FREQ, DAMP, or DLD.

Example

The following command sets the sort mode of the signal to FREQuency.

:CALCulate:FSCan:SLIST:SORT:TYPE FREQuency

The following query returns FREQ.

:CALCulate:FSCan:SLIST:SORT:TYPE?

:CALCulate:FSCan:SLIST:ZOOM

Syntax

:CALCulate:FSCan:SLIST:ZOOM <integer>

Description

Takes the midspan frequency as the reference and zooms the coordinate display at the selected signal of the signal table to 10% of the current span.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 2,000	--

Example

The following command takes the midspan frequency as the reference and zooms the coordinate display at the Signal 3 to 10% of the current span.

:CALCulate:FSCan:SLIST:ZOOM 3

:CALCulate:FSCan:SLIST:ZOOM:OUT

Syntax

:CALCulate:FSCan:SLIST:ZOOM:OUT

Description

Returns the coordinate display of the current signal to its previous display set before the Signal Zoom.

:CALCulate:LLINe:ALL:DELeTe

Syntax

:CALCulate:LLINe:ALL:DELeTe

Description

Deletes all the limit line data.

:CALCulate:LLINe:TEST

Syntax

:CALCulate:LLINe:TEST OFF|ON|0|1

:CALCulate:LLINe:TEST?

Description

Enables or disables the limit line test function.

Queries the setting state of the limit line test function.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command disables the limit line test function.

```
:CALCulate:LLINe:TEST OFF or :CALCulate:LLINe:TEST 0
```

The following query returns 0.

```
:CALCulate:LLINe:TEST?
```

:CALCulate:LLINe<n>:AMPLitude:CMODE:RELative**Syntax**

```
:CALCulate:LLINe<n>:AMPLitude:CMODE:RELative OFF|ON|0|1
```

```
:CALCulate:LLINe<n>:AMPLitude:CMODE:RELative?
```

Description

Enables or disables the coupling functions between the selected limit line data points and the reference level.

Queries the setting state of the coupling functions between the selected limit line data points and the reference level.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
--	Bool	OFF ON 0 1	OFF 0

Remarks

OFF|0: disables the coupling function. That is, "Fixed" is selected under **Y to Ref**, and the amplitude of the current limit line editing point is not be affected by the reference level.

ON|1: enables the coupling function. That is, "Relative" is selected under **Y to Ref**, and the amplitude of the current editing point is the difference between the amplitude of the point and that of the current reference level. At this time, if the reference level changes, then the position of the current editing point changes along with the reference level.

Return Format

The query returns 0 or 1.

Example

The following command disables the coupling functions between the selected limit line data points and the reference level.

```
:CALCulate:LLINe2:AMPLitude:CMODE:RELative OFF or :CALCulate:LLINe2:AMPLitude:CMODE:RELative 0
```

The following query returns 0.

```
:CALCulate:LLINe2:AMPLitude:CMODE:RELative?
```

:CALCulate:LLINe<n>:BUILd**Syntax**

```
:CALCulate:LLINe<n>:BUILd TRACE1|TRACE2|TRACE3
```

Description

Builds the limit line from the selected trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
--	Keyword	TRACE1 TRACE2 TRACE3	--

Example

The following command builds Limit Line 2 from Trace2.

```
:CALCulate:LLINE2:BUILD TRACE2
```

:CALCulate:LLINE<n>:CONTrol:INTerpolate:TYPE**Syntax**

```
:CALCulate:LLINE<n>:CONTrol:INTerpolate:TYPE LOGarithmic|LINEar
```

```
:CALCulate:LLINE<n>:CONTrol:INTerpolate:TYPE?
```

Description

Sets the frequency interpolation mode of the selected limit line.

Queries the frequency interpolation mode of the selected limit line.

Parameter

Name	Type	Range	Default
--	Keyword	LOGarithmic LINEar	LINEar

Return Format

The query returns LOG or LIN.

Example

The following command sets the frequency interpolation mode of Limit Line 1 to LINEar.

```
:CALCulate:LLINE1:CONTrol:INTerpolate:TYPE LINEar
```

The following query returns LIN.

```
:CALCulate:LLINE1:CONTrol:INTerpolate:TYPE?
```

:CALCulate:LLINE<n>:COPY**Syntax**

```
:CALCulate:LLINE<n>:COPY LLINE1|LLINE2|LLINE3|LLINE4|LLINE5|LLINE6
```

Description

Copies the selected limit line to the current limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
--	Keyword	LLINE1 LLINE2 LLINE3 LLINE4 LLINE5 LLINE6	--

Remarks

If the limit line to be copied that you select is the same as the current limit line, no operation should be performed.

Example

The following command copies Limit Line 1 to Limit Line 2.

```
:CALCulate:LLINE2:COPY LLINE1
```

:CALCulate:LLINe<n>:DATA

Syntax

```
:CALCulate:LLINe<n>:DATA <x>,<ampl>,<connect>{,<x>,<ampl>,<connect>}
:CALCulate:LLINe<n>:DATA?
```

Description

Edits one limit line, and marks it with n.

Queries the limit line data that you are editing currently.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<x>	Consecutive Real Number	0 Hz to 6.5 GHz	--
<ampl>	Consecutive Real Number	-1,000 dBm to 1,000 dBm	--
<connect>	Discrete	0 1	0

Remarks

<x>: indicates frequency.

<apml>: indicates the amplitude. By default, its unit is dBm. The same X value can be configured with at most two amplitude values.

<connect>: can be configured with 1. It indicates that the current point connects with the previous point to determine the limit line.

Return Format

Queries the returned limit line data that you are editing currently.

Example

The following command edits a limit line that contains three points, and marks it Limit Line 2.

```
:CALCulate:LLINe2:DATA 50,100,1,100,150,1,200,200,1
```

The following query returns

```
5.000000000e+01,1.000000000e+02,1,1.000000000e+02,1.500000000e+02,1,2.000000000e+02,2.000000000e+02,1,
```

```
:CALCulate:LLINe2:DATA?
```

:CALCulate:LLINe<n>:DELeTe

Syntax

```
:CALCulate:LLINe<n>:DELeTe
```

Description

Deletes the selected limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--

Example

The following command deletes Limit Line 2.

```
:CALCulate:LLINe2:DELeTe
```

:CALCulate:LLINe<n>:DISPlay

Syntax

:CALCulate:LLINe<n>:DISPlay OFF|ON|0|1
:CALCulate:LLINe<n>:DISPlay?

Description

Turns on or off the selected limit line.
Queries the setting state of the selected limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command turns on Limit Line 2.
:CALCulate:LLINe2:DISPlay ON or :CALCulate:LLINe2:DISPlay 1

The following query returns 1.
:CALCulate:LLINe2:DISPlay?

:CALCulate:LLINe<n>:FAIL?

Syntax

:CALCulate:LLINe<n>:FAIL?

Description

Queries the measurement results of the selected limit line and its associated trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--

Remarks

If you enable the test for the displayed trace and its corresponding limit line, and each displayed trace has its corresponding limit line enabled, then you can run the command to query whether the trace test passes.

Return Format

The query returns 0 (pass) or 1 (fail).

:CALCulate:LLINe<n>:FREQuency:CMODE:RELative

Syntax

:CALCulate:LLINe<n>:FREQuency:CMODE:RELative OFF|ON|0|1
:CALCulate:LLINe<n>:FREQuency:CMODE:RELative?

Description

Enables or disables the coupling functions between the selected limit line data points and the center frequency.
Queries the setting state of the coupling functions between the selected limit line data points and the center

frequency.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
--	Bool	OFF ON 0 1	OFF 0

Remarks

OFF|0: disables the coupling function. That is, "Fixed" is selected under **X to CF**, and the frequency of the current limit line editing point is not be affected by the midspan frequency.

ON|1: enables the coupling function. That is, "Relative" is selected under **X to CF**, and the frequency of the current limit line editing point is the difference between the frequency of the point and that of the current midspan frequency. At this time, if the midspan frequency changes, then the position of the current editing point will move left and right with it.

Return Format

The query returns 0 or 1.

Example

The following command disables the coupling functions between data points of Limit Line 2 and the midspan frequency.

```
:CALCulate:LLINe2:FREQuency:CMODE:RELative OFF or :CALCulate:LLINe2:FREQuency:CMODE:RELative 0
```

The following query returns 0.

```
:CALCulate:LLINe2:FREQuency:CMODE:RELative?
```

:CALCulate:LLINe<n>:MARGIN

Syntax

```
:CALCulate:LLINe<n>:MARGIN <rel_ampl>
```

```
:CALCulate:LLINe<n>:MARGIN?
```

Description

Sets the margin for the selected limit line.

Queries the margin for the selected limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
<rel_ampl>	Consecutive Real Number	-40 dB to 0 dB	0 dB

Return Format

The query returns the margin for the limit line in scientific notation.

Example

The following command sets the margin for Limit Line 2 to be 1 dB.

```
:CALCulate:LLINe2:MARGIN 1
```

The following query returns 1.000000000e+00.

```
:CALCulate:LLINe2:MARGIN?
```

:CALCulate:LLINe<n>:MARGin:STATe

Syntax

```
:CALCulate:LLINe<n>:MARGin:STATe OFF|ON|0|1
:CALCulate:LLINe<n>:MARGin:STATe?
```

Description

Enables or disables the margin for the selected limit line.

Queries the setting state of the margin for the selected limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command turns on the margin for Limit Line 2.

```
:CALCulate:LLINe2:MARGin:STATe ON or :CALCulate:LLINe2:MARGin:STATe 1
```

The following query returns 1.

```
:CALCulate:LLINe2:MARGin:STATe?
```

:CALCulate:LLINe<n>:OFFSet:X

Syntax

```
:CALCulate:LLINe<n>:OFFSet:X <freq>
:CALCulate:LLINe<n>:OFFSet:X?
```

Description

Sets the frequency offset of the specified limit line.

Queries the frequency offset of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
<freq>	Consecutive Real Number	-1 GHz 至 1 GHz	0 Hz

Return Format

The query returns the frequency offset in scientific notation.

Example

The following command sets the frequency offset of Limit Line 2 to 5 kHz.

```
:CALCulate:LLINe2:OFFSet:X 5000
```

The following query returns 5.000000000e+03.

```
:CALCulate:LLINe2:OFFSet:X?
```


:CALCulate:LLINe<n>:OFFSet:Y

Syntax

```
:CALCulate:LLINe<n>:OFFSet:Y <re_ampl>
:CALCulate:LLINe<n>:OFFSet:Y?
```

Description

Sets the amplitude offset of the specified limit line.
Queries the amplitude offset of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
<re_ampl>	Consecutive Real Number	-50 dB 至 50 dB	0 dB

Return Format

The query returns the amplitude offset in scientific notation.

Example

The following command sets the amplitude offset of Limit Line 2 to 20 dB.

```
:CALCulate:LLINe2:OFFSet:Y 20
```

The following query returns 2.000000000e+01.

```
:CALCulate:LLINe2:OFFSet:Y?
```

:CALCulate:LLINe<n>:TRACe

Syntax

```
:CALCulate:LLINe<n>:TRACe 1|2|3
:CALCulate:LLINe<n>:TRACe?
```

Description

Sets the trace for the current limit line test.
Queries the trace for the current limit line test.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	--
--	Discrete	1 2 3	Refer to "Remarks"

Remarks

Limit Line 1 and 2: The default is Trace 1.

Limit Line 3 and 4: The default is Trace 2.

Limit Line 5 and 6: The default is Trace 3.

Return Format

The query returns 1, 2, or 3.

Example

The following command sets that Trace 2 is tested against Limit Line 3.

```
:CALCulate:LLINe3:TRACe 2
```

The following query returns 2.

```
:CALCulate:LLINe3:TRACe?
```

:CALCulate:MARKer:PEAK:SEARch:THReshold:LINE

Syntax

:CALCulate:MARKer:PEAK:SEARch:THReshold:LINE OFF|ON|0|1
 :CALCulate:MARKer:PEAK:SEARch:THReshold:LINE?

Description

Enables or disables the peak threshold line.
 Queries the status of the peak threshold line.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the peak threshold line.
 :CALCulate:MARKer:PEAK:SEARch:THReshold:LINE ON
 or :CALCulate:MARKer:PEAK:SEARch:THReshold:LINE 1

The following query returns 1.

:CALCulate:MARKer:PEAK:SEARch:THReshold:LINE?

:CALCulate:MARKer<n>:LINEs[:STATe]

Syntax

:CALCulate:MARKer<n>:LINEs[:STATe] OFF|ON|0|1
 :CALCulate:MARKer<n>:LINEs[:STATe]?

Description

Enables or disables the marker line of the specified marker.
 Queries the status for the marker line of the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--
--	Bool	OFF ON 0 1	OFF 0

Remarks

If the marker is not visible in the selected area, enable the marker line function to extend the marker line to the display area for better observation.

Return Format

The query returns 0 or 1.

Example

The following command enables the marker line of Marker 1.
 :CALCulate:MARKer1:LINEs:STATe ON or :CALCulate:MARKer1:LINEs:STATe 1

The following query returns 1.

:CALCulate:MARKer1:LINEs:STATe?

:CALCulate:MARKer<n>:STATe

Syntax

```
:CALCulate:MARKer<n>:STATe OFF|ON|0|1
:CALCulate:MARKer<n>:STATe?
```

Description

Enables or disables the specified marker.
Queries the status of the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--
--	Bool	OFF ON 0 1	OFF 0

Remarks

If the specified marker is disabled currently, by default, the marker mode is "Position" when you send the command to enable the marker.

Return Format

The query returns 0 or 1.

Example

The following command enables Marker 1.

```
:CALCulate:MARKer1:STATe ON or :CALCulate:MARKer1:STATe 1
```

The following query returns 1.

```
:CALCulate:MARKer1:STATe?
```

:CALCulate:MARKer<n>:X

Syntax

```
:CALCulate:MARKer<n>:X <param>
:CALCulate:MARKer<n>:X?
```

Description

Sets the frequency of the specified marker.
Queries the frequency of the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--
<param>	Consecutive Real Number	30 MHz to 1 GHz	515 MHz

Return Format

The query returns the frequency of the specified marker in scientific notation.

Example

The following command sets the frequency of Marker 1 to 515 MHz.

```
:CALCulate:MARKer1:X 515000000
```

The following query returns 5.150000000e+08.

```
:CALCulate:MARKer1:X?
```

:CALCulate:MARKer<n>:Y?**Syntax**

:CALCulate:MARKer<n>:Y?

Description

Queries the amplitude of the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	--

:CALCulate:METER:LIMit:ALL:FAIL?**Syntax**

:CALCulate:METER:LIMit:ALL:FAIL?

Description

Queries the measurement results of all the limit lines and their associated meters.

Remarks

If no limit line is set for the meter, the query returns 0.

It is only applicable to the meter whose limit lines are enabled. If one limit line is disabled, then it will not be tested.

Return Format

The query returns 0 (indicating that all the meters are within the limit, and the test is successful) or 1 (indicating that the test is failed).

:CALCulate:METER:POWER[:CURRent]?**Syntax**

:CALCulate:METER:POWER[:CURRent]?

Description

Queries the current power of the meter.

Remarks

If the meter filter is EMI filter and RBW is 1 MHz, and the meter detector type is quasi peak, the query of the corresponding meter power value returns -1.700000000e+02.

If the meter filter is Gauss filter, and the meter detector type is quasi peak, CISPR average, or RMS average, the query of the corresponding meter power value returns -1.700000000e+02.

The query returns the minimum data value (-1.700000000e+02) if the meter is disabled.

Return Format

The query returns the current power values of three meters in scientific notation. The values are separated by commas.

:CALCulate:METER:POWER:PEAK?

Syntax

:CALCulate:METER:POWER:PEAK?

Description

Queries the peak power of the meter.

Remarks

The query returns the minimum data value if the meter is disabled.

Return Format

The query returns the peak power values of three meters in scientific notation. The values are separated by commas.

:CALCulate:METER<n>:LIMIT[:DATA]

Syntax

:CALCulate:METER<n>:LIMIT[:DATA] <ampl>

:CALCulate:METER<n>:LIMIT[:DATA]?

Description

Sets the limits of the specified meter.

Queries the limits of the specified meter.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	--
<ampl>	Consecutive Real Number	Current amplitude range	80 dBuV

Return Format

The query returns the limits of the specified meter in scientific notation.

Example

The following command sets the limits of Meter 1 to 10 dBm.

```
:CALCulate:METER1:LIMIT:DATA 10
```

The following query returns 1.000000000e+01.

```
:CALCulate:METER1:LIMIT:DATA?
```

:CALCulate:METER<n>:LIMIT:FAIL?

Syntax

CALCulate:METER<n>:LIMIT:FAIL?

Description

Tests the measurement results of one limit line and its associated specified meter.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	--

Remarks

This command will execute the test no matter whether the meter or the limit line is enabled.

Return Format

The query returns 0 (indicating that the selected meter is within the limit, and the test is successful) or 1 (indicating that the selected meter exceeds the limit line, and the test is failed).

:CALCulate:METER<n>:LIMIT:STATE**Syntax**

```
:CALCulate:METER<n>:LIMIT:STATE OFF|ON|0|1
```

```
:CALCulate:METER<n>:LIMIT:STATE?
```

Description

Enables or disables the limit line of the specified meter.

