MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual Spectrum Analyzer Function Remote Control

45th Edition

- **For safety and warning information, please read this manual before attempting to use the equipment.**
- **Additional safety and warning information is provided within the MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Mainframe Operation), MS2830A Signal Analyzer Operation Manual (Mainframe Operation) or MS2840A Signal Analyzer Operation Manual (Mainframe Operation). Please also refer to this document before using the equipment.**
- **Keep this manual with the equipment.**

ANRITSU CORPORATION

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Safety Symbols

To prevent the risk of personal injury or loss related to equipment malfunction, Anritsu Corporation uses the following safety symbols to indicate safety-related information. Ensure that you clearly understand the meanings of the symbols BEFORE using the equipment. Some or all of the following symbols may be used on all Anritsu equipment. In addition, there may be other labels attached to products that are not shown in the diagrams in this manual.

Symbols used in manual

⚠ DANGER This indicates a very dangerous procedure that could result in serious injury or death if not performed properly.

⚠ WARNING This indicates a hazardous procedure that could result in serious injury or death if not performed properly.

⚠ CAUTION This indicates a hazardous procedure or danger that could result in light-to-severe injury, or loss related to equipment malfunction, if proper precautions are not taken.

Safety Symbols Used on Equipment and in Manual

The following safety symbols are used inside or on the equipment near operation locations to provide information about safety items and operation precautions. Ensure that you clearly understand the meanings of the symbols and take the necessary precautions BEFORE using the equipment.

This indicates a prohibited operation. The prohibited operation is indicated symbolically in or near the barred circle.

This indicates an obligatory safety precaution. The obligatory operation is indicated symbolically in or near the circle.

This indicates a warning or caution. The contents are indicated symbolically in or near the triangle.

This indicates a note. The contents are described in the box.

These indicate that the marked part should be recycled.

MS2690A/MS2691A/MS2692A and MS2830A/MS2840A
Signal Analyzer
Operation Manual Spectrum Analyzer Function Remote Control

19 April 2007 (First Edition)
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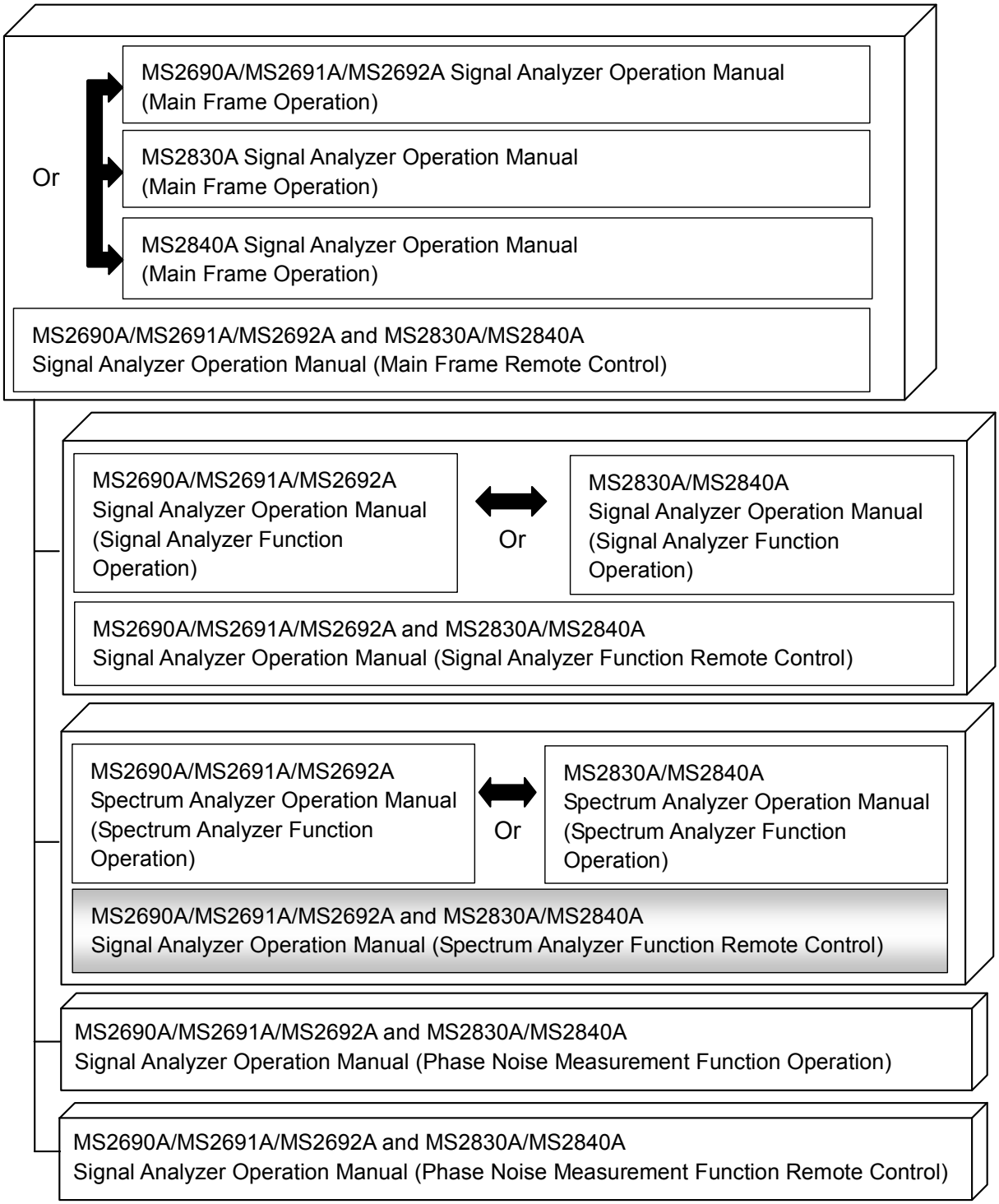
About This Manual

■ Operation manual configuration

The operation manual configuration of the MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer is shown below.



- Signal Analyzer Operation Manual (Mainframe Operation)
- Signal Analyzer Operation Manual (Mainframe Remote Control)

  Description of basic operations, maintenance procedures, common functions and common remote functions of the mainframe

- Signal Analyzer Operation Manual (Signal Analyzer Function)
- Signal Analyzer Operation Manual (Signal Analyzer Function Remote Control)

  Description of basic operations, functions and remote functions of the signal analyzer

- Signal Analyzer Operation Manual (Spectrum Analyzer Function)
- Signal Analyzer Operation Manual (Spectrum Analyzer Function Remote Control) <This document>

  Description of basic operations, functions and remote functions of the spectrum analyzer

- Signal Analyzer Operation Manual (Phase Noise Measurement Function)
- Signal Analyzer Operation Manual (Phase Noise Measurement Function Remote Control)

  Description of basic operations, functions and remote functions of the Phase Noise

Convention Used in This Manual

Except where there is a good reason to do otherwise, this manual assumes the use of MS269xA.

Note that the descriptions in this manual also apply to MS2830A or MS2840A.

Table of Contents

Chapter 1 Overview

This chapter provides an overview of the remote control of the Spectrum Analyzer function (hereinafter, referred to as “this application”).

1.1 Overview

Automatic measurement can be performed by using this instrument in connection with an external controller (PC). This instrument is standard equipped with GPIB, Ethernet, and USB interfaces. You can also select a remote control command from the SCPI mode, which is a command format defined by the SCPI Consortium, and Native mode, which is our unique format.

See the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control)* for how to switch the language mode.

You can use the Native mode by converting SCPI commands into Native ones. See the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control)* for details.

Chapter 2 SCPI Device Message Details

This chapter describes detailed specifications on SCPI remote control commands for executing function s of this application in alphabetical order. Refer to the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control)* for detailed specifications on IEEE488.2 common device messages and application common device messages.

<integer_13>,<integer_14>,<integer_15>,<integer_16>,<integer_17>,<integer_18>,
<integer_19>,<integer_20> 2-759
[:SENSe]:SPURious[:RANGe][:LIST]:AVERage:COUNt? 2-760
:CALCulate:SPURious[:RANGe][:LIST]:CORRection:COMMon 2-760
:CALCulate:SPURious[:RANGe][:LIST]:CORRection:RECall ,<filename>
[,<device>] 2-761
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA[:STARt]
<ampl_1>,<ampl_2>,<ampl_3>,<ampl_4>,<ampl_5>,<ampl_6>,<ampl_7>,<ampl_8>,
<ampl_9>,<ampl_10>,<ampl_11>,<ampl_12>,<ampl_13>,<ampl_14>,<ampl_15>,
<ampl_16>,<ampl_17>,<ampl_18>,<ampl_19>,<ampl_20> 2-762
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA[:STARt]? 2-763
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP:AUTO
ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,
ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,
ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,
ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0 2-764
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP:AUTO? 2-765
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP
<ampl_1>,<ampl_2>,<ampl_3>,<ampl_4>,<ampl_5>,<ampl_6>,<ampl_7>,<ampl_8>,
<ampl_9>,<ampl_10>,<ampl_11>,<ampl_12>,<ampl_13>,<ampl_14>,<ampl_15>,
<ampl_16>,<ampl_17>,<ampl_18>,<ampl_19>,<ampl_20> 2-766
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[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:RESolution|:EXCursion
<rel_ampl_1>,<rel_ampl_2>,<rel_ampl_3>,<rel_ampl_4>,<rel_ampl_5>,<rel_ampl_6>,
<rel_ampl_7>,<rel_ampl_8>,<rel_ampl_9>,<rel_ampl_10>,<rel_ampl_11>,
<rel_ampl_12>,<rel_ampl_13>,<rel_ampl_14>,<rel_ampl_15>,<rel_ampl_16>,
<rel_ampl_17>,<rel_ampl_18>,<rel_ampl_19>,<rel_ampl_20> 2-768
[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:RESolution|:EXCursion? 2-769
[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:THReshold
<real_1>,<real_2>,<real_3>,<real_4>,<real_5>,<real_6>,<real_7>,<real_8>,<real_9>,
<real_10>,<real_11>,<real_12>,<real_13>,<real_14>,<real_15>,<real_16>,<real_17>,
<real_18>,<real_19>,<real_20> 2-770
[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:THReshold? 2-771
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]:COUPle
ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,
ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,
ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,
ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0 2-772
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]:COUPle? 2-773
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]
<bandwidth_1>,<bandwidth_2>,<bandwidth_3>,<bandwidth_4>,<bandwidth_5>,
<bandwidth_6>,<bandwidth_7>,<bandwidth_8>,<bandwidth_9>,<bandwidth_10>,
<bandwidth_11>,<bandwidth_12>,<bandwidth_13>,<bandwidth_14>,<bandwidth_15>,
<bandwidth_16>,<bandwidth_17>,<bandwidth_18>,<bandwidth_19>,

2.1 Frequency/Span

Table 2.1-1 lists device messages for frequency/span.

