



RIGOL

PNOISE Mode

For RSA800 Series Spectrum

Programming Guide
2026.08

Guaranty and Declaration

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Document Overview

This manual introduces how to program and control **RIGOL** RSA800 series spectrum analyzer (PNOISE mode) by using SCPI commands through the USB or LAN interface.

Tip

For the latest version of this manual, download it from the official website of RIGOL (<http://www.rigol.com>).

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Software upgrade might change or add product features. Please acquire the latest version of the manual from RIGOL website or contact RIGOL to upgrade the software.

Format Conventions in this Manual

1. Key

The front panel key is denoted by the menu key icon. For example,  indicates the "System" key.

2. Menu

The menu item is denoted by the format of "Menu Name (Bold) + Character Shading" in the manual. For example, Setup indicates clicking or tapping the "Setup" sub-menu under the "System" menu to view the basic system settings.

3. Operation Procedures

The next step of the operation is denoted by ">" in the manual. For example,  > Save indicates that first clicking or tapping the icon , then clicking or tapping Save.

Content Conventions in this Manual

The RSA800 series spectrum analyzers consist of the following models. Unless otherwise specified, this manual uses the RSA814 as an example to describe the SCPI commands supported by the RSA800 series under PNOISE mode.

Model	Frequency	RF Input Port	TG Output Port
RSA804	5 kHz ~ 4.5 GHz	1, Type-N (F)	1, Type-N (F)
RSA808	5 kHz ~ 8.5 GHz	1, Type-N (F)	1, Type-N (F)
RSA814	5 kHz ~ 14 GHz	1, Type-N (F)	1, Type-N (F)

Command System

This chapter introduces the commands of the RSA800 series spectrum analyzer in PNOISE mode.

:CALCulate Commands

The :CALCulate commands mainly cover the functions of marker, trace, limit line, and spurious search.

:CALCulate:LLINe:SElect

Syntax

:CALCulate:LLINe:SElect <limit>

:CALCulate:LLINe:SElect?

Description

Sets or queries the selected limit line.

Parameter

Name	Type	Range	Default
<limit>	Discrete	LLINe1 LLINe2 LLINe3 LLINe4 LLINe5 LLINe6	—

Return Format

The query returns the currently selected limit line.

Example

:CALC:LLIN:SElect LLIN2 /*Selects Limit Line 2.*/

:CALC:LLIN:SElect? /*The query returns LLINe2.*/

:CALCulate:LLINe<n>:TYPE

Syntax

:CALCulate:LLINe<n>:TYPE <type>

:CALCulate:LLINe<n>:TYPE?

Description

Sets or queries the type of the specified limit line.

Parameter

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

Remarks

Limit Line 1, Limit Line 3, and Limit Line 5 belong to the upper type; Limit Line 2, Limit Line 4, and Limit Line 6 belong to the lower type.

Return Format

The query returns UPP or LOW.

Example

:CALCulate:LPLot:LLINe2:TYPE UPPer /*Sets the type of Limit Line 2 to Upper.*/

:CALCulate:LPLot:LLINe2:TYPE? /*The query returns UPP.*/

:CALCulate:LPLot:LLINe:ALL:DELeTe

Syntax

:CALCulate:LPLot:LLINe:ALL:DELeTe

Description

Deletes all the limit line data.

:CALCulate:LPLot:LLINe:TEST[:STATe]

Syntax

:CALCulate:LPLot:LLINe:TEST[:STATe] <bool>

:CALCulate:LPLot:LLINe:TEST[:STATe]?

Description

Sets or queries whether the limit line test is enable or not.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

:CALCulate:LPLot:LLINe:TEST:STATe ON or :CALCulate:LPLot:LLINe:TEST:STATe 1 /*Enables the limit line test.*/

:CALCulate:LPLot:LLINe:TEST:STATe? /*The query returns 1.*/

:CALCulate:LPLot:LLINe<n>:AMPLitude:INTerpolate:TYPE

Syntax

:CALCulate:LPLot:LLINe<n>:AMPLitude:INTerpolate:TYPE <type>

:CALCulate:LPLot:LLINe<n>:AMPLitude:INTerpolate:TYPE?

Description

Sets or queries the amplitude interpolation type of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<type>	Discrete	LINear LOG	LOG

Remarks

LINear: linear type.
LOG: log type.

Return Format

The query returns LIN or LOG.

Example

:CALCulate:LPLot:LLINe2:AMPLitude:INTERpolate:TYPE LOG /*Sets the amplitude interpolation type of the limit line to LOG.*/

:CALCulate:LPLot:LLINe2:AMPLitude:INTERpolate:TYPE? /*The query returns LOG.*/

:CALCulate:LPLot:LLINe<n>:CONTrol:INTERpolate:TYPE**Syntax**

:CALCulate:LPLot:LLINe<n>:CONTrol:INTERpolate:TYPE <type>

:CALCulate:LPLot:LLINe<n>:CONTrol:INTERpolate:TYPE?

Description

Sets or queries the type of the frequency interpolation type of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<type>	Discrete	LINear LOG	LOG

Remarks

LINear: linear type.
LOG: log type.

Return Format

The query returns LIN or LOG.

Example

:CALCulate:LPLot:LLINe2:CONTrol:INTERpolate:TYPE LINear

/*Sets the frequency interpolation type of the limit line to LINear.*/

:CALCulate:LPLot:LLINe2:CONTrol:INTERpolate:TYPE?/*The query returns LIN.*/

:CALCulate:LPLot:LLINe<n>:COPY**Syntax**

:CALCulate:LPLot:LLINe<n>:COPY <copy>

Description

Copies the selected limit line to the current limit line.

Parameter

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

```
:CALCulate:LPLot:LLINe2:COPY LLINe1 /*Copies Limit Line 1 to Limit Line 2.*/
```

:CALCulate:LPLot:LLINe<n>:DISPlay

Syntax

```
:CALCulate:LPLot:LLINe<n>:DISPlay <bool>
```

```
:CALCulate:LPLot:LLINe<n>:DISPlay?
```

Description

Sets or queries whether to DISPlay the specified limit line.

Parameter

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

Return Format

The query returns 1 or 0.

Example

```
:CALC:LPL:LLIN1:DISP ON /*DISPlays Limit Line 1.*/
```

```
:CALC:LPL:LLIN1:DISP? /*The query returns 1.*/
```

:CALCulate:LPLot:LLINe<n>:TRACe

Syntax

```
:CALCulate:LPLot:LLINe<n>:TRACe <trace>
```

```
:CALCulate:LPLot:LLINe<n>:TRACe?
```

Description

Sets or queries the target trace of the specified limit line in the limit line test.

Parameter

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

Return Format

The query returns the trace number.

Example

```
:CALC:LPL:LLIN1:TRAC 1 /*Sets the test trace of Limit Line 1 to Trace 1.*/
```

```
:CALC:LPL:LLIN1:TRAC? /*The query returns 1.*/
```

:CALCulate:LPLot:LLINe<n>:DELeTe

Syntax

:CALCulate:LPLot:LLINe<n>:DELeTe

Description

Deletes the specified limit line.

Parameter

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

Example

:CALC:LPL:LLIN1:DEL /*Deletes Limit Line 1.*/

:CALCulate:LPLot:LLINe<n>:DATA

Syntax

:CALCulate:LPLot:LLINe<n>:DATA <x>,<ampl>,<connect>{,<x>,<ampl>,<connect>}
:CALCulate:LPLot: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>	Real	0 Hz to 6.5 GHz (X-axis indicates frequency)	—
<ampl>	Real	-1000 dBm to 1000 dBm	—
<connect>	Discrete	0 1	0

Remarks

- <x>: indicates the frequency.
- <ampl>: 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 0 or 1. When it is configured with 1, it indicates that the current point connects with the previous point to determine the limit line; when configured with 0, it indicates that the current point is disconnected from the previous point. The <connect> value of the first point can be configured with 0.

Return Format

The query returns the limit line data that are being edited currently in strings.

Example

```
:CALC:LPL:LLIN1:DATA 50,100,0,100,150,1,200,200,1
/*Edits a limit line that contains three points, and marks it Limit Line 1.*/
:CALC:LPL:LLIN1:DATA?
/*The query returns 50,100.000000,0,100,150.000000,1,200,200.000000,1.*/
```

:CALCulate:LPLot:LLINe<n>:MARGin

Syntax

:CALCulate:LPLot:LLINe<n>:MARGin <margin>

:CALCulate:LPLot:LLINe<n>:MARGin?

Description

Sets or queries the margin value of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<margin>	Real	-100 dB to 100 dB	0 dB

Return Format

The query returns the margin value of the specified limit line in real number.

Example

:CALC:LPL:LLIN1:MARG 3 /*Sets the margin value of Limit Line 1 to 3 dB.*/

:CALC:LPL:LLIN1:MARG? /*The query returns 3.*/

:CALCulate:LPLot:LLINe<n>:MARGin:STATe

Syntax

:CALCulate:LPLot:LLINe<n>:MARGin:STATe <bool>

:CALCulate:LPLot:LLINe<n>:MARGin:STATe?

Description

Sets or queries the margin state of the specified limit line.

Parameter

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

Return Format

The query returns 1 or 0.

Example

:CALC:LPL:LLIN1:MARG:STAT ON /*Enables the margin state.*/

:CALC:LPL:LLIN1:MARG:STAT? /*The query returns 1.*/

:CALCulate:LPLot:LLINe<n>:OFFSet:X

Syntax

:CALCulate:LPLot:LLINe<n>:OFFSet:X <offset>

:CALCulate:LPLot:LLINe<n>:OFFSet:X?

Description

Sets or queries the X-axis offset of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<offset>	Real	-500 GHz to 500 GHz	0

Return Format

The query returns the X-axis offset of the specified limit line in real number.

Example

:CALC:LPL:LLIN1:OFFS:X 100 /*Sets the X-axis offset to 100 Hz.*/

:CALC:LPL:LLIN1:OFFS:X? /*The query returns 100.*/

:CALCulate:LPLot:LLINe<n>:OFFSet:Y**Syntax**

:CALCulate:LPLot:LLINe<n>:OFFSet:Y <offset>

:CALCulate:LPLot:LLINe<n>:OFFSet:Y?

Description

Sets or queries the Y-axis offset of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<offset>	Real	—	0

Return Format

The query returns the Y-axis offset of the specified limit line in real number.

Example

:CALC:LPL:LLIN1:OFFS:Y 5 /*Sets the Y-axis offset of Limit Line 1 to 5 dB.*/

:CALC:LPL:LLIN1:OFFS:Y? /*The query returns 5.*/

:CALCulate:LPLot:LLINe<n>:OFFSet:UPDate**Syntax**

:CALCulate:LPLot:LLINe<n>:OFFSet:UPDate

Description

Applies the offset to the specified limit line.

Parameter

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

Return Format

N/A

Example

:CALCulate:LPLot:LLINe1:OFFSet:UPDate /*Applies the offset to Limit Line 1.*/

:CALCulate:LPLot:LLINe<n>:AMPLitude:CMODE:RELative

Syntax

:CALCulate:LPLot:LLINe<n>:AMPLitude:CMODE:RELative <bool>

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

Description

Sets or queries the type for Y to RF.

Parameter

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

Remarks

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

ON|1: "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 value. At this time, if the reference value changes, then the position of the current editing point changes along with the reference value.

Return Format

The query returns 0 or 1.