Queries the status of the limit line of the specified meter.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	--
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the limit line of Meter 1.

```
:CALCulate:METER1:LIMIT:STATE ON or :CALCulate:METER1:LIMIT:STATE 1
```

The following query returns 1.

```
:CALCulate:METER1:LIMIT:STATE?
```

:CALibration Commands

Command List:

- ◆ [:CALibration:\[ALL\]](#)
- ◆ [:CALibration:AUTO](#)

:CALibration:[ALL]

Syntax

:CALibration:[ALL]

Description

Executes self-calibration immediately.

Remarks

If the self-calibration succeeded, the command :CALibration:[ALL]? returns 0; if failed, the command :CALibration:[ALL]? returns 1.

Example

The following command executes the self-calibration immediately.

:CALibration:ALL

:CALibration:AUTO

Syntax

:CALibration:AUTO OFF|ON|0|1

:CALibration:AUTO?

Description

Enables or disables self-calibration.

Query the setting status of auto calibration.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables auto calibration.

:CALibration:AUTO ON or :CALibration:AUTO 1

The following query returns 1.

:CALibration:AUTO?

:COUPle Command

Command List:

◆ [:COUPle](#)

:COUPle

Syntax

:COUPle ALL

Description

Sets all the manual/auto settings in the current measurement mode to be "Auto".

:CONFigure Command

Command List:

- ◆ [:CONFigure?](#)
- ◆ [:CONFigure:FSCan](#)

:CONFigure?

Syntax

:CONFigure?

Description

Queries the current measurement function.

Return Format

The query returns FSCan.

:CONFigure:FSCan

Syntax

:CONFigure:FSCan

Description

Set the spectrum analyzer to the frequency scanning measurement state.

:DISPlay Commands

Command List:

- ◆ [:DISPlay:BACKlight](#)
- ◆ [:DISPlay:ENABle](#)
- ◆ [:DISPlay:FSCan:VIEW:METER:FLINE](#)
- ◆ [:DISPlay:FSCan:VIEW:METER\[:STATe\]](#)
- ◆ [:DISPlay:FSCan:VIEW:WINDow:TRACE:Y\[:SCALE\]:PDIVision](#)
- ◆ [:DISPlay:FSCan:VIEW:WINDow:TRACE:Y\[:SCALE\]:RLEVEL](#)
- ◆ [:DISPlay:FSCan:VIEW:WINDow:TRACE:Y\[:SCALE\]:RLEVEL:OFFSet](#)
- ◆ [:DISPlay:FSCan:WINDow:MAMarker\[:STATe\]](#)
- ◆ [:DISPlay:GRATICule\[:STATe\]](#)
- ◆ [:DISPlay:HDMI\[:STATe\]](#)
- ◆ [:DISPlay:METER<n>\[:STATe\]](#)
- ◆ [:DISPlay:VIEW:WINDow:TRACE:X:SPACing](#)
- ◆ [:DISPlay:WINDow:TRACE:Y:DLINe](#)
- ◆ [:DISPlay:WINDow:TRACE:Y:DLINe:STATe](#)
- ◆ [:DISPlay\[:WINDow\]:TRACE<n>:MODE](#)

:DISPlay:BACKlight

Syntax

:DISPlay:BACKlight <integer>
:DISPlay:BACKlight?

Description

Sets the brightness of the backlight of LCD.
Queries the brightness of the backlight of LCD.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 100	100

Return Format

The query returns the brightness of the LCD backlight in integer.

Example

The following command sets the brightness of the LCD backlight to be 50.
:DISPlay:BACKlight 50

The following query returns 50.
:DISPlay:BACKlight?

:DISPlay:ENABLE

Syntax

:DISPlay:ENABLE OFF|ON|0|1
:DISPlay:ENABLE?

Description

Enables or disables LCD.
Queries the status of the LCD.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the LCD.
:DISPlay:ENABLE ON or :DISPlay:ENABle 1

The following query returns 1.
:DISPlay:ENABle?

:DISPlay:FSCan:VIEW:METER:FLINE

Syntax

:DISPlay:FSCan:VIEW:METER:FLINE OFF|ON|0|1
:DISPlay:FSCan:VIEW:METER:FLINE?

Description

Enables or disables the display of the meter frequency line.
Queries the display status of the meter frequency line.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the display of the meter frequency line.

:DISPlay:FSCan:VIEW:METER:FLINE ON

The following query returns 1.

:DISPlay:FSCan:VIEW:METER:FLINE?

:DISPlay:FSCan:VIEW:METER[:STATE]

Syntax

:DISPlay:FSCan:VIEW:METER[:STATE] OFF|ON|0|1
:DISPlay:FSCan:VIEW:METER[:STATE]?

Description

Enables or disables the display of the meter window.
Queries the display status of the meter window.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the display of the meter window.

:DISPlay:FSCan:VIEW:METER:STATE ON or :DISPlay:FSCan:VIEW:METER:STATE 1

The following query returns 1.

:DISPlay:FSCan:VIEW:METER:STATE?

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:PDIVision**Syntax**

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:PDIVision <rel_ampl>

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:PDIVision?

Description

Sets the Y-axis scale type.

Queries the Y-axis scale type.

Parameter

Name	Type	Range	Default
<rel_ampl>	Consecutive Real Number	0.1 dB to 20 dB	10 dB

Return Format

The query returns the Y-axis scale value in scientific notation.

Example

The following command sets the Y-axis scale value to 15 dB.

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y:SCALe:PDIVision 15

The following query returns 1.500000e+01.

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y:SCALe:PDIVision?

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:RLEVel**Syntax**

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:RLEVel <real>

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:RLEVel?

Description

Sets the reference level.

Queries the reference level.

Parameter

Name	Type	Range	Default
<real>	Consecutive Real Number	-63.01 dBuV to 136.99 dBuV	106.99 dBuV

Return Format

The query returns the reference level in scientific notation.

Example

The following command sets the reference level to 100 dBuV.

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y:SCALe:RLEVel 100

The following query returns 9.999970004e+01.

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y:SCALe:RLEVel?

:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:RLEVel:OFFSet

Syntax

```
:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:RLEVel:OFFSet <rel_ampl>
:DISPlay:FSCan:VIEW:WINDow:TRACe:Y[:SCALe]:RLEVel:OFFSet?
```

Description

Sets the reference level offset.

Queries the reference level offset.

Parameter

Name	Type	Range	Default
<rel_ampl>	Consecutive Real Number	-300 dB to 300 dB	0 dB

Remarks

The offset of the reference level only modifies the reference level and amplitude readout of the marker, but does not change the position of the curve.

Return Format

The query returns the offset of the reference level in scientific notation.

Example

The following command sets the reference level offset to 10 dB.

```
:DISPlay:FSCan:VIEW:WINDow:TRACe:Y:SCALe:RLEVel:OFFSet 10
```

The following query returns 1.000000000e+01.

```
:DISPlay:FSCan:VIEW:WINDow:TRACe:Y:SCALe:RLEVel:OFFSet?
```

:DISPlay:FSCan:WINDow:MAMarker[:STATe]

Syntax

```
:DISPlay:FSCan:WINDow:MAMarker[:STATe] OFF|ON|0|1
:DISPlay:FSCan:WINDow:MAMarker[:STATe]?
```

Description

Enables or disables the display of the measurement window at the marker.

Queries the display status of the measurement window at the marker.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the display of the measurement window at the marker.

```
:DISPlay:FSCan:WINDow:MAMarker:STATe ON or :DISPlay:FSCan:WINDow:MAMarker:STATe 1
```

The following query returns 1.

```
:DISPlay:FSCan:WINDow:MAMarker:STATe?
```

:DISPlay:GRATicule[:STATe]

Syntax

:DISPlay:GRATicule[:STATe] OFF|ON|0|1
:DISPlay:GRATicule[:STATe]?

Description

Enables or disables the display of the graticule.
Queries the display of the graticule.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables display of the graticule.
:DISPlay:GRATicule:STATe ON or :DISPlay:GRATicule:STATe 1

The following query returns 1.
:DISPlay:GRATicule:STATe?

:DISPlay:HDMI[:STATe]

Syntax

:DISPlay:HDMI[:STATe] OFF|ON|0|1
:DISPlay:HDMI[:STATe]?

Description

Enables or disables HDMI.
Queries the setting state of HDMI.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables HDMI.
:DISPlay:HDMI:STATe ON or :DISPlay:HDMI:STATe 1

The following query returns 1.
:DISPlay:HDMI:STATe?

:DISPlay:METer<n>[:STATe]

Syntax

```
:DISPlay:METer<n>[:STATe] OFF|ON|0|1
:DISPlay:METer<n>[:STATe]?
```

Description

Enables or disables the specified meter.
Queries the status of the specified meter.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	Refer to "Remarks"

Remarks

The meter1 is enabled by default, while the meter2 and meter3 are disabled by default.

Return Format

The query returns 0 or 1.

Example

The following command enables Meter 2.
:DISPlay:METer2:STATe ON or :DISPlay:METer2:STATe 1

The following query returns 1.
:DISPlay:METer2:STATe?

:DISPlay:VIEW:WINDow:TRACe:X:SPACing

Syntax

```
:DISPlay:VIEW:WINDow:TRACe:X:SPACing LINear|LOGarithmic
:DISPlay:VIEW:WINDow:TRACe:X:SPACing?
```

Description

Sets the scale type of X-axis.
Queries the scale type of X-axis.

Parameter

Name	Type	Range	Default
--	Keyword	LINear LOGarithmic	LOGarithmic

Return Format

The query returns LIN or LOG.

Example

The following command sets the scale type of X-axis to Lin.
:DISPlay:VIEW:WINDow:TRACe:X:SPACing LINear

The following query returns LIN.
:DISPlay:VIEW:WINDow:TRACe:X:SPACing?

:DISPlay:WINDow:TRACe:Y:DLINe

Syntax

:DISPlay:WINDow:TRACe:Y:DLINe <ampl>

:DISPlay:WINDow:TRACe:Y:DLINe?

Description

Sets the position of the display line.

Queries the position of the display line.

Parameter

Name	Type	Range	Default
<ampl>	Consecutive Real Number	Current amplitude range	81.99 dBuV

Remarks

By default, the display line is disabled. When the display line is enabled for the first time, its position is 81.99 dBuV.

Return Format

The query returns the position of the display line in scientific notation.

Example

The following command sets the position of the display line to -10 dBm.

:DISPlay:WINDow:TRACe:Y:DLINe -10

The following query returns -1.000000000e+01.

:DISPlay:WINDow:TRACe:Y:DLINe?

:DISPlay:WINDow:TRACe:Y:DLINe:STATe

Syntax

:DISPlay:WINDow:TRACe:Y:DLINe:STATe OFF|ON|0|1

:DISPlay:WINDow:TRACe:Y:DLINe:STATe?

Description

Turns on or off the display line.

Queries the status of the display line.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the display line.

:DISPlay:WINDow:TRACe:Y:DLINe:STATe ON or :DISPlay:WINDow:TRACe:Y:DLINe:STATe 1

The following query returns 1.

:DISPlay:WINDow:TRACe:Y:DLINe:STATe?

:DISPlay[:WINDow]:TRACe<n>:MODE**Syntax**

:DISPlay[:WINDow]:TRACe<n>:MODE WRITe|AVERAge|MAXHold|MINHold
:DISPlay[:WINDow]:TRACe<n>:MODE?

Description

Sets the type of the specified trace.

Queries the type of the specified trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	--
--	Keyword	WRITe AVERAge MAXHold MINHold	WRITe

Remarks

WRITe: indicates clear/write.

AVERAge: indicates average.

MAXHold: indicates the maximum hold.

MINHold: indicates the minimum hold.

Return Format

The query returns WRIT, AVER, MAXH, or MINH.

Example

The following command sets the type of Trace 1 to Max Hold.

:DISPlay:WINDow:TRACe1:MODE MAXHold

The following query returns MAXH.

:DISPlay:WINDow:TRACe1:MODE?

:FETCh Command

Command List:

◆ [:FETCh:FSCan?](#)

:FETCh:FSCan?

Syntax

:FETCh:FSCan?

Description

Queries the frequency scan measurement results (returns the signal table information).

:FORMat Commands

Command List:

- ◆ [:FORMat:BORDER](#)
- ◆ [:FORMat\[:TRACe\]\[:DATA\]](#)

:FORMat:BORDER

Syntax

:FORMat:BORDER NORMal|SWAPped
:FORMat:BORDER?

Description

Selects the binary data byte order for data transmission.
Queries the binary data byte order for data transmission.

Parameter

Name	Type	Range	Default
--	Keyword	NORMal SWAPped	NORMal

Remarks

NORMal: indicates that the byte sequence begins with the most significant byte (MSB) and ends with the least significant byte (LSB).

SWAPped: indicates that the byte sequence begins with the least significant byte (LSB) and ends with the most significant byte (MSB).

Return Format

The query returns NORM or SWAP.

Example

The following command queries the binary data byte order for data transmission to be NORMal.

:FORMat:BORDER NORMal

The following query returns NORM.

:FORMat:BORDER?

:FORMat[:TRACe][:DATA]

Syntax

:FORMat[:TRACe][:DATA] ASCii|INTeger,32|REAL,32|REAL,64
:FORMat[:TRACe][:DATA]?

Description

Sets the input/output format of the trace data.
Queries the input/output format of the trace data.

Parameter

Name	Type	Range	Default
--	Keyword	ASCii INTeger,32 REAL,32 REAL,64	ASCii

Remarks

ASCii: ASCII characters, separated by commas.
INTeger,32: binary 32-bit integer values.
REAL,32: binary 32-bit real values.
REAL,64: binary 64-bit real values.

Return Format

The query returns ASC,8, INT,32, REAL,32, or REAL,64.

Example

The following command sets the input/output format of the trace data to be REAL,32.
:FORMat:TRACe:DATA REAL,32

The following query returns REAL,32.
:FORMat:TRACe:DATA?

IEEE 488.2 Common Commands

IEEE 488.2 common commands are used to operate or query the status registers. For the structure of the status register, refer to "[:STATus Commands](#)".

Command List:

- ◆ [*CLS](#)
- ◆ [*ESE](#)
- ◆ [*ESR?](#)
- ◆ [*IDN?](#)
- ◆ [*OPC](#)
- ◆ [*RCL](#)
- ◆ [*RST](#)
- ◆ [*SAV](#)
- ◆ [*SRE](#)
- ◆ [*STB?](#)
- ◆ [*TRG](#)
- ◆ [*TST?](#)
- ◆ [*WAI](#)

*CLS

Syntax

*CLS

Description

Clears all the event registers and status byte registers.

*ESE

Syntax

*ESE <value>

*ESE?

Description

Sets the enable register for the standard event status register.

Queries the enable register for the standard event status register.

Parameter

Name	Type	Range	Default
<value>	Integer	Refer to " Remarks "	0

Remarks

Bit 2, bit 3, bit 4, and bit 7 are reserved; you can set their values but they will not affect the system. Bit 1 and bit 6 are not used and are always treated as 0; therefore, the range of <value> are the decimal numbers corresponding to the binary numbers ranging from 00000000 (0 in decimal) to 11111111 (255 in decimal) and of which bit 1 and bit 6 are 0.

Return Format

The query returns an integer. The integer equals to the binary-weighted sum of all the bits set in the register. For example, the query returns 144 if bit 4 (16 in decimal) and bit 7 (128 in decimal) are enabled.

Example

The following command sets the enable register for the standard event status register to 16.

*ESE 16

The following query returns 16.

*ESE?

*ESR?

Syntax

*ESR?

Description

Queries and clears the event register for the standard event status register.

Remarks

Bit 1 and bit 6 in the standard event status register are not in use, and are regarded as 0. The query returns a decimal value that corresponds to the binary values ranging from 00000000 (0 in decimal) to 11111111 (255 in decimal) and of which bit 1 and bit 6 are 0.

Return Format

The query returns an integer. The integer equals to the binary-weighted sum of all the bits set in the register. For example, the query returns 144 if bit 4 (16 in decimal) and bit 7 (128 in decimal) are enabled.

Example

The following query returns 24 (bit 3 and bit 4 have been set).

*ESR?

IDN?*Syntax**

*IDN?

Description

Queries the ID string of the instrument.

Return Format

The query returns the ID string in the following format:

Rigol Technologies,<model>,<serial number>,XX.XX.XX

<model>: instrument model

<serial number>: serial number of the instrument

XX.XX.XX: software version of the instrument

Example

The following query returns Rigol Technologies,RSA5065,RSA5A010200001,00.02.00.

*IDN?

OPC*Syntax**

*OPC

*OPC?

Description

Sets bit 0 (Operation Complete, OPC) in the standard event status register to 1 after the current operation is finished.

Queries whether the current operation is finished.

Return Format

The query returns 1 after the current operation is finished; otherwise, the query returns 0.

RCL*Syntax**

*RCL <integer>

Description

Recalls the selected register.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 16	--

Example

The following command recalls Register 1.

*RCL 1

RST*Syntax**

*RST

Description

Restores the instrument to its factory default settings.

SAV*Syntax**

*SAV <integer>

Description

Saves the current instrument state to the selected register.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 16	--

Example

The following command saves the current instrument state to Register 1.

*SAV 1

SRE*Syntax**

*SRE <value>

*SRE?

Description

Sets the enable register for the status byte register.

Queries the enable register for the status byte register.

Parameter

Name	Type	Range	Default
<value>	Integer	Refer to " Remarks "	0

Remarks

Bit 0 and bit 1 are not used and are always treated as 0; therefore, the range of <value> are the decimal numbers corresponding to the binary numbers ranging from 00000000 (0 in decimal) to 11111111 (255 in decimal) and of which bit 0 and bit 1 are 0.