Table 2.1-1 Device messages for frequency/span

Function	Device Messages
Center Frequency	[:SENSe]:FREQuency:CENTer <freq>
	[:SENSe]:FREQuency:CENTer?
Frequency Step Size	[:SENSe]:FREQuency:CENTer:STEP[:INCRement] <freq>
	[:SENSe]:FREQuency:CENTer:STEP[:INCRement]?
Frequency Offset	[:SENSe]:FREQuency:OFFSet <freq>
	[:SENSe]:FREQuency:OFFSet?
Frequency Offset Mode	[:SENSe]:FREQuency:OFFSet:STATe ON|OFF|1|0
	[:SENSe]:FREQuency:OFFSet:STATe?
Frequency Span	[:SENSe]:FREQuency:SPAN <freq>
	[:SENSe]:FREQuency:SPAN?
Full Span	[:SENSe]:FREQuency:SPAN:FULL
Start Frequency	[:SENSe]:FREQuency:STARt <freq>
	[:SENSe]:FREQuency:STARt?
Stop Frequency	[:SENSe]:FREQuency:STOP <freq>
	[:SENSe]:FREQuency:STOP?
Zero Span	[:SENSe]:FREQuency:SPAN:ZERO
Frequency Band Mode	[:SENSe]:FREQuency:BAND:MODE NORMal|SPURious
	[:SENSe]:FREQuency:BAND:MODE?
	[:SENSe]:FREQuency:BAND:MODE:STATe?
Couple Time/Freq. Domain	[:SENSe]:FREQuency:DOMain:COUPle ON|OFF|1|0
	[:SENSe]:FREQuency:DOMain:COUPle?
Switching Speed	[:SENSe]:FREQuency:SYNThesis[:STATe] BPHase|NORMal|FAST
	[:SENSe]:FREQuency:SYNThesis[:STATe]?

[:SENSe]:FREQuency:CENTer <freq>

Center Frequency

Function

This command sets the center frequency.

Command

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

Parameter

`<freq>`		Center frequency
	Range	
	[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
		–100 MHz to 13.6 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 13.6 GHz (Option 043)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 27 GHz (Option 044)
		–100 MHz to 45 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
	Default	
	[MS269xA]	3.00 GHz (MS2690A)
		6.75 GHz (MS2691A)
		13.25 GHz (MS2692A)
	[MS2830A]	1.8 GHz (Option 040)
		3.0 GHz (Option 041)
		6.75 GHz (Option 043)
		13.25 GHz (Option 044)
		21.5 GHz (Option 045)
	[MS2840A]	1.8 GHz (Option 040)
		3.0 GHz (Option 041)
		13.25 GHz (Option 044)
		22.25 GHz (Option 046)

Details

This command is not available during the Spurious Emission measurement.

Example of Use

To set the center frequency to 123.456 kHz.

```
FREQ:CENT 123456
```

[:SENSe]:FREQuency:CENTer?

Center Frequency Query

Function

This command queries the center frequency.

Command

```
[:SENSe]:FREQuency:CENTer?
```

Response

```
<freq>
```

Parameter

`<freq>`		Center frequency
Range		
	[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
		–100 MHz to 13.6 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 13.6 GHz (Option 043)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 27 GHz (Option 044)
		–100 MHz to 45 GHz (Option 046)
Resolution		1 Hz
Suffix code		None. Value is returned in Hz units.
Default		
	[MS269xA]	3.00 GHz (MS2690A)
		6.75 GHz (MS2691A)
		13.25 GHz (MS2692A)
	[MS2830A]	1.8 GHz (Option 040)
		3.0 GHz (Option 041)
		6.75 GHz (Option 043)
		13.25 GHz (Option 044)
		21.5 GHz (Option 045)
	[MS2840A]	1.8 GHz (Option 040)
		3.0 GHz (Option 041)
		13.25 GHz (Option 044)
		22.25 GHz (Option 046)

Example of Use

To query the center frequency.

```
FREQ:CENT?
> 123456
```

[:SENSe]:FREQuency:CENTer:STEP[:INCRement] <freq>

Frequency Step Size

Function

This command sets the step size of the center, start and stop frequency.

Command

```
[:SENSe]:FREQuency:CENTer:STEP[:INCRement] <freq>
```

Parameter

<freq>		Step size
Range		
	[MS269xA]	1 Hz to 6.00 GHz (MS2690A)
		1 Hz to 13.5 GHz (MS2691A)
		1 Hz to 26.5 GHz (MS2692A)
	[MS2830A]	1 Hz to 3.6 GHz (Option 040)
		1 Hz to 6.0 GHz (Option 041)
		1 Hz to 13.5 GHz (Option 043)
		1 Hz to 26.5 GHz (Option 044)
		1 Hz to 43 GHz (Option 045)
	[MS2840A]	1 Hz to 3.6 GHz (Option 040)
		1 Hz to 6.0 GHz (Option 041)
		1 Hz to 26.5 GHz (Option 044)
		1 Hz to 44.5 GHz (Option 046)
Resolution		1 Hz
Suffix code		HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default value		1 GHz

Example of Use

To set the step size to 100.0 kHz.

```
FREQ:CENT:STEP 100000
```

[:SENSe]:FREQuency:CENTer:STEP[:INCRement]?

Frequency Step Size Query

Function

This command queries the step size of the center, start and stop frequency.

Query

```
[:SENSe]:FREQuency:CENTer:STEP?
```

Response

```
<freq>
```

Parameter

`<freq>`		Step size
	Range	
	[MS269xA]	1 Hz to 6.0 GHz (MS2690A)
		1 Hz to 13.5 GHz (MS2691A)
		1 Hz to 26.5 GHz (MS2692A)
	[MS2830A]	1 Hz to 3.6 GHz (Option 040)
		1 Hz to 6.0 GHz (Option 041)
		1 Hz to 13.5 GHz (Option 043)
		1 Hz to 26.5 GHz (Option 044)
		1 Hz to 43 GHz (Option 045)
	[MS2840A]	1 Hz to 3.6 GHz (Option 040)
		1 Hz to 6.0 GHz (Option 041)
		1 Hz to 26.5 GHz (Option 044)
		1 Hz to 44.5 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the step size.

```
FREQ:CENT:STEP?
> 100000
```

[:SENSe]:FREQuency:OFFSet <freq>

Frequency Offset

Function

This command sets the frequency offset.

Command

```
[:SENSe]:FREQuency:OFFSet <freq>
```

Parameter

<freq>		Offset
	Range	–100 to 100 GHz
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
	Default value	0 Hz

Example of Use

To set the frequency offset to 10 MHz.

```
FREQ:OFFS 10MHZ
```

[:SENSe]:FREQuency:OFFSet?

Frequency Offset Query

Function

This command queries the frequency offset.

Query

```
[:SENSe]:FREQuency:OFFSet?
```

Response

```
<freq>
```

Parameter

<freq>		Offset
	Range	–100 to 100 GHz
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Example of Use

To query the frequency offset.

```
FREQ:OFFS?
> 10000000
```

[:SENSe]:FREQuency:OFFSet:STATe ON|OFF|1|0

Frequency Offset Mode

Function

This command enables/disables the frequency offset.

Command

```
[:SENSe]:FREQuency:OFFSet:STATe <switch>
```

Parameter

<switch>	Frequency offset On/Off
ON|1	Enables the frequency offset.
OFF|0	Disables the frequency offset (Default value).

Example of Use

To enable the frequency offset.

```
FREQ:OFFS:STAT ON
```

[:SENSe]:FREQuency:OFFSet:STATe?

Frequency Offset Mode Query

Function

This command queries the On/Off state of the frequency offset.

Query

```
[:SENSe]:FREQuency:OFFSet:STATe?
```

Response

```
<switch>
```

Parameter

<switch>	Frequency offset On/Off
1	Frequency offset is enabled.
0	Frequency offset is disabled.

Example of Use

To query the On/Off state of the frequency offset.

```
FREQ:OFFS:STAT?
> 1
```

[:SENSe]:FREQuency:SPAN <freq>

Frequency Span

Function

This command sets the frequency span.

Command

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

Parameter

<freq>		Frequency span
	Range	
	[MS269xA]	0 Hz, 300 Hz to 6.15 GHz (MS2690A)
		0 Hz, 300 Hz to 13.7 GHz (MS2691A)
		0 Hz, 300 Hz to 26.7 GHz (MS2692A)
	[MS2830A]	0 Hz, 300 Hz to 3.8 GHz (Option 040)
		0 Hz, 300 Hz to 6.2 GHz (Option 041)
		0 Hz, 300 Hz to 13.7 GHz (Option 043)
		0 Hz, 300 Hz to 26.7 GHz (Option 044)
		0 Hz, 300 Hz to 43.2 GHz (Option 045)
	[MS2840A]	0 Hz, 300 Hz to 3.8 GHz (Option 040)
		0 Hz, 300 Hz to 6.2 GHz (Option 041)
		0 Hz, 300 Hz to 27.1 GHz (Option 044)
		0 Hz, 300 Hz to 45.1 GHz (Option 046)
	Resolution	2 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
	Default	
	[**MS269xA]**	6.00 GHz (MS2690A)
		13.50 GHz (MS2691A)
		26.50 GHz (MS2692A)
	[MS2830A]	3.6 GHz (Option 040)
		6.0 GHz (Option 041)
		13.5 GHz (Option 043)
		26.5 GHz (Option 044)
		43 GHz (Option 045)
	[MS2840A]	3.6 GHz (Option 040)
		6.0 GHz (Option 041)
		26.5 GHz (Option 044)
		44.5 GHz (Option 046)

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set the frequency span to 1 GHz.

```
FREQ:SPAN 1GHZ
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:FREQuency:SPAN
[:SENSe]:CHPower:FREQuency:SPAN
[:SENSe]:OBWidth:FREQuency:SPAN
```

[:SENSe]:FREQuency:SPAN?

Frequency Span Query

Function

This command queries the frequency span.

Query

```
[:SENSe]:FREQuency:SPAN?
```

Response

```
<freq>
```

Parameter

`<freq>`		Frequency span
	Range	
	[MS269xA]	0 Hz, 300 Hz to 6.15 GHz (MS2690A)
		0 Hz, 300 Hz to 13.7 GHz (MS2691A)
		0 Hz, 300 Hz to 26.7 GHz (MS2692A)
	[MS2830A]	0 Hz, 300 Hz to 3.8 GHz (Option 040)
		0 Hz, 300 Hz to 6.2 GHz (Option 041)
		0 Hz, 300 Hz to 13.7 GHz (Option 043)
		0 Hz, 300 Hz to 26.7 GHz (Option 044)
		0 Hz, 300 Hz to 43.2 GHz (Option 045)
	[MS2840A]	0 Hz, 300 Hz to 3.8 GHz (Option 040)
		0 Hz, 300 Hz to 6.2 GHz (Option 041)
		0 Hz, 300 Hz to 27.1 GHz (Option 044)
		0 Hz, 300 Hz to 45.1 GHz (Option 046)
	Resolution	2 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.

Example of Use

To query the frequency span.

```
FREQ:SPAN?
> 10000000000
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:FREQuency:SPAN?
[:SENSe]:CHPower:FREQuency:SPAN?
[:SENSe]:OBWidth:FREQuency:SPAN?
```

[:SENSe]:FREQuency:SPAN:FULL

Full Span

Function

This command maximizes the span frequency.

Command

```
[:SENSe]:FREQuency:SPAN:FULL
```

Parameter

<freq>	Full span frequency
Range	
[MS269xA]	6.15 GHz (MS2690A)
	13.70 GHz (MS2691A)
	27.10 GHz (MS2692A)
[MS2830A]	3.8 GHz (Option 040)
	6.2 GHz (Option 041)
	13.7 GHz (Option 043)
	26.7 GHz (Option 044)
	43.2 GHz (Option 045)
[MS2840A]	3.8 GHz (Option 040)
	6.2 GHz (Option 041)
	27.1 GHz (Option 044)
	45.1 GHz (Option 046)

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To maximize the frequency span.

```
FREQ:SPAN:FULL
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:FREQuency:SPAN:FULL
[:SENSe]:CHPower:FREQuency:SPAN:FULL
[:SENSe]:OBWidth:FREQuency:SPAN:FULL
```

[:SENSe]:FREQuency:STARt <freq>

Start Frequency

Function

This command sets the start frequency.