Example

:CALCulate:LPLot:LLINe2:AMPLitude:CMODE:RELative OFF

or :CALCulate:LPLot:LLINe2:AMPLitude:CMODE:RELative 0

/*Sets "Y to Ref" to Fixed for Limit Line 2.*/

:CALCulate:LPLot:LLINe2:AMPLitude:CMODE:RELative? /*The query returns 0.*/

:CALCulate:LPLot:LLINe<n>:BUILd

Syntax

:CALCulate:LPLot:LLINe<n>:BUILd <trace>

Description

Builds the limit line from the selected trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<trace>	Discrete	TRACe1 TRACe2 TRACe3	TRACe1

Example

```
:CALC:LPL:LLIN1:BUIL TRAC1 /*Builds Limit Line 1 from TRACe 1.*/
```

:CALCulate:LPLot:LLINe<n>:DESCription**Syntax**

```
:CALCulate:LPLot:LLINe<n>:DESCription <string>
```

```
:CALCulate:LPLot:LLINe<n>:DESCription?
```

Description

Sets or queries the description of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<string>	ASCII String	Refer to Remarks	—

Remarks

The length of the description cannot exceed 256 characters.

Example

```
:CALC:LPL:LLIN1:DESC "Test Limit" /*Sets the description of Limit Line 1 to "Test Limit".*/
```

```
:CALC:LPL:LLIN1:DESC? /*The query returns "Test Limit".*/
```

:CALCulate:LPLot:LLINe<n>:COMMeNT**Syntax**

```
:CALCulate:LPLot:LLINe<n>:COMMeNT <string>
```

```
:CALCulate:LPLot:LLINe<n>:COMMeNT?
```

Description

Sets or queries the comment of the specified limit line.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6	1
<string>	ASCII String	Refer to Remarks	—

Remarks

The length of the comment cannot exceed 256 characters.

Example

```
:CALC:LPL:LLIN1:COMM "Phase Noise Limit" /*Sets the comment of Limit Line 1 to "Phase Noise Limit".*/
```

```
:CALC:LPL:LLIN1:COMM? /*The query returns "Phase Noise Limit".*/
```

:CALCulate:LPLot:MARKer<n>:MODE

Syntax

:CALCulate:LPLot:MARKer<n>:MODE <mode>

:CALCulate:LPLot:MARKer<n>:MODE?

Description

Sets or queries the marker mode of the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	1
<mode>	Discrete	POSition DELTA OFF	OFF

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

:CALCulate:LPLot:MARKer1:MODE POSition /*Sets the type of Marker 1 to POSition.*/

:CALCulate:LPLot:MARKer1:MODE? /*The query returns POS.*/

:CALCulate:LPLot:MARKer<n>:REference

Syntax

:CALCulate:LPLot:MARKer<n>:REference <ref_marker>

:CALCulate:LPLot:MARKer<n>:REference?

Description

Sets or queries the reference marker of the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	1
<ref_marker>	Integer	1 to 8	Next marker

Return Format

The query returns the reference marker for the specified marker in integer.

Example

:CALCulate:LPLot:MARKer1:REference 2 /*Sets the reference marker of Marker 1 to Marker 2.*/

:CALCulate:LPLot:MARKer1:REference? /*The query returns 2.*/

:CALCulate:LPLot:MARKer<n>:X

Syntax

:CALCulate:LPLot:MARKer<n>:X <freq>

:CALCulate:LPLot:MARKer<n>:X?

Description

Sets or queries the marker X value of the specified marker.

Parameter

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

Return Format

The query returns the marker X value of the specified marker in real number. Its unit is Hz.

Example

:CALCulate:LPLot:MARKer1:X 20000 /*Sets the marker X value of Marker 1 to 20 kHz.*/

:CALCulate:LPLot:MARKer1:X? /*The query returns 20000.*/

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

:CALCulate:LPLot:MARKer<n>:Y?

Description

Queries the Y-axis value at the specified marker.

Parameter

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

Return Format

The query returns the Y-axis value at the specified marker in real number. Its unit is dBc/Hz.

Example

:CALCulate:LPLot:MARKer1:Y? /* The query returns 20000*/

:CALCulate:LPLot:MARKer<n>:TRACe**Syntax**

:CALCulate:LPLot:MARKer<n>:TRACe <trace>

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

Description

Sets or queries the marker trace for the specified marker.

Parameter

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

Remarks

<trace> indicates the marker trace. It can be set to Trace1 through Trace3.

Return Format

The query returns the marker trace number for the specified marker in integer.

Example

:CALCulate:LPLot:MARKer1:TRACe 2 /*Sets the marker trace of Marker 1 to Trace 2.*/

:CALCulate:LPLot:MARKer1:TRACe? /*The query returns 2.*/

:CALCulate:LPLot:MARKer<n>:FUNCTION

Syntax

:CALCulate:LPLot:MARKer<n>:FUNCTION <func>

:CALCulate:LPLot:MARKer<n>:FUNCTION?

Description

Sets or queries the marker function type of the specified marker.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	1
<func>	Real	OFF PMDEgree PMRADian PMDBC JITTer RFM AVERage	OFF

Remarks

OFF: disables the marker function.

PMDEgree: indicates residual PM(deg).

PMRADian: indicates residual PM(rad).

PMDBC: indicates residual PM(dBc).

JITTer: indicates jitter.

RFM: indicates Residual FM.

AVERage: indicates average noise density.

Return Format

The query returns the marker function type of the specified marker.

Example

:CALCulate:LPLot:MARKer1:FUNCTION JITTer /*Sets the marker function type of Marker 1 to JITTer.*/

:CALCulate:LPLot:MARKer1:FUNCTION? /*The query returns JITT.*/

:CALCulate:LPLot:MARKer<n>:FUNCTION:BAND:SPAN

Syntax

:CALCulate:LPLot:MARKer<n>:FUNCTION:BAND:SPAN <freq>

:CALCulate:LPLot:MARKer<n>:FUNCTION:BAND:SPAN?

Description

Sets or queries the band span of the specified marker.

Parameter

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

<freq>	Real	Start Frequency Offset - Stop Frequency Offset ^[1]	(Stop Frequency Offset - Start Frequency Offset) x 5%
--------	------	---	---

Note[1]: Ensure that the band left and band right is within the range between start frequency offset and stop frequency offset. If the band span you set is not within this range, a prompt message "Out of range" is Displayed.

Remarks

- When the band span value is modified, the band left and band right values will be updated automatically.
- When the marker function is disabled, the band span is automatically set to 0.

To set or query the start frequency offset, run the **[:SENSe]:LPLot:FREQuency:OFFSet:STARt** command;
to set or query the stop frequency offset, run the **[:SENSe]:LPLot:FREQuency:OFFSet:STOP** command.

Return Format

The query returns the band span of the specified marker in real number. Its unit is Hz.

Example

```
:CALC:LPL:MARK1:FUNC:BAND:SPAN 1000 /*Sets the band span of Marker 1 to 1 kHz.*/
:CALC:LPL:MARK1:FUNC:BAND:SPAN? /*The query returns 1000.*/
```

:CALCulate:LPLot:MARKer<n>:FUNCTION:BAND:LEFT

Syntax

```
:CALCulate:LPLot:MARKer<n>:FUNCTION:BAND:LEFT <freq>
:CALCulate:LPLot:MARKer<n>:FUNCTION:BAND:LEFT?
```

Description

Sets the left edge frequency of the signal involved in the calculation for the band function.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	1
<freq>	Real	Start Frequency Offset - Stop Frequency Offset	Marker Frequency - 5% of (Stop Frequency - Cutoff Frequency)/2

Remarks

- When the band left value is modified, the band span value will be updated automatically.
- When the marker function is disabled, the band span is automatically set to 0.
- When the marker function is disabled and band span is set to zero, the band left is set to the current center frequency.

Return Format

The query returns the left edge frequency for the band of the specified marker in real number. Its unit is Hz.

Example

```
:CALC:LPL:MARK1:FUNC:BAND:LEFT 1000 /*Sets the left edge frequency for the band of Marker 1 to 1 kHz.*/
```

:CALC:LPL:MARK1:FUNC:BAND:LEFT? /*The query returns 1000.*/

:CALCulate:LPLot:MARKer<n>:FUNCtion:BAND:RIGHT

Syntax

:CALCulate:LPLot:MARKer<n>:FUNCtion:BAND:RIGHT <freq>
:CALCulate:LPLot:MARKer<n>:FUNCtion:BAND:RIGHT?

Description

Sets the right edge frequency of the signal involved in the calculation for the band function.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4 5 6 7 8	1
<freq>	Real	Start Frequency Offset - Stop Frequency Offset	Marker Frequency + 5% of (Stop Frequency - Cutoff Frequency)/2

Remarks

- When the band left value is modified, the band span value will be updated automatically.
- When the marker function is disabled, the band span is automatically set to 0.
- When the marker function is disabled and band span is set to zero, the band right is set to the current center frequency.

Return Format

The query returns the right edge frequency for the band of the specified marker in real number. Its unit is Hz.

Example

:CALC:LPL:MARK1:FUNC:BAND:RIGHT 1000 /*Sets the right edge frequency for the band of Marker 1 to 1 kHz.*/
:CALC:LPL:MARK1:FUNC:BAND:RIGHT? /*The query returns 1000.*/

:CALCulate:LPLot:MARKer<n>:FUNCtion:RESult?

Syntax

:CALCulate:LPLot:MARKer<n>:FUNCtion:RESult?

Description

Queries the calculation results of the marker function for the specified marker.

Parameter

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

Remarks

The query returns the calculation results of the marker function for the specified marker in scientific notation. The unit is determined by the marker function type that you select.

Example

:CALCulate:LPLot:MARKer<n>:FUNCtion:RESult?/*The query returns 5.76300385056E-13.*/

:CALCulate:LPLot:MARKer<n>:SPURious:MAXimum

Syntax

:CALCulate:LPLot:MARKer<n>:SPURious:MAXimum

Description

Moves the specified marker to the max. spurious signal.

Parameter

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

Example

:CALC:LPL:MARK1:SPUR:MAX /*Moves Marker 1 to max. spurious signal.*/

:CALCulate:LPLot:MARKer<n>:SPURious:MAXimum:NEXT

Syntax

:CALCulate:LPLot:MARKer<n>:SPURious:MAXimum:NEXT

Description

Moves the specified marker to the next higher spurious signal.

Parameter

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

Example

:CALC:LPL:MARK1:SPUR:MAX:NEXT /*Moves Marker 1 to the next higher spurious signal.*/

:CALCulate:LPLot:MARKer<n>:SPURious:MAXimum:RIGHT

Syntax

:CALCulate:LPLot:MARKer<n>:SPURious:MAXimum:RIGHT

Description

Moves the specified marker to the next spurious signal to the right of the current marker position.

Parameter

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

Example

:CALC:LPL:MARK1:SPUR:MAX:RIGH /*Moves Marker 1 to the next spurious signal to the right of the current marker position.*/

:CALCulate:LPLot:MARKer<n>:SPURious:MAXimum:LEFT

Syntax

:CALCulate:LPLot:MARKer<n>:SPURious:MAXimum:LEFT

Description

Moves the specified marker to the next spurious signal to the left of the current marker position.

Parameter

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

Example

:CALC:LPL:MARK1:SPUR:MAX:LEFT /*Moves Marker 1 to the next spurious signal to the left of the current marker position.*/

:CALCulate:LPLot:SPURious:SORTmode

Syntax

:CALCulate:LPLot:SPURious:SORTmode <mode>
:CALCulate:LPLot:SPURious:SORTmode?