Return Format

The query returns an integer. The integer equals to the binary-weighted sum of all the bits set in the register. For example, the query returns 144 if bit 4 (16 in decimal) and bit 7 (128 in decimal) are enabled.

Example

The following command sets the enable register for the status byte register to 16.

*SRE 16

The following query returns 16.

*SRE?

***STB?**

Syntax

*STB?

Description

Queries the event register for the status byte register.

Remarks

Bit 0 and bit 1 in the status byte register are not in use, and are regarded as 0. The query returns a decimal value that corresponds to the binary values ranging from 00000000 (0 in decimal) to 11111111 (255 in decimal) and of which bit 0 and bit 1 are 0.

Return Format

The query returns an integer. The integer equals to the binary-weighted sum of all the bits set in the register. For example, the query returns 144 if bit 4 (16 in decimal) and bit 7 (128 in decimal) are enabled.

Example

The following query returns 24 (bit 3 and bit 4 have been set).

*STB?

***TRG**

Syntax

*TRG

Description

Triggers a sweep or measurement immediately.

***TST?**

Syntax

*TST?

Description

Queries whether the self-check operation is finished.

Remarks

The query returns 0 or 1. A zero is returned if the test is successful, 1 if it fails.

***WAI**

Syntax

*WAI

Description

Waits for all the pending operations to complete before executing any additional commands.

:INITiate Commands

Command List:

- ◆ [:INITiate:FSCan:CLEar:IMMediate](#)
- ◆ [:INITiate:PAUSE](#)
- ◆ [:INITiate:RESume](#)
- ◆ [:INITiate1:CONTInuous](#)
- ◆ [:INITiate2:CONTInuous](#)
- ◆ [:INITiate2:IMMediate\]](#)
- ◆ [:INITiate2:REStart](#)

:INITiate:FSCan:CLEar:IMMediate

Syntax

:INITiate:FSCan:CLEar:IMMediate

Description

Deletes all the signals in the signal table and launches the selected scan sequence.

:INITiate:PAUSE

Syntax

:INITiate:PAUSE

Description

Pauses scan, search, or the final measurement.

:INITiate:RESume

Syntax

:INITiate:RESume

Description

Resumes to scan from the scan point where you pause.

:INITiate1:CONTInuous

Syntax

:INITiate1:CONTInuous OFF|ON|0|1
:INITiate1:CONTInuous?

Description

Sets the measurement mode of the meter to Continuous (ON|1) or Single (OFF|0).
Queries the measurement mode of the meter.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command sets the measurement mode of the meter to CONTInuous.

:INITiate1:CONTInuous ON or :INITiate1:CONTInuous 1

The following query returns 1.

:INITiate1:CONTInuous?

:INITiate2:CONTInuous**Syntax**

:INITiate2:CONTInuous OFF|ON|0|1

:INITiate2:CONTInuous?

Description

Selects continuous (ON|1) or single (OFF|0) sweep mode.

Queries the current sweep mode.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command sets the instrument to sweep continuously.

:INITiate2:CONTInuous ON or :INITiate2:CONTInuous 1

The following query returns 1.

:INITiate2:CONTInuous?

:INITiate2:IMMediate**:INITiate2:REStart****Syntax**

:INITiate2:IMMediate

:INITiate2:REStart

Description

Starts the scan, search, or the final measurement based on the selected scan sequence.

:INSTrument Commands

Command List:

- ◆ [:INSTrument:COUPle:FREQuency:CENTer](#)
- ◆ [:INSTrument:DEFault](#)
- ◆ [:INSTrument:NSElect](#)
- ◆ [:INSTrument\[:SElect\]](#)

:INSTrument:COUPle:FREQuency:CENTer

Syntax

:INSTrument:COUPle:FREQuency:CENTer ALL|NONE

:INSTrument:COUPle:FREQuency:CENTer?

Description

Turns on or off the global center frequency of the instrument.

Queries the setting status of the global center frequency of the instrument.

Parameter

Name	Type	Range	Default
--	Keyword	ALL NONE	NONE

Remarks

NONE: turns off the global center frequency.

ALL: turns on the global center frequency.

If you execute this command in any mode, the center frequency of the current mode is set to the global center frequency. Adjusting the center frequency in a mode, while the global center frequency is on, will modify the global center frequency.

Return Format

The query returns ALL or NONE.

Example

The following command enables the global center frequency of the instrument.

:INSTrument:COUPle:FREQuency:CENTer ALL

The following query returns ALL.

:INSTrument:COUPle:FREQuency:CENTer?

:INSTrument:DEFault

Syntax

:INSTrument:DEFault

Description

Resets the parameters of the current mode to be the factory default settings.

:INSTrument:NSElect

:INSTrument[:SElect]

Syntax

```
:INSTrument:NSElect 1|2|3|4  
:INSTrument:NSElect?  
:INSTrument[:SElect] SA|RTSA|VSA|EMI  
:INSTrument[:SElect]?
```

Description

Selects the working mode of the instrument.
Queries the working mode of the instrument.

Parameter

Name	Type	Range	Default
--	Discrete	1 2 3 4	1
--	Keyword	SA RTSA VSA EMI	SA

Remarks

The above parameters 1|2|3|4 correspond to SA|RTSA|VSA|EMI, respectively.
After running the command of switching the working mode, we recommend you set the timeout value to 8 s, or perform the next operation after a delay of 8 s.

Example

The following command sets the working mode of the instrument to EMI.

```
:INSTrument:NSElect 4  
:INSTrument:SElect EMI
```

The following query returns 4 or EMI.

```
:INSTrument:NSElect?  
:INSTrument:SElect?
```

:MMEMory Commands

Command List:

- ◆ [:MMEMory:DELeTe](#)
- ◆ [:MMEMory:LOAD:CORRection](#)
- ◆ [:MMEMory:LOAD:LIMit](#)
- ◆ [:MMEMory:LOAD:SCAN](#)
- ◆ [:MMEMory:LOAD:SLISt](#)
- ◆ [:MMEMory:LOAD:STATe](#)
- ◆ [:MMEMory:LOAD:TRACe](#)
- ◆ [:MMEMory:LOAD:TRACe:DATA](#)
- ◆ [:MMEMory:MOVE](#)
- ◆ [:MMEMory:STORe:CORRection](#)
- ◆ [:MMEMory:STORe:LIMit](#)
- ◆ [:MMEMory:STORe:SCAN](#)
- ◆ [:MMEMory:STORe:SCReen](#)
- ◆ [:MMEMory:STORe:SLISt](#)
- ◆ [:MMEMory:STORe:STATe](#)
- ◆ [:MMEMory:STORe:TRACe](#)
- ◆ [:MMEMory:STORe:TRACe:DATA](#)

Remarks:

The mode name in the path specified in this manual is "EMI" mode.

:MMEMory:DELeTe

Syntax

:MMEMory:DELeTe <file_name>

Description

Deletes a specified file.

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	--	--

Remarks

<file_name> should contain the path and the filename.

This operation fails if the file with the specified filename does not exist.

Example

The following command deletes the "state1.sta" file in the "/emi/state" folder.

```
:MMEMory:DELeTe /emi/state/state1.sta
```

:MMEMory:LOAD:CORRection

Syntax

:MMEMory:LOAD:CORRection 1|2|3|4,<file_name>

Description

Loads the data from the specified file (suffixed with .csv) to carry out amplitude correction.

Parameter

Name	Type	Range	Default
--	Discrete	1 2 3 4	--
<file_name>	ASCII String	--	--

Remarks

The parameter 1|2|3|4 corresponds to ANTenna|CABLe|OTHer|USER.

This operation fails if the file with the specified filename does not exist.

Example

The following command loads the amplitude correction file ANT.csv to the instrument.

```
:MMEMory:LOAD:CORRection 1,ANT.csv
```

:MMEMory:LOAD:LIMit

Syntax

:MMEMory:LOAD:LIMit <label>,<file_name>

Description

Loads the edited limit line file (.csv).

Parameter

Name	Type	Range	Default
<label>	Keyword	LLINE1 LLINE2 LLINE3 LLINE4 LLINE5 LLINE6	--
<file_name>	ASCII String	--	--

Remarks

This operation fails if the file with the specified filename does not exist.

Example

The following command loads the limit line file (upp1.csv) to Limit Line 1.

```
:MMEMory:LOAD:LIMit LLINE1,upp1.csv
```

:MMEMory:LOAD:SCAN**Syntax**

```
:MMEMory:LOAD:SCAN <file_name>
```

Description

Loads the specified scan table file (.csv).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	--	--

Remarks

This operation fails if the file with the specified filename does not exist.

Example

The following command loads the scan table file (scan1.csv) to the instrument.

```
:MMEMory:LOAD:SCAN scan.csv
```

:MMEMory:LOAD:SLIS**Syntax**

```
:MMEMory:LOAD:SLIS <file_name>
```

Description

Loads the specified signal table file (.csv).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	--	--

Remarks

This operation fails if the file with the specified filename does not exist.

Example

The following command loads the signal table file (slist1.csv) to the instrument.

```
:MMEMory:LOAD:SLIS slist.csv
```

:MMEMory:LOAD:STATe**Syntax**

```
:MMEMory:LOAD:STATe <file_name>
```

Description

Loads the specified state file (.sta).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	--	--

Remarks

This operation fails if the file with the specified filename does not exist.

Example

The following command loads the state file (state1.sta) to the instrument.

```
:MMEMory:LOAD:STATe state1.sta
```

:MMEMory:LOAD:TRACe**Syntax**

```
:MMEMory:LOAD:TRACe <label>,<file_name>
```

Description

Loads the specified trace file (.trs) and the current instrument state.

Parameter

Name	Type	Range	Default
<label>	Keyword	TRACE1 TRACE2 TRACE3	--
<file_name>	ASCII String	--	--

Remarks

This operation fails if the file with the specified filename does not exist.

Example

The following command loads the current instrument state and the trace file (t1.trs) to Trace2.

```
:MMEMory:LOAD:TRACe TRACE2,t1.trs
```

:MMEMory:LOAD:TRACe:DATA**Syntax**

```
:MMEMory:LOAD:TRACe:DATA <label>,<file_name>
```

Description

Loads the specified measurement data file (suffixed with .csv).

Parameter

Name	Type	Range	Default
<label>	Keyword	TRACE1 TRACE2 TRACE3	--
<file_name>	ASCII String	--	--

Remarks

This operation fails if the file with the specified filename does not exist.

Example

The following command loads the measurement data file (trace1.csv) to Trace1.

```
:MMEMory:LOAD:TRACe:DATA TRACE1,trace1.csv
```

:MMEMory:MOVE

Syntax

:MMEMory:MOVE <file_name1>,<file_name2>

Description

Renames the specified file <file_name1> as <file_name2>.

Parameter

Name	Type	Range	Default
<file_name1>	ASCII String	--	--
<file_name2>	ASCII String	--	--

Remarks

<file_name1> and <file_name2> should contain the path and the filename.
This operation fails if the file with the specified filename does not exist.

Example

The following command renames the state file (state1.sta) in the folder (/emi/state) as "state2.sta".
:MMEMory:MOVE /emi/state/state1.sta,/emi/state/state2.sta

:MMEMory:STORe:CORRection

Syntax

:MMEMory:STORe:CORRection 1|2|3|4,<file_name>

Description

Saves the amplitude correction data file to the default path ("/mode name"/correction) with a specified filename suffixed with ".csv" by default (you do not have to add the suffix manually).

Parameter

Name	Type	Range	Default
--	Discrete	1 2 3 4	--
<file_name>	ASCII String	--	--

Remarks

The parameter 1|2|3|4 corresponds to ANTenna|CABLe|OTHer|USER.
If the specified file already exists, overwrite it.

Example

The following command saves the amplitude correction data with the filename "ANT" to the folder (/emi/correction).
:MMEMory:STORe:CORRection 1,ANT

:MMEMory:STORe:LIMit

Syntax

:MMEMory:STORe:LIMit <label>,<file_name>

Description

Saves the currently edited limit line with a specified filename suffixed with ".csv" by default to the default path ("/mode name"/limit).

Parameter

Name	Type	Range	Default
<label>	Keyword	LLINE1 LLINE2 LLINE3 LLINE4 LLINE5 LLINE6	--
<file_name>	ASCII String	--	--

Remarks

If the specified file already exists, overwrite it.

Example

The following command saves Limit Line 1 data with the filename "low" to the folder (/emi/limit).
:MMEMory:STORe:LIMit LLINE1,low

:MMEMory:STORe:SCAN**Syntax**

:MMEMory:STORe:SCAN <filename>

Description

Saves the scan table with a specified filename suffixed with ".csv" by default to the default path (/ "mode name"/scantable).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	--	--

Remarks

If the specified file already exists, overwrite it.

Example

The following command saves the scan table with the filename "scantable1" to the folder (/emi/scantable).
:MMEMory:STORe:SCAN scantable1

:MMEMory:STORe:SCReen**Syntax**

:MMEMory:STORe:SCReen <file_name>

Description

Saves the current screen image with the specified filename suffixed with ".jpg", ".png/", or ".bmp" to the default path (/ "mode name"/screen).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	--	--

Remarks

If the specified file already exists, overwrite it.

If a suffix (.jpg/.png/.bmp) is added to the filename, you can save the current screen image with a different format based on its different suffix.

If no suffix is added to the filename, then by default, the current screen image is saved in the currently selected format.

Example

The following command saves the current screen image with the filename "screen.jpg" to the folder (/emi/screen).

```
:MMEMory:STORe:SCReen screen.jpg
```

:MMEMory:STORe:SLISt**Syntax**

```
:MMEMory:STORe:SLISt <filename>
```

Description

Saves the signal table with a specified filename suffixed with ".csv" by default to the default path ("/mode name"/signaltable).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	--	--

Remarks

If the specified file already exists, overwrite it.

Example

The following command saves the signal table with the filename "signaltable1" to the folder (/emi/signaltable).

```
:MMEMory:STORe:SLISt signaltable1
```

:MMEMory:STORe:STATe**Syntax**

```
:MMEMory:STORe:STATe <file_name>
```

Description

Saves the current instrument state with the specified filename suffixed with ".sta" to the default path ("/mode name"/state).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	--	--

Remarks

If the specified file already exists, overwrite it.

Example

The following command saves the current instrument state with the filename "state.sta" to the folder (/emi/state).

```
:MMEMory:STORe:STATe state
```

:MMEMory:STORe:TRACe

Syntax

:MMEMory:STORe:TRACe <label>,<file_name>

Description

Saves the specified trace+state file with filename suffixed with ".trs" to the default path ("/mode name"/tracestate).

Parameter

Name	Type	Range	Default
<label>	Keyword	TRACE1 TRACE2 TRACE3	--
<file_name>	ASCII String	--	--

Remarks

If the specified file already exists, overwrite it.

Example

The following command saves the current instrument state and Trace 1 with the filename "mystate.trs" to the folder (/emi/tracestate).

```
:MMEMory:STORe:TRACe TRACE1,mystate
```

:MMEMory:STORe:TRACe:DATA

Syntax

:MMEMory:STORe:TRACe:DATA <label>,<file_name>

Description

Saves the trace measurement results with a specified filename suffixed with ".csv" to the default path ("/mode name"/measdata).

Parameter

Name	Type	Range	Default
<label>	Keyword	TRACE1 TRACE2 TRACE3	--
<file_name>	ASCII String	--	--

Remarks

If the specified file already exists, overwrite it.

Example

The following command saves Trace1 measurement data with the specified filename "mydata.csv" to the folder (/emi/measdata).

```
:MMEMory:STORe:TRACe:DATA TRACE1,mydata
```

[[:SENSe] Commands

Command List:

- ◆ [\[:SENSe\]:AVERage:COUNT](#)
- ◆ [\[:SENSe\]:AVERage:TYPE](#)
- ◆ [\[:SENSe\]:AVERage:TYPE:AUTO](#)
- ◆ [\[:SENSe\]:BANDwidth|BWIDth:EMIFilter:STATe](#)
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- ◆ [\[:SENSe\]:CORRection:CSET:ALL:DELeTe](#)
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- ◆ [\[:SENSe\]:CORRection:CSET<n>:DATA](#)
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- ◆ [:INPut:IMPedance](#)
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- ◆ [\[:SENSe\]:CORRection:SA\[:RF\]:GAIN](#)
- ◆ [\[:SENSe\]:DETEctor:TRACe<n>:AUTO](#)
- ◆ [\[:SENSe\]:EMC:STANdard\[:SElect\]](#)
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- ◆ [\[:SENSe\]:FSCan:DETEctor:TRACe<n>](#)
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- ◆ [\[:SENSe\]:FSCan:FINal:DETEctor<n>:DWELl](#)
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- ◆ [\[:SENSe\]:FSCan:SCAN:ABORT](#)
- ◆ [\[:SENSe\]:FSCan:SCAN<n>:BANDwidth|BWIDth:EMIFilter:STATe](#)
- ◆ [\[:SENSe\]:FSCan:SCAN<n>:BANDwidth\[:RESolution\]](#)
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- ◆ [\[:SENSe\]:FSCan:SCAN<n>:POINT](#)
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- ◆ [\[:SENSe\]:FSCan:SEARch:MODE](#)
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- ◆ [\[:SENSe\]:METER<n>:DETEctor](#)
- ◆ [\[:SENSe\]:POWer\[:RF\]:ATTenuation](#)
- ◆ [\[:SENSe\]:POWer\[:RF\]:GAIN\[:STATe\]](#)

[[:SENSe]:AVERage:COUNT

Syntax

[[:SENSe]:AVERage:COUNT <integer>
[:SENSe]:AVERage:COUNT?