Command

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

Parameter

`<freq>`		Start frequency
	Range	
	[MS269xA]	–100 MHz to 6.0499997 GHz (MS2690A)
		–100 MHz to 13.5999997 GHz (MS2691A)
		–100 MHz to 26.5999997 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.6999997 GHz (Option 040)
		–100 MHz to 6.0999997 GHz (Option 041)
		–100 MHz to 13.5999997 GHz (Option 043)
		–100 MHz to 26.5999997 GHz (Option 044)
		–100 MHz to 43.0999997 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.6999997 GHz (Option 040)
		–100 MHz to 6.0999997 GHz (Option 041)
		–100 MHz to 26.9999997 GHz (Option 044)
		–100 MHz to 44.9999997 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ ,MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
	Default value	0 Hz

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set the start frequency to 1 GHz.

```
FREQ:STAR 1GHZ
```

[:SENSe]:FREQuency:STARt?

Start Frequency Query

Function

This command queries the start frequency.

Query

```
[:SENSe]:FREQuency:STARt?
```

Response

```
<freq>
```

Parameter

`<freq>`		Start frequency
	Range	
	[MS269xA]	–100 MHz to 6.0499997 GHz (MS2690A)
		–100 MHz to 13.5999997 GHz (MS2691A)
		–100 MHz to 26.5999997 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.6999997 GHz (Option 040)
		–100 MHz to 6.0999997 GHz (Option 041)
		–100 MHz to 13.5999997 GHz (Option 043)
		–100 MHz to 26.5999997 GHz (Option 044)
		–100 MHz to 43.0999997 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.6999997 GHz (Option 040)
		–100 MHz to 6.0999997 GHz (Option 041)
		–100 MHz to 26.9999997 GHz (Option 044)
		–100 MHz to 44.9999997 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the start frequency.

```
FREQ:STAR?
> 1000000000
```

[:SENSe]:FREQuency:STOP <freq>

Stop Frequency

This command sets the stop frequency.

Command

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

Parameter

<freq> Stop frequency

Range	
[MS269xA]	–99.9997 MHz to 6.05 GHz (MS2690A)
	–99.9997 MHz to 13.6 GHz (MS2691A)
	–99.9997 MHz to 26.6 GHz (MS2692A)
[MS2830A]	–99.9997 MHz to 3.7 GHz (Option 040)
	–99.9997 MHz to 6.1 GHz (Option 041)
	–99.9997 MHz to 13.6 GHz (Option 043)
	–99.9997 MHz to 26.6 GHz (Option 044)
	–99.9997 MHz to 43.1 GHz (Option 045)
[MS2840A]	–99.9997 MHz to 3.7 GHz (Option 040)
	–99.9997 MHz to 6.1 GHz (Option 041)
	–99.9997 MHz to 27 GHz (Option 044)
	–99.9997 MHz to 45 GHz (Option 046)
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
	Hz is used when omitted.
Default	
[MS269xA]	6.00 GHz (MS2690A)
	13.50 GHz (MS2691A)
	26.50 GHz (MS2692A)
[MS2830A]	3.6 GHz (Option 040)
	6.0 GHz (Option 041)
	13.5 GHz (Option 043)
	26.5 GHz (Option 044)
	43 GHz (Option 045)
[MS2840A]	3.6 GHz (Option 040)
	6.0 GHz (Option 041)
	26.5 GHz (Option 044)
	44.5 GHz (Option 046)

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set the stop frequency to 10 MHz.

```
FREQ:STOP 10000KHZ
```

[:SENSe]:FREQuency:STOP?

Stop Frequency Query

Function

This command queries the stop frequency.

Query

```
[:SENSe]:FREQuency:STOP?
```

Response

```
<freq>
```

Parameter

`<freq>`		Stop frequency
	Range	
	[MS269xA]	–99.9997 MHz to 6.05 GHz (MS2690A)
		–99.9997 MHz to 13.6 GHz (MS2691A)
		–99.9997 MHz to 26.6 GHz (MS2692A)
	[**MS2830A]**	–99.9997 MHz to 3.7 GHz (Option 040)
		–99.9997 MHz to 6.1 GHz (Option 041)
		–99.9997 MHz to 13.6 GHz (Option 043)
		–99.9997 MHz to 26.6 GHz (Option 044)
		–99.9997 MHz to 43.1 GHz (Option 045)
	[**MS2840A]**	–99.9997 MHz to 3.7 GHz (Option 040)
		–99.9997 MHz to 6.1 GHz (Option 041)
		–99.9997 MHz to 27 GHz (Option 044)
		–99.9997 MHz to 45 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the stop frequency.

```
FREQ:STOP?
> 10000000
```

[:SENSe]:FREQuency:SPAN:ZERO

Zero Span

Function

This command sets the frequency span to 0 Hz (Time domain display).

Command

```
[:SENSe]:FREQuency:SPAN:ZERO
```

Details

When Zero Span is executed during other than the Burst Average measurement, the Measure function is set to Off.

Example of Use

To set the frequency span to 0 Hz (Time domain display).

```
FREQ:SPAN:ZERO
```

[:SENSe]:FREQuency:BAND:MODE NORMal|SPURious

Frequency Band Mode

Function

This command sets the frequency band path. The frequency at which the path is switched to the preselector band or a path that does not pass through the preselector can be set with this function.

Command

```
[:SENSe]:FREQuency:BAND:MODE <mode>
```

Parameter

<mode>	Frequency band mode
[MS269xA]	
NORMal	Sets the frequency to be switched to the preselector band to 6.0 GHz.
SPURious	Sets the frequency to be switched to the preselector band to 3.0 GHz.
[MS2830A-041/043/044/045]	
NORMal	Sets the frequency to be switched to the preselector band to 4.0 GHz.
SPURious	Sets the frequency to be switched to the preselector band to 3.5 GHz.
[MS2840A-041/044/046]	
NORMal	Sets the frequency to be switched to the preselector band to 4.0 GHz.
SPURious	Sets the frequency to be switched to the preselector band to 3.5 GHz.

Details

[MS269xA]

This command is not available when the Option 003 Preselector lower limit frequency extension option is not installed.

[MS2830A]

This command is not available when used with the Option 040 3.6 GHz Signal Analyzer.

[MS2840A]

This command is not available when used with the Option 040 3.6 GHz Signal Analyzer.

Example of Use

To set the frequency to be switched to the preselector band to 6.0 GHz.

```
FREQ:BAND:MODE NORM
```

[:SENSe]:FREQuency:BAND:MODE?

Frequency Band Mode Query

Function

This command queries the frequency band path. The frequency at which the path is switched to the preselector band or a path that does not pass through the preselector can be set with this function.

Query

```
[:SENSe]:FREQuency:BAND:MODE?
```

Response

```
<mode>
```

Parameter

<mode>	Frequency band mode
[MS269xA]	
NORMal	Sets the frequency to be switched to the preselector band to 6.0 GHz.
SPURious	Sets the frequency to be switched to the preselector band to 3.0 GHz.
[MS2830A-041/043/044/045]	
NORMal	Sets the frequency to be switched to the preselector band to 4.0 GHz.
SPURious	Sets the frequency to be switched to the preselector band to 3.5 GHz.
[MS2840A-041/044/046]	
NORMal	Sets the frequency to be switched to the preselector band to 4.0 GHz.
SPURious	Sets the frequency to be switched to the preselector band to 3.5 GHz.

Example of Use

To query the frequency band path.

```
FREQ:BAND:MODE?
> NORM
```

[:SENSe]:FREQuency:BAND:MODE:STATe?

Frequency Band Mode Status Query

Function

This command queries the Spurious Mode status of the frequency band with the current measurement conditions.

Query

```
[:SENSe]:FREQuency:BAND:MODE:STATe?
```

Response

```
<status>
```

Parameter

<status>	Spurious Mode status of frequency band
1	Includes the frequency band in Spurious Mode.
0	Does not include the frequency band in Spurious Mode.

Details

This command is available for MS2830A and MS2840A.
When Spurious is selected for the Frequency Band Mode, the frequency band of Spurious Mode is included if the frequency range is 3.5 GHz ≤ f.

Example of Use

To query the Spurious Mode status of the frequency band with the current measurement conditions.

```
FREQ:BAND:MODE:STAT?
> 1
```

[:SENSe]:FREQuency:DOMain:COUPle ON|OFF|1|0

Couple Time/Freq. Domain

Function

Sets whether to couple the time domain parameters and frequency domain parameters.

Command

```
[:SENSe]:FREQuency:DOMain:COUPle <switch>
```

Parameter

`<switch>`	Enables/disables coupling
`ON|1`	Couples (shares) the RBW, VBW, detection mode, and trace point between the time domain and the frequency domain (Default).
`OFF|0`	Separates the RBW, VBW, detection mode, and trace point for the time domain from those for the frequency domain.

Example of Use

To disable coupling.

```
FREQ:DOM:COUP OFF
```

[:SENSe]:FREQuency:DOMain:COUPle?

Couple Time/Freq. Domain Query

Function

Queries whether the time domain parameters and frequency domain parameters are coupled.

Query

```
[:SENSe]:FREQuency:DOMain:COUPle?
```

Response

```
<switch>
```

Parameter

<switch>	Enables/disables coupling
1	The RBW, VBW, detection mode, and trace point are coupled (shared) between the time domain and the frequency domain.
0	The RBW, VBW, detection mode, and trace point for the time domain are separate from those for the frequency domain.

Example of Use

To query whether coupling is enabled.

```
FREQ:DOM:COUP?
> 0
```

[:SENSe]:FREQuency:SYNThesis[:STATe] BPHase|NORMal|FAST

Switching Speed

Function

This command sets the switching speed of frequency.

Command

```
[:SENSe]:FREQuency:SYNThesis[:STATe] <mode>
```

Parameter

<mode>	Frequency switching speed
BPHase	The operation is done so as to improve the phase noise characteristic rather than the frequency switching speed.
NORMal	Same as the setting of BPHase.
FAST	The operation is done so as to increase the frequency switching speed.

Details

This command is available for MS2830A and MS2840A.
Note that because the FAST setting gives priority to the switching speed of the local frequency, the phase noise characteristic worsens.

Example of Use

To set the frequency switching mode to the speed priority mode.

```
FREQ:SYNT FAST
```

[:SENSe]:FREQuency:SYNThesis[:STATe]?

Switching Speed Query

Function

This command queries the switching speed of frequency.

Query

```
[:SENSe]:FREQuency:SYNThesis[:STATe]?
```

Response

```
<mode>
```

Parameter

`<mode>`	Frequency switching speed
`BPH`	The operation is done so as to improve the phase noise characteristic rather than the frequency switching speed.
`FAST`	The operation is done so as to increase the frequency switching speed.

Details

This command is available for MS2830A and MS2840A.
Note that because the FAST setting gives priority to the switching speed of the local frequency, the phase noise characteristic worsens.

Example of Use

To query frequency switching speed

```
FREQ:SYNT?
> FAST
```

2.2 Level

The table below shows device messages for level.

Table 2.2-1 Device messages for level

Function	Device Message
Reference Level	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
RF Attenuator	[:SENSe]:POWer[:RF]:ATTenuation <rel_ampl>
	[:SENSe]:POWer[:RF]:ATTenuation?
RF Attenuator Auto/Manual	[:SENSe]:POWer[:RF]:ATTenuation:AUTO ON|OFF|1|0
	[:SENSe]:POWer[:RF]:ATTenuation:AUTO?
Log Scale Range	:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic]:PDIVision <rel_ampl>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic]:PDIVision?
Scale Mode	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:SPACing LINear|LOGarithmic
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:SPACing?
Log Scale Unit	:UNIT:POWer DBM|DBMV|V|W|DBUV|DBUVE|DBUVM
	:UNIT:POWer?
Linear Scale Range	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINear:PDIVision <percent>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINear:PDIVision?
Log Scale Line	:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic] <lines>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic]?
Ref.Level Offset Value	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEvel:OFFSet <rel_ampl>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEvel:OFFSet?
Reference Level Offset Mode	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet:STATe ON|OFF|1|0
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet:STATe?
Pre Amp	[:SENSe]:POWer[:RF]:GAIN[:STATe] ON|OFF|1|0
	[:SENSe]:POWer[:RF]:GAIN[:STATe]?
Log Scale Line	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINE[:LOGarithmic] <lines>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINE[:LOGarithmic]?
Impedance	[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude] 50|75
	[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude]?