Description

Sets or queries the sorting mode of the spurious table.

Parameter

Name	Type	Range	Default
<mode>	Discrete	FREQ AMPL	AMPL

Remarks

- FREQ: sorted by frequency in ascending order.
- AMPL: sorted by amplitude in descending order.

Example

:CALC:LPL:SPUR:SORT FREQ /*Sorted by frequency.*/
:CALC:LPL:SPUR:SORT? /*The query returns FREQ.*/

:CALCulate:LPLot:SPURious:THReshold

Syntax

:CALCulate:LPLot:SPURious:THReshold <offset>
:CALCulate:LPLot:SPURious:THReshold?

Description

Sets or queries the spurious offset.

Parameter

Name	Type	Range	Default
<offset>	Real	0 dB to 50 dB	10 dB

Remarks

Only the value above the spurious offset can be identified as spurious.

Return Format

The query returns the spurious offset in scientific notation.

Example

```
:CALC:LPL:SPUR:THR 25 /*Sets the spurious offset to 25 dB.*/
:CALC:LPL:SPUR:THR? /*The query returns 2.5E+01.*/
```

:CALCulate:LPLot:SPURious:TABLE

Syntax

```
:CALCulate:LPLot:SPURious:TABLE <bool>
:CALCulate:LPLot:SPURious:TABLE?
```

Description

Sets or queries whether to DISPlay the spurious table.

Parameter

Name	Type	Range	Default
<bool>	Bool	ON OFF 1 0	OFF 0

Return Format

The query returns 1 or 0.

Example

```
:CALC:LPL:SPUR:TABL ON /*Enables the DISPlay of the spurious table.*/
:CALC:LPL:SPUR:TABL? /*The query returns 1.*/
```

:CALCulate:MARKer:AOff

Syntax

```
:CALCulate:MARKer:AOff
```

Description

Turns off all the enabled markers.

:CALCulate:MARKer:COUPle[:STATe]

Syntax

```
:CALCulate:MARKer:COUPle[:STATe] <bool>
:CALCulate:MARKer:COUPle[:STATe]?
```

Description

Sets or queries the marker coupling state.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Remarks

When this function enabled, moving any marker will enable other markers (except the OFF marker) to move with it.

Return Format

The query returns 0 or 1.

Example

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

/*Disables the coupling state of the marker.*/

:CALCulate:MARKer:COUPle:STATe? /*The query returns 0.*/

:CALCulate:MARKer:NEXT

Syntax

:CALCulate:MARKer:NEXT

Description

Sets the next marker.

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

Syntax

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

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

Description

Sets or queries whether to DISPlay the marker line for the specified marker.

Parameter

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

Return Format

The query returns 0 or 1.

Example

:CALCulate:MARKer1:LINEs:STATe ON or :CALCulate:MARKer1:LINEs:STATe 1 /*Enables the DISPlay of the marker line for Marker 1.*/

:CALCulate:MARKer1:LINEs:STATe? /*The query returns 1.*/

:CALCulate:MARKer:TABLE:STATe

Syntax

:CALCulate:MARKer:TABLE:STATe <bool>

:CALCulate:MARKer:TABLE:STATe?

Description

Enables or disables the DISPLAY of the marker table; queries whether the marker table is DISPLAYed.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

:CALCulate:MARKer:TABLE:STATe ON or :CALCulate:MARKer:TABLE:STATe 1

/*Enables the DISPLAY of the marker table.*/

:CALCulate:MARKer:TABLE:STATe? /*The query returns 1.*/

:CALibration Commands**:CALibration[:ALL]****Syntax**

:CALibration[:ALL]

Description

Executes self-calibration immediately.

Example

:CALibration:ALL /*Executes self-calibration immediately.*/

:CALibration:AUTO**Syntax**

:CALibration:AUTO <bool>

:CALibration:AUTO?

Description

Enables or disables auto calibration.

Queries the setting status of auto calibration.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

:CALibration:AUTO ON or :CALibration:AUTO 1 /*Enables the auto calibration.*/

:CALibration:AUTO? /*The query returns 1.*/

:CONFigure Commands

:CONFigure:CATalog?

Syntax

:CONFigure:CATalog?

Description

Queries the current measurement function.

Return Format

The query returns PNOISE.

:COUPle Commands

:COUPle

Syntax

:COUPle <enum>

Description

Enables auto coupling.

Parameter

Name	Type	Range	Default
<enum>	Discrete	ALL NONE	—

Remarks

ALL: enables auto coupling.

NONE: disables auto coupling. Couple manually.

Return Format

N/A

Example

:COUPle NONE /*Disables auto coupling function.*/

:DISPlay Commands

:DISPlay:LPLot:VIEW[:Select]

Syntax

:DISPlay:LPLot:VIEW[:Select] <view>

:DISPlay:LPLot:VIEW[:Select]?

Description

Sets or queries the current combination view.

Parameter

Name	Type	Range	Default
<view>	Discrete	NORMal DECade SPURious	NORMal

Remarks

NORMal: normal view. In this view, it DISPlays the log plot graph, DISPlaying the current noise measurement trace.

DECade: Decade view. When you set it to DECade, both log plot graph view and decade table view are DISPlayed.

SPURious: Spurious view. When you set it to SPURious, both log plot graph view and spurious table view are DISPlayed.

Return Format

The query returns NORM, DEC, or SPUR.

Example

:DISP:LPL:VIEW NORMal /*Sets the combination view to NORMal.*/

:DISP:LPL:VIEW? /*The query returns NORM.*/

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:RLEVel

Syntax

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <ampl>

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

Description

Sets or queries the reference value in the log plot graph.

Parameter

Name	Type	Range	Default
<ampl>	Real	-200 dBc/Hz to 200 dBc/Hz	-70 dBc/Hz

Return Format

The query returns the reference value in real number. The default unit is dBc/Hz.

Example

:DISP:LPL:WIND1:TRAC:Y:RLEV 0 /*Sets the reference value in log plot graph to 0 dBc/Hz.*/

:DISP:LPL:WIND1:TRAC:Y:RLEV? /*The query returns 0.*/

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

Syntax

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <div>

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

Description

Sets or queries the scale per division in the log plot graph.

Parameter

Name	Type	Range	Default
<div>	Real	0.1 dB to 20 dB	10 dB

Return Format

The query returns the Y-axis scale value in real number.

Example

:DISP:LPL:WIND1:TRAC:Y:PDIV 10 /*Sets the scale/div value to 10 dB.*/

:DISP:LPL:WIND1:TRAC:Y:PDIV? /*The query returns 10.*/

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:COUPle

Syntax

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:COUPle <bool>

:DISPlay:LPLot:WINDow[1]:TRACe:Y[:SCALe]:COUPle?

Description

Sets or queries whether to enable the auto scaling function.

Parameter

Name	Type	Range	Default
<bool>	Bool	ON OFF 1 0	OFF

Return Format

The query returns 1 or 0.

Example

:DISP:LPL:WIND1:TRAC:Y:COUP ON /*Enables the auto scaling function.*/

:DISP:LPL:WIND1:TRAC:Y:COUP? /*The query returns 1.*/

:DISPlay:SFRequency:VIEW[:Select]

Syntax

:DISPlay:SFRequency:VIEW[:Select] <view>

:DISPlay:SFRequency:VIEW[:Select]?

Description

Sets or queries the current combination view.

Parameter

Name	Type	Range	Default
<view>	Discrete	GRAPh TABLe	GRAPh

Remarks

- GRAPh: Single-point measurement graph view
- TABLe: Single-point measurement table view

Return Format

The query returns GRAP or TABL.

Example

```
:DISP:SFR:VIEW TABLe /*Sets the combination view to TABLe.*/
:DISP:SFR:VIEW? /*The query returns TABL.*/
```

:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:RLEVel

Syntax

```
:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <ampl>
:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
```

Description

Sets or queries the reference value for single-point measurement.

Parameter

Name	Type	Range	Default
<ampl>	Real	-200 dBc/Hz to 200 dBc/Hz	-70 dBc/Hz

Return Format

The query returns the reference value in real number. The default unit is dBc/Hz.

Example

```
:DISP:SFR:WIND1:TRAC:Y:RLEV 0 /*Sets the reference value to 0 dBc/Hz.*/
:DISP:SFR:WIND1:TRAC:Y:RLEV? /*The query returns 0.*/
```

:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

Syntax

```
:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <div>
:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
```

Description

Sets or queries the scale per division for single-point measurement..

Parameter

Name	Type	Range	Default
<div>	Real	0.1 dB to 20 dB	10 dB

Return Format

The query returns the Y-axis scale value in real number.

Example

```
:DISP:SFR:WIND1:TRAC:Y:PDIV 10 /*Sets the scale/div value to 10 dB.*/
:DISP:SFR:WIND1:TRAC:Y:PDIV? /*The query returns 10.*/
```

:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:COUPle

Syntax

:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:COUPle <bool>

:DISPlay:SFRequency:WINDow[1]:TRACe:Y[:SCALe]:COUPle?

Description

Sets or queries whether to enable the Y-axis auto scaling function for single-point measurement.

Parameter

Name	Type	Range	Default
<bool>	Bool	ON OFF 1 0	OFF

Return Format

The query returns 1 or 0.

Example

:DISP:SFR:WIND1:TRAC:Y:COUP ON /*Enables the auto scaling function.*/

:DISP:SFR:WIND1:TRAC:Y:COUP? /*The query returns 1.*/

:FETCh Commands

:FETCh:SFRequency

Syntax

:FETCh:SFRequency <n>?

Description

Queries the single-point measurement result data.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2	1

Remarks

- If n is omitted or n=1, four values are returned: Carrier Power, Carrier Frequency, Current Single-point Measured Value, Average Single-point Measured Value.
- When n=2: Returns the 101-point trace of single-point measurement.

Return Format

The query returns measurement result data in string format, with values separated by commas.

Example

:FETCh:SFR2? /* Query single-point measurement trace data */

:FETCh:LPLot[n]?

Syntax

:FETCh:LPLot[n]?

Description

Retrieves phase noise (LPLot) measurement results. Depending on the parameter *n*, it returns scalar summary values, trace point counts, trace data, decade frequency table data, or spurious emission detection results.

Parameter

Name	Type	Range	Default
<n>	Integer	1~8	1

Remarks

- **If *n* is unspecified or *n*=1:** Returns 7 comma-separated scalar values in the following order:
 - Carrier Power (dBm)
 - Carrier Frequency (Hz)
 - RMS phase noise of the full smoothed trace (degrees)
 - RMS phase noise of the full smoothed trace (radians)
 - Residual FM of the full smoothed trace (Hz)
 - Spot noise at the start offset frequency (dBc/Hz)
 - Spot noise at the stop offset frequency (dBc/Hz)
- ***n*=2:** Returns 3 comma-separated scalar values in the following order:
 - Number of X-Y data points for Trace 1
 - Number of X-Y data points for Trace 2
 - Number of X-Y data points for Trace 3
- ***n*=3:** Returns the data point list of Trace 1 (comma-separated). The number of data points depends on the implementation and measured frequency range, which can be queried via the command :FETCh:LPLot2?.
- ***n*=4:** Returns the data point list of Trace 2 (comma-separated). The number of data points depends on the implementation and measured frequency range, which can be queried via the command :FETCh:LPLot2?.
- ***n*=5:** Returns the data point list of Trace 3 (comma-separated). The number of data points depends on the implementation and measured frequency range, which can be queried via the command :FETCh:LPLot3?.
- ***n*=6:** Returns a data point list of each trace amplitude at every decade offset frequency (comma-separated). The return sequence is: Frequency Offset, Amplitude of Trace 1 (Yellow), Amplitude of Trace 2 (Cyan), Amplitude of Trace 3 (Magenta). SCPI_NAN (Not a Number) is returned for non-existent traces or uncovered frequency points. Total number of values = Number of decades × 4 + 4.