Description

Sets the trace average count of the current measurement.
Queries the trace average count of the current measurement.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 10,000	1

Return Format

The query returns the average count in integer.

Example

The following command sets the average count to 100.
:SENSe:AVERage:COUNT 100

The following query returns 100.
:SENSe:AVERage:COUNT?

[[:SENSe]:AVERage:TYPE

Syntax

[[:SENSe]:AVERage:TYPE LOG|RMS|SCALar
[:SENSe]:AVERage:TYPE?

Description

Selects the average type of the swept SA analysis measurement.
Queries the average type of the swept SA analysis measurement.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	--
--	Keyword	LOG RMS SCALar	SCALar

Remarks

LOG: indicates log.
RMS: indicates root mean square.
SCALar: indicates scalar.

Return Format

The query returns LOG, RMS, or SCAL.

Example

The following command selects the average type of the swept SA analysis mode to LOG.
:SENSe:AVERage:TYPE LOG

The following query returns LOG.
:SENSe:AVERage:TYPE?

[[:SENSe]:AVERage:TYPE:AUTO

Syntax

```
[[:SENSe]:AVERage:TYPE:AUTO OFF|ON|0|1
[:SENSe]:AVERage:TYPE:AUTO?
```

Description

Enables or disables the auto state for the average type of the current measurement.
Queries the on/off auto state for the average type of the current measurement.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the auto state for the average type of the current measurement.
:SENSe:AVERage:TYPE:AUTO ON or :SENSe:AVERage:TYPE:AUTO 1

The following query returns 1.
:SENSe:AVERage:TYPE:AUTO?

[[:SENSe]:BANDwidth|BWIDth:EMIFilter:STATe

Syntax

```
[[:SENSe]:BANDwidth|BWIDth:EMIFilter:STATe OFF|ON|0|1
[:SENSe]:BANDwidth|BWIDth:EMIFilter:STATe?
```

Description

Enables or disables the EMI filter.
Queries the status of the EMI filter.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Remarks

ON: selects the EMI filter (-6 dB bandwidth).
OFF: selects the Gaussian filter (-3 dB bandwidth).

Return Format

The query returns 0 or 1.

Example

The following command selects the EMI filter.
:SENSe:BANDwidth:EMIFilter:STATe ON or :SENSe:BANDwidth:EMIFilter:STATe 1
:SENSe:BWIDth:EMIFilter:STATe ON or :SENSe:BWIDth:EMIFilter:STATe 1

The following query returns 1.
:SENSe:BANDwidth:EMIFilter:STATe?
:SENSe:BWIDth:EMIFilter:STATe?

[[:SENSe]:BANDwidth|BWIDth[:RESolution]

Syntax

```
[[:SENSe]:BANDwidth|BWIDth[:RESolution] <freq>
[:SENSe]:BANDwidth|BWIDth[:RESolution]?
```

Description

Sets the resolution bandwidth (RBW) of the meter frequency.
Queries the resolution bandwidth of the meter frequency.

Parameter

Name	Type	Range	Default
<freq>	Discrete	100 Hz to 10 MHz (at 1-3-10 step)	120 kHz

Remarks

When the EMC measurement standard is "None" and "Gauss" filter is selected, the RBW range is as above.
When "EMI" filter is selected, resolution bandwidth can only be 200 Hz, 9 kHz, 120 kHz, or 1 MHz.

Return Format

The query returns the resolution bandwidth in scientific notation. Its unit is Hz.

Example

The following command sets RBW to 1000 Hz.

```
:SENSe:BANDwidth:RESolution 1000
```

```
:SENSe:BWIDth:RESolution 1000
```

The following query returns 1.000000000e+03.

```
:SENSe:BANDwidth:RESolution?
```

```
:SENSe:BWIDth:RESolution?
```

[[:SENSe]:BANDwidth|BWIDth[:RESolution]:AUTO

Syntax

```
[[:SENSe]:BANDwidth|BWIDth[:RESolution]:AUTO OFF|ON|0|1
[:SENSe]:BANDwidth|BWIDth[:RESolution]:AUTO?
```

Description

Enables or disables the auto setting mode of the meter RBW.
Queries the status of the auto setting mode of the meter RBW.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Remarks

OFF: indicates "Manual" mode. You can use the [\[:SENSe\]:BANDwidth|BWIDth\[:RESolution\]](#) command to set the RBW value.

ON: indicates "Auto" mode. The RBW automatically couple to the frequency of the meter.

Frequency (Meter) Fmet	RBW
Fmet < 150 kHz	200 Hz
150 kHz ≤ Fmet < 30 MHz	9 kHz
30 MHz ≤ Fmet < 1 GHz	120 kHz
Fmet ≥ 1 GHz	1 MHz

When the EMC measurement standard is "None", this command is invalid. When the EMC measurement standard is "CISPR", select the Auto RBW mode by default.

Return Format

The query returns 0 or 1.

Example

The following command enables the auto setting mode of RBW.

```
:SENSe:BANDwidth:RESolution:AUTO ON or :SENSe:BANDwidth:RESolution:AUTO 1
```

```
:SENSe:BWIDth:RESolution:AUTO ON or :SENSe:BWIDth:RESolution:AUTO 1
```

The following query returns 1.

```
:SENSe:BANDwidth:RESolution:AUTO?
```

```
:SENSe:BWIDth:RESolution:AUTO?
```

[:SENSe]:CORRection:CSET:ALL:DELeTe

Syntax

```
[ :SENSe]:CORRection:CSET:ALL:DELeTe
```

Description

Deletes all the amplitude correction data.

[:SENSe]:CORRection:CSET:ALL[:STATe]

Syntax

```
[ :SENSe]:CORRection:CSET:ALL[:STATe] OFF|ON|0|1
```

```
[ :SENSe]:CORRection:CSET:ALL[:STATe]?
```

Description

Enables or disables all the amplitude correction functions.

Queries the status of the amplitude correction function.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Remarks

When the function is disabled, settings for all the corrections are disabled.

When the function is enabled, settings for all the corrections are enabled, and the "Antenna" correction is enabled by default.

To enable or disable settings for each correction, refer to the [\[:SENSe\]:CORRection:CSET<n>\[:STATe\]](#) command.

Return Format

The query returns 0 or 1.

Example

The following command enables the amplitude correction function.

```
:SENSe:CORRection:CSET:ALL:STATe ON or :SENSe:CORRection:CSET:ALL:STATe 1
```

The following query returns 1.

```
:SENSe:CORRection:CSET:ALL:STATe?
```

[[:SENSe]:CORRection:CSET<n>:DATA

Syntax

```
[[:SENSe]:CORRection:CSET<n>:DATA <x>,<ampl>,{<x>,<ampl>}
[:SENSe]:CORRection:CSET<n>:DATA?
```

Description

Creates an amplitude correction curve by using the specified data.
Queries the specified amplitude correction data.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	--
<x>	Consecutive Real Number	0 Hz to 6.5 GHz	--
<ampl>	Consecutive Real Number	-120 dBm to +100 dBm	--

Remarks

<n>: 1 indicates antenna; 2 indicates cable; 3 indicates other, and 4 indicates user.
The range for the number of editing points is from 1 to 200.

Return Format

The query returns the specified amplitude correction data in <x>,<ampl>,{<x>,<ampl>} format.

Example

The following command creates an amplitude correction curve.

```
:SENSe:CORRection:CSET1:DATA 900E6,0.3,1.0E9,0.35,1.3E9,0.2
```

The following query returns

```
9.000000000e+08,3.000000000e-01,1.000000000e+09,3.500000000e-01,1.300000000e+09,2.000000000e-01.
```

```
:SENSe:CORRection:CSET1:DATA?
```

[[:SENSe]:CORRection:CSET<n>:DATA:MERGE

Syntax

```
[[:SENSe]:CORRection:CSET<n>:DATA:MERGE <x>,<ampl>,{<x>,<ampl>}
```

Description

Adds correction data to the current correction curve.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	--
<x>	Consecutive Real Number	0 Hz to 6.5 GHz	--
<ampl>	Consecutive Real Number	-120 dBm to +100 dBm	--

Remarks

<n>: 1 indicates antenna; 2 indicates cable; 3 indicates other, and 4 indicates user.
The range for the number of editing points is from 1 to 200.

Return Format

The query returns the added amplitude correction data in <x>,<ampl>,{<x>,<ampl>} format.

Example

The following command adds two points to the current correction curve.

```
:SENSe:CORRection:CSET1:DATA 900E6,0.3,1.0E9,0.35
```

[[:SENSe]:CORRection:CSET<n>:DELeTe

Syntax

[[:SENSe]:CORRection:CSET<n>:DELeTe

Description

Deletes the specified amplitude correction setting.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	--

Remarks

<n>: 1 indicates antenna; 2 indicates cable; 3 indicates other, and 4 indicates user.

Example

The following command deletes the antenna correction setting.

:SENSe:CORRection:CSET1:DELeTe

[[:SENSe]:CORRection:CSET<n>[:STATe]

Syntax

[[:SENSe]:CORRection:CSET<n>[:STATe] OFF|ON|0|1

[[:SENSe]:CORRection:CSET<n>[:STATe]?

Description

Enables or disables the specified amplitude correction function.

Queries the status of the specified amplitude correction function.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	--
--	Bool	OFF ON 0 1	OFF 0

Remarks

<n>: 1 indicates antenna; 2 indicates cable; 3 indicates other, and 4 indicates user.

Return Format

The query returns 0 or 1.

Example

The following command disables the "Antenna" amplitude correction function.

:SENSe:CORRection:CSET1:STATe OFF or :SENSe:CORRection:CSET1:STATe 0

The following query returns 0.

:SENSe:CORRection:CSET1:STATe?

[[:SENSe]:CORRection:CSET<n>:X:SPACIng

Syntax

[[:SENSe]:CORRection:CSET<n>:X:SPACIng LINear|LOGarithmic

[[:SENSe]:CORRection:CSET<n>:X:SPACIng?

Description

Selects the frequency interpolation mode for amplitude correction.
Queries the frequency interpolation mode for amplitude correction.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	--
--	Discrete	LINear LOGarithmic	LINear

Remarks

<n>: 1 indicates antenna; 2 indicates cable; 3 indicates other, and 4 indicates user.
In Lin mode, linear interpolation is adopted for the frequency, and log interpolation is adopted for the amplitude.
In Log mode, for both of frequency and amplitude, we interpolate on a log scale.

Return Format

The query returns LIN or LOG.

Example

The following command sets the frequency interpolation mode to LINear.
:SENSe:CORRection:CSET1:X:SPACing LINear

The following query returns LIN.
:SENSe:CORRection:CSET1:X:SPACing?

:INPut:IMPedance [:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude]

Syntax

:INPut:IMPedance 50|75
:INPut:IMPedance?
[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude] 50|75
[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude]?

Description

Sets the input impedance for voltage-to-power conversion. The unit is Ω .
Queries the input impedance for voltage-to-power conversion.

Parameter

Name	Type	Range	Default
--	Discrete	50 75	50

Remarks

If the output impedance of the system under measurement is 75 Ω , you should use a 75 Ω to 50 Ω adapter (option) supplied by RIGOL to connect the analyzer with the system under test, and then set the input impedance to 75 Ω .

Return Format

The query returns 50 or 75.

Example

The following command sets the input impedance is 75 Ω .
:INPut:IMPedance 75 or :SENSe:CORRection:IMPedance:INPut:MAGNitude 75

The following query returns 75.
:INPut:IMPedance? or :SENSe:CORRection:IMPedance:INPut:MAGNitude?

[[:SENSe]:CORRection:SA[:RF]:GAIN

Syntax

```
[[:SENSe]:CORRection:SA[:RF]:GAIN <rel_ampl>
[:SENSe]:CORRection:SA[:RF]:GAIN?
```

Description

Sets the external gain.

Queries the external gain.

Parameter

Name	Type	Range	Default
<rel_ampl>	Consecutive Real Number	-120 dB to 120 dB	0 dB

Return Format

The query returns the external gain value in scientific notation. The unit is dB.

Example

The following command set the external gain value to 20 dB.

```
:SENSe:CORRection:SA:RF:GAIN 20
```

The following query returns 2.000000000e+01.

```
:SENSe:CORRection:SA:RF:GAIN?
```

[[:SENSe]:DETEctor:TRACe<n>:AUTO

Syntax

```
[[:SENSe]:DETEctor:TRACe<n>:AUTO OFF|ON|0|1
[:SENSe]:DETEctor:TRACe<n>:AUTO?
```

Description

Enables or disables the Detector Auto function for the specified trace.

Queries the status of the Detector Auto function for the specified trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	1
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the Detector Auto function for Trace 1.

```
:SENSe:DETEctor:TRACe1:AUTO ON or :SENSe:DETEctor:TRACe1:AUTO 1
```

The following query returns 1.

```
:SENSe:DETEctor:TRACe1:AUTO?
```


[[:SENSe]:EMC:STANdard[:SElect]

Syntax

```
[[:SENSe]:EMC:STANdard[:SElect] NONE|CISPr
[:SENSe]:EMC:STANdard[:SElect]?
```

Description

Sets the EMC standard.

Queries the EMC standard.

Parameter

Name	Type	Range	Default
--	Discrete	NONE CISPr	CISPr

Return Format

The query returns NONE or CISPr.

Example

The following command sets the EMC standard to CISPr.

```
:SENSe:EMC:STANdard:SElect CISPr
```

The following query returns CISPr.

```
:SENSe:EMC:STANdard:SElect?
```

[[:SENSe]:FREQuency:CENTer

Syntax

```
[[:SENSe]:FREQuency:CENTer <freq>
[:SENSe]:FREQuency:CENTer?
```

Description

Sets the frequency of the meter.

Queries the frequency of the meter.

Parameter

Name	Type	Range	Default
<freq>	Consecutive Real Number	0 Hz to Fmax ^[1]	515 MHz

Note^[1]: The maximum measurement frequency Fmax is determined by the instrument model. For RSA5065, Fmax is 6.5 GHz; for RSA5032, Fmax is 3.2 GHz.

Return Format

The query returns the frequency of the meter in scientific notation. The unit is Hz.

Example

The following command sets the frequency of the meter to 1 MHz.

```
:SENSe:FREQuency:CENTer 1000000
```

The following query returns 1.000000000e+06.

```
:SENSe:FREQuency:CENTer?
```

[[:SENSe]:FREQuency:MIDSpan

Syntax

[[:SENSe]:FREQuency:MIDSpan <freq>
[:SENSe]:FREQuency:MIDSpan?

Description

Sets the midspan center frequency.
Queries the midspan center frequency.

Parameter

Name	Type	Range	Default
<freq>	Consecutive Real Number	5 kHz to (Fmax - 5 kHz)	515 MHz

Return Format

The query returns the midspan center frequency in scientific notation. The unit is Hz.

Example

The following command sets the midspan center frequency to 1 MHz.
:SENSe:FREQuency:MIDSpan 1000000

The following query returns 1.000000000e+06.
:SENSe:FREQuency:MIDSpan?

[[:SENSe]:FREQuency:SPAN

Syntax

[[:SENSe]:FREQuency:SPAN <freq>
[:SENSe]:FREQuency:SPAN?

Description

Sets the span of the analyzer.
Queries the span.

Parameter

Name	Type	Range	Default
<freq>	Consecutive Real Number	10 Hz to Fmax	970 MHz

Return Format

The query returns the span in scientific notation. Its unit is Hz.

Example

The following command sets the span to 20 MHz.
:SENSe:FREQuency:SPAN 20000000

The following query returns 2.000000000e+07.
:SENSe:FREQuency:SPAN?

[[:SENSe]:FREQuency:STARt

Syntax

[[:SENSe]:FREQuency:STARt <freq>
[:SENSe]:FREQuency:STARt?

Description

Sets the start frequency.
Queries the start frequency.

Parameter

Name	Type	Range	Default
<freq>	Consecutive Real Number	0 Hz to (Fmax - 10 Hz)	midspan frequency - span/2

Return Format

The query returns the start frequency in scientific notation. The unit is Hz.

Example

The following command sets the start frequency to 100 MHz.
:SENSe:FREQuency:STARt 100000000

The following query returns 1.000000000e+08.
:SENSe:FREQuency:STARt?

[[:SENSe]:FREQuency:STARt:AUTO

Syntax

[[:SENSe]:FREQuency:STARt:AUTO ON|OFF|1|0
[:SENSe]:FREQuency:STARt:AUTO?

Description

Enables or disables the auto coupling mode of start frequency.
Queries the status of the auto coupling mode of start frequency.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the auto coupling mode of start frequency.
:SENSe:FREQuency:STARt:AUTO ON or :SENSe:FREQuency:STARt:AUTO 1

The following query returns 1.
:SENSe:FREQuency:STARt:AUTO?

[[:SENSe]:FREQuency:STOP

Syntax

```
[[:SENSe]:FREQuency:STOP <freq>
[:SENSe]:FREQuency:STOP?
```

Description

Sets the stop frequency.
Queries the stop frequency.

Parameter

Name	Type	Range	Default
<freq>	Consecutive Real Number	10 Hz to Fmax	midspan frequency + span/2

Return Format

The query returns the stop frequency in scientific notation. The unit is Hz.