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

Reference Level

Function

This command sets the reference level.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>
```

Parameter

`<real>` Reference level

- Range: Value equivalent to –120 to +50 dBm
- Resolution: 0.01 dB (When scale unit settings are dB-system units)
  0.01 pV (When scale unit settings are V-system units)
  0.01 yW (When scale unit settings are W-system units)
- Suffix code

`DBM,DM`	dBm
`DBMV`	dBmV
`DBUV`	dBµV
`DBUVE`	dBµV (emf)
`DBUVM`	dBµV/m
`V`	V
`MV`	mV
`UV`	µV
`W`	W
`MW`	mW
`UW`	µW
`NW`	nW
`PW`	pW
`FW`	fW

  Scale unit settings apply when omitted.
  V is used for Linear Scale.
- Default value: 0 dBm

Details

This command is not available when Spurious Emission is On and Gate View is Off.

Example of Use

To set the reference level to 0 dBm.

```
DISP:WIND:TRAC:Y:RLEV 0DBM
```

Related command

This command has the same function as the following commands.

```
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
```

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

Reference Level Query

Function

This command queries the reference level.

Query

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

Response

```
<real>
```

Parameter

`<real>`		Reference level
	Range	Value equivalent to –120 to +50 dBm
	Resolution	0.01 dB (When scale unit settings are dB-system units) 0.01 pV (When scale unit settings are V-system units) 0.01 yW (When scale unit settings are W-system units)
	Suffix code	None. Value is returned in dBm units.

Example of Use

To query the reference level.

```
DISP:WIND:TRAC:Y:RLEV?
> 0.00
```

Related command

This command has the same function as the following commands.

```
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
```

[:SENSe]:POWer[:RF]:ATTenuation <rel_ampl>

RF Attenuator

Function

This command sets the attenuation.

Command

```
[:SENSe]:POWer[:RF]:ATTenuation <rel_ampl>
```

Parameter

<rel_ampl>		Attenuation
	Range	0 to 60 dB
	Resolution	2 dB steps
	Suffix code	DB dB is used even when omitted.
	Default value	10 dB

Details

This command is not available in the following situations:

- When Spurious Emission is On AND when Gate View is Off.

Example of Use

To set the attenuation to 10 dB.

```
POW:ATT 10
```

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

RF Attenuator Query

Function

This command queries the attenuation.

Query

```
[:SENSe]:POWer[:RF]:ATTenuation?
```

Response

```
<rel_ampl>
```

Parameter

`<rel_ampl>`		Attenuation
	Range	0 to 60 dB
	Resolution	2 dB steps
	Suffix code	DB dB is used even when omitted.

Example of Use

To query the attenuation.

```
POW:ATT?
> 10
```

[:SENSe]:POWer[:RF]:ATTenuation:AUTO ON|OFF|1|0

RF Attenuator Auto/Manual

Function

This command enables/disables the automatic attenuation setting function.

Command

```
[:SENSe]:POWer[:RF]:ATTenuation:AUTO <switch>
```

Parameter

<switch>	Automatic attenuation setting function On/Off state
0|OFF	Disables the automatic attenuation setting function.
1|ON	Enables the automatic attenuation setting function (Default value).

Details

This command is not available in the following situations:

- When Spurious Emission is On AND when Gate View is Off.

Example of Use

To enable the automatic attenuation setting function.

```
POW:ATT:AUTO ON
```

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

RF Attenuator Auto/Manual Query

Function

This command queries the On/Off state of the automatic attenuation.

Query

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

Response

```
<switch>
```

Parameter

<switch>	Automatic attenuation is disabled/enabled.
0	Disabled.
1	Enabled.

Example of Use

To query the On/Off state of the automatic attenuation setting.

```
POW:ATT:AUTO?
> 1
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic]:PDIVision <rel_ampl>

Log Scale Range

Function

This command sets the Y-axis scale magnification when Scale Mode is set to Log.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic]:PDIVisi
on <rel_ampl>
```

Parameter

<rel_ampl>	Y-axis scale magnification
0.1	0.1 dB/div
0.2	0.2 dB/div
0.5	0.5 dB/div
1	1 dB/div
2	2 dB/div
5	5 dB/div
10	10 dB/div
20	20 dB/div
Default value	10 dB/div

Example of Use

To set the scale magnification to 0.5 dB/div.

```
DISP:WIND:TRAC:Y:PDIV 0.5
```

Related command

This command has the same function as the following commands.

```
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVis
ion
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
e]:PDIVision
```

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

Log Scale Range Query

Function

This command queries the Y-axis scale magnification when Scale Mode is set to Log.

Query

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic]:PDIVisi
on?
```

Response

```
<rel_ampl>
```

Parameter

<rel_ampl>	Y-axis scale magnification
0.1	0.1 dB/div
0.2	0.2 dB/div
0.5	0.5 dB/div
1	1 dB/div
2	2 dB/div
5	5 dB/div
10	10 dB/div
20	20 dB/div

Example of Use

To query the scale magnification.

```
DISP:WIND:TRAC:Y:PDIV?
> 0.5
```

Related command

This command has the same function as the following commands.

```
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion?
:DISPlay:SEMask:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
e]:PDIVision?
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:SPACing LINear|LOGarithmic

Scale Mode

Function

This command switches the scale mode.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:SPACing <mode>
```

Parameter

<mode>	Scale mode
LOGarithmic	Log scale (Default value)
LINear	Linear scale

Details

When the scale mode has been set to Linear, the Measure function is set to Off.

Example of Use

To set the scale mode to linear scale.

```
DISP:WIND:TRAC:Y:SPAC LIN
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:SPACing?

Scale Mode Query

Function

This command queries the scale mode.

Query

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:SPACing?
```

Response

```
<mode>
```

Parameter

<mode>	Scale mode
LOG	Log scale
LIN	Linear scale

Example of Use

To query the scale mode.

```
DISP:WIND:TRAC:Y:SPAC?
> LIN
```

:UNIT:POWer DBM|DBMV|V|W|DBUV|DBUVE|DBUVM

Log Scale Unit

Function

This command sets the level display unit system at log scale.

Command

```
:UNIT:POWer <unit>
```

Parameter

<unit>	Level display unit system at log scale
DBM	dBm
DBMV	dBmV
DBUV	dBμV
DBUVE	dBmV (emf)
V	V
W	W
DBUVM	dBμV/m
Default value	dBm

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.
If V (W) is selected and a measurement result is 99.999 GV (GW) or more, 99.999 GV (GW) or more is displayed.

Example of Use

To set the level display unit system at log scale to V.

```
UNIT:POW V
```

:UNIT:POWer?

Log Scale Unit Query

Function

This command queries the level display unit system at Log scale.

Query

```
:UNIT:POWer?
```

Response

```
<unit>
```

Parameter

<unit>	Level display unit system at Log scale
DBM	dBm
DBMV	dBmV
DBUV	dBμV
DBUVE	dBmV (emf)
V	V
W	W
DBUVM	dBμV/m

Example of Use

To query the level display unit system at Log scale.

```
UNIT:POW?
> V
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINear:PDIVision <percent>

Linear Scale Range

Function

This command sets the Y-axis scale magnification for the linear scale display.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINear:PDIVision
<percent>
```

Parameter

<percent>	Y-axis scale magnification
1	1 %/div
2	2 %/div
5	5 %/div
10	10 %/div
Default value	10 %/div

Example of Use

To set the scale magnification to 5%/div.

```
DISP:WIND:TRAC:Y:LIN:PDIV 5
```

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

Linear Scale Range Query

Function

This command queries the Y-axis scale magnification when Scale Mode is set to Linear.

Query

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINear:PDIVision?
```

Response

```
<percent>
```

Parameter

<percent>	Y-axis scale magnification
1	1 %/div
2	2 %/div
5	5 %/div
10	10 %/div

Example of Use

To query the scale magnification.

```
DISP:WIND:TRAC:Y:LIN:PDIV?
> 5
```


:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic] <lines>

Log Scale Line

Function

This command sets the number of Y-axis scale segments in Log scale mode.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic] <lines>
```

Parameter

<lines>	Number of Y-axis scale segments
10	10 segments (Default value)
12	12 segments

Details

This command is available only in Log scale mode.

Example of Use

To set the number of Y-axis scale segments in Log scale mode to 12.

```
DISP:WIND:TRAC:Y 12
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic]?

Log Scale Line Query

Function

This command queries the number of Y-axis segments in Log scale mode.

Query

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe][:LOGarithmic]?
```

Response

```
<lines>
```

Parameter

<lines>	Number of Y-axis scale segments
10	10 segments
12	12 segments

Details

This command is available only in Log scale mode.

Example of Use

To query the number of Y-axis scale segments in Log scale mode.

```
DISP:WIND:TRAC:Y?
> 12
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet <rel_ampl>

Ref.Level Offset Value

Function

This command sets the offset value of the reference level offset function.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet
<rel_ampl>
```

Parameter

<rel_ampl>	Reference level offset value
Range	–100.00 to +100.00 dB
Resolution	0.01 dB
Suffix code	DB dB is used even when omitted.
Default value	0 dB

Example of Use

To set the reference level offset function to ON at +10 dB.

```
DISP:WIND:TRAC:Y:RLEV:OFFS 10
```

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

Ref.Level Offset Value Query

Function

This command queries the offset value of the reference level offset function.

Query

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet?
```

Response

```
<rel_ampl>
```

Parameter

<rel_ampl>	Reference level offset value
Range	–100.00 to +100.00 dB
Resolution	0.01 dB
Suffix code	DB dB is used even when omitted.

Example of Use

To query the reference level offset.

```
DISP:WIND:TRAC:Y:RLEV:OFFS?
> 10.00
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet:STATe ON|OFF|1|0

Reference Level Offset Mode

Function

This command enables/disables the reference level offset function.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet:STATe
<switch>
```

Parameter

<switch>	Reference level offset function On/Off
ON|1	Enables the reference level offset function.
OFF|0	Disables the reference level offset function (Default value).

Example of Use

To enable the reference level offset function.

```
DISP:WIND:TRAC:Y:RLEV:OFFS:STAT ON
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet:STATe?

Reference Level Offset Mode Query

Function

This command queries the On/Off state of the reference level offset function.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet:STATe?
```

Response

```
<switch>
```

Parameter

<switch>	Reference level offset function On/Off
1	Reference level offset function is enabled.
0	Reference level offset function is disabled.

Example of Use

To query the On/Off state of the reference level offset function.

```
DISP:WIND:TRAC:Y:RLEV:OFFS:STAT?
> 1
```

[:SENSe]:POWer[:RF]:GAIN[:STATe] ON|OFF|1|0

Pre Amp

Function

This command sets Pre Amp to On/Off.

Command

```
[:SENSe]:POWer[:RF]:GAIN[:STATe] <switch>
```

Parameter

<switch>	Pre Amp On/Off
ON|1	Pre Amp is set to On.
OFF|0	Pre Amp is set to Off (Default value).

Details

[MS269xA]
This command is fixed to Off and cannot be set when the Option 008/108 6 GHz Preamplifier is not installed.
[MS2830A]
This command is fixed to Off and cannot be set when the Option 008/108/068/168 Preamplifier is not installed.
[MS2840A]
This command is fixed to Off and cannot be set when the Option 008/108/068/168/069/169 Preamplifier is not installed.
[Common]
This is not available when Spurious Emission is On, and Gate View is Off.

Example of Use

To set Pre Amp to On.