- **n=7:** Returns the total number of detected spurious signals.
- **n=8:** Returns the list of detected spurious signal values (comma-separated). The return sequence is: Spur 1 Frequency, Spur 1 Amplitude, Spur 1 Jitter, Spur 2 Frequency, Spur 2 Amplitude, Spur 2 Jitter, and so on.

Return Format

The query returns phase noise measurement results in string format, with individual data items separated by commas.

Example

```
:FETCh:LPLot? /* Read scalar results such as carrier and integrated noise (equivalent to n=1) */
:FETCh:LPLot1? /* Read scalar results such as carrier and integrated noise */
:FETCh:LPLot2? /* Query the number of data points for each trace */
:FETCh:LPLot3? /* Read Trace 1 data */
:FETCh:LPLot6? /* Read decade frequency table data */
:FETCh:LPLot7? /* Query the quantity of spurious signals */
:FETCh:LPLot8? /* Read spurious signal list */:FETCh:LPLot8?
```

IEEE 488.2 Common Commands

IEEE 488.2 common commands are used to operate or query the status registers.

*CLS

Syntax

*CLS

Description

Clears all the event registers and status byte registers.

*ESE

Syntax

*ESE <value>

*ESE?

Description

Sets or queries the enable register of the standard event status register.

Parameter

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

Remarks

The 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 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,RSA814,RSA8004000000,00.00.25.
*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 or queries the enable register of 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?

*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

:INITiate:CONTinuous

Syntax

:INITiate:CONTinuous <bool>
 :INITiate:CONTinuous?

Description

Selects continuous (ON|1) or single (OFF|0) measurement mode.
 Queries the current measurement mode.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

```
:INITiate:CONTinuous ON or :INITiate:CONTinuous 1 /*Performs continuous measurement.*/  
:INITiate:CONTinuous? /*The query returns 1.*/
```

:INITiate[:IMMediate]

Syntax

:INITiate[:IMMediate]

Description

Initializes one sweep in the non-measurement state. Triggers one measurement in the measurement state.

:INITiate:REStart

Syntax

:INITiate:REStart

Description

Restarts to initiate a sweep.

:INSTrument Commands

:INSTrument:SCReen:CATalog?

Syntax

:INSTrument:SCReen:CATalog?

Description

Queries the available measurement modes DISPlayed at the bottom of the screen.

:INSTrument:SCReen:CREate

Syntax

:INSTrument:SCReen:CREate

Description

Creates a new measurement mode label at the bottom of the screen.

:INSTrument:SCReen:DELeTe

Syntax

:INSTrument:SCReen:DELeTe

Description

Deletes the currently selected measurement mode label at the bottom of the screen.

:INSTrument:SCReen:DELeTe:ALL

Syntax

:INSTrument:SCReen:DELeTe:ALL

Description

Deletes all the currently not selected measurement mode label at the bottom of the screen.

:INSTrument:SCReen:SELeCt

Syntax

:INSTrument:SCReen:SELeCt <name>

:INSTrument:SCReen:SELeCt?

Description

Switches to the specified screen.

Queries the currently selected screen.

Parameter

Name	Type	Range	Default
<name>	ASCII String	The label can contain English letters and numbers, as well as some symbols.	_____

Remarks

You can run the *:INSTrument:SCReen:CATalog?* command to query the measurement mode label name.

Example

:INSTrument:SCReen:SELeCt PhaseNoise 1 /*Switches to the screen PhaseNoise 1.*/

:INSTrument:SCReen:SELeCt?/*The query returns PhaseNoise 1.*/

:INSTrument[:SELeCt]

Syntax

:INSTrument[:SELeCt] <enum>

:INSTrument[:SELeCt]?

Description

Selects the working mode of the instrument.

Queries the working mode of the instrument.

Parameter

Name	Type	Range	Default
<enum>	Discrete	SA GPSA_TG RTSA RTSA_UFS GPSA_ACP GPSA_CNR GPSA_CHPower GPSA_TOI GPSA_HARModist GPSA_OBW GPSA_TPOWer EMI VSA AM FM PM PNOISE	SA

Remarks

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

```
:INSTrument:SELEct PNOISE /*Sets the instrument to work in PNOISE mode.*/  
:INSTrument:SELEct? /*The query returns PNOISE.*/
```

:LAN Commands

:LAN:DHCP

Syntax

```
:LAN:DHCP <bool>  
:LAN:DHCP?
```

Description

Turns on or off the DHCP configuration mode; or queries the on/off status of the current DHCP configuration mode.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	ON 1

Remarks

When the three IP configuration types (DHCP, Auto IP, and Static IP) are all turned on, the priority of the parameter configuration from high to low is "DHCP", "Auto IP", and "Static IP".

When DHPC is valid, the DHCP server in the current network will assign the network parameters (such as the IP address) for the oscilloscope.

After the :LAN:APPLY command is executed, the configuration type can take effect immediately.

Return Format

The query returns 1 or 0.

Example

```
:LAN:DHCP OFF /*Disables DHCP configuration mode.*/  
:LAN:DHCP? /*The query returns 0.*/
```

:LAN:AUTOip

Syntax

```
:LAN:AUTOip <bool>  
:LAN:AUTOip?
```

Description

Turns on or off the Auto IP configuration mode; or queries the on/off status of the current Auto IP configuration mode.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	ON 1

Remarks

When the auto IP mode is valid, disable DHCP manually. In Auto IP mode, the instrument gets the IP address (ranging from 169.254.0.1 to 169.254.255.254) and the subnet mask (255.255.0.0) automatically according to the current network configuration.

Return Format

The query returns 1 or 0.

Example

```
:LAN:AUTOip OFF /*Disables the Auto IP configuration mode.*/
:LAN:AUTOip? /*The query returns 0.*/
```

:LAN:MANual

Syntax

```
:LAN:MANual <bool>
:LAN:MANual?
```

Description

Turns on or off the static IP configuration mode; or queries the on/off status of the static IP configuration mode.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Remarks

When the static IP mode is valid, disable DHCP and Auto IP manually. You can self-define the network parameters of the oscilloscope, such as IP address, subnet mask, gateway, and DNS address. For the setting of the IP address, refer to the :LAN:IPADdress command. For the setting of the subnet mask, refer to the :LAN:SMASk command. For the setting of the gateway, refer to the :LAN:GATeway command. For the setting of DNS, refer to the :LAN:DNS command.

Return Format

The query returns 1 or 0.

Example

```
:LAN:MANual ON /*Enables the static IP configuration mode.*/
:LAN:MANual? /*The query returns 1.*/
```

:LAN:IPADdress

Syntax

:LAN:IPADdress <string>

:LAN:IPADdress?

Description

Sets or queries the IP address of the instrument.

Parameter

Name	Type	Range	Default
<string>	ASCII String	Refer to " Remarks "	—

Remarks

The format of the <string> is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) of the address is from 0 to 223 (except 127); and the range for the other three segments is from 0 to 255.

Only when the IP configuration mode is static IP and both DHCP and Auto IP are disabled, can you use the set IP address.

Return Format

The query returns the current IP address in strings.

Example

:LAN:IPADdress 192.168.1.10 /*Sets the IP address to 192.168.1.10.*/

:LAN:IPADdress? /*The query returns 192.168.1.10.*/

:LAN:SMASK**Syntax**

:LAN:SMASK <string>

:LAN:SMASK?

Description

Sets or queries the subnet mask.

Parameter

Name	Type	Range	Default
<string>	ASCII String	Refer to " Remarks "	—

Remarks

The format of the <string> is "nnn.nnn.nnn.nnn". The range for each segment (nnn) is from 0 to 255.

Only when the IP configuration mode is static IP and both DHCP and Auto IP are disabled, can you use the set subnet mask.

Return Format

The query returns the current subnet mask in strings.

Example

:LAN:SMASK 255.255.255.0 /*Sets the subnet mask to 255.255.255.0.*/

:LAN:SMASK? /*The query returns 255.255.255.0.*/

:LAN:GATeway

Syntax

:LAN:GATeway <string>
:LAN:GATeway?

Description

Sets or queries the default gateway.

Parameter

Name	Type	Range	Default
<string>	ASCII String	Refer to " Remarks "	——

Remarks

The format of the<string> is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) of the address is from 0 to 223 (except 127); and the range for the other three segments is from 0 to 255.
Only when the IP configuration mode is static IP and both DHCP and Auto IP are disabled, can you use the set default gateway.

Return Format

The query returns the current gateway in strings.

Example

:LAN:GATeway 192.168.1.1 /*Sets the default gateway to 192.168.1.1.*/
:LAN:GATeway? /*The query returns 192.168.1.1.*/

:LAN:DNS

Syntax

:LAN:DNS <string>
:LAN:DNS?

Description

Sets or queries the DNS address.

Parameter

Name	Type	Range	Default
<string>	ASCII String	Refer to " Remarks "	——

Remarks

The format of the<string> is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) of the address is from 0 to 223 (except 127); and the range for the other three segments is from 0 to 255.
Only when the IP configuration mode is static IP and both DHCP and Auto IP are disabled, can you use the set DNS.

Return Format

The query returns the current DNS address in strings.

Example

:LAN:DNS 192.168.1.1 /*Sets the DNS address to 192.168.1.1.*/
:LAN:DNS? /*The query returns 192.168.1.1.*/

:LAN:MAC?

Syntax

:LAN:MAC?

Description

Queries the MAC address.

Return Format

The query returns the MAC address in strings. For example, 00:19:AF:00:11:22.

:LAN:DSERver?

Syntax

:LAN:DSERver?

Description

Queries the DHCP server address.

Return Format

The query returns the DHCP server address in strings.

:LAN:STATus?

Syntax

:LAN:STATus?

Description

Queries the current network configuration status.

Remarks

- UNLINK: Not connected!
- CONNECTED: Connected successfully.
- INIT: acquiring IP address.
- IPCONFLICT: IP conflicted.
- BUSY: please wait...
- CONFIGURED: network configuration succeeded.
- DHCPFAILED: DHCP configuration failed.
- INVALIDIP: invalid IP.
- IPLOSE: IP lost.

Return Format

The query returns UNLINK, CONNECTED, INIT, IPCONFLICT, BUSY, CONFIGURED, DHCPFAILED, INVALIDIP, or IPLOSE.

:LAN:VISA?

Syntax

:LAN:VISA? [<type>]



Description

Queries the VISA address of the instrument.

Parameter

Name	Type	Range	Default
<type>	Discrete	{USB LXI}	—

Remarks

This command contains a parameter "type" and it is used to set or query the address type. By default, it returns the LXI address.

Return Format

The query returns the VISA address in strings.

:LAN:MDNS

Syntax

:LAN:MDNS <bool>

:LAN:MDNS?

Description

Enables or disables mDNS; or queries the mDNS status.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

:LAN:MDNS ON /*Enables mDNS.*/

:LAN:MDNS? /*The query returns 1.*/

:LAN:APPLy

Syntax

:LAN:APPLy

Description

Applies the network configuration.