Example

The following command sets the stop frequency to 10 MHz.

```
:SENSe:FREQuency:STOP 10000000
```

The following query returns 1.000000000e+07.

```
:SENSe:FREQuency:STOP?
```

[[:SENSe]:FREQuency:STOP:AUTO

Syntax

```
[[:SENSe]:FREQuency:STOP:AUTO ON|OFF|1|0
[:SENSe]:FREQuency:STOP:AUTO?
```

Description

Enables or disables the auto coupling mode of stop frequency.
Queries the status of the auto coupling mode of stop frequency.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the auto coupling mode of stop frequency.

```
:SENSe:FREQuency:STOP:AUTO ON or :SENSe:FREQuency:STOP:AUTO 1
```

The following query returns 1.

```
:SENSe:FREQuency:STOP:AUTO?
```

[[:SENSe]:FSCan:DETEctor:TRACe<n>

Syntax

```
[[:SENSe]:FSCan:DETEctor:TRACe<n> AVERage|NEGative|POSitive|CAVerage |QPEak|RAVerage
[:SENSe]:FSCan:DETEctor:TRACe<n>?
```

Description

Sets the detector type for the specified trace.
Queries the detector type for the specified trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	1
--	Keyword	AVERage NEGative POSitive CAVerage QPEak RAVerage	POSitive

Remarks

AVERage: indicates the voltage average.
NEGative: indicates the negative peak.
POSitive: indicates the positive peak.
CAVerage: indicates the CISPR average.
QPEak: indicates the quasi-peak.
RAVerage: indicates the RMS average.

Return Format

The query returns AVER, NEG, POS, CAV, QPE, or RAV.

Example

The following command sets the detector type of Trace 1 to Positive.
[:SENSe]:FSCan:DETEctor:TRACe1 POSitive

The following query returns POS.
[:SENSe]:FSCan:DETEctor:TRACe1?

[[:SENSe]:FSCan:FINal:DETEctor<n>

Syntax

```
[[:SENSe]:FSCan:FINal:DETEctor<n> POSitive|QPEak|CAVerage|RAVerage|AVERage|NEGative|OFF
[:SENSe]:FSCan:FINal:DETEctor<n>?
```

Description

Sets the detector type of the specified detector in the final measurement.
Queries the detector type of the specified detector in the final measurement.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	1
--	Keyword	POSitive QPEak CAVerage RAVerage AVERage NEGative OFF	Refer to " Remarks "

Remarks

POSitive: indicates the positive peak.
QPEak: indicates the quasi-peak.
CAVerage: indicates the CISPR average.
RAVerage: indicates the RMS average.

AVERage: indicates the voltage average.

NEGative: indicates the negative peak.

OFF: indicates disabling the detector.

By default, the detector 1 type is positive peak; the detector 2 type is quasi peak; the detector 3 type is CISPR average.

Return Format

The query returns POS, QPE, CAV, RAV, AVER, NEG, or OFF.

Example

The following command sets the detector type of Detector 1 in the final measurement to POSitive.

```
:SENSe:FSCan:FINal:DETEctor1 POSitive
```

The following query returns POS.

```
:SENSe:FSCan:FINal:DETEctor1?
```

[:SENSe]:FSCan:FINal:DETEctor<n>:DWELI

Syntax

```
[ :SENSe]:FSCan:FINal:DETEctor<n>:DWELI <dwel Time>
```

```
[ :SENSe]:FSCan:FINal:DETEctor<n>:DWELI?
```

Description

Sets the dwell time of the specified detector in the final measurement.

Queries the dwell time of the specified detector in the final measurement.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	1
<dwel Time>	Consecutive Real Number	Refer to "Remarks"	Refer to "Remarks"

Remarks

By default, the detector 1 dwell time is 200 ms; the detector 2 dwell time is 1 s; the detector 3 dwell time is 1 s.

The maximum dwell time is 60 s, and the minimum value depends on the detector type.

When the quasi peak detector is selected, the minimum dwell time is 0.5 ms. When the CISPR average or RMS average detector is selected, the minimum dwell time is 0.1 ms. When the positive peak or negative peak detector is selected, the minimum dwell time is depends on the smallest RBW among ranges turned on in the scan table.

RBW	Minimum Dwell Time
100 Hz ≤ RBW < 200 Hz	1 ms
200 Hz < RBW < 1 kHz	100 us
1 kHz ≤ RBW < 100 kHz	100 us
RBW ≥ 100 kHz	50 us

Return Format

The query returns the dwell time in scientific notation. The unit is s.

Example

The following command sets the dwell time of Detector 1 in the final measurement to 0.1 s.

```
:SENSe:FSCan:FINal:DETEctor1:DWELI 0.1
```

The following query returns 1.000000000e-01.

```
:SENSe:FSCan:FINal:DETEctor1:DWELI?
```

[[:SENSe]:FSCan:FINal:DETEctor<n>:LDELta

Syntax

```
[[:SENSe]:FSCan:FINal:DETEctor<n>:LDELta <limit_Num>
[:SENSe]:FSCan:FINal:DETEctor<n>:LDELta?
```

Description

Sets the limit line used by the specified detector in the final measurement.
Queries the limit line used by the specified detector in the final measurement.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	1
<limit_Num>	Discrete	1 2 3 4 5 6	1

Return Format

The query returns the limit line used by the specified detector.

Example

The following command sets the limit line used by Detector 1 in the final measurement to Limit Line 2.
:SENSe:FSCan:FINal:DETEctor1:LDELta 2

The following query returns 2.
:SENSe:FSCan:FINal:DETEctor1:LDELta?

[[:SENSe]:FSCan:MARKer:COUPle:METER

Syntax

```
[[:SENSe]:FSCan:MARKer:COUPle:METER OFF|ON|0|1
[:SENSe]:FSCan:MARKer:COUPle:METER?
```

Description

Enables or disables the coupling function between the meter and the marker.
Queries the status of the coupling function between the meter and the marker.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the coupling function between the meter and the marker.
:SENSe:FSCan:MARKer:COUPle:METER ON or :SENSe:FSCan:MARKer:COUPle:METER 1

The following query returns 1.
:SENSe:FSCan:MARKer:COUPle:METER?

[[:SENSe]:FSCan:SCAN:ABORT

Syntax

```
[[:SENSe]:FSCan:SCAN:ABORT
```

Description

Stops the current scan sequence.

[[:SENSe]:FSCan:SCAN<n>:BANDwidth|BWIDth:EMIFilter:STATe

Syntax

```
[[:SENSe]:FSCan:SCAN<n>:BANDwidth|BWIDth:EMIFilter:STATe OFF|ON|0|1
```

```
[[:SENSe]:FSCan:SCAN<n>:BANDwidth|BWIDth:EMIFilter:STATe?
```

Description

Enables or disables the EMI filter within the specified range.

Queries the status of the EMI filter within the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
--	Bool	OFF ON 0 1	ON 1

Remarks

ON: selects the EMI filter (-6 dB bandwidth).

OFF: selects the Gaussian filter (-3 dB bandwidth).

This command is valid only when the EMC measurement standard is "None".

Return Format

The query returns 0 or 1.

Example

The following command selects the filter type within Range 2 to EMI filter.

```
:SENSe:FSCan:SCAN2:BANDwidth:EMIFilter:STATe ON
```

```
or :SENSe:FSCan:SCAN2:BANDwidth:EMIFilter:STATe 1
```

```
:SENSe:FSCan:SCAN2:BWIDth:EMIFilter:STATe ON or :SENSe:FSCan:SCAN2:BWIDth:EMIFilter:STATe 1
```

The following query returns 1.

```
:SENSe:FSCan:SCAN2:BANDwidth:EMIFilter:STATe?
```

```
:SENSe:FSCan:SCAN2:BWIDth:EMIFilter:STATe?
```

[[:SENSe]:FSCan:SCAN<n>:BANDwidth[:RESolution]

Syntax

```
[[:SENSe]:FSCan:SCAN<n>:BANDwidth[:RESolution] <freq>
```

```
[[:SENSe]:FSCan:SCAN<n>:BANDwidth[:RESolution]?
```

Description

Sets the resolution bandwidth (RBW) for the specified range.

Queries the RBW for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
<freq>	Discrete	100 Hz to 10 MHz (at 1-3-10 step)	120 kHz

Remarks

When the EMC measurement standard is "None" and "Gauss" filter is selected, the RBW range is as above. When "EMI" filter is selected, resolution bandwidth can only be 200 Hz, 9 kHz, 120 kHz, or 1 MHz.

Return Format

The query returns the resolution bandwidth for the specified range in scientific notation. Its unit is Hz.

Example

The following command sets RBW for Range 1 to 1000 Hz.

```
:SENSe:FSCan:SCAN1:BANDwidth:RESolution 1000
```

The following query returns 1.000000000e+03.

```
:SENSe:FSCan:SCAN1:BANDwidth:RESolution?
```

[:SENSe] :FSCan:SCAN <n> :BANDwidth [:RESolution] :AUTO**Syntax**

```
[ :SENSe ] :FSCan:SCAN<n>:BANDwidth [ :RESolution ] :AUTO ON|OFF|1|0
```

```
[ :SENSe ] :FSCan:SCAN<n>:BANDwidth [ :RESolution ] :AUTO?
```

Description

Enables or disables the auto setting mode of RBW for the specified range.

Queries the status of the auto setting mode of RBW for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
--	Bool	OFF ON 0 1	ON 1

Remarks

In auto mode, the resolution bandwidth changes with the span.

Return Format

The query returns 0 or 1.

Example

The following command enables the auto setting mode of RBW for Range 1.

```
:SENSe:FSCan:SCAN1:BANDwidth:RESolution:AUTO ON
```

```
or :SENSe:FSCan:SCAN1:BANDwidth:RESolution:AUTO 1
```

The following query returns 1.

```
:SENSe:FSCan:SCAN1:BANDwidth:RESolution:AUTO?
```

[:SENSe] :FSCan:SCAN <n> :INPut:ATTenuation**Syntax**

```
[ :SENSe ] :FSCan:SCAN<n>:INPut:ATTenuation <rel_ampl>
```

```
[ :SENSe ] :FSCan:SCAN<n>:INPut:ATTenuation?
```

Description

Sets the attenuation value for the specified range.
 Queries the attenuation value for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
<rel_ampl>	Integer	0 dB to 50 dB	10 dB

Return Format

The query returns the attenuation in integer. The unit is dB.

Example

The following command sets the attenuation for Range 1 to 20 dB.

```
:SENSe:FSCan:SCAN1:INPut:ATTenuation 20
```

The following query returns 20.

```
:SENSe:FSCan:SCAN1:INPut:ATTenuation?
```

[[:SENSe]:FSCan:SCAN<n>:INPut:ATTenuation:AUTO**Syntax**

```
[[:SENSe]:FSCan:SCAN<n>:INPut:ATTenuation:AUTO ON|OFF|1|0
```

```
[[:SENSe]:FSCan:SCAN<n>:INPut:ATTenuation:AUTO
```

Description

Enables or disables the auto attenuation mode for the specified range.
 Queries the status of the auto attenuation mode for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command disables the auto attenuation mode for Range 1.

```
:SENSe:FSCan:SCAN1:INPut:ATTenuation:AUTO 0 or :SENSe:FSCan:SCAN1:INPut:ATTenuation:AUTO OFF
```

The following query returns 0.

```
:SENSe:FSCan:SCAN1:INPut:ATTenuation:AUTO?
```

[[:SENSe]:FSCan:SCAN<n>:POINT**Syntax**

```
[[:SENSe]:FSCan:SCAN<n>:POINT <integer>
```

```
[[:SENSe]:FSCan:SCAN<n>:POINT?
```

Description

Sets the number of scan points for the specified range.
 Queries the number of scan points for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
<integer>	Integer	101 to 10,001	Refer to "Remarks"

Remarks

The default value of the scan points is determined by the following parameters for the specified range:
 scan points = (stop frequency – start frequency) / (RBW/2)

Return Format

The query returns the number of scan points in integer.

Example

The following command sets the number of scan points for Range 1 to 650.

```
:SENSe:FSCan:SCAN1:POINT 650
```

The following query returns 650.

```
:SENSe:FSCan:SCAN1:POINT?
```

[:SENSe] :FSCan:SCAN<n> :POWer:GAIN[:STATe]**Syntax**

```
[ :SENSe ] :FSCan:SCAN<n> :POWer:GAIN[:STATe] ON|OFF|1|0
```

```
[ :SENSe ] :FSCan:SCAN<n> :POWer:GAIN[:STATe]?
```

Description

Enable or disable the preamplifier for the specified range.

Queries the status of the preamplifier for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the preamplifier for Range 1.

```
:SENSe:FSCan:SCAN1:POWer:GAIN:STATe 1 or :SENSe:FSCan:SCAN1:POWer:GAIN:STATe ON
```

The following query returns 1.

```
:SENSe:FSCan:SCAN1:POWer:GAIN:STATe?
```

[:SENSe] :FSCan:SCAN<n> :STARt**Syntax**

```
[ :SENSe ] :FSCan:SCAN<n> :STARt <freq>
```

```
[ :SENSe ] :FSCan:SCAN<n> :STARt?
```

Description

Sets the start frequency for the specified range.

Queries the start frequency for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
<freq>	Consecutive Real Number	0 Hz to 6.5 GHz	30 MHz

Return Format

The query returns the start frequency for the specified range in scientific notation. The unit is Hz.

Example

The following command sets the start frequency for Range 1 to 10 MHz.

```
:SENSe:FSCan:SCAN1:START 10000000
```

The following query returns 1.000000000e+07.

```
:SENSe:FSCan:SCAN1:START?
```

[[:SENSe]:FSCan:SCAN<n>:STATe**Syntax**

```
[[:SENSe]:FSCan:SCAN<n>:STATe ON|OFF|1|0
```

```
[[:SENSe]:FSCan:SCAN<n>:STATe?
```

Description

Enables or disables the sweep function for the specified range.

Queries the sweep status for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables sweep for Range 1.

```
:SENSe:FSCan:SCAN1:STATe ON or :SENSe:FSCan:SCAN1:STATe 1
```

The following query returns 1.

```
:SENSe:FSCan:SCAN1:STATe?
```

[[:SENSe]:FSCan:SCAN<n>:STOP**Syntax**

```
[[:SENSe]:FSCan:SCAN<n>:STOP <freq>
```

```
[[:SENSe]:FSCan:SCAN<n>:STOP?
```

Description

Sets the stop frequency for the specified range.

Queries the stop frequency for the specified range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
<freq>	Consecutive Real Number	0 Hz to 6.5 GHz	1 GHz

Return Format

The query returns the stop frequency for the specified range in scientific notation. The unit is Hz.

Example

The following command sets the stop frequency for Range 1 to 100 MHz.

```
:SENSe:FSCan:SCAN1:STOP 100000000
```

The following query returns 1.000000000e+08.

```
:SENSe:FSCan:SCAN1:STOP?
```

[[:SENSe]:FSCan:SCAN<n>:TIME**Syntax**

```
[[:SENSe]:FSCan:SCAN<n>:TIME <time>
```

```
[[:SENSe]:FSCan:SCAN<n>:TIME?
```

Description

Sets the scan time for the specified sweep range.

Queries the scan time for the specified sweep range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
<time>	Consecutive Real Number	1 ms 至 4000 s	--

Return Format

The query returns the scan time in scientific notation. The unit is s.

Example

The following command sets the scan time for sweep range 1 to 0.1 s.

```
:SENSe:FSCan:SCAN1:TIME 0.1
```

The following query returns 1.000000000e-01.

```
:SENSe:FSCan:SCAN1:TIME?
```

[[:SENSe]:FSCan:SCAN<n>:TIME:AUTO**Syntax**

```
[[:SENSe]:FSCan:SCAN<n>:TIME:AUTO ON|OFF|1|0
```

```
[[:SENSe]:FSCan:SCAN<n>:TIME:AUTO?
```

Description

Enables or disables the auto scan time for the specified sweep range.

Queries the status of the auto scan time for the specified sweep range.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8 9 10	3 4 5
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command enables the auto scan time for sweep range 1.

```
:SENSe:FSCan:SCAN1:TIME:AUTO 1 or :SENSe:FSCan:SCAN1:TIME:AUTO ON
```

The following query returns 1.

```
:SENSe:FSCan:SCAN1:TIME:AUTO?
```

[[:SENSe]:FSCan:SEARch:MODE**Syntax**

```
[[:SENSe]:FSCan:SEARch:MODE PONLy|PLIMits|SLIMits
```

```
[[:SENSe]:FSCan:SEARch:MODE?
```

Description

Sets the signal search criteria in the signal table.

Queries the signal search criteria in the signal table.

Parameter

Name	Type	Range	Default
--	Keyword	PONLy PLIMits SLIMits	PONLy

Remarks

PONLy: indicates the peak criteria only. Perform the search and find the peak that meets the peak criteria.

PLIMits: indicates the peak criteria and limits. Perform the search and find the peak that meets the peak criteria and limits.

SLIMits: indicates the subranges and limits. Perform the search and find the peak that meets the peak criteria and limits within each subrange.

Return Format

The query returns PONL, PLIM, or SLIM.

Example

The following command sets the signal search criteria in the signal table to PONLy.

```
:SENSe:FSCan:SEARch:MODE PONLy
```

The following query returns PONL.

```
:SENSe:FSCan:SEARch:MODE?
```

[[:SENSe]:FSCan:SEARch:PEAK:COUNT**Syntax**

```
[[:SENSe]:FSCan:SEARch:PEAK:COUNt <integer>
```

```
[[:SENSe]:FSCan:SEARch:PEAK:COUNt?
```

Description

Sets the number of peaks that are required during signal search.

Queries the number of peaks that are required during signal search.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 2000	25

Remarks

This command is only valid when the peak count is enabled.