```
POW:GAIN ON
```

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

Pre Amp Query

Function

This command queries the On/Off state of the Pre-amplifier.

Query

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

Response

```
<switch>
```

Parameter

<switch>	Pre-amplifier On/Off
1	On
0	Off (Default value)

Example of Use

To query the On/Off state of the Pre-amplifier.

```
POW:GAIN?
> 1
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINE[:LOGarithmic] <lines>

Log Scale Line

Function

This command sets the number of Y-axis segments in Log scale mode.

Command

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINE[:LOGarithmic]
<lines>
```

Parameter

<lines>	Number of Y-axis scale segments
10	10 segments (Default value)
12	12 segments

Details

This function can be set only in Log scale mode.

Example of Use

To set the number of Y-axis segments in Log scale mode to 12.

```
DISP:WIND:TRAC:Y:LINE 12
```

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINE[:LOGarithmic]?

Log Scale Line Query

Function

This command queries the number of Y-axis scale segments in Log scale mode.

Query

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINE[:LOGarithmic]?
```

Response

```
<lines>
```

Parameter

<lines>	Number of Y-axis scale segments
10	10 segments
12	12 segments

Example of Use

To query the number of Y-axis scale segments for Log scale.

```
DISP:WIND:TRAC:Y:LINE?
> 12
```

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

Impedance

Function

This command sets the input impedance.

Command

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

Parameter

<mode>	Impedance
50	Sets impedance to 50 Ω. (Default)
75	Sets impedance to 75 Ω.

Example of Use

To set the impedance to 75 Ω.

```
CORR:IMP 75
```

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

Impedance Query

Function

This command queries the input impedance setting.

Query

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

Response

```
<mode>
```

Parameter

<mode>	Impedance
50	To set the impedance to 50 Ω.
75	To set the impedance to 75 Ω.

Example of Use

To query the input impedance setting.

```
CORR:IMP?
> 75
```

2.3 RBW/VBW

Table 2.3-1 lists device messages for RBW/VBW.

Table 2.3-1 Device messages for RBW/VBW

Function	Device Message
Resolution Bandwidth	[:SENSe]:BANDwidth|:BWIDth[:RESolution] <freq>
	[:SENSe]:BANDwidth|:BWIDth[:RESolution]?
	:CALCulate:BANDwidth|:BWIDth[:RESolution] <freq>
	:CALCulate:BANDwidth|:BWIDth[:RESolution]?
Resolution Bandwidth Auto/Manual	[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO ON|OFF|1|0
	[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?
	:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO ON|OFF|1|0
	:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO?
Resolution Bandwidth Normal/CISPR	[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE NORMal|CISPr
	[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?
	:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE NORMal|CISPr
	:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?
Video Bandwidth	[:SENSe]:BANDwidth|:BWIDth:VIDeo <freq>
	[:SENSe]:BANDwidth|:BWIDth:VIDeo?
Video Bandwidth Auto/Manual	[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO ON|OFF|1|0
	[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?
Video Bandwidth Mode	[:SENSe]:BANDwidth|:BWIDth:VIDeo:MODE VIDeo|POWer
	[:SENSe]:BANDwidth|:BWIDth:VIDeo:MODE?

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

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW). When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

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

Parameter

`<freq>`	Resolution bandwidth (RBW)
[MS269xA]	
Range/Resolution	30 Hz to 31.25 MHz However, the settable value is 30 Hz to 3 MHz (for 1 to 3 sequences), 50 kHz, 5 MHz, 10 MHz, or 20 MHz, or 31.25 MHz.
[MS2830A], [MS2840A]	
RBW Mode Normal	
Range/Resolution	1 Hz to 31.25 MHz However, the settable value is 1 Hz to 3 MHz (for 1 to 3 sequences), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, or 31.25 MHz.
RBW Mode CISPR	(Only with MS2830A-016/116, MS2840A-016/116)
Range/Resolution	The settable value is 200 Hz, 9 kHz, 120 kHz, or 1 MHz.
Default	Value set in CISPR RBW Auto
[Common]	
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default	Value set in RBW Auto (Except RBW Mode CISPR)

Details

In MS269xA, MS2830A, MS2840A RBW Mode: Normal

- The resolution bandwidth Auto setting is switched off when the resolution bandwidth (RBW) is changed.
- For MS2830A, MS2840A RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.
- For RBW 31.25 MHz, it is not a Gauss filter but a flat-top characteristic filter. This command can be used only during 0 span.
- RBW 1 Hz, 3 Hz, and 10 Hz cannot be set when Auto Sweep Type Rules is Swept Only. This command cannot be used during 0 span because Auto Sweep Type Rules is fixed to Swept Only.
- This command is disabled during the Spectrum Emission Mask measurement.
- This command is disabled during the Spurious Emission measurement.

In MS2830A, MS2840A RBW Mode: CISPR

- The resolution bandwidth Auto setting is switched off when the resolution bandwidth (RBW) is changed.
- RBW 1 MHz cannot be set when Detector is Quasi-Peak.
- Not available when Measure function is set to On.
- Not available when Gate View function is set to On.

Example of Use

To set the RBW to 3 kHz.

```
BAND 3KHZ
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]
[:SENSe]:CHPower:BANDwidth[:RESolution]
[:SENSe]:OBWidth:BANDwidth[:RESolution]
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]
:CALCulate:BANDwidth|:BWIDth[:RESolution]
:CALCulate:ACPower:BANDwidth[:RESolution]
:CALCulate:CHPower:BANDwidth[:RESolution]
:CALCulate:OBWidth:BANDwidth[:RESolution]
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]
```

:CALCulate:BANDwidth|:BWIDth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW). When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
:CALCulate:BANDwidth|:BWIDth[:RESolution] <freq>
```

Parameter

<freq>	Resolution bandwidth (RBW)
[MS269xA]	
Range/Resolution	30 Hz to 31.25 MHz However, the settable value is 30 Hz to 3 MHz (for 1 to 3 sequences), 50 kHz, 5 MHz, 10 MHz, or 20 MHz, or 31.25 MHz.
[MS2830A], [MS2840A]	
RBW Mode Normal	
Range/Resolution	1 Hz to 31.25 MHz However, the settable value is 1 Hz to 3 MHz (for 1 to 3 sequences), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, or 31.25 MHz.
RBW Mode CISPR	(Only with MS2830A-016/116, MS2840A-016/116)
Range/Resolution	The settable value is 200 Hz, 9 kHz, 120 kHz, or 1 MHz.
Default	Value set in CISPR RBW Auto
[Common]	
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default	Value set in RBW Auto (Except RBW Mode CISPR)

Details

In MS269xA, MS2830A, MS2840A RBW Mode: Normal

- The resolution bandwidth Auto setting is switched off when the resolution bandwidth (RBW) is changed. For MS2830A, MS2840A RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.
- For RBW 31.25 MHz, it is not a Gauss filter but a flat-top characteristic filter. This command can be used only during 0 span.
- RBW 1 Hz, 3 Hz, and 10 Hz cannot be set when Auto Sweep Type Rules is Swept Only. This command cannot be used during 0 span because Auto Sweep Type Rules is fixed to Swept Only.
- This command is disabled during the Spectrum Emission Mask measurement.
- This command is disabled during the Spurious Emission measurement.

In MS2830A, MS2840A RBW Mode: CISPR

- The resolution bandwidth Auto setting is switched off when the resolution bandwidth (RBW) is changed.
- RBW 1 MHz cannot be set when Detector is Quasi-Peak.
- Not available when Measure function is set to On.
- Not available when Gate View function is set to On.

Example of Use

To set RBW to 3 kHz.

```
CALC:BAND 3KHZ
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]
[:SENSe]:ACPower:BANDwidth[:RESolution]
[:SENSe]:CHPower:BANDwidth[:RESolution]
[:SENSe]:OBWidth:BANDwidth[:RESolution]
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]
:CALCulate:ACPower:BANDwidth[:RESolution]
:CALCulate:CHPower:BANDwidth[:RESolution]
:CALCulate:OBWidth:BANDwidth[:RESolution]
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]
```

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

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW). When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

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

Response

```
<freq>
```

Parameter

`<freq>` Resolution bandwidth(RBW)

[MS269xA]

Range/Resolution 30 Hz to 31.25 MHz
However, the settable value is 30 Hz to 3 MHz (for 1 to 3 sequences), 50 kHz, 5 MHz, 10 MHz, or 20 MHz, or 31.25 MHz.

[MS2830A], [MS2840A]

RBW Mode Normal

Range/Resolution 1 Hz to 31.25 MHz
However, the settable value is 1 Hz to 3 MHz (for 1 to 3 sequences), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, or 31.25 MHz.

RBW Mode CISPR (With MS2830A-016/116, MS2840A-016/116)

Range/Resolution The settable value is 200 Hz, 9 kHz, 120 kHz, or 1 MHz.

[Common]

Suffix code HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
Hz is used when omitted.

Details

The automatic setting of the resolution bandwidth is OFF, if the resolution bandwidth (RBW) is changed.

Example of Use

To query RBW.

```
BAND?
> 3000
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]?
[:SENSe]:CHPower:BANDwidth[:RESolution]?
[:SENSe]:OBWidth:BANDwidth[:RESolution]?
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?
:CALCulate:BANDwidth|:BWIDth[:RESolution]
:CALCulate:ACPower:BANDwidth[:RESolution]?
:CALCulate:CHPower:BANDwidth[:RESolution]?
:CALCulate:OBWidth:BANDwidth[:RESolution]?
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?
```

:CALCulate:BANDwidth|:BWIDth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW). When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
:CALCulate:BANDwidth|:BWIDth[:RESolution]?
```

Response

```
<freq>
```

Parameter

`<freq>` Resolution bandwidth (RBW)

[MS269xA]

Range/Resolution 30 Hz to 31.25 MHz
However, the settable value is 30 Hz to 3 MHz (for 1 to 3 sequences), 50 kHz, 5 MHz, 10 MHz, or 20 MHz, or 31.25 MHz.

[MS2830A], [MS2840A]

RBW Mode Normal

Range/Resolution 1 Hz to 31.25 MHz
However, the settable value is 1 Hz to 3 MHz (for 1 to 3 sequences), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, or 31.25 MHz.

RBW Mode CISPR (With MS2830A-016/116, MS2840A-016/116)

Range/Resolution The settable value is 200 Hz, 9 kHz, 120 kHz, or 1 MHz.

[Common]

Suffix code HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
Hz is used when omitted.

Details

The automatic setting of the resolution bandwidth is OFF, if the resolution bandwidth (RBW) is changed.