Remarks

After configuring the LAN parameters, run this command to apply the LAN settings.

:LAN:HOST:NAME

Syntax

:LAN:HOST:NAME <name>

:LAN:HOST:NAME?

Description

Sets or queries the host name.

Parameter

Name	Type	Range	Default
<name>	ASCII String	The label can contain English letters and numbers, as well as some symbols.	—

Return Format

The query returns the host name in ASCII strings.

:LAN:DESCRiption**Syntax**

:LAN:DESCRiption <name>

:LAN:DESCRiption?

Description

Sets or queries the description.

Parameter

Name	Type	Range	Default
<name>	ASCII String	The label can contain English letters and numbers, as well as some symbols.	—

Return Format

The query returns the description in ASCII strings.

:MMEMory Commands**:MMEMory:STORe:STATe****Syntax**

:MMEMory:STORe:STATe <file_name>

Description

Saves the current instrument state as a file with the specified file name suffixed with "*.sta" to the default path (/pnoise/state).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	—	—

Remarks

If the specified file already exists, overwrite it.

Example

:MMEMory:STORe:STATe state /*Saves the current instrument state as a file named state.sta to the /pnoise/state folder.*/

:MMEMory:STORe:TRACe

Syntax

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

Description

Saves the specified trace and instrument state as a file with the specified file name suffixed with ".trs" to the default path (/pnoise/trace).

Parameter

Name	Type	Range	Default
<label>	Discrete	TRACE1 TRACE2 TRACE3	—
<file_name>	ASCII String	—	—

Remarks

If the specified file already exists, overwrite it.

Example

:MMEMory:STORe:TRACe TRACE1,mydata
/*Saves Trace 1 data and instrument state as a file with the file name mydata.trs to the default path (/pnoise/trace).*/

:MMEMory:STORe:TRACe:DATA

Syntax

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

Description

Saves the trace measurement data as a file with the specified file name suffixed with ".csv" to the default path (/pnoise/measdata).

Parameter

Name	Type	Range	Default
<label>	Discrete	TRACE1 TRACE2 TRACE3	—
<file_name>	ASCII String	—	—

Remarks

If the specified file already exists, overwrite it.

Example

:MMEMory:STORe:TRACe:DATA TRACE1,mydata
/*Saves the Trace1 measurement data as a file with the file name mydata.csv to the default path (/pnoise/measdata).*/

:MMEMory:STORe:CORRection

Syntax

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

Description

Saves the amplitude correction data of the current limit line with the specified filename suffixed with ".csv" by default (you do not have to add the suffix manually) to the default path (/pnoise/correction).

Parameter

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

Remarks

If the specified file already exists, overwrite it.

Example

:MMEMory:STORe:CORRection LLINE1,low

Saves the amplitude correction data of Limit Line 1 with the filename "low" to the /pnoise/correction folder.*/

:MMEMory:STORe:LIMit

Syntax

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

Description

Saves the currently edited limit line with the specified filename suffixed with ".csv" by default (you do not have to add the suffix manually) to the default path (/pnoise/limit).

Parameter

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

Remarks

If the specified file already exists, overwrite it.

Example

:MMEMory:STORe:LIMit LLINE1,low

/*Saves the Limit Line 1 data with the filename "low" to the /pnoise/limit folder.*/

:MMEMory:STORe:IMG:PNG

Syntax

:MMEMory:STORe:IMG:PNG <path>

Description

Saves the screen image to the specified path.

Parameter

Name	Type	Range	Default
<file>	ASCII String	—	—

:MMEMory:STORe:SCReen

Syntax

:MMEMory:STORe:SCReen <file>

Description

Saves the current screenshot as a file with the specified file name suffixed with "*.jpg", "*.png", or "*.bmp" to the default path (/pnoise/screen).

Parameter

Name	Type	Range	Default
<file>	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

:MMEMory:STORe:SCReen screen.jpg

/*Saves the current screenshot as a file with the file name screen.jpg to the /pnoise/screen folder.*/

:MMEMory:STORe:MTABLe

Syntax

:MMEMory:STORe:MTABLe <file_name>

Description

Saves the marker table with a specified filename suffixed with ".csv" by default (you do not have to add the suffix manually) to the default path (/pnoise/measdata).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	—	—

Remarks

If the specified file already exists, overwrite it.

Example

The following command saves the marker table with the specified filename "MAK1" to the folder (/pnoise/measdata).

:MMEMory:STORe:MTABle MAK1

:MMEMory:STORe:PTABle

Syntax

:MMEMory:STORe:PTABle <file_name>

Description

Saves the peak table with a specified filename suffixed with ".csv" by default (you do not have to add the suffix manually) to the default path (/pnoise/measdata).

Parameter

Name	Type	Range	Default
<file_name>	ASCII String	—	—

Remarks

If the specified file already exists, overwrite it.

Example

The following command saves the spurious table with the specified filename "PT1" to the folder (/pnoise/measdata).

:MMEMory:STORe:PTABle PT1

:MMEMory:STORe:SCReen:DATA?

Syntax

:MMEMory:STORe:SCReen:DATA?

Description

Saves the screen data.

:MMEMory:STORe:STATe?

Syntax

:MMEMory:STORe:STATe?

Description

Obtains the status register.

:MMEMory:LOAD:STATe

Syntax

:MMEMory:LOAD:STATe <file_name>

Description

Loads the specified state file suffixed with "*.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

```
:MMEMory:LOAD:STATe state1.sta /*Loads the state file named state1.sta to the instrument.*/
```

:MMEMory:LOAD:TRACe

Syntax

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

Description

Loads the specified trace+state file (suffixed with .trs).

Parameter

Name	Type	Range	Default
<label>	Discrete	TRACE1 TRACE2 TRACE3	—
<file_name>	ASCII String	—	—

Remarks

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

Example

```
:MMEMory:LOAD:TRACe TRACE1,mydata,trs
/*Loads the trace+state file named mydata.trs to Trace 1.*/
```

: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>	Discrete	TRACE1 TRACE2 TRACE3	—
<file_name>	ASCII String	—	—

Remarks

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

Example

```
:MMEMory:LOAD:TRACe:DATA TRACE1,measdata1.csv
```

```
/*Loads the measurement data file named trace1.csv to Trace 1.*/
```

:MMEMory:LOAD:LIMit

Syntax

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

Description

Loads the edited limit line file (.csv).

Parameter

Name	Type	Range	Default
<label>	Discrete	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

```
:MMEMory:LOAD:LIMit LLINE1,limlt1.csv
```

```
/*Loads the limit line file limlt1.csv to Limit Line 1.*/
```

:MMEMory:LOAD:CORRection

Syntax

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

Description

Loads the amplitude correction data of the specified file suffixed with "*.csv".

Parameter

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

Remarks

The parameter <label> indicates the amplitude correction type. 1 indicates Antenna, 2 indicates Cable, 3 indicates Others, and 4 indicates User.

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

Example

```
:MMEMory:LOAD:CORRection 1,correction1.csv
```

```
/*Loads the antenna amplitude correction file correction1.csv to the instrument.*/
```



:MMEMory:USER:STORE

Syntax

:MMEMory:USER:STORE <user>

:MMEMory:USER:STORE?

Description

Sets or queries the preset file.

Parameter

Name	Type	Range	Default
<user>	Discrete	DEF USER1 USER2 USER3 USER4 USER5 USER6	DEF

Example

:MMEMory:USER:STORE USER1 /*Sets the preset file to USER1.*/

:MMEMory:USER:STORE? /*The query returns USER1.*/

[::SENSe] Commands

[::SENSe]:AVERage:COUNT

Syntax

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

Description

Sets or queries the trace average count of the current measurement.

Parameter

Name	Type	Range	Default
<integer>	Integer	1 to 1000	10

Return Format

The query returns the number of average times in integer.

Example

```
::SENSe:AVERage:COUNT 100 /*Sets the average count to 100.*/
::SENSe:AVERage:COUNT? /*The query returns 100.*/
```

[::SENSe]:AVERage:COUNT:CURRent?

Syntax

```
[::SENSe]:AVERage:COUNT:CURRent?
```

Description

Queries the current average times of the average trace.

Return Format

The query returns the trace average count that has been executed in integer.

[::SENSe]:AVERage[:STATe]

Syntax

```
[::SENSe]:AVERage[:STATe] <bool>
[::SENSe]:AVERage[:STATe]?
```

Description

Sets or queries the average state.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

```
:SENSe:AVERage:STATe ON or :SENSe:AVERage:STATe 1 /*Enables the average state.*/
:SENSe:AVERage:STATe? /*The query returns 1.*/
```

[[:SENSe]:AVERage:TCONtrol]

Syntax

```
[[:SENSe]:AVERage:TCONtrol <enum>
[:SENSe]:AVERage:TCONtrol?
```

Description

Sets or queries the average mode.

Parameter

Name	Type	Range	Default
<enum>	Discrete	EXPonential REPeat	—

Remarks

EXPonential: indicates the exponential average mode.

REPeat: indicates the repeated average mode.

Return Format

The query returns EXP or REP.

Example

```
:SENSe:AVERage:TCONtrol REPeat /*Sets the average mode to REPeat.*/
:SENSe:AVERage:TCONtrol? /*The query returns REP.*/
```

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

Syntax

```
[[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude] <enum>
[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude]?
```

Description

Sets or queries the input impedance. The unit is Ω .

Parameter

Name	Type	Range	Default
<enum>	Discrete	50 75	50

Remarks

If the output impedance of the system under test 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

:SENSe:CORRection:IMPedance:INPut:MAGNitude 75 /*Sets the input impedance to 75 Ω.*/
 :SENSe:CORRection:IMPedance:INPut:MAGNitude? /*The query returns 75.*/

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

Syntax

[:SENSe]:CORRection:SA[:RF]:GAIN <rel_amp>
 [:SENSe]:CORRection:SA[:RF]:GAIN?

Description

Sets or queries the external gain.

Parameter

Name	Type	Range	Default
<rel_amp>	Real	-120 dB to 120 dB	0 dB

Return Format

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

Example

:SENSe:CORRection:SA:RF:GAIN 20 /*Sets the external gain to 20 dB.*/
 :SENSe:CORRection:SA:RF:GAIN? /*The query returns 2.0E +01.*/

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

Syntax

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

Description

Sets or queries whether the correction function is enabled.

Parameter

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

Remarks

The parameter <n> sets the amplitude correction type. 1 indicates Antenna, 2 indicates Cable, 3 indicates Other, and 4 indicates User.

Return Format

The query returns 0 or 1.

Example

:SENSe:CORRection:CSET1:STATe 1 or :SENSe:CORRection:CSET1:STATe ON
 /*Enables the antenna amplitude correction.*/
 :SENSe:CORRection:CSET1:STATe? /*The query returns 1.*/

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

Syntax

```
[:SENSe]:CORRection:CSET<n>:DESCRiption <string>
[:SENSe]:CORRection:CSET<n>:DESCRiption?
```

Description

Sets or queries the description of the amplitude correction.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	—
<string>	ASCII String	The label can contain English letters and numbers, as well as some symbols.	—

Remarks

The parameter <n> sets the amplitude correction type. 1 indicates Antenna, 2 indicates Cable, 3 indicates Other, and 4 indicates User.

Return Format

The query returns the amplitude correction description in ASCII strings.