Return Format

The query returns the peak count in integer.

Example

The following command sets the number of peaks that are required during signal search to 3.

```
:SENSe:FSCan:SEARCh:PEAK:COUNt 3
```

The following query returns 3.

```
:SENSe:FSCan:SEARCh:PEAK:COUNt?
```

[:SENSe]:FSCan:SEARCh:PEAK:COUNt:STATe**Syntax**

```
[ :SENSe ]:FSCan:SEARCh:PEAK:COUNt:STATe OFF|ON|0|1
```

```
[ :SENSe ]:FSCan:SEARCh:PEAK:COUNt:STATe?
```

Description

Enables or disables the peak count setting.

Queries the status of the peak count setting.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the peak count setting.

```
:SENSe:FSCan:SEARCh:PEAK:COUNt:STATe ON or :SENSe:FSCan:SEARCh:PEAK:COUNt:STATe 1
```

The following query returns 1.

```
:SENSe:FSCan:SEARCh:PEAK:COUNt:STATe?
```

[:SENSe]:FSCan:SEARCh:SUBRange:COUNt**Syntax**

```
[ :SENSe ]:FSCan:SEARCh:SUBRange:COUNt <integer>
```

```
[ :SENSe ]:FSCan:SEARCh:SUBRange:COUNt?
```

Description

Sets the number of subranges in the signal search.

Queries the number of subranges in the signal search.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 50	25

Return Format

The query returns the number of subranges in integer.

Example

The following command sets the number of subranges in the signal search to 3.

```
:SENSe:FSCan:SEARCh:SUBRange:COUNt 3
```

The following query returns 3.

```
:SENSe:FSCan:SEARCh:SUBRange:COUnT?
```

[:SENSe]:FSCan:SEQuence

Syntax

```
[ :SENSe ]:FSCan:SEQuence SCAN|SEARCh|SSAMeasure|SASearch|SAMeasure|REMeasure
```

```
[ :SENSe ]:FSCan:SEQuence?
```

Description

Sets the type of the scan sequence.

Queries the type of the scan sequence.

Parameter

Name	Type	Range	Default
--	Keyword	SCAN SEARCh SSAMeasure SASearch SAMeasure REMeasure	SCAN

Remarks

SCAN: indicates the scan only. Perform the pre-scan only.

SEARCh: indicates the search only. Perform the peak search only.

SSAMeasure: indicates all the operations. Perform the pre-scan, peak search, and final measurement.

SASearch: indicates scan and search. Perform the pre-scan and peak search.

SAMeasure: indicates the search and measurement. Perform the peak search and final measurement.

REMeasure: indicates the final measurement.

Return Format

The query returns SCAN, SEAR, SSAM, SAS, SAM, or REM.

Example

The following command sets the type of the scan sequence to SCAN.

```
:SENSe:FSCan:SEQuence SCAN
```

The following query returns SCAN.

```
:SENSe:FSCan:SEQuence?
```

[:SENSe]:FSCan:SEQuence:REMeasure

Syntax

```
[ :SENSe ]:FSCan:SEQuence:REMeasure CURRent|MARKed|ALL
```

```
[ :SENSe ]:FSCan:SEQuence:REMeasure?
```

Description

Sets the type of the final measurement.

Queries the type of the final measurement.

Parameter

Name	Type	Range	Default
--	Keyword	CURRent MARKed ALL	CURRent

Remarks

CURRent: indicates the selected signal.

MARKed: indicates the marked signal.

ALL: indicates all the signals.

Return Format

The query returns CURR, MARK, or ALL.

Example

The following command sets the type of the final measurement to CURRENT.

```
:SENSe:FSCan:SEQuence:REMeasure CURRent
```

The following query returns CURR.

```
:SENSe:FSCan:SEQuence:REMeasure?
```

[[:SENSe]:FSCan:SLIST:COUPle:METER**Syntax**

```
[[:SENSe]:FSCan:SLIST:COUPle:METER OFF|ON|0|1
```

```
[[:SENSe]:FSCan:SLIST:COUPle:METER?
```

Description

Enables or disables the coupling function between the meter and the signal table.

Queries the status of the coupling function between the meter and the signal table.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the coupling function between the meter and the signal table.

```
:SENSe:FSCan:SLIST:COUPle:METER ON or :SENSe:FSCan:SLIST:COUPle:METER 1
```

The following query returns 1.

```
:SENSe:FSCan:SLIST:COUPle:METER?
```

[[:SENSe]:FSCan:TRACe:TYPE**Syntax**

```
[[:SENSe]:FSCan:TRACe:TYPE WRITe|AVERAge|MAXHold|MINHold
```

```
[[:SENSe]:FSCan:TRACe:TYPE?
```

Description

Sets the type of the trace.

Queries the type of the trace.

Parameter

Name	Type	Range	Default
--	Keyword	WRITe AVERAge MAXHold MINHold	WRITe

Remarks

WRITe: indicates clear/write.

AVERAge: indicates average.

MAXHold: indicates the maximum hold.

MINHold: indicates the minimum hold.

Return Format

The query returns WRIT, AVER, MAXH, or MINH.

Example

The following command sets the type of the current trace to MAXHold.

```
:SENSe:FSCan:TRACe:TYPE MAXHold
```

The following query returns MAXH.

```
:SENSe:FSCan:TRACe:TYPE?
```

[[:SENSe]:METer:DETector:DWELI**Syntax**

```
[[:SENSe]:METer:DETector:DWELI <time>
```

```
[[:SENSe]:METer:DETector:DWELI?
```

Description

Sets the dwell time of the meter detector.

Queries the dwell time of meter detector.

Parameter

Name	Type	Range	Default
<time>	Consecutive Real Number	10 ms to 100 s	10 ms

Return Format

The query returns the dwell time in scientific notation. The unit is s.

Example

The following command sets the dwell time of the meter detector to 0.1 s.

```
:SENSe:METer:DETector:DWELI 0.1
```

The following query returns 1.000000000e-01.

```
:SENSe:METer:DETector:DWELI?
```

[[:SENSe]:METer:PHOLd:ADJustable**Syntax**

```
[[:SENSe]:METer:PHOLd:ADJustable <time>
```

```
[[:SENSe]:METer:PHOLd:ADJustable?
```

Description

Sets the peak hold time of the meter.

Queries the peak hold time of the meter.

Parameter

Name	Type	Range	Default
<time>	Consecutive Real Number	500 ms to 100 s	2 s

Return Format

The query returns the peak hold time in scientific notation.

Example

The following command sets the peak hold time of the meter to 0.8 s.

```
:SENSe:METer:PHOLd:ADJustable 0.8
```

The following query returns 8.000000000e-01.
:SENSe:METer:PHOLd:ADJutable?

[[:SENSe]:METer:PHOLd:RESet

Syntax

[[:SENSe]:METer:PHOLd:RESet

Description

Resets the peak hold lines of all the currently enabled meters to the current signal value.

[[:SENSe]:METer:PHOLd:TYPE

Syntax

[[:SENSe]:METer:PHOLd:TYPE INFinite|ADJutable
[:SENSe]:METer:PHOLd:TYPE?

Description

Sets the max hold time mode of the meter.

Queries the max hold time mode of the meter.

Parameter

Name	Type	Range	Default
--	Keyword	INFinite ADJutable	INFinite

Remarks

INFinite: indicates the infinite mode. The peak hold line of the selected meter will not be reset.

ADJutable: indicates the adjustable mode. The peak hold line of the selected meter will be reset to the current signal value after the set peak hold time.

Return Format

The query returns INF or ADJ.

Example

The following command sets the max hold time of the meter to INFinite.

:SENSe:METer:PHOLd:TYPE INFinite

The following query returns INF.

:SENSe:METer:PHOLd:TYPE?

[[:SENSe]:METer<n>:DETEctor

Syntax

[[:SENSe]:METer<n>:DETEctor POSitive|QPEak|CAVerage|RAVerage|AVERage|NEGative
[:SENSe]:METer<n>:DETEctor?

Description

Sets the detector type of the specified meter.

Queries the detector type of the specified meter.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	1
--	Keyword	POSitive QPEak CAVerage RAVerage AVERage NEGative	POSitive

Remarks

POSitive: indicates the positive peak.

QPEak: indicates the quasi-peak.

CAVerage: indicates the CISPR average.

RAVerage: indicates the RMS average.

AVERage: indicates the voltage average.

NEGative: indicates the negative peak.

Return Format

The query returns POS, QPE, CAV, RAV, AVER, or NEG.

Example

The following command sets the detector type of Meter 1 to POSitive.

```
:SENSe:METER1:DETECTOR POSitive
```

The following query returns POS.

```
:SENSe:METER1:DETECTOR?
```

[[:SENSe]:POWER[:RF]:ATTenuation**Syntax**

```
[[:SENSe]:POWER[:RF]:ATTenuation <real>
```

```
[[:SENSe]:POWER[:RF]:ATTenuation?
```

Description

Sets the attenuation of the meter attenuator.

Queries the attenuation of the meter attenuator.

Parameter

Name	Type	Range	Default
<real>	Integer	0 dB to 50 dB	10 dB

Return Format

The query returns the attenuation in integer. The unit is dB.

Example

The following command set the attenuation to 20 dB.

```
:SENSe:POWER:RF:ATTenuation 20
```

The following query returns 20.

```
:SENSe:POWER:RF:ATTenuation?
```

[[:SENSe]:POWer[:RF]:GAIN[:STATe]**Syntax**

[[:SENSe]:POWer[:RF]:GAIN[:STATe] OFF|ON|0|1
[:SENSe]:POWer[:RF]:GAIN[:STATe]?

Description

Enable or disable the meter preamplifier.
Queries the status of the meter preamplifier.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command enables the meter preamplifier.

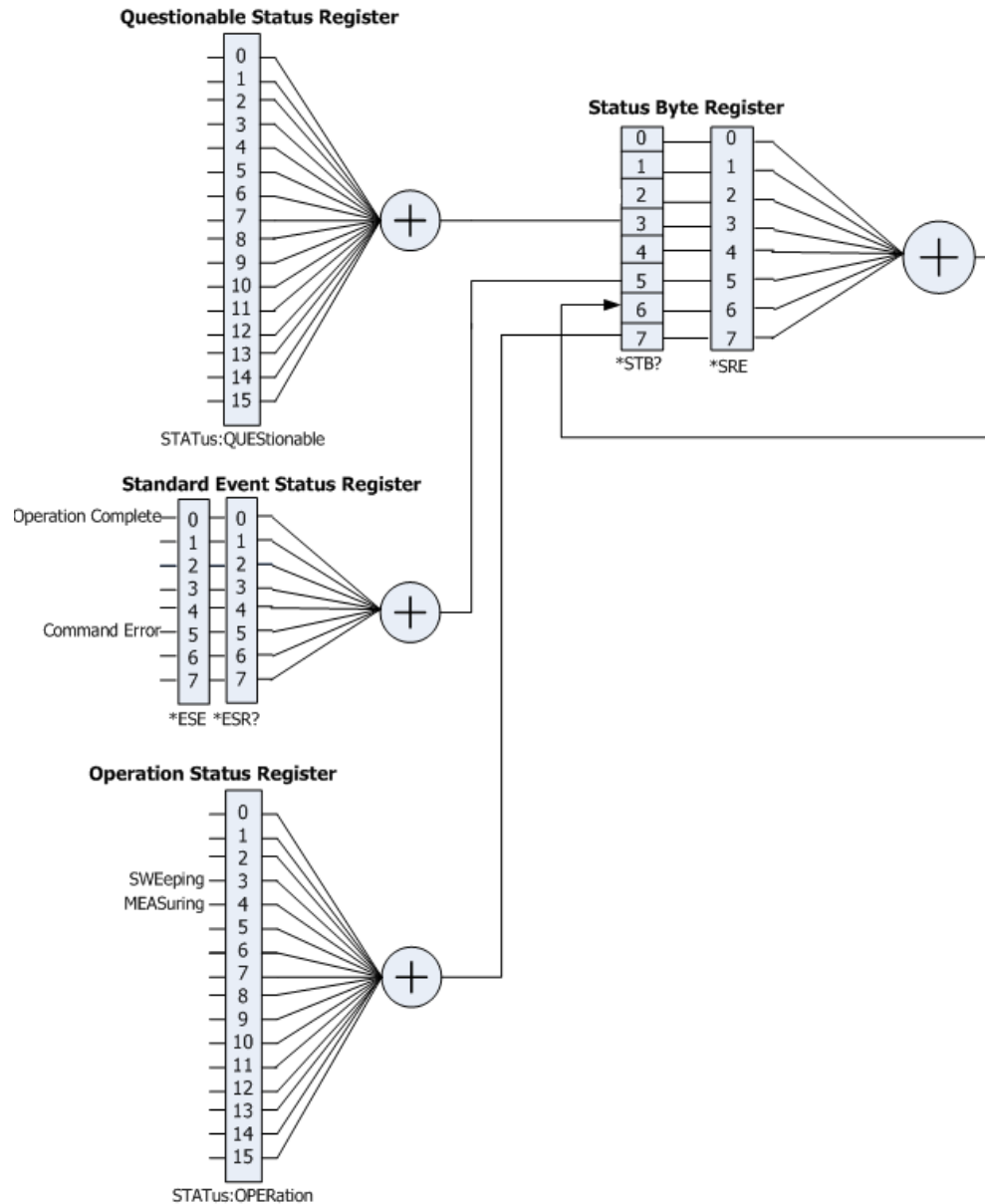
:SENSe:POWer:RF:GAIN:STATe ON or :SENSe:POWer:RF:GAIN:STATe 1

The following query returns 1.

:SENSe:POWer:RF:GAIN:STATe?

:STATus Commands

The :STATus commands and [IEEE 488.2 Common Commands](#) are used to operate or query the status registers. The structure of the status register is shown in the following figure. The STATus commands are used to set and query the questionable status register and operation status register. IEEE488.2 common commands can be used to operate on the standard event status register and status byte register.



Command List:

- ◆ [:STATus:OPERation:CONDition?](#)
- ◆ [:STATus:OPERation:ENABLE](#)
- ◆ [:STATus:OPERation\[:EVENT\]?](#)
- ◆ [:STATus:PRESet](#)
- ◆ [:STATus:QUEStionable:CONDition?](#)
- ◆ [:STATus:QUEStionable:ENABLE](#)
- ◆ [:STATus:QUEStionable\[:EVENT\]?](#)

:STATus:OPERation:CONDition?

Syntax

:STATus:OPERation:CONDition?

Description

Queries the condition register of the operation status register.

Return Format

The query returns the condition register in integer. For example, 24.

:STATus:OPERation:ENABle

Syntax

:STATus:OPERation:ENABle <integer>

:STATus:OPERation:ENABle?

Description

Sets the enable register of the operation status register.

Queries the enable register of the operation status register.

Parameter

Name	Type	Range	Default
<integer>	Integer	Refer to "Remarks"	0

Remarks

The definition of the Operation Status Register is shown in the following table. Bit 0-2, bit 5-7, bit 13, and bit 14 are reserved. You can set their values but they will not affect the system. Bit 15 and bit 12-8 are not used and are always treated as 0. Therefore, the parameter <integer> can be any decimal value that corresponds to the binary-weighted sum of the bits that range from 0000000000000000 (0 in decimal) to 1111111111111111 (32,767 in decimal) and of which bit 15 and bit 12-8 are 0.

Bit	Value	Description
0	1	Reserved
1	2	Reserved
2	4	Reserved
3	8	SWEEping
4	16	MEASuring
5	32	Reserved
6	64	Reserved
7	128	Reserved
8	0	Not Used
9	0	Not Used
10	0	Not Used
11	0	Not Used
12	0	Not Used
13	8192	Reserved
14	16384	Reserved
15	0	Not Used

Return Format

The query returns the enable register of the Operation Status Register in integer.

Example

The following command sets the enable register of the Operation Status Register to 100.

```
:STATus:OPERation:ENABLE 100
```

The following query returns 100.

```
:STATus:OPERation:ENABLE?
```

:STATus:OPERation[:EVENT]?**Syntax**

```
:STATus:OPERation[:EVENT]?
```

Description

Queries the event register of the Operation Status Register.

Return Format

The query returns the event register in integer. For example, 24.

:STATus:PRESet**Syntax**

```
:STATus:PRESet
```

Description

Clears the enable register of the Operation Status Register and Questionable Status Register.

:STATus:QUEStionable:CONDition?**Syntax**

```
:STATus:QUEStionable:CONDition?
```

Description

Queries the condition register of the Questionable Status Register.

Return Format

Queries the condition register of the questionable status register in integer. For example, 0.

:STATus:QUEStionable:ENABLE**Syntax**

```
:STATus:QUEStionable:ENABLE <integer>
```

```
:STATus:QUEStionable:ENABLE?
```

Description

Sets the enable register of the Questionable Status Register.

Queries the enable register of the Questionable Status Register.

Parameter

Name	Type	Range	Default
<integer>	Integer	Refer to "Remarks"	0

Remarks

The definition of the Questionable Status Register is shown in the following table. Bit 0-8, bit 13, and bit 14 are reserved. You can set their values but they will not affect the system. Bit 15, bit 12-9 are not used and they are always treated as 0. Therefore, the parameter <integer> can be any decimal value that corresponds to the binary-weighted sum of the bits that range from 0000000000000000 (0 in decimal) to 1111111111111111 (32,767 in decimal) and of which bit 15 and bit 12-9 are 0.