Example of Use

To query RBW.

```
CALC:BAND?
> 3000
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]?
[:SENSe]:ACPower:BANDwidth[:RESolution]?
[:SENSe]:CHPower:BANDwidth[:RESolution]?
[:SENSe]:OBWidth:BANDwidth[:RESolution]?
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?
:CALCulate:ACPower:BANDwidth[:RESolution]?
:CALCulate:CHPower:BANDwidth[:RESolution]?
:CALCulate:OBWidth:BANDwidth[:RESolution]?
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?
```

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

Resolution Bandwidth Auto/Manual

Function

This command enables/disables the resolution bandwidth (RBW) automatic setting function. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO <switch>
```

Parameter

MS269xA, MS2830A, MS2840A RBW Mode Normal

<switch>	Automatic resolution bandwidth setting function On/Off state
0|OFF	Disables the automatic resolution bandwidth function.
1|ON	Enables the automatic resolution bandwidth setting function (Default).

MS2830A, MS2840A RBW Mode CISPR

(Only with MS2830A-016/116, MS2840A-016/116)

<switch>	Automatic setting (for CISPR RBW)
0|OFF	Automatic setting is set to Off.
1|ON	Automatic setting is set to On (Default).

Details

MS269xA, MS2830A, MS2840A RBW Mode Normal
This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

MS2830A, MS2840A RBW Mode CISPR
Not available when Measure function is set to On.
Not available when Gate View function is set to On.

Example of Use

To enable the automatic resolution bandwidth setting function.

```
BAND:AUTO ON
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO
```

:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO ON|OFF|1|0

Resolution Bandwidth Auto/Manual

Function

This command sets the resolution bandwidth (RBW) automatically. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO <switch>
```

Parameter

MS269xA, MS2830A, MS2840A RBW Mode Normal

<switch>	Automatic setting
0|OFF	Sets the automatic setting to Off.
1|ON	Sets the automatic setting to On (Default).

MS2830A, MS2840A RBW Mode CISPR

(Only with MS2830A-016/116, MS2840A-016/116)

<switch>	Automatic setting (for CISPR RBW)
0|OFF	Automatic setting is set to Off.
1|ON	Automatic setting is set to On (Default).

Details

MS269xA, MS2830A, MS2840A RBW Mode Normal
This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

MS2830A, MS2840A RBW Mode CISPR
Not available when Measure function is set to On.
Not available when Gate View function is set to On.

Example of Use

To enable the automatic setting of RBW.

```
CALC:BAND:AUTO ON
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO
```

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

Resolution Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic resolution bandwidth setting. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

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

Response

```
<switch>
```

Parameter

MS269xA, MS2830A, MS2840A RBW Mode Normal

<switch>	Automatic resolution bandwidth setting function On/Off
0	Automatic resolution bandwidth setting function is disabled.
1	Automatic resolution bandwidth setting function is enabled.

MS2830A, MS2840A RBW Mode CISPR

(Only with MSA2830A-016/116, MS2840A-016/116)

<switch>	Automatic setting (for CISPR RBW)
0	Automatic setting is set to Off.
1	Automatic setting is set to On (Default).

Example of Use

To query the On/Off state of the automatic resolution bandwidth setting.

```
BAND:AUTO?
> 1
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
```

:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO?

Resolution Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic resolution bandwidth setting. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO?
```

Response

```
<switch>
```

Parameter

MS269xA, MS2830A, MS2840A RBW Mode Normal

<switch>	Automatic setting
0	Automatic resolution bandwidth setting function is disabled.
1	Automatic resolution bandwidth setting function is enabled.

MS2830A, MS2840A RBW Mode CISPR

(Only with MS2830A-016/116, MS2840A-016/116)

<switch>	Automatic setting (for CISPR RBW)
0	Automatic setting is set to Off.
1	Automatic setting is set to On.

Example of Use

To query the On/Off state of the automatic resolution bandwidth setting.

```
CALC:BAND:AUTO?
> 1
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
```

[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth (RBW) mode. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE <mode>
```

Parameter

<mode>	Resolution Bandwidth (RBW)
NORMal	RBW (in normal cases). This is the Default.
CISPr	CISPR RBW

Details

This function is available when MS2830A-016/116, MS2840A-016/116 is installed.
Not available when Measure function is set to On.
Not available when Gate View function is set to On.

Example of Use

To switch the mode to CISPR RBW.

```
BAND:MODE CISP
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth (RBW) mode. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE <mode>
```

Parameter

<mode>	Resolution Bandwidth (RBW)
NORMal	RBW (in normal cases). This is the Default.
CISPr	CISPR RBW

Details

This function is available when MS2830A-016/116, MS2840A-016/116 is installed.
Not available when Measure function is set to On.
Not available when Gate View function is set to On.

Example of Use

To switch the mode to CISPR RBW.

```
CALC:BAND:MODE CISP
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

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

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth (RBW) mode. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?
```

Response

```
<mode>
```

Parameter

<mode>	Resolution Bandwidth (RBW)
NORM	RBW (in normal cases). .
CISP	CISPR RBW

Details

This function is available when MS2830A-016/116, MS2840A-016/116 is installed.
Not available when Measure function is set to On.
Not available when Gate View function is set to On.

Example of Use

To query the RBW mode.

```
BAND:MODE?
> NORM
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
```

:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth (RBW) mode. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?
```

Response

```
<mode>
```

Parameter

<mode>	Resolution Bandwidth (RBW)
NORM	RBW (in normal cases)
CISP	CISPR RBW

Details

This function is available when MS2830A-016/116, MS2840A-016/116 is installed.
Not available when Measure function is set to On.
Not available when Gate View function is set to On.

Example of Use

To query the RBW mode.

```
CALC:BAND:MODE?
> NORM
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
```

[:SENSe]:BANDwidth|:BWIDth:VIDeo <freq>

Video Bandwidth

Function

This command sets the video bandwidth (VBW). When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
[:SENSe]:BANDwidth|:BWIDth:VIDeo <freq>
```

Parameter

<freq>	Video bandwidth (VBW)
Range/Resolution	1 Hz to 10 MHz (1 to 3 sequences), 5 kHz, OFF
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default	Value set in VBW Auto

Details

The automatic setting of the video bandwidth (VBW) is OFF, if the video bandwidth is changed.
This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set VBW to 3 kHz.

```
BAND:VID 3KHZ
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth:VIDeo
[:SENSe]:CHPower:BANDwidth:VIDeo
[:SENSe]:OBWidth:BANDwidth:VIDeo
```

[:SENSe]:BANDwidth|:BWIDth:VIDeo?

Video Bandwidth Query

Function

This command queries the video bandwidth (VBW). When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
[:SENSe]:BANDwidth|:BWIDth:VIDeo?
```

Response

```
<freq>
```

Parameter

<freq>		Video bandwidth (VBW)
	Range/Resolution	1 Hz to 10 MHz (1 to 3 sequences), 5 kHz, OFF
	Suffix code	None. Value is returned in Hz units.

Details

The automatic setting of the video bandwidth (VBW) is OFF, if the video bandwidth is changed.

Example of Use

To query VBW.

```
BAND:VID?
> 3000
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth:VIDeo?
[:SENSe]:CHPower:BANDwidth:VIDeo?
[:SENSe]:OBWidth:BANDwidth:VIDeo?
```

[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO ON|OFF|1|0

Video Bandwidth Auto/Manual

Function

This command enables/disables the automatic video bandwidth (VBW) setting function. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO <switch>
```

Parameter

`<switch>`	Automatic video bandwidth setting function On/Off
`0|OFF`	Disables the automatic video bandwidth setting function.
`1|ON`	Enables the automatic video bandwidth setting function (Default).

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To enable the automatic video bandwidth setting function.

```
BAND:VID:AUTO ON
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth:VIDeo
[:SENSe]:CHPower:BANDwidth:VIDeo
[:SENSe]:OBWidth:BANDwidth:VIDeo
```

[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?

Video Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic video bandwidth (VBW) setting. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>	Automatic video bandwidth setting function On/Off
0	Automatic video bandwidth setting function is disabled.
1	Automatic video bandwidth setting function is enabled.

Example of Use

To query the On/Off state of the automatic video bandwidth setting.

```
BAND:VID:AUTO?
> 1
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth:VIDeo?
[:SENSe]:CHPower:BANDwidth:VIDeo?
[:SENSe]:OBWidth:BANDwidth:VIDeo?
```

[:SENSe]:BANDwidth|:BWIDth:VIDeo:MODE VIDeo|POWer

Video Bandwidth Mode

Function

This command sets the video bandwidth (VBW) processing method.

Command

```
[:SENSe]:BANDwidth|:BWIDth:VIDeo:MODE <method>
```

Parameter

`<method>`	VBW processing method
`VIDeo`	Normal VBW
`POWer`	Power VBW (Default)

Details

This command is not available in the following cases:

- When Detection is set to RMS.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the video bandwidth processing method when measuring the reference power to Power VBW.

```
BAND:VID:MODE POW
```

[:SENSe]:BANDwidth|:BWIDth:VIDeo:MODE?

Video Bandwidth Mode Query

Function

This command queries the video bandwidth (VBW) processing method.

Query

```
[:SENSe]:BANDwidth|:BWIDth:VIDeo:MODE?
```

Response

```
<method>
```

Parameter

<method>	VBW processing method
VID	Normal VBW
POW	Power VBW

Details

This command is fixed to Off and cannot be set if Detection is set to the following:

- RMS

Example of Use

To query the video bandwidth processing when measuring the reference power.

```
BAND:VID:MODE?
> POW
```

2.4 Marker

Table 2.4-1 lists device messages for marker.

Table 2.4-1 Device messages for marker

Function	Device Message
Marker Mode	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
Marker State	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:STATe OFF|ON|0|1
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:STATe?
Active Marker	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:ACTive OFF|ON|0|1
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:ACTive?
Zone Marker Position	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
Zone Marker Frequency (Time)	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
Zone Marker Relative Frequency (Time)	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:DELTa <freq>|<time>
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:DELTa?
Relative To	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?
Marker List	:CALCulate:MARKer:TABLe[:STATe] OFF|ON|0|1
	:CALCulate:MARKer:TABLe[:STATe]?
Spot Line	:CALCulate:MARKer:SLINe[:STATe] OFF|ON|0|1
	:CALCulate:MARKer:SLINe[:STATe]?
Couple Zone	:CALCulate:MARKer:COUPle:ZONE[:STATe] OFF|ON|0|1
	:CALCulate:MARKer:COUPle:ZONE[:STATe]?
Power Marker	:CALCulate:PMARker:MODE ON|OFF|1|0
	:CALCulate:PMARker:MODE?
Zone Marker Width	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:DIVision <division>
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:DIVision?
Zone Marker Width (by Point)	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:POINt <integer>
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:POINt?
Zone Marker Width (by Frequency)	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh <freq>
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh?
Zone Width Type	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:TYPE ZONE|SPOT
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:TYPE?
Marker Trace	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:TRACe 1|2|3|4|5|6
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:TRACe?
Marker to Center Frequency	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:SET]:CENTer

Table 2.4-1 Device messages for marker (Cont'd)

Function	Device message
Marker to Reference Level	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:SET]:RLEVel
Marker Result	:CALCulate:MARKer:RESult INTegration|DENSity|PEAK
	:CALCulate:MARKer:RESult?
Marker Position Query	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:PEAK:X:POSition?
Marker Frequency (Time) Query	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:PEAK:X?
Marker Level Query	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?
Marker Relative Level Query	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y:DELTa?
Reference Marker Position Query	:CALCulate:MARKer:REFerence:X:POSition?
Marker Frequency (Time) Query	:CALCulate:MARKer:REFerence:X?
Reference Marker Level Query	:CALCulate:MARKer:REFerence:Y?
Power Marker Result Query	:CALCulate:PMARker[1]|2|3|4|5|6|7|8|9|10:Y?
	:CALCulate:PMARker:DELTa:Y?
All Marker Off	:CALCulate:MARKer:AOFF
Marker Readout Query	:CALCulate:MARKer:READout?
Frequency Counter Gate Time	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt:GATetime <time>
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt:GATetime?
Frequency Counter State	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt[:STATe] OFF|ON|0|1
	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt[:STATe]?
Frequency Counter	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt:X?
Marker Tracking	:CALCulate:MARKer:TRCKing[:STATe] OFF|ON|0|1
	:CALCulate:MARKer:TRCKing[:STATe]?