Example

```
:SENSe:CORRection:CSET1:DESCRiption Rigol /*Sets the description of the antenna amplitude
correction to Rigol.*/
:SENSe:CORRection:CSET1:DESCRiption? /*The query returns Rigol.*/
```

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

Syntax

```
[:SENSe]:CORRection:CSET<n>:COMMeNt <string>
[:SENSe]:CORRection:CSET<n>:COMMeNt?
```

Description

Sets or queries the comment of the amplitude correction.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	—
<string>	ASCII String	The label can contain English letters and numbers, as well as some symbols.	—

Remarks

The parameter <n> sets the amplitude correction type. 1 indicates Antenna, 2 indicates Cable, 3 indicates Other, and 4 indicates User.

Return Format

The query returns the comment of the amplitude correction in strings.

Example

```
:SENSe:CORRection:CSET1:COMMeNt Rigol /*Sets the comment of the antenna amplitude
correction to Rigol.*/
```

:SENSe:CORRection:CSET1:COMMeNt? /*The query returns Rigol.*/*

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

Syntax

[:SENSe]:CORRection:CSET<n>:X:SPACing <enum>
[:SENSe]:CORRection:CSET<n>:X:SPACing?

Description

Sets or queries the type of the frequency interpolation of the specified amplitude correction.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	—
<enum>	Discrete	LINear LOG	LINear

Remarks

The parameter <n> sets the amplitude correction type. 1 indicates Antenna, 2 indicates Cable, 3 indicates Other, and 4 indicates User.

LINear: linear type.

LOG: log type.

Return Format

The query returns LIN or LOG.

Example

:SENSe:CORRection:CSET1:X:SPACing LOG

/*Sets the type of the frequency interpolation of the antenna amplitude correction is LOG.*/*

:SENSe:CORRection:CSET1:X:SPACing ?/*The query returns LOG.*/*

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

Syntax

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

Description

Sets or queries the amplitude correction points in the table.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	—
<string>	ASCII String	The label can contain English letters and numbers, as well as some symbols.	—

Remarks

The parameter <n> sets the amplitude correction type. 1 indicates Antenna, 2 indicates Cable, 3 indicates Other, and 4 indicates User.

Return Format

The query returns the data in the amplitude correction table in ASCII strings.

Example

```
:SENSe:CORRection:CSET1:DATA 5,2
```

/*Sets a group of data in the antenna amplitude correction table to 5 Hz frequency and 2 dB amplitude.*/

```
:SENSe:CORRection:CSET1:DATA? /*The query returns 5.000000000000000e+00,2.000000.*/
```

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

Syntax

```
[:SENSe]:CORRection:CSET<n>:DATA:MERG <string>
```

Description

Merges the amplitude correction.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3 4	—
<string>	ASCII String	The label can contain English letters and numbers, as well as some symbols.	—

Remarks

The parameter <n> sets the amplitude correction type. 1 indicates Antenna, 2 indicates Cable, 3 indicates Other, and 4 indicates User.

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

Syntax

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

Description

Deletes the single amplitude correction data.

Remarks

The parameter <n> sets the amplitude correction type. 1 indicates Antenna, 2 indicates Cable, 3 indicates Other, and 4 indicates User.

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

Syntax

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

Description

Delete all amplitude correction data.

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

Syntax

```
[[:SENSe]:CORRection:CSET:ALL[:STATe] <bool>
[:SENSe]:CORRection:CSET:ALL[:STATe]?
```

Description

Sets or queries whether to apply all the corrections.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

```
:SENSe:CORRection:CSET:ALL:STATe 1 or :SENSe:CORRection:CSET:ALL:STATe ON
/*Enables applying all the corrections.*/
:SENSe:CORRection:CSET:STATe? /*The query returns 1.*/
```

[[:SENSe]:CORRection:CSET[:ID]

Syntax

```
[[:SENSe]:CORRection:CSET[:ID] <enum>
[:SENSe]:CORRection:CSET[:ID]?
```

Description

Sets or queries the type of the amplitude correction.

Parameter

Name	Type	Range	Default
<enum>	Discrete	OFF ANTENna CABLE OTHEr USER	—

Remarks

ANTENna: Antenna.

CABLE: Cable.

OTHEr: Other.

USER: indicates user-defined.

Return Format

The query returns ANTE, CABL, OTHE, or USER.

Example

```
:SENSe:CORRection:CSET:ID OTHER /*Sets the type of the amplitude correction to OTHER.*/
:SENSe:CORRection:CSET:ID? /*The query returns OTHE.*/
```

[[:SENSe]:CARRier:THReshold:MINimum

Syntax

```
[[:SENSe]:CARRier:THReshold:MINimum <amptd>
[:SENSe]:CARRier:THReshold:MINimum?
```

Description

Sets or queries the min. carrier level.

Parameter

Name	Type	Range	Default
<amptd>	Real	-200 dBm to 30 dBm	-50 dBm

Remarks

When the carrier power is below this value, the measurement may be incorrect.

Return Format

The query returns the min. carrier level in scientific notation.

Example

```
:SENS:CARR:THR:MIN -40      /*Sets the min. carrier level to -40 dBm.*/
:SENS:CARR:THR:MIN?         /*The query returns -4.0E+01.*/
```

[[:SENSe]:FREQuency:CARRier

Syntax

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

Description

Sets or queries the nominal frequency of the phase noise measurement.

Parameter

Name	Type	Range	Default
<freq>	Real	5 kHz to $F_{\max}$	1 GHz

Remarks

- $F_{\max}$ is determined by the instrument model.
- When the signal track is enabled, the nominal frequency will be automatically adjusted based on the signal.

Return Format

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

Example

```
:SENS:FREQ:CARR 20      /*Sets the nominal frequency to 20 Hz.*/
:SENS:FREQ:CARR?        /*The query returns 2.0E+01.*/
```

[[:SENSe]:FREQuency:CARRier:TRACk[:STATe]

Syntax

```
[[:SENSe]:FREQuency:CARRier:TRACk[:STATe] <bool>
[:SENSe]:FREQuency:CARRier:TRACk[:STATe]?
```

Description

Sets or queries whether to enable the signal track function.

Parameter

Name	Type	Range	Default
<bool>	Bool	ON OFF 1 0	OFF 0

Remarks

When the signal track function is enabled, the analyzer will track the signal frequency changes automatically.

Example

:FREQ:CARR:TRAC ON /*Enables the signal track function.*/

:FREQ:CARR:TRAC? /*The query returns 1.*/

[[:SENSe]:FREQuency:VERify:TOLerance:ABSolute

Syntax

[[:SENSe]:FREQuency:VERify:TOLerance:ABSolute <freq>

[[:SENSe]:FREQuency:VERify:TOLerance:ABSolute?

Description

Sets or queries the absolute frequency tolerance in the signal verification.

Parameter

Name	Type	Range	Default
<freq>	Real	1 Hz to 1 GHz	1 kHz

Return Format

The query returns the absolute frequency tolerance in scientific notation. Its unit is Hz.

Example

:SENS:FREQ:VER:TOL:ABS 1000 /*Sets the absolute frequency tolerance to 1 kHz.*/

:SENS:FREQ:VER:TOL:ABS? /*The query returns 1.0E+03.*/

[[:SENSe]:FREQuency:VERify:TOLerance[:RELative]

Syntax

[[:SENSe]:FREQuency:VERify:TOLerance[:RELative] <percent>

[[:SENSe]:FREQuency:VERify:TOLerance[:RELative]?

Description

Sets or queries the relative frequency tolerance in the signal verification, expressed in percentage.

Parameter

Name	Type	Range	Default
<percent>	Real	1% to 100%	10%

Return Format

The query returns the relative frequency tolerance in scientific notation. The unit is %.

Example

```
:SENS:FREQ:VER:TOL: 0.5 /*Sets the relative frequency tolerance to 0.5%.*/
:SENS:FREQ:VER:TOL? /*The query returns 5.0E-01.*/
```

[:SENSe]:FREQuency:VERify[:STATe]

Syntax

```
[:SENSe]:FREQuency:VERify[:STATe] <bool>
[:SENSe]:FREQuency:VERify[:STATe]?
```

Description

Sets or queries whether to enable the frequency verification.

Parameter

Name	Type	Range	Default
<bool>	Bool	ON OFF 1 0	OFF 0

Return Format

The query returns 1 or 0.

Example

```
:SENS:FREQ:VER ON /*Enables the frequency verification.*/
:SENS:FREQ:VER? /*The query returns 1.*/
```

[:SENSe]:LPLot:FREQuency:OFFSet:STARt

Syntax

```
[:SENSe]:LPLot:FREQuency:OFFSet:STARt <freq>
[:SENSe]:LPLot:FREQuency:OFFSet:STARt?
```

Description

Sets or queries the start frequency offset for the log plot graph.

Parameter

Name	Type	Range	Default
<freq>	Real	10 Hz to (max. stop frequency offset/10)	30 MHz

Remarks

- The max. start frequency offset is (max. stop frequency offset/10). If the start frequency offset is greater than the stop frequency offset, then the stop frequency offset is automatically set to (start frequency offset x 10).
- The frequency offset value must be an integer number of decades apart. If the value is an integer number of decades, it will be automatically adjusted to the effective value that is closest to the proper value.

Return Format

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

Example

:SENS:LPL:FREQ:OFFS:STAR 100 /*Sets the start frequency offset for the log plot graph to 100 Hz.*/
 :SENS:LPL:FREQ:OFFS:STAR? /*The query returns 1.0E+02.*/

[[:SENSe]:LPLot:FREQuency:OFFSet:STOP**Syntax**

[[:SENSe]:LPLot:FREQuency:OFFSet:STOP <freq>
 [[:SENSe]:LPLot:FREQuency:OFFSet:STOP?

Description

Sets or queries the stop frequency offset for the log plot graph.

Parameter

Name	Type	Range	Default
<freq>	Real	Right sideband: stop frequency offset < Fmax - nominal frequency Left sideband: stop frequency offset < nominal frequency - 5 kHz	30 MHz

Remarks

- The max. stop frequency offset is (max. start frequency offset x 10). If the stop frequency offset is smaller than the start frequency offset, then the stop frequency offset is automatically set to (start frequency offset/10).
- The frequency offset value must be an integer number of decades apart. If the value is an integer number of decades, it will be automatically adjusted to the effective value that is closest to the proper value.

Return Format

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

Example

:SENS:LPL:FREQ:OFFS:STOP 1000 /*Sets the stop frequency offset for the log plot graph to 1 kHz.*/
 :SENS:LPL:FREQ:OFFS:STOP? /*The query returns 1.0E+03.*/

[[:SENSe]:LPLot:CARRier:MEASure:DISPlay**Syntax**

[[:SENSe]:LPLot:CARRier:MEASure:DISPlay <state>
 [[:SENSe]:LPLot:CARRier:MEASure:DISPlay?

Description

Sets or queries the carrier power measurement display state.

Parameter

Name	Type	Range	Default
<state>	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 1 or 0.

Example

```
:SENSe:LPLot:CARRier:MEASure:DISPlay 1 or :SENSe LPLot:CARRier:MEASure:DISPlay ON
/*Enables the carrier power measurement display state*/
:SENSe:LPLot:CARRier:MEASure:DISPlay? /*The query returns 1.*/
```

[:SENSe]:LPLot:OFFSet:SIDE

Syntax

```
[:SENSe]:LPLot:OFFSet:SIDE <side>
[:SENSe]:LPLot:OFFSet:SIDE?
```

Description

Sets or queries the offset side of the phase noise measurement.