Bit	Value	Description
0	1	Reserved
1	2	Reserved
2	4	Reserved
3	8	Reserved
4	16	Reserved
5	32	Reserved
6	64	Reserved
7	128	Reserved
8	256	Reserved
9	0	Not Used
10	0	Not Used
11	0	Not Used
12	0	Not Used
13	8192	Reserved
14	16384	Reserved
15	0	Not Used

Return Format

Queries the enable register of the questionable status register in integer.

Example

The following command sets the enable register of the Questionable Status Register to 100.

```
:STATus:QUESTionable:ENABLE 100
```

The following query returns 100.

```
:STATus:QUESTionable:ENABLE?
```

:STATus:QUESTionable[:EVENT]?**Syntax**

```
:STATus:QUESTionable[:EVENT]?
```

Description

Queries the event register of the Questionable Status Register.

Return Format

Queries the event register of the Questionable Status Register in integer. For example, 0.

:SYSTem Commands

Command List:

- ◆ [:SYSTem:BEEPer:STATe](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:APPLy](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:AUTOp:STATe](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:DHCP:STATe](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:IP:ADDReSS](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:IP:DNSBack](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:IP:DNSPreferred](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:IP:DNSServer](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:IP:GATeway](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:IP:SUBMask](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:MANuip:STATe](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:MDNS:STATe](#)
- ◆ [:SYSTem:COMMunicate:LAN\[:SELF\]:RESet](#)
- ◆ [:SYSTem:CONFigure:INformation?](#)
- ◆ [:SYSTem:DATE](#)
- ◆ [:SYSTem:FSWitch\[:STATe\]](#)
- ◆ [:SYSTem:LANGuage](#)
- ◆ [:SYSTem:LKEY](#)
- ◆ [:SYSTem:OPTion:STATe?](#)
- ◆ [:SYSTem:PON:TYPE](#)
- ◆ [:SYSTem:PRESet](#)
- ◆ [:SYSTem:PRESet:SAVE](#)
- ◆ [:SYSTem:PRESet:TYPE](#)
- ◆ [:SYSTem:PRESet:USER:SAVE](#)
- ◆ [:SYSTem:SCPI:DISPlay](#)
- ◆ [:SYSTem:SECurity:CLEar](#)
- ◆ [:SYSTem:SHOW](#)
- ◆ [:SYSTem:TIME](#)

:SYSTem:BEEPer:STATe

Syntax

:SYSTem:BEEPer:STATe OFF|ON|0|1
:SYSTem:BEEPer:STATe?

Description

Turns on or off the beeper.

Queries the on/off status of the beeper.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

The following command turns on the beeper.

:SYSTem:BEEPer:STATe ON or :SYSTem:BEEPer:STATe 1

The following query returns 1.

:SYSTem:BEEPer:STATe?

:SYSTem:COMMunicate:LAN[:SELF]:APPLy

Syntax

:SYSTem:COMMunicate:LAN[:SELF]:APPLy

Description

Applies the LAN interface parameter settings.

:SYSTem:COMMunicate:LAN[:SELF]:AUTOip:STATe

Syntax

:SYSTem:COMMunicate:LAN[:SELF]:AUTOip:STATe OFF|ON|0|1
:SYSTem:COMMunicate:LAN[:SELF]:AUTOip:STATe?

Description

Enables or disables the auto IP setting mode.

Queries the status of the auto IP setting mode.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Remarks

The analyzer attempts to acquire the IP address configuration according to the sequence of DHCP, Auto IP, and Manual IP. These three modes cannot be disabled at the same time.

ON|1: enables the auto IP mode.

OFF|0: disables the auto IP mode and selects DHCP configuration mode.

Return Format

The query returns 0 or 1.

Example

The following command enables the auto IP setting mode.

```
:SYSTem:COMMunicate:LAN:SELF:AUTOip:STATe ON or :SYSTem:COMMunicate:LAN:SELF:AUTOip:STATe 1
```

The following query returns 1.

```
:SYSTem:COMMunicate:LAN:SELF:AUTOip:STATe?
```

:SYSTem:COMMunicate:LAN[:SELF]:DHCP:STATe**Syntax**

```
:SYSTem:COMMunicate:LAN[:SELF]:DHCP:STATe OFF|ON|0|1
```

```
:SYSTem:COMMunicate:LAN[:SELF]:DHCP:STATe?
```

Description

Enables or disables the DHCP configuration mode.

Queries the status of the DHCP configuration mode.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Remarks

The analyzer attempts to acquire the IP address configuration according to the sequence of DHCP, Auto IP, and Manual IP. These three modes cannot be disabled at the same time.

ON|1: enables the DHCP configuration mode.

OFF|0: disables the DHCP configuration mode and selects the auto IP mode.

Return Format

The query returns 0 or 1.

Example

The following command enables the DHCP configuration mode.

```
:SYSTem:COMMunicate:LAN:SELF:DHCP:STATe ON or :SYSTem:COMMunicate:LAN:SELF:DHCP:STATe 1
```

The following query returns 1.

```
:SYSTem:COMMunicate:LAN:SELF:DHCP:STATe?
```

:SYSTem:COMMunicate:LAN[:SELF]:IP:ADDRes**Syntax**

```
:SYSTem:COMMunicate:LAN[:SELF]:IP:ADDRes <ip_address>
```

```
:SYSTem:COMMunicate:LAN[:SELF]:IP:ADDRes?
```

Description

Sets the IP address.

Queries the IP address.

Parameter

Name	Type	Range	Default
<ip_address>	ASCII String	Refer to "Remarks"	--

Remarks

The format of <ip_address> is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) of the address is from 1 to 223 (except 127); and the range for the other three segments is from 0 to 255.

This command is only valid in manual IP setting mode.

Return Format

The query returns the current IP address in the format of "nnn.nnn.nnn.nnn".

Example

The following command sets the IP address to "172.16.3.199".

```
:SYSTem:COMMUnicate:LAN:SELF:IP:ADDRes 172.16.3.199
```

The following query returns 172.16.3.199.

```
:SYSTem:COMMUnicate:LAN:SELF:IP:ADDRes?
```

:SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSBack

Syntax

```
:SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSBack <ip_address>
```

```
:SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSBack?
```

Description

Sets the backup address for the DNS.

Queries the backup address for the DNS.

Parameter

Name	Type	Range	Default
<ip_address>	ASCII String	Refer to " Remarks "	--

Remarks

The format of <ip_address> is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) of the address is from 1 to 223 (except 127); and the range for the other three segments is from 0 to 255.

This command is only valid in manual DNS setting mode.

Return Format

The query returns the current backup DNS address in the format of "nnn.nnn.nnn.nnn".

Example

The following command sets the backup address of DNS to "172.16.2.2".

```
:SYSTem:COMMUnicate:LAN:SELF:IP:DNSBack 172.16.2.2
```

The following query returns 172.16.2.2.

```
:SYSTem:COMMUnicate:LAN:SELF:IP:DNSBack?
```

:SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSPreferred :SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSServer

Syntax

```
:SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSPreferred <ip_address>
```

```
:SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSPreferred?
```

```
:SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSServer <ip_address>
```

```
:SYSTem:COMMUnicate:LAN[:SELF]:IP:DNSServer?
```

Description

Sets the preferred address for the DNS.

Queries the preferred address for the DNS.

Parameter

Name	Type	Range	Default
<ip_address>	ASCII String	Refer to " Remarks "	--

Remarks

The format of <ip_address> is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) of the address is from 1 to 223 (except 127); and the range for the other three segments is from 0 to 255.

This command is only valid in manual DNS setting mode.

Return Format

The query returns the currently preferred DNS address in the format of "nnn.nnn.nnn.nnn".

Example

The following command sets the preferred DNS address to "172.16.2.2".

```
:SYSTem:COMMunicate:LAN:SELF:IP:DNSPreferred 172.16.2.2
```

```
:SYSTem:COMMunicate:LAN:SELF:IP:DNSServer 172.16.2.2
```

The following query returns 172.16.2.2.

```
:SYSTem:COMMunicate:LAN:SELF:IP:DNSPreferred?
```

```
:SYSTem:COMMunicate:LAN:SELF:IP:DNSServer?
```

:SYSTem:COMMunicate:LAN[:SELF]:IP:GATeway**Syntax**

```
:SYSTem:COMMunicate:LAN[:SELF]:IP:GATeway <ip_address>
```

```
:SYSTem:COMMunicate:LAN[:SELF]:IP:GATeway?
```

Description

Sets the default gateway.

Queries the default gateway.

Parameter

Name	Type	Range	Default
<ip_address>	ASCII String	Refer to " Remarks "	--

Remarks

The format of <ip_address> is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) of the address is from 1 to 223 (except 127); and the range for the other three segments is from 0 to 255.

This command is only valid in manual IP setting mode.

Return Format

The query returns the current default gateway in the format of "nnn.nnn.nnn.nnn".

Example

The following command sets the default gateway to "172.16.3.1".

```
:SYSTem:COMMunicate:LAN:SELF:IP:GATeway 172.16.3.1
```

The following query returns 172.16.3.1.

```
:SYSTem:COMMunicate:LAN:SELF:IP:GATeway?
```

:SYSTem:COMMunicate:LAN[:SELF]:IP:SUBMask

Syntax

:SYSTem:COMMunicate:LAN[:SELF]:IP:SUBMask<ip_address>
:SYSTem:COMMunicate:LAN[:SELF]:IP:SUBMask?

Description

Sets the subnet mask.
Queries the subnet mask.

Parameter

Name	Type	Range	Default
<ip_address>	ASCII String	Refer to "Remarks"	--

Remarks

The format of <ip_address> is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) is from 0 to 255.
This command is only valid in manual IP setting mode.

Return Format

The query returns the current subnet mask in the format of "nnn.nnn.nnn.nnn".

Example

The following command sets the subnet mask to "255.255.255.0".
:SYSTem:COMMunicate:LAN:SELF:IP:SUBMask 255.255.255.0

The following query returns 255.255.255.0.
:SYSTem:COMMunicate:LAN:SELF:IP:SUBMask?

:SYSTem:COMMunicate:LAN[:SELF]:MANuip:STATe

Syntax

:SYSTem:COMMunicate:LAN[:SELF]:MANuip:STATe OFF|ON|0|1
:SYSTem:COMMunicate:LAN[:SELF]:MANuip:STATe?

Description

Enables or disables the manual IP setting mode.
Queries the status of the manual IP setting mode.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Remarks

The analyzer attempts to acquire the IP address configuration according to the sequence of DHCP, Auto IP, and Manual IP. These three modes cannot be disabled at the same time.
ON|1: enables the manual IP mode.
OFF|0: disables the manual IP mode and selects the DHCP mode.

Return Format

The query returns 0 or 1.

Example

The following command enables the manual IP setting mode.
:SYSTem:COMMunicate:LAN:SELF:MANuip:STATe ON or :SYSTem:COMMunicate:LAN:SELF:MANuip:STATe
1

The following query returns 1.

```
:SYSTem:COMMunicate:LAN:SELF:MANuip:STATe?
```

:SYSTem:COMMunicate:LAN[:SELF]:MDNS:STATe

Syntax

```
:SYSTem:COMMunicate:LAN[:SELF]:MDNS:STATe OFF|ON|0|1
```

```
:SYSTem:COMMunicate:LAN[:SELF]:MDNS:STATe?
```

Description

Enables or disables the state of the network information sending.

Queries the on/off status of the network information sending.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Remarks

ON|1: The state of the network information sending is turned on.

ON|0: The state of the network information sending is turned off.

Return Format

The query returns 0 or 1.

Example

The following command sets the state of the network information sending to "on".

```
:SYSTem:COMMunicate:LAN:SELF:MDNS:STATe ON or :SYSTem:COMMunicate:LAN:SELF:MDNS:STATe 1
```

The following query returns 1.

```
:SYSTem:COMMunicate:LAN:SELF:MDNS:STATe?
```

:SYSTem:COMMunicate:LAN[:SELF]:RESet

Syntax

```
:SYSTem:COMMunicate:LAN[:SELF]:RESet
```

Description

Resets the LAN setting: enable the DHCP, disable Auto IP and the Manual IP.

:SYSTem:CONFigure:INFormation?

Syntax

```
:SYSTem:CONFigure:INFormation?
```

Description

Queries the system information of the spectrum analyzer.

Remarks

The system information includes the model, serial number, software and hardware version number, and firmware version number.

Return Format

The query returns the system information. For example,

Model:RSA5065
 SN:RSA5B192000020
 Main Board:00.01.00
 Keyboard:00.01.00
 CPU:00.01.00
 SPU:00.01.02
 WPU:00.01.00
 BOOT:00.01.00
 OS:00.01.00
 Firmware:00.01.00

Note: When you use RSA5065-TG/RSA5032-TG, the query also returns information about "TG Board".

:SYSTem:DATE

Syntax

:SYSTem:DATE <year>,<month>,<day>
 :SYSTem:DATE?

Description

Sets the date of the instrument.
 Queries the date of the instrument.

Parameter

Name	Type	Range	Default
<year>	ASCII String	2000 to 2099	--
<month>	ASCII String	01 to 12	--
<day>	ASCII String	01 to 31	--

Return Format

The query returns the current date in the format of "YYYY,MM,DD".

Example

The following command sets the date of the instrument to 2017/11/16.
 :SYSTem:DATE 2017,11,16

The following query returns 2017,11,16
 :SYSTem:DATE?

:SYSTem:FSWitch[:STATe]

Syntax

:SYSTem:FSWitch[:STATe] OFF|ON|0|1
 :SYSTem:FSWitch[:STATe]?

Description

Sets the power switch on the front panel to be turned on or off.
 Queries whether the power switch on the front panel is turned on or off.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

The following command sets the power switch on the front panel is turned off.

```
:SYSTem:FSWitch:STATe OFF or :SYSTem:FSWitch:STATe 0
```

The following query returns 0.

```
:SYSTem:FSWitch:STATe?
```

:SYSTem:LANGuage**Syntax**

```
:SYSTem:LANGuage ENGLISH|CHINESE
```

```
:SYSTem:LANGuage?
```

Description

Sets the language of the instrument.

Queries the language of the instrument.

Parameter

Name	Type	Range	Default
--	Keyword	ENGLISH CHINESE	ENGLISH

Return Format

The query returns ENGL or CHIN.

Example

The following command sets the language to English.

```
:SYSTem:LANGuage ENGLISH
```

The following query returns ENGL.

```
:SYSTem:LANGuage?
```

:SYSTem:LKEY**Syntax**

```
:SYSTem:LKEY <option info>@<license info>
```

Description

Installs and activates the specified option.

Parameter

Name	Type	Range	Default
<option info>	ASCII String	--	--
<license info>	ASCII String	--	--

Remarks

The parameter <option info> indicates the order number of the option. <license info> indicates the serial number of the option.

Example

The following command installs the option RSA5000-PA.

```
:SYSTem:LKEY
```

RSA5000-PA@8AD12B8EBC5DF492D1D4289B7CBA5B6150BF6F5D752D645C36D74530B05F39B49C461B2
3A50D6C94A34E06782AC4380070B0D1A86BA84E02768391FFD70C2103

:SYSTem:OPTion:STATe?

Syntax

:SYSTem:OPTion:STATe? <option name>

Description

Queries whether an option is activated or not.

Parameter

Name	Type	Range	Default
<option name>	ASCII String	--	--

Return Format

The query returns 0 (not activated) or 1 (activated).

Example

The following command queries whether the option RSA5000-PA is activated.

:SYSTem:OPTion:STATe? RSA5000-PA

:SYSTem:PON:TYPE

Syntax

:SYSTem:PON:TYPE PRESet|LAST

:SYSTem:PON:TYPE?

Description

Selects the setting type the instrument recalls at power-on.

Queries what setting type the instrument recalls at power-on.

Parameter

Name	Type	Range	Default
--	Keyword	PRESet LAST	PRESet

Remarks

PRESet: indicates preset settings, including factory mode and 6 user-defined settings.

LAST: indicates the last setting.

Return Format

The query returns PRES or LAST.

Example

The following command sets the instrument to recall the last setting.

:SYSTem:PON:TYPE LAST

The following query returns LAST.

:SYSTem:PON:TYPE?

:SYSTem:PRESet

Syntax

:SYSTem:PRESet

Description

Recalls the preset settings of the system and recovers the system to the state specified by the [:SYSTem:PRESet:TYPE](#) command.

:SYSTem:PRESet:SAVE

Syntax

:SYSTem:PRESet:SAVE USER1|USER2|USER3|USER4|USER5|USER6

Description

Saves the specified user setting.

Parameter

Name	Type	Range	Default
--	Keyword	USER1 USER2 USER3 USER4 USER5 USER6	--

:SYSTem:PRESet:TYPE

Syntax

:SYSTem:PRESet:TYPE FACTory|USER1|USER2|USER3|USER4|USER5|USER6
:SYSTem:PRESet:TYPE?

Description

Selects the preset type of the system to be the factory mode or any one of the items from User1 to User6. Queries the preset type of the system.

Parameter

Name	Type	Range	Default
--	Keyword	FACTory USER1 USER2 USER3 USER4 USER5 USER6	FACTory

Return Format

The query returns FACT, USER1, USER2, USER3, USER4, USER5, or USER6.

Example

The following command sets the preset type of the system to User5.

```
:SYSTem:PRESet:TYPE USER5
```

The following query returns USER5.

```
:SYSTem:PRESet:TYPE?
```

:SYSTem:PRESet:USER:SAVE

Syntax

:SYSTem:PRESet:USER:SAVE

Description

Saves the current user setting.