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF

Marker Mode

Function

This command sets the marker mode.

Command

```
:CALCulate:MARKer[n]:MODE <mode>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<mode>	Marker mode
NORMal|POSition	Normal marker
DELTa	Delta marker
FIXed	Fixed marker
OFF	Not displaying any marker
Default	Off (Normal only in Marker1)

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the mode of the marker 1 to delta marker.

```
CALC:MARK:MODE DELT
```

Related command

This command has the same function as the following commands.

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

Marker Mode Query

Function

This command queries the marker mode.

Query

```
:CALCulate:MARKer[n]:MODE?
```

Response

```
<mode>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<mode>	Marker mode
NORM	Normal marker
DELT	Delta marker
FIX	Fixed marker
OFF	Not displaying any marker

Example of Use

To query the mode of the marker.

```
CALC:MARK:MODE?
> DELT
```

Related command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:
MODE?
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:STATe OFF|ON|0|1

Marker State

Function

This command sets the marker to On/Off.

Command

```
:CALCulate:MARKer[n]:STATe <switch>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<switch>	Marker mode
ON|1	Sets the marker mode to Normal.
OFF|0	Sets the marker mode to Off.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the marker 2 to Normal.

```
CALC:MARK2:STAT ON
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:STATe?

Marker State Query

Function

This command queries the On/Off state of the marker.

Query

```
:CALCulate:MARKer[n]:STATe?
```

Response

```
<switch>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<switch>	Marker mode
1	Marker mode is set to other than Off.
0	Marker mode is set to Off.

Example of Use

To query the mode of Marker 2.

```
CALC:MARK2:STAT?
> 1
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:ACTive OFF|ON|0|1

Active Marker

Function

This command specifies the active marker.

Command

```
:CALCulate:MARKer[n]:ACTive <switch>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<switch>	Active marker
ON|1	Sets the marker n to On.
OFF|0	Sets the marker n to Off.

Details

Multiple markers can not be set to active.
This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the marker 1 to active.

```
CALC:MARK:ACT ON
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:ACTive?

Active Marker Query

Function

This command queries the active marker.

Query

```
:CALCulate:MARKer[n]:ACTive?
```

Response

```
<switch>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<switch>	Active marker
1	Active marker On.
0	Active marker Off.

Example of Use

To query the active marker.

```
CALC:MARK:ACT?
> 1
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>

Zone Marker Position

Function

This command moves the center of the zone marker to the specified position.

Command

```
:CALCulate:MARKer[n]:X:POSition <integer>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<integer>	Number of display points from the left edge of the screen
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To move the center of the zone marker to the 5 hundredth point from the left edge of the screen.

```
CALC:MARK:X:POS 500
```

Related command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

Zone Marker Position Query

Function

This command queries the center position of the zone marker.

Query

```
:CALCulate:MARKer[n]:X:POSition?
```

Response

```
<integer>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<integer>	Number of display points from the left edge of the screen
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)

Example of Use

To query the center of the zone marker.

```
CALC:MARK:X:POS?
> 500
```

Related command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>

Zone Marker Frequency (Time)

Function

This command moves the center of the zone marker to the specified frequency or time.

Command

```
:CALCulate:MARKer[n]:X <freq>|<time>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<freq>	Center frequency of zone marker
Range	
[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
	–100 MHz to 13.6 GHz (MS2691A)
	–100 MHz to 26.6 GHz (MS2692A)
[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
	–100 MHz to 6.1 GHz (Option 041)
	–100 MHz to 13.6 GHz (Option 043)
	–100 MHz to 26.6 GHz (Option 044)
	–100 MHz to 43.1 GHz (Option 045)
[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
	–100 MHz to 6.1 GHz (Option 041)
	–100 MHz to 26.6 GHz (Option 044)
	–100 MHz to 44.6 GHz (Option 046)
Resolution	0.01 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
	Hz is used when omitted.
Default	X-axis center
<time>	Center time of zone marker
Range	–1000 to 1000 s
Resolution	1 ns
Suffix code	NS, US, MS, S

S is used when omitted.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To move the center frequency of the zone marker to 100 MHz.

```
CALC:MARK:X 100MHZ
```

Related command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

Zone Marker Frequency (Time) Query

Function

This command queries the center of the zone marker.

Query

```
:CALCulate:MARKer[n]:X?
```

Response

```
<freq>
<time>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1

<freq>	Center frequency of zone marker
Range	
[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
	–100 MHz to 13.6 GHz (MS2691A)
	–100 MHz to 26.6 GHz (MS2692A)
[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
	–100 MHz to 6.1 GHz (Option 041)
	–100 MHz to 13.6 GHz (Option 043)
	–100 MHz to 26.6 GHz (Option 044)
	–100 MHz to 43.1 GHz (Option 045)
[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
	–100 MHz to 6.1 GHz (Option 041)
	–100 MHz to 26.6 GHz (Option 044)
	–100 MHz to 44.6 GHz (Option 046)
Resolution	0.01 Hz
Suffix code	None
Default	X-axis center
<time>	Center time of zone marker
Range	–1000 to 1000 s
Resolution	0.01 s
Suffix code	None

Example of Use

To query the center of the zone marker of Marker 1.

```
CALC:MARK:X?
> 100000000.00
```

Related command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:
X?
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:DELTa <freq>|<time>

Zone Marker Relative Frequency (Time)

Function

This command moves the center of the zone marker to the frequency (time), specified by relative value.

Command

```
:CALCulate:MARKer[n]:X:DELTa <freq>|<time>
```

Parameter

<n>	Marker Number
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10
When omitted:	Specifies marker 1
<freq>	Relative center frequency of zone maker
Range	Absolute frequency range – Reference marker center frequency
Resolution	0.01 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default	0 Hz
<time>	Relative center time of zone marker
Range	Absolute time range – Reference marker center time
Resolution	1 ns
Suffix code	NS, US, MS, S S is used when the suffix code is omitted.
Default	0 s

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.
Not available when Marker Mode is set other than Delta.

Example of Use

When Frequency Span is 0 Hz, and Active Marker is Maker 2. To move the center of Marker 1 zone marker to +100 MHz of Marker 2 (reference marker).

```
CALC:MARK1:REF 2
CALC:MARK1:X:DELT 100MHZ
```

When Frequency Span is 0 Hz, and Active Marker is Maker 2.
To move the center of Marker 1 zone marker to 15 ms of Marker 2 (reference marker).

```
CALC:MARK1:REF 2
CALC:MARK:X:DELT 1,15MS
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:DELTa?

Zone Marker Relative Frequency (Time) Query

Function

This command queries the center of zone marker in relative value.

Query

```
:CALCulate:MARKer[n]:X:DELTa?
```

Response

```
<freq>
<time>
```

Parameter

<n>		Marker Number
	1	Specifies marker 1
	2	Specifies marker 2
	3	Specifies marker 3
	4	Specifies marker 4
	5	Specifies marker 5
	6	Specifies marker 6
	7	Specifies marker 7
	8	Specifies marker 8
	9	Specifies marker 9
	10	Specifies marker 10
	When omitted:	Specifies marker 1
<freq>		Center frequency of zone maker
	Range	Absolute frequency range – Reference marker center frequency
	Resolution	0.01 Hz
	Suffix code	None
<time>		Center time of zone marker
	Range	Absolute time range – Reference marker center time
	Resolution	1 ns
	Suffix code	None

Example of Use

When Frequency Span is 0 Hz, and Active Marker is Maker 2.
To move the center of Marker 1 zone marker to +100 MHz of Marker 2 (reference marker).

```
CALC:MARK1:REF 2
CALC:MARK:X:DELT 1,100MHZ
```

To query the center of Marker 1 zone marker in relative value.

```
CALC:MARK:X:DELT?
> 100000000.00
```

When Frequency Span is 0 Hz, and Active Marker is Maker 2.
To move the center of Marker 1 zone marker to 15 ms of Marker 2 (reference marker).

```
CALC:MARK1:REF 2
CALC:MARK:X:DELT 1,15MS
```

To query the center of Marker 1 zone marker in relative value.

```
CALC:MARK:X:DELT? 1
> 0.015000000
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>

Relative To

Function

This command sets the reference marker when the marker mode is set to Delta.

Command

```
:CALCulate:MARKer[n]:REFerence <integer>
```

Parameter

<n>	Marker number to set
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<integer>	Marker number for reference
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Active marker

Details

The setting target marker cannot be set to the reference marker.
This command is not available in the following cases:

- During the Spurious Emission measurement AND when Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the reference marker for Marker 2 to 4.

```
CALC:MARK2:REF 4
```

Related Commands

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerenc
e
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerenc
e
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerenc
e
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:
REFerence
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

Relative To Query

Function

This command queries the reference marker when the marker mode is set to Delta.

Query

```
:CALCulate:MARKer[n]:REFerence?
```

Response

```
<integer>
```

Parameter

<n>	Marker number to set
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1

<integer>	Marker number for reference
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10

Example of Use

To query the reference marker for the marker 2.

```
CALC:MARK2:REF?
> 4
```

Related Command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerenc
e?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerenc
e?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerenc
e?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:
REFerence?
```

:CALCulate:MARKer:TABLe[:STATe] OFF|ON|0|1

Marker List

Function

This command selects the marker list display On/Off.

Command

```
:CALCulate:MARKer:TABLe[:STATe] <switch>
```

Parameter

`<switch>`	Marker list display On/Off
`ON|1`	Sets the marker list to On.
`OFF|0`	Sets the marker list to Off.

Details

This command is not available when Measure function is set to On and during the Spurious Emission measurement.

Example of Use

To the marker list display to On.

```
CALC:MARK:TABL ON
```

:CALCulate:MARKer:TABLe[:STATe]?

Marker List Query

Function

This command queries the On/Off state of the marker list display setting.

Query

```
:CALCulate:MARKer:TABLe[:STATe]?
```

Response

```
<switch>
```

Parameter

`<switch>`	Marker list display On/Off
`1`	Marker list is set to On.
`0`	Marker list is set to Off.

Example of Use

To query the On/Off state of the marker list display setting.

```
CALC:MARK:TABL?
> 1
```

:CALCulate:MARKer:SLINe[:STATe] OFF|ON|0|1

Spot Line

Function

This command selects the marker line display in spot marker On/Off.

Command

```
:CALCulate:MARKer:SLINe[:STATe] <switch>
```

Parameter

<switch>	Marker list display On/Off
ON|1	Displays the marker line.
OFF|0	Hides the marker line.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To display the marker line.

```
CALC:MARK:SLIN ON
```

:CALCulate:MARKer:SLINe[:STATe]?

Spot Line Query

Function

This command queries the On/Off state of the marker line display setting in spot marker.

Query

```
:CALCulate:MARKer:SLINe[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Marker line display On/Off
1	Displays the marker line.
0	Hides the marker line.

Example of Use

To query the On/Off state of the marker line display setting.

```
CALC:MARK:SLIN?
> 1
```

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

Couple Zone

Function

This command sets Zone Width shared setting On/Off.

Command

```
:CALCulate:MARKer:COUPle:ZONE[:STATe] <switch>
```

Parameter

<switch>	Zone Width shared setting On/Off
ON|1	Sets the shared setting to On.
OFF|0	Sets the shared setting to Off.

Details

Shares the Zone Width setting of each marker when set to On.
Not available during Time Domain.
This command is not available during the time domain measurement.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the Zone Width shared setting to On.

```
CALC:MARK:COUP:ZONE ON
```

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

Couple Zone Query

Function

This command queries the On/Off state of the Zone Width shared setting.