Parameter

Name	Type	Range	Default
<side>	Discrete	USBand LSBand	USBand

Remarks

USBand: upper sideband.
LSBand: lower sideband.

Return Format

The query returns USBand or LSBand.

Example

```
:SENS:LPL:OFFS:SIDE USB /*Sets the offset side to USBand.*/
:SENS:LPL:OFFS:SIDE? /*The query returns USBand.*/
```

[:SENSe]:LPLot:DETEctor

Syntax

```
[:SENSe]:LPLot:DETEctor <type>
[:SENSe]:LPLot:DETEctor?
```

Description

Sets or queries the detector type of the phase noise measurement.

Parameter

Name	Type	Range	Default
<type>	Discrete	AVERage SAMPlE RAVerage	AVERage

Remarks

AVERage: indicates the voltage average detector.
SAMPlE: indicates the sample detector.
RAVerage: indicates the RMS average detector.

Return Format

The query returns SAMP, AVER, or RAV.

Example

```
:SENS:LPL:DET AVER      /*Sets the detector type to AVERage.*/
:SENS:LPL:DET?          /*The query returns AVER.*/
```

[[:SENSe]:LPLot:SMOoth**Syntax**

```
[[:SENSe]:LPLot:SMOoth <percent>
[:SENSe]:LPLot:SMOoth?
```

Description

Sets or queries smoothing percentage. This value controls the smoothing degree of the smoothed trace in the log plot graph.

Parameter

Name	Type	Range	Default
<percent>	Real	1 to 50	2

Remarks

- The greater the value, the smoother the trace.
- Appropriate smoothing reduces noise, but excessive smoothing can cause the loss of signal details.

Return Format

The query returns the smoothing value in scientific notation. The unit is %.

Example

```
:SENS:LPL:SMO 5 /*Sets the smoothing value to 5%.*/
:SENS:LPL:SMO? /*The query returns 5.0E+00.*/
```

[[:SENSe]:LPLot:METHod**Syntax**

```
[[:SENSe]:LPLot:METHod <type>
[:SENSe]:LPLot:METHod?
```

Description

Sets or queries the measurement type: Phase Noise measurement or DANL measurement.

Parameter

Name	Type	Range	Default
<type>	Discrete	DANL PN	PN

Remarks

When carrier measurement results are available, the DANL mode can measure the instrument's average DISPlayed noise level.

Return Format

The query returns either DANL or PN.

Example

```
:LPL:METH DANL /* Switch measurement type to DANL */
:LPL:METH? /* The query returns DANL */
```

[:SENSe]:LPLot:SWEep:SVFailed

Syntax

```
[:SENSe]:LPLot:SWEep:SVFailed <action>
[:SENSe]:LPLot:SWEep:SVFailed?
```

Description

Sets or queries the action taken when the signal verification fails.

Parameter

Name	Type	Range	Default
<action>	Discrete	OFF ON	OFF

Remarks

- OFF: restarts the measurement when signal verification fails.
- ON: stops the measurement immediately when signal verification fails.

Return Format

The query returns ON or OFF.

Example

```
:SENS:LPL:SWE:SVF ON /*Stops the measurement immediately after the signal verification fails.*/
:SENS:LPL:SWE:SVF? /*The query returns ON.*/
```

[:SENSe]:LPLot:CANCellation[:STATe]

Syntax

```
[:SENSe]:LPLot:CANCellation[:STATe] <bool>
[:SENSe]:LPLot:CANCellation[:STATe]?
```

Description

Sets or queries whether to enable the noise cancellation feature.

Parameter

Name	Type	Range	Default
<bool>	Bool	ON OFF 1 0	OFF 0

Remarks

- When the noise cancellation feature is enabled, the noise floor of the measurement system can be removed.
- Before noise cancellation is used, ensure that the DANL of the instrument have been measured and stored in a reference trace.

Return Format

The query returns 0 or 1.

Example

:SENS:LPL:CANC ON /*Enables the noise cancellation feature.*/

:SENS:LPL:CANC? /*The query returns 1.*/

[::SENSe]:LPLot:CANCellation:TRACe

Syntax

[::SENSe]:LPLot:CANCellation:TRACe <trace>

[::SENSe]:LPLot:CANCellation:TRACe?

Description

Sets or queries the reference trace for the noise cancellation feature.

Parameter

Name	Type	Range	Default
<trace>	Integer	1 2 3	1

Remarks

The reference trace is used as the reference DANL floor trace for the noise cancellation feature.

Return Format

The query returns the reference trace number in integer.

Example

:SENS:LPL:CANC:TRAC 2 /*Sets the reference trace to Trace 2.*/

:SENS:LPL:CANC:TRAC? /*The query returns 2.*/

[::SENSe]:LPLot:CANCellation:DELTA

Syntax

[::SENSe]:LPLot:CANCellation:DELTA <threshold>

[::SENSe]:LPLot:CANCellation:DELTA?

Description

Sets or queries the threshold for the noise cancellation feature.

Parameter

Name	Type	Range	Default
<threshold>	Real	0.001 dB to 5 dB	0.01 dB

Remarks

This value determines the minimum delta between the reference and pre-cancellation traces that must exist before any cancellation is performed.

Return Format

The query returns the threshold in scientific notation.

Example

```
:SENS:LPL:CANC:DELT 15      /*Sets the threshold to 15 dB.*/
:SENS:LPL:CANC:DELT?        /*The query returns 1.5E+01.*/
```

[:SENSe]:POWer:RLEVel

Syntax

```
[:SENSe]:POWer:RLEVel <level>
[:SENSe]:POWer:RLEVel?
```

Description

Sets or queries the nominal level in the signal verification.

Parameter

Name	Type	Range	Default
<level>	Real	-200 dBm to 200 dBm	0 dBm

Return Format

The query returns the nominal level in scientific notation. The unit is dBm.

Example

```
:SENS:POW:RLEV -10          /*Sets the nominal level to -10 dBm.*/
:SENS:POW:RLEV?             /*The query returns -1.0E+01.*/
```

[:SENSe]:POWer:RLEVel:VERify:TOLerance

Syntax

```
[:SENSe]:POWer:RLEVel:VERify:TOLerance <tolerance>
[:SENSe]:POWer:RLEVel:VERify:TOLerance?
```

Description

Sets or queries the absolute level tolerance.

Parameter

Name	Type	Range	Default
<tolerance>	Real	0.1 dB to 100 dB	10 dB

Return Format

The query returns the absolute level tolerance in scientific notation. The unit is dB.

Example

```
:SENS:POW:RLEV:VER:TOL 5    /*Sets the absolute level tolerance to 5 dB.*/
:SENS:POW:RLEV:VER:TOL?     /*The query returns 5.0E+00.*/
```

[:SENSe]:POWer:RLEVel:VERify[:STATe]

Syntax

```
[:SENSe]:POWer:RLEVel:VERify[:STATe] <bool>
```

[[:SENSe]:POWer:RLEVel:VERify[:STATe]?

Description

Sets or queries whether to enable the level verification.

Parameter

Name	Type	Range	Default
<bool>	Bool	ON OFF 1 0	OFF 0

Return Format

The query returns 1 or 0.

Example

```
:SENS:POW:RLEV:VER ON      /*Enables the level verification.*/
:SENS:POW:RLEV:VER?        /*The query returns 1.*/
```

[[:SENSe]:POWer[:RF]:ATTenuation

Syntax

```
[[:SENSe]:POWer[:RF]:ATTenuation <real>
[:SENSe]:POWer[:RF]:ATTenuation?
```

Description

Sets or queries the attenuation of the RF front-end attenuator.

Parameter

Name	Type	Range	Default
<real>	Integer	0 dB to 40 dB	10 dB

Return Format

The query returns the attenuation in integer. The unit is dB.

Example

```
:SENSe:POWer:RF:ATTenuation 20 /*Sets the attenuation value to 20 dB.*/
:SENSe:POWer:RF:ATTenuation?   /*The query returns 20.*/
```

[[:SENSe]:POWer[:RF]:ATTenuation:AUTO

Syntax

```
[[:SENSe]:POWer[:RF]:ATTenuation:AUTO <bool>
[:SENSe]:POWer[:RF]:ATTenuation:AUTO?
```

Description

Enables or disables the auto setting mode of the input attenuation.
Queries the status of the auto setting mode of the input attenuation.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	ON 1

Return Format

The query returns 0 or 1.

Example

:SENSe:POWer:RF:ATTenuation:AUTO OFF or :SENSe:POWer:RF:ATTenuation:AUTO 0

/*Disables the auto attenuation mode.*/

:SENSe:POWer:RF:ATTenuation:AUTO? /*The query returns 0.*/

[[:SENSe]:POWer[:RF]:GAIN[:STATe]

Syntax

[[:SENSe]:POWer[:RF]:GAIN[:STATe] <bool>

[[:SENSe]:POWer[:RF]:GAIN[:STATe]?

Description

Sets or queries the on/off status of the preamplifier (PA).

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

:SENSe:POWer:RF:GAIN:STATe ON or :SENSe:POWer:RF:GAIN:STATe 1

/*Enables the preamplifier (PA).*/

:SENSe:POWer:RF:GAIN:STATe? /*The query returns 1.*/

[[:SENSe]:POWer[:RF]:MIXer:RANGe[:UPPer]

Syntax

[[:SENSe]:POWer[:RF]:MIXer:RANGe[:UPPer] <ampl>

[[:SENSe]:POWer[:RF]:MIXer:RANGe[:UPPer]?

Description

Sets or queries the maximum level of the input mixer.

Parameter

Name	Type	Range	Default
<ampl>	Real	-50 dBm to -10 dBm	-10 dBm

Return Format

The query returns the maximum level of the input mixer in scientific notation. The unit is dBm.

Example

:SENSe:POWer:RF:MIXer:RANGe:UPPer -20 /*Sets the max. mixer level to -20 dBm*/

:SENSe:POWer:RF:MIXer:RANGe:UPPer? /*The query returns -2.0E+01.*/

[[:SENSe]:SFRequency:STATe

Syntax

[[:SENSe]:SFRequency:STATe <bool>
[[:SENSe]:SFRequency:STATe?

Description

Sets or queries the enable state of single-point measurement.

Parameter

Name	Type	Range	Default
<bool>	Bool	ON OFF 1 0	ON

Remarks

Sets or queries the enable state of single-point measurement.

Return Format

The query returns 1 or 0.

Example

:SFR:STAT ON /* Enable single-point measurement*/
:SFR:STAT? /* The query returns 1*/

[[:SENSe]:SFRequency:SOFFset

Syntax

[[:SENSe]:SFRequency:SOFFset <freq>
[[:SENSe]:SFRequency:SOFFset?

Description

Sets or queries the measurement offset for single-point measurement.

Parameter

Name	Type	Range	Default
<freq>	Real	10~1000000000	10000

Return Format

The query returns the single-point measurement offset as a real number in Hz.

Example

:SFR:SOFF 1000000 /* Set single-point measurement offset to 1 MHz */
:SFR:SOFF? /* Query the single-point measurement offset */

[[:SENSe]:SFRequency:METHod

Syntax

```
[[:SENSe]:SFRequency:METhod <type>
[:SENSe]:SFRequency:METhod?
```

Description

Sets or queries the measurement type of single-point measurement as Phase Noise measurement or DANL measurement.