Remarks

If the current preset type is "FACTory", save the current user setting to User1. If the current preset type is "User1 through User6", save the current user setting to the specified user.

:SYSTem:SCPI:DISPlay**Syntax**

:SYSTem:SCPI:DISPlay OFF|ON|0|1

:SYSTem:SCPI:DISPlay?

Description

Enables or disables the SCPI display.

Queries the setting status of the SCPI display.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Remarks

When you use the SCPI commands to control the instrument remotely, turning on the SCPI Display will go to the specified menu of the corresponding command; turning off the SCPI Display will not go to the specified menu.

Return Format

The query returns 0 or 1.

Example

The following command enables the SCPI display.

:SYSTem:SCPI:DISPlay 1 or :SYSTem:SCPI:DISPlay ON

The following query returns 1.

:SYSTem:SCPI:DISPlay?

:SYSTem:SECurity:CLEAr**Syntax**

:SYSTem:SECurity:CLEAr

Description

Clears all the data that you set safely.

Remarks

Deletes all the files that you have saved, deletes all the configuration files, and executes the factory resetting operation.

:SYSTem:SHOW**Syntax**

:SYSTem:SHOW OFF|SYSTem|OPTion|LICense

:SYSTem:SHOW?

Description

Displays the system-related information.

Queries the system-related information.

Parameter

Name	Type	Range	Default
--	Keyword	OFF SYSTem OPTion LICense	OFF

Remarks

OFF: turns off the system information display.

SYSTem: displays the system information.

OPTion: displays the option information.

LICense: displays the registration information.

Return Format

The query returns OFF, SYST, OPT, or LIC.

Example

The following command displays the system information.

:SYSTem:SHOW SYSTem

The following query returns SYST.

:SYSTem:SHOW?

:SYSTem:TIME**Syntax**

:SYSTem:TIME <hour>,<minute>,<second>

:SYSTem:TIME?

Description

Sets the system time of the instrument.

Queries the system time of the instrument.

Parameter

Name	Type	Range	Default
<hour>	ASCII String	00 to 23	--
<minute>	ASCII String	00 to 59	--
<second>	ASCII String	00 to 59	--

Return Format

The query returns the current system time in the format of "HH,MM,SS".

Example

The following command sets the system time to "15:10:30".

:SYSTem:TIME 15,10,30

The following query returns 15,10,30.

:SYSTem:TIME?

:TRACe Commands

Command List:

- ◆ :TRACe[:DATA]
- ◆ :TRACe<n>:DISPlay[:STATe]
- ◆ :TRACe<n>:UPDate:STATe

:TRACe[:DATA]

Syntax

```
:TRACE[:DATA]? TRACE1|TRACE2|TRACE3
```

Description

Queries the log data of the specified trace.

Parameter

Name	Type	Range	Default
--	Keyword	TRACE1 TRACE2 TRACE3	--

Remarks

If the filter for the specified range in the scan table is EMI filter and RBW is 1 MHz, and the trace detector type is quasi peak, the query of the corresponding trace data returns -1.700000000e+02.

If the filter the filter for the specified range in the scan table is Gauss filter, and the trace detector type is quasi peak, CISPR average, or RMS average, the query of the corresponding trace data returns -1.700000000e+02.

Return Format

The query returns the data of the specified trace. The format of the returned data is determined by the settings of the `:FORMat[:TRACe][:DATA]` command.

Example^[1]

- [illegible]

Note: The PC software converts the returned binary data to ASCII format. Therefore, if you use the PC software to perform the query command, the returned value is displayed as a messy code.
:TRACe:DATA? TRACE2

Note^[1]: The two examples in this page take sending 801 points as an example, and the query returns 801 points. Due to the limited space, the subsequent data are omitted. In addition, the returned values of the above examples are obtained when the system stops sweeping the trace.

:TRACe<n>:DISPlay[:STATe]

Syntax

```
:TRACe<n>:DISPlay[:STATe] OFF|ON|0|1
:TRACe<n>:DISPlay[:STATe]?
```

Description

Enables or disables the display of the specified trace.
Queries the setting state for the specified trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	--
--	Bool	OFF ON 0 1	Refer to "Remarks"

Remarks

By default, Trace 1 is enabled (ON), and Trace 2 through Trace 3 are disabled (OFF).

Return Format

The query returns 1 or 0.

Example

The following command enables the display of Trace 1.
:TRACe1:DISPlay:STATe ON or :TRACe1:DISPlay:STATe 1

The following query returns 1.
:TRACe1:DISPlay:STATe?

:TRACe<n>:UPDate:STATe

Syntax

```
:TRACe<n>:UPDate:STATe OFF|ON|0|1
:TRACe<n>:UPDate:STATe?
```

Description

Enables or disables the update of the specified trace.
Queries the setting state for the update of the specified trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	--
--	Bool	OFF ON 0 1	Refer to "Remarks"

Remarks

By default, Trace 1 is enabled (ON), and Trace 2 through Trace 3 are disabled (OFF).

Return Format

The query returns 1 or 0.

Example

The following command enables the update of Trace 1.
:TRACe1:UPDate:STATe ON or :TRACe1:UPDate:STATe 1

The following query returns 1.
:TRACe1:UPDate:STATe?

:TRIGger Commands

Command List:

- ◆ [:TRIGger\[:SEQuence\]:ATRigger](#)
- ◆ [:TRIGger\[:SEQuence\]:ATRigger:STATe](#)
- ◆ [:TRIGger\[:SEQuence\]:EXTeRnal<n>:DELay](#)
- ◆ [:TRIGger\[:SEQuence\]:EXTeRnal<n>:DELay:STATe](#)
- ◆ [:TRIGger\[:SEQuence\]:EXTeRnal<n>:SLOPe](#)
- ◆ [:TRIGger\[:SEQuence\]:HOLDoff](#)
- ◆ [:TRIGger\[:SEQuence\]:HOLDoff:STATe](#)
- ◆ [:TRIGger\[:SEQuence\]:SOURce](#)
- ◆ [:TRIGger2:MODE](#)

:TRIGger[:SEQuence]:ATRigger

Syntax

```
:TRIGger[:SEQuence]:ATRigger <time>
:TRIGger[:SEQuence]:ATRigger?
```

Description

Sets the time that the analyzer will wait for the trigger to be initiated automatically.
Queries the time that the analyzer will wait for the trigger to be initiated automatically.

Parameter

Name	Type	Range	Default
<time>	Consecutive Real Number	1 ms to 100 s	100 ms

Remarks

This command is only valid when the auto triggering function is enabled.

Return Format

The query returns the time value in scientific notation. The unit is s.

Example

The following command sets the time to 10 ms.

```
:TRIGger:SEQuence:ATRigger 0.01
```

The following query returns 1.000000000e-02.

```
:TRIGger:SEQuence:ATRigger?
```

:TRIGger[:SEQuence]:ATRigger:STATe

Syntax

```
:TRIGger[:SEQuence]:ATRigger:STATe OFF|ON|0|1
:TRIGger[:SEQuence]:ATRigger:STATe?
```

Description

Enables or disables the auto trigger function.
Queries the setting status of auto trigger function.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 1 or 0.

Example

The following command enables the auto trigger function.

:TRIGger:SEquence:ATRIgger:STATe ON or :TRIGger:SEquence:ATRIgger:STATe 1

The following query returns 1.

:TRIGger:SEquence:ATRIgger:STATe?

:TRIGger[:SEquence]:EXTernal<n>:DELay**Syntax**

:TRIGger[:SEquence]:EXTernal<n>:DELay <time>

:TRIGger[:SEquence]:EXTernal<n>:DELay?

Description

Sets the delay time for the external trigger.

Queries the delay time for the external trigger.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2	--
<time>	Consecutive Real Number	0 us to 500 ms	1 μ s

Remarks

When the parameter n is set to 1, it indicates External Trigger 1; when set to 2, it indicates External Trigger 2.

This command is only valid when the external trigger delay function is enabled.

Return Format

The query returns the delay time for the external trigger in scientific notation. The unit is s.

Example

The following command sets the delay time for External Trigger 1 to 100 ms.

:TRIGger:SEquence:EXTernal1:DELay 0.1

The following query returns 1.000000000e-01.

:TRIGger:SEquence:EXTernal1:DELay?

:TRIGger[:SEquence]:EXTernal<n>:DELay:STATe**Syntax**

:TRIGger[:SEquence]:EXTernal<n>:DELay:STATe OFF|ON|0|1

:TRIGger[:SEquence]:EXTernal<n>:DELay:STATe?

Description

Enables or disables the external trigger delay function.

Queries the setting state of the external trigger delay function.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2	--
--	Bool	OFF ON 0 1	OFF 0

Remarks

When the parameter n is set to 1, it indicates External Trigger 1; when set to 2, it indicates External Trigger 2.

Return Format

The query returns 1 or 0.

Example

The following command enables the delay function of External Trigger 1.

:TRIGger:SEquence:EXternal1:DElay:STATe ON or :TRIGger:SEquence:EXternal1:DElay:STATe 1

The following query returns 1.

:TRIGger:SEquence:EXternal1:DElay:STATe?

:TRIGger[:SEquence]:EXternal<n>:SLOPe**Syntax**

:TRIGger:SEquence:EXternal<n>:SLOPe POSitive|NEGative

:TRIGger:SEquence:EXternal<n>:SLOPe?

Description

Sets the trigger edge for the external trigger.

Queries the trigger edge for the external trigger.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2	--
--	Keyword	POSitive NEGative	POSitive

Remarks

When the parameter n is set to 1, it indicates External Trigger 1; when set to 2, it indicates External Trigger 2.

POSitive: indicates the rising edge.

NEGative: indicates the falling edge.

Return Format

The query returns POS or NEG.

Example

The following command sets the trigger edge of External Trigger 1 to be Positive.

:TRIGger:SEquence:EXternal1:SLOPe POSitive

The following query returns POS.

:TRIGger:SEquence:EXternal1:SLOPe?

:TRIGger[:SEQuence]:HOLDoff

Syntax

```
:TRIGger[:SEQuence]:HOLDoff <time>
:TRIGger[:SEQuence]:HOLDoff?
```

Description

Sets the trigger holdoff time.

Queries the trigger holdoff time.

Parameter

Name	Type	Range	Default
<time>	Consecutive Real Number	100 us to 500 ms	100 ms

Remarks

This command is only valid when the trigger holdoff function is enabled.

Return Format

The query returns the trigger holdoff time in scientific notation. The unit is s.

Example

The following command sets the sync holdoff time to 100 ms.

```
:TRIGger:SEQuence:HOLDoff 0.1
```

The following query returns 1.000000000e-01.

```
:TRIGger:SEQuence:HOLDoff?
```

:TRIGger[:SEQuence]:HOLDoff:STATe

Syntax

```
:TRIGger[:SEQuence]:HOLDoff:STATe OFF|ON|0|1
:TRIGger[:SEQuence]:HOLDoff:STATe?
```

Description

Turns on or off the trigger holdoff function.

Queries the status of the trigger holdoff function.

Parameter

Name	Type	Range	Default
--	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 1 or 0.

Example

The following command enables the trigger holdoff function.

```
:TRIGger:SEQuence:HOLDoff:STATe ON or :TRIGger:SEQuence:HOLDoff:STATe 1
```

The following query returns 1.

```
:TRIGger:SEQuence:HOLDoff:STATe?
```

:TRIGger[:SEQuence]:SOURce

Syntax

:TRIGger[:SEQuence]:SOURce EXTernal1|EXTernal2|IMMediate
:TRIGger[:SEQuence]:SOURce?

Description

Sets the trigger source.

Queries the trigger source.

Parameter

Name	Type	Range	Default
--	Keyword	EXTernal1 EXTernal2 IMMediate	IMMediate

Remarks

EXTernal1: indicates External Trigger 1.

EXTernal2: indicates External Trigger 2.

IMMediate: indicates the free-run trigger.

Return Format

The query returns EXT1, EXT2, or IMM.

Example

The following command sets the trigger source to free-run trigger.

:TRIGger:SEQuence:SOURce IMMediate

The following query returns IMM.

:TRIGger:SEQuence:SOURce?

:TRIGger2:MODE

Syntax

:TRIGger2:MODE IN|OUT|0|1
:TRIGger2:MODE?

Description

Sets the interface type of External Trigger 2.

Queries the interface type of External Trigger 2.

Parameter

Name	Type	Range	Default
--	Keyword	IN OUT 0 1	IN 0

Remarks

IN|0: indicates the input interface.

OUT|1: indicates the output interface.

Return Format

The query returns 0 or 1.

Example

The following command sets External Trigger 2 to be the input interface.

:TRIGger2:MODE IN

The following query returns 0.

:TRIGger2:MODE?

:UNIT Command

Command List:

◆ [:UNIT:POWer](#)

:UNIT:POWer

Syntax

:UNIT:POWer DBM|DBMV|DBUV|V|W

:UNIT:POWer?

Description

Sets the unit of the Y axis.

Queries the unit of the Y axis.

Parameter

Name	Type	Range	Default
--	Keyword	DBM DBMV DBUV V W	Refer to "Remarks"

Remarks

The default log unit is dBm.

The default linear unit is V.

Return Format

The query returns DBM, DBMV, DBUV, V, or W.

Example

The following command sets the amplitude unit to Watts.

:UNIT:POWer W

The following query returns W.

:UNIT:POWer?

Chapter 3 Appendix

Appendix A: Default Settings

Sending the [*RST](#) command can restore the instrument to default settings, as shown in the table below.

Parameter Name	EMI Parameter Value
FREQ	
Frequency(Meter)	515 MHz
Midspan Freq	515 MHz
Start Freq	Auto, 30 MHz
Stop Freq	Auto, 1 GHz
Scale Type	Log
SPAN	
Span	970 MHz
AMPT	
Ref Level	106.99 dBuV
Att(Meter)	10 dB
RF Preamp(Meter)	Off
Y Axis Unit	dBuV
Scale/Div	10 dB
Ref Offset	0 dB
BW	
RBW(Meter)	Auto, 120 kHz
Filter Type(Meter)	EMI
Trigger	
Source	Free Run
Hold-off	Off, 100 ms
Auto Trig	Off, 100 ms
Slope	POS
Delay	Off, 1 μ s
Trace	
Selected Trace	Trace1
Trace Type	Clear Write
Trace Det	Pos Peak
Detector Auto	On
Trace Update	On
Trace Display	On
Mode Setup	
Global CF	Off, 515 MHz
EMC Standard	CISPR
Select Meter	Meter 1
Meter	On
Detector	Pos Peak
Limit	Off, 80 dBuV
Dwell Time	10 ms
Peak Hold Type	Infinite
Adjust Time	2 s
Couple to Signals	Off
Couple to Marker	Off
Measure Setup	
Frequency Scan	
Avg Number	1
Avg Type	SCALar

Avg Auto	Auto
Test Limits	Off
Select Limit	Limit1
Limit State	Off
Test Trace	Trace1
X to CF	Fixed
Y to Ref	Fixed
Margin	Off, 0 dB
Freq Interpolation	Lin
Frequency	0 Hz
Amplitude	106.99 dBuV
Build From	Trace1
Copy From	Limit1
X Offset	0 Hz
Y Offset	0 dB
Select Signal	1
Delete	Selected
Sort Signals	Freq
Sort Order	ASC
Auto Sort	On
Search Criteria	Peak Criteria
Peak Number	Off, 25
Subrange Num	25
Select Range	Range 5
Range	On
Start Freq	600 MHz
Stop Freq	1 GHz
Points	6667
Scan Time	On, 544.117 ms
Auto RBW	On, 120 kHz
Filter Type	EMI
Attenuation	On, 10 dB
RF Preamp	Off
Scan Table	Off
Scan Sequence	Scan Only
(Re)measure	Curr Signal
Select Detector	Detector 1
Dwell Time	200 ms
Detector	Pos Peak
Limit for Delta	Limit 1
Marker	
Selected Marker	Marker 1
Marker Mode	Position
Reference Marker	Marker 2
Marker Trace	Trace 1
Marker Frequency	515 MHz
Line State	Off
Couple Markers	Off
Peak	
Peak Threshold	On, 16.99 dBuV
Peak Excursion	On, 6 dB
Threshold Line	Off
Search Mode	Max
Marker Func	
Selected Marker	Marker 1

Select Detector	Detector 1
Dwell Time	200 ms
Detector	Pos Peak
Limit for Delta	Limit 1
Meas at Mkr Win	Off
System^[1]	
Power On	Preset
Preset Type	Default
Align Auto	On
LAN Setting Mode	DHCP
Display Line	Off, 81.99 dBuV
Graticule	On
HDMI	On
HDMI Resolution	1280*720 60Hz
LCD	On
LCD Backlight	100%
Meters Display	On
Meters Freq Line	On
Next Range Display	Off
Power Switch	Default
Beep Switch	Off
Volume	50
SCPI Display	On
User Key	Off
Language	English

Note^[1]: Not affected by Preset settings.

Appendix B: Warranty

RIGOL (SUZHOU) TECHNOLOGIES, INC. (hereinafter referred to as **RIGOL**) warrants that the product will be free from defects in materials and workmanship within the warranty period. If a product proves defective within the warranty period, **RIGOL** guarantees free replacement or repair for the defective product.

To get repair service, please contact with your nearest **RIGOL** sales or service office.

There is no other warranty, expressed or implied, except such as is expressly set forth herein or other applicable warranty card. There is no implied warranty of merchantability or fitness for a particular purpose. Under no circumstances shall **RIGOL** be liable for any consequential, indirect, ensuing, or special damages for any breach of warranty in any case.