Query

```
:CALCulate:MARKer:COUPle:ZONE[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Zone Width shared setting On/Off
1	On
0	Off

Details

Shares the Zone Width setting of each marker when set to On.

Example of Use

To query the On/Off state of the Zone Width shared setting.

```
CALC:MARK:COUP:ZONE?
> 1
```

:CALCulate:PMARker:MODE ON|OFF|1|0

Power Marker

Function

This command switches the display mode of the marker value.

Command

```
:CALCulate:PMARker:MODE <switch>
```

Parameter

<switch>	Marker Result
ON|1	Integration
OFF|0	Peak

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To the display mode of the marker value to Integration.

```
CALC:PMAR:MODE ON
```

:CALCulate:PMARker:MODE?

Power Marker Query

Function

This command queries the display mode of the marker value.

Query

```
:CALCulate:PMARker:MODE?
```

Response

```
<switch>
```

Parameter

<switch>	Marker Result
1	Integration
0	Peak

Example of Use

To query the display mode of the marker value.

```
CALC:PMAR:MODE?
> 1
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:DIVision <division>

Zone Marker Width

Function

This command sets the width of the zone marker by the number of screen segments.

Command

```
:CALCulate:MARKer[n]:WIDTh:DIVision <division>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<division>	Zone marker width
0	Spot
0.5	0.5 div
1	1 div (Default)
2	2 div
3	3 div
4	4 div
5	5 div
6	6 div
7	7 div
8	8 div
9	9 div
10	10 div

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the zone marker width to 5 div.

```
CALC:MARK:WIDT:DIV 5
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:DIVision?

Zone Marker Width Query

Function

This command queries the zone marker width by the number of screen segments.

Query

```
:CALCulate:MARKer[n]:WIDTh:DIVision?
```

Response

```
<division>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<division>	Zone marker width
0	Spot
0.5	0.5 div
1	1 div (Default)
2	2 div
3	3 div
4	4 div
5	5 div
6	6 div
7	7 div
8	8 div
9	9 div
10	10 div

Details

–999.0 is returned, if the zone marker width is out of range.

Example of Use

To query the zone marker width by the number of screen segments.

```
CALC:MARK:WIDT:DIV?
> 5
```


:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:POINt <integer>

Zone Marker Width (by Point)

Function

This command sets the zone marker width by the point.

Command

```
:CALCulate:MARKer[n]:WIDTh:POINt <integer>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<integer>	Zone marker width
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only) points (number of trace points)

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the zone marker width of Marker 1 to 501 points.

```
CALC:MARK:WIDT:POIN 501
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:POINt?

Zone Marker Width (by Point) Query

Function

This command queries the zone marker width by the point.

Query

```
:CALCulate:MARKer[n]:WIDTh:POINt?
```

Response

```
<integer>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<integer>	Zone marker width
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only) points (number of trace points)

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Example of Use

To query the zone marker width by the point.

```
CALC:MARK:WIDT:POIN?
> 501
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh <freq>

Zone Marker Width (by Frequency)

Function

This command sets the zone marker width by the frequency.

Command

```
:CALCulate:MARKer[n]:WIDTh <freq>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<freq>	Frequency of zone marker
Range	0.01 Hz to the specified span width
Resolution	0.01 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default	Value of 1 Division

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the zone marker width of Marker 1 to 1 MHz.

```
CALC:MARK:WIDT 1MHZ
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh?

Zone Marker Width (by Frequency) Query

Function

This command queries the zone marker width.

Query

```
:CALCulate:MARKer[n]:WIDTh?
```

Response

```
<freq>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<freq>	Frequency of zone marker
Range	0.01 Hz to the specified span width
Resolution	0.01 Hz
Suffix code	None

Example of Use

To query the zone marker width of Marker 1.

```
CALC:MARK:WIDT?
> 1000000.00
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:TYPE ZONE|SPOT

Zone Width Type

Function

This command sets the zone type of the marker.

Command

```
:CALCulate:MARKer[n]:WIDTh:TYPE <zone_type>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<zone_type>	Zone type of Marker
ZONE	Zone marker
SPOT	Spot marker

Details

This command is available when Marker Result is Peak.
When Marker Result is set to Integration or Density, Zone type is fixed to Zone, Spot cannot be selected.
This command is not available in the following cases:

- During the time domain measurement.
- During Spurious Emission measurement when Displayed Segment Mode is Auto.
- During Spectrum Emission Mask measurement.

Example of Use

To set the zone type of the marker in the marker 1 to zone marker.

```
CALC:MARK:WIDT:TYPE ZONE
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:WIDTh:TYPE?

Zone Width Type Query

Function

This command queries the zone type of the marker.

Query

```
:CALCulate:MARKer[n]:WIDTh:TYPE?
```

Response

```
<zone_type>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<zone_type>	Zone type of Marker
ZONE	Zone marker
SPOT	Spot marker

Example of Use

To query the zone type of the marker in the marker 1.

```
CALC:MARK:WIDT:TYPE?
> ZONE
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:TRACe 1|2|3|4|5|6

Marker Trace

Function

This command selects a trace to operate the marker (marker trace).

Command

```
:CALCulate:MARKer[n]:TRACe <mode>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	All markers
<mode>	Type of trace to be activated
1	Trace A
2	Trace B
3	Trace C
4	Trace D
5	Trace E
6	Trace F

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spurious Emission measurement.

Example of Use

To set trace B of all markers as the marker trace.

```
CALC:MARK:TRAC 2
```

Related command

This command has the same function as the following command.

```
:TRACe:ACTive
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:TRACe?

Marker Trace Query

Function

This command queries the trace to operate the marker (marker trace).

Query

```
:CALCulate:MARKer[n]:TRACe?
```

Response

```
<mode>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<mode>	Type of active trace
1	Trace A
2	Trace B
3	Trace C
4	Trace D
5	Trace E
6	Trace F

Example of Use

To query all marker traces.

```
CALC:MARK:TRAC?
> 2
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:SET]:CENTer

Marker to Center Frequency

Function

This command sets the marker frequency to the center frequency.

Command

```
:CALCulate:MARKer[n][:SET]:CENTer
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1

Details

This command is not available in the following cases:

- When the marker mode is set to Off.
- During the Spurious Emission measurement.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the marker frequency to the center frequency.

```
CALC:MARK:CENT
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:SET]:RLEVel

Marker to Reference Level

Function

This command sets the marker level to the reference level.

Command

```
:CALCulate:MARKer[n][:SET]:RLEVel
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1

Details

This command is not available in the following cases:

- When the marker mode is set to Off.
- During the Spurious Emission measurement and when Display Segment Mode is set to Auto.

Not available during Spectrum Emission Mask measurement.

Example of Use

To set the marker level of the marker 1 to the reference level.

```
CALC:MARK:RLEV
```

:CALCulate:MARKer:RESult INTegration|DENSity|PEAK

Marker Result

Function

This command sets the type of the marker display value.

Command

```
:CALCulate:MARKer:RESult <mode>
```

Parameter

<mode>	Type of Marker value
INTegration	Total Power in the zone band
DENSity	Power per 1 Hz in the zone band
PEAK	Peak power in the zone

Details

Integration and Density cannot be set when Scale Mode is Lin.
Also, Integration cannot be set when Time Domain mode is selected.
Automatic setting of the peaking bias value cannot be used during Spurious measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the marker display value to the total power in the zone band.

```
CALC:MARK:RES INT
```

:CALCulate:MARKer:RESult?

Marker Result Query

Function

This command queries the type of the marker display value.

Query

```
:CALCulate:MARKer:RESult?
```

Response

```
<mode>
```

Parameter

<mode>	Type of Marker value
INT	Total power in the zone band
DENS	Power per 1 Hz in the zone band
PEAK	Peak power in the zone

Example of Use

To query the type of the marker display value.

```
CALC:MARK:RES?
> INT
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:PEAK:X:POSition?

Marker Position Query

Function

This command queries the marker position by the number of display points from the left edge of the screen.

Query

```
:CALCulate:MARKer[n]:PEAK:X:POSition?
```

Response

```
<point>
```

Parameter

<n>		Marker number
	1	Marker 1
	2	Marker 2
	3	Marker 3
	4	Marker 4
	5	Marker 5
	6	Marker 6
	7	Marker 7
	8	Marker 8
	9	Marker 9
	10	Marker 10
	When omitted:	Marker 1
<point>		Marker position (Number of display points from the left edge of the screen)
	Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only) (The upper limit varies depending on the number of the trace display points.) –999.0 is returned when no measurement is performed or an error occurs.
	Resolution	1

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query the marker position of Marker 1.

```
CALC:MARK:PEAK:X:POS?
> 500
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:PEAK:X?

Marker Frequency (Time) Query

Function

This command queries the frequency or time at the marker point. As for the delta marker, this command queries the frequency difference or time difference between the delta marker and the marker specified by Relative To.

Query

```
:CALCulate:MARKer[n]:PEAK:X?
```

Response

`<freq>` (in frequency domain)
`<time>` (in time domain)

Parameter

`<n>`	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
`<freq>`	In frequency domain
Resolution	0.01 Hz.
Suffix code	None. Value is returned in Hz units. –999999999999 is returned when no measurement is performed or an error occurs.
`<time>`	In time domain
resolution	0.1 ns.
Suffix code	None. Value is returned in s units. –999999999999 is returned when no measurement is performed or an error occurs.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query the frequency at the marker point of Marker 1.

```
CALC:MARK:PEAK:X?
> 1.00
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?

Marker Level Query

Function

This command queries the level at the marker point. In case of delta marker, it queries the level ratio.

Query

```
:CALCulate:MARKer[n][:PEAK]:Y?
```

Response

```
<level>
```

Parameter

<n>		Marker number
	1	Marker 1
	2	Marker 2
	3	Marker 3
	4	Marker 4
	5	Marker 5
	6	Marker 6
	7	Marker 7
	8	Marker 8
	9	Marker 9
	10	Marker 10
	When omitted:	Marker 1
<level>		Marker point level
	When marker level display units are dB-system units	
	Resolution	0.001 dB
	Suffix code	None. Value is returned in the unit specified by Scale Unit.
		–999.0 is returned when no measurement is performed or an error occurs.
	When marker level display units are V-system units	
	Resolution	0.01 pV
	Suffix code	None. Value is returned in V units.
		–999.0 is returned when no measurement is performed or an error occurs.
	When marker level display units are W-system units	
	Resolution	0.01 yW
	Suffix code	None. Value is returned in W units.
		–999.0 is returned when no measurement is performed or an error occurs.

When Marker Mode is Delta and Scale Mode is Log

resolution:	0.001 dB
Suffix code	None. Value is returned in dB units.
	–999.0 is returned at no measurement or error

When Marker Mode is Delta and Scale Mode is Lin

Range	0.0000 to 10000
Resolution	0.0001
Suffix code	None, no units,
	–999.0 is returned at no measurement or error

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query the level at the marker point of Marker 1.

```
CALC:MARK:Y?
> -73.687
```

Related command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:
Y?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y:DELTa?

Marker Relative Level Query

Function

This command queries the marker level in relative value.

Query

```
:CALCulate:MARKer[n][:PEAK]:Y:DELTa?
```

Response

```
<level>
```

Parameter

<n>	Marker Number
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10
When omitted:	Specifies marker 1
<level>	Marker level in relative value
When Scale Mode is Log	
resolution	0.001 dB
Suffix code	None. Value is returned in dB units.
	–999.0” is returned at no measurement or error
When Scale Mode is Lin	
Range	0.0000 to 10000
Resolution	0.0001
Suffix code	None, no units
	“–999.0” is returned at no measurement or error

Details

-999.0 is returned when Marker Mode is set to other than Delta.
Not available when Marker Mode is set other than Delta.

Example of Use

To query the relative level