Parameter

Name	Type	Range	Default
<type>	Discrete	DANL PN	PN

Remarks

- PN : Phase Noise
- DANL: DISPLAYed Average Noise Level

Return Format

The query returns either DANL or PN.

Example

```
:SFR:METh DANL /* Switch measurement type to DANL */
:SFR:METh? /* Query and return DANL */
```

[[:SENSe]:SWEep:SVFailed

Syntax

```
[[:SENSe]:SWEep:SVFailed <action>
[:SENSe]:SWEep:SVFailed?
```

Description

Sets or queries the action taken when the signal verification fails.

Parameter

Name	Type	Range	Default
<action>	Discrete	OFF ON	OFF

Remarks

- OFF: restarts the measurement when signal verification fails.
- ON: stops the measurement immediately when signal verification fails.

Return Format

The query returns ON or OFF.

Example

```
:SENS:SWE:SVF ON /*Stops the measurement immediately after the signal verification
fails.*/
:SENS:SWE:SVF? /*The query returns ON.*/
```

:SYSTem Commands

:SYSTem:BEEPer

Syntax

:SYSTem:BEEPer <bool>
:SYSTem:BEEPer?

Description

Enables or disables the beeper; queries the on/off status of the beeper.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

:SYSTem:BEEPer ON or :SYSTem:BEEPer 1 /*Enables the beeper.*/
:SYSTem:BEEPer? /*The query returns 1.*/*

:SYSTem:BRIGhtness

Syntax

:SYSTem:BRIGhtness <brightness>
:SYSTem:BRIGhtness?

Description

Sets or queries the screen brightness.

Parameter

Name	Type	Range	Default
<brightness>	Integer	0% to 100%	80%

Return Format

The query returns the screen brightness in integer.

Example

:SYSTem:BRIGhtness 50 /*Sets the screen brightness to 50%.*/
:SYSTem:BRIGhtness? /*The query returns 50.*/*

:SYSTem:DATE

Syntax

:SYSTem:DATE <year>,<month>,<day>
:SYSTem:DATE?

Description

Sets or queries the system 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 system date in the format of "YYYY-MM-DD".

Example

:SYSTem:DATE 2017,11,16 /*Sets the system date of the instrument to Nov. 16th, 2017.*/

:SYSTem:DATE? /*The query returns 2017-11-16.*/

:SYSTem:GPIB

Syntax

:SYSTem:GPIB <adr>

:SYSTem:GPIB?

Description

Sets or queries the GPIB address.

Parameter

Name	Type	Range	Default
<adr>	Integer	1 to 30	1

Return Format

The query returns an integer ranging from 1 to 30.

Example

:SYSTem:GPIB 2 /*Sets the GPIB address to 2.*/

:SYSTem:GPIB? /*The query returns 2.*/

:SYSTem:LANGuage

Syntax

:SYSTem:LANGuage <enum>

Description

Sets or queries the system language of the instrument.

Parameter

Name	Type	Range	Default
<enum>	Discrete	SCHinese TCHinese KOREan JAPanese ENGLish GERMan PORTuguese POLish FRENch RUSSian SPAN THAI INDonesian	ENGLish

Remarks

SCHinese: Simplified Chinese.

TCHinese: Traditional Chinese.

KOREan: Korean.

JAPanese: Japanese.

ENGLISH: English.
 GERMAN: German.
 PORTUGUESE: Portuguese.
 POLISH: Polish.
 FRENCH: French.
 RUSSIAN: Russian.
 SPAN: Spanish.
 THAI: Thai.
 INDONESIAN: Indonesian.

Return Format

The query returns SCH, TCH, KOR, JAP, ENGL, GERM, PORT, POL, FREN, RUSS, SPAN, THAI, or IND.

Example

```
:SYSTEM:LANGUAGE ENGLISH /*Sets the system language to ENGLISH.*/
:SYSTEM:LANGUAGE? /*The query returns ENGL.*/
```

:SYSTEM:LOCKED

Syntax

```
:SYSTEM:LOCKED<bool>
:SYSTEM:LOCKED?
```

Description

Locks or unlocks the keypad.
 Queries whether the keypad is locked or not.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

```
:SYSTEM:LOCKED 1 or :SYSTEM:LOCKED ON /*Disables the touch screen operation.*/
:SYSTEM:LOCKED? /*The query returns 1.*/
```

:SYSTEM:OPTION:INSTALL

Syntax

```
:SYSTEM:OPTION:INSTALL <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

```
:SYSTem:OPTion:INSTall RSA800-PNM@
8AD12B8EBC5DF492D1D4289B7CBA5B6150BF6F5D752D645C36D74530B05F39B49C461B23A50D
6C94A34E06782AC4380070B0D1A86BA84E02768391FFD70C2103
/*Installs the option RSA800-PNM*/
```

:SYSTem:OPTion:STATus?

Syntax

```
:SYSTem:OPTion:STATus? <option name>
```

Description

Queries whether the specified option is activated.

Parameter

Name	Type	Range	Default
<option name>	Discrete	EMI ADM VSA AMK PNM	—

Return Format

The query returns 0 (not activated) or 1 (activated).

Example

```
:SYSTem:OPTion:STATus? PNM /*Queries whether the PNM option is activated.*/
```

:SYSTem:OPTion:UNINStall

Syntax

```
:SYSTem:OPTion:UNINStall
```

Description

Uninstalls all the official options.

:SYSTem:PON

Syntax

```
:SYSTem:PON <power_on>
:SYSTem:PON?
```

Description

Sets or queries the setting type the instrument recalls at power-on.

Parameter

Name	Type	Range	Default
<power_on>	Discrete	DEFault LATest	PRESet

Remarks

DEFAult: indicates preset settings, including factory mode and 6 user-defined settings.
LATest: last settings.

Return Format

The query returns DEF or LAT.

Example

```
:SYSTem:PON LAT /*Sets the instrument to recall last settings at next power-on.*/  
:SYSTem:PON? /*The query returns LAT.*/
```

:SYSTem:RESet**Syntax**

:SYSTem:RESet

Description

Restarts the instrument.

:SYSTem:PRESet**Syntax**

:SYSTem:PRESet

Description

Restores the instrument to its preset settings.

:SYSTem:PSTatus**Syntax**

```
:SYSTem:PSTatus <status>  
:SYSTem:PSTatus?
```

Description

Sets or queries the on/off state of the power switch.

Parameter

Name	Type	Range	Default
<status>	Discrete	DEFAult OPEN	DEFAult

Remarks

DEFAult: switches off.
OPEN: switches on.

Return Format

The query returns DEF or OPEN.

Example

:SYSTem:PStatus OPEN /*Sets the power switch to On.*/
:SYSTem:PStatus? /*The query returns OPEN.*/

:SYSTem:PWRD

Syntax

:SYSTem:PWRD

Description

Sets the instrument to power off.

:SYSTem:STIME

Syntax

:SYSTem:STIME <bool>
:SYSTem:STIME?

Description

Sets or queries whether to DISPlay the system time.

Parameter

Name	Type	Range	Default
<bool>	Bool	OFF ON 0 1	OFF 0

Return Format

The query returns 0 or 1.

Example

:SYSTem:STIME 1 or :SYSTem:STIME ON /*Sets to DISPlay the system date.*/
:SYSTem:STIME? /*The query returns 1.*/

:SYSTem:TIME

Syntax

:SYSTem:TIME <hour>,<minute>,<second>
:SYSTem:TIME?

Description

Sets or 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

```
:SYSTem:TIME 15,10,30 /*Sets the system time of the instrument to 15:10:30.*/  
:SYSTem:TIME? /*The query returns 15:10:30.*/*
```

:SYSTem:VERSion?**Syntax**

```
:SYSTem:VERSion?
```

Description

Queries the version number of the SCPI used by the system.

:TRACe Commands**:TRACe:LPLot:SElect****Syntax**

```
:TRACe:LPLot:SElect <trace>  
:TRACe:LPLot:SElect?
```

Description

Sets or queries the current active trace.

Parameter

Name	Type	Range	Default
<trace>	Discrete	TRACe1 TRACe2 TRACe3	TRACe1

Return Format

The query returns TRACe1, TRACe2, or TRACe3.

Example

```
:TRAC:LPL:SEL TRAC1 /*Selects Trace 1 as the active trace.*/  
:TRAC:LPL:SEL? /*The query returns TRACe1.*/*
```

:TRACe<n>:LPLot:TYPE**Syntax**

```
:TRACe<n>:LPLot:TYPE <type>  
:TRACe<n>:LPLot:TYPE?
```

Description

Sets or queries the type of the specified trace.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	—
<type>	Discrete	RAW SMOothed VIEW BLANK	RAW

Remarks

RAW: raw trace. DISPlays the raw trace. The raw trace presents the directly acquired measurement data, without any smoothing applied.

SMOothed: smoothed trace. DISPlays the smoothed trace, with the spurious removed.

VIEW: DISPlays the trace. Only DISPlays the trace and not updates the trace.

BLANK: blank trace. Not DISPlays the trace. When you enable multiple traces (Trace1, Trace2, and Trace3) at the same time, you can set the unwanted traces to Blank.

The default trace type for Trace 1 is Raw; the default trace type for Trace 2 is Smoothed; and the default trace type for Trace 3 is Blank.

Return Format

The query returns RAW, SMO, VIEW, or BLAN.

Example

```
:TRAC1:LPL:TYPE RAW          /*Sets Trace 1 as the raw trace.*/  
:TRAC1:LPL:TYPE?             /*The query returns RAW.*/
```

:TRACe<n>:LPLot:HOLD

Syntax

```
:TRACe<n>:LPLot:HOLD <hold>  
:TRACe<n>:LPLot:HOLD?
```

Description

Sets or queries the trace hold mode.

Parameter

Name	Type	Range	Default
<n>	Discrete	1 2 3	1
<hold>	Discrete	OFF MAXHold MINHold	OFF

Remarks

- OFF: disables the trace hold. The trace restores to the updated state.
- MAXHold: indicates the maximum hold. Maintains and DISPlays a max hold trace, which represents the maximum data value on a point-by-point basis. When a new maximum value is generated, data will be updated, and the newly updated maximum value prevails.
- MINHold: indicates the minimum hold. Maintains and DISPlays a min hold trace, which represents the minimum data value on a point-by-point basis. When a new minimum value is generated, data will be updated, and the newly updated minimum value prevails.

Return Format

The query returns OFF, MAXH, or MINH.

Example

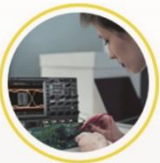
```
:TRAC1:LPL:HOLD MAXH          /*Sets Trace 1 to Max Hold.*/  
:TRAC1:LPL:HOLD?             /*The query returns MAXH.*/
```

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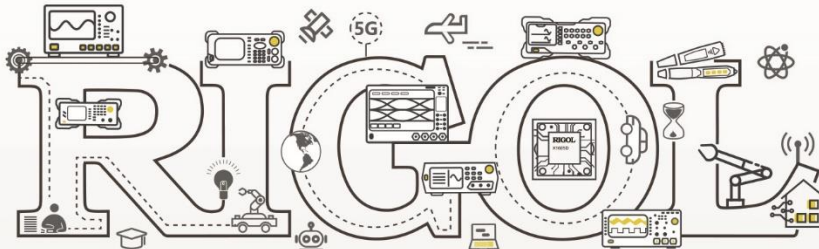
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Semiconductors



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Research



Communication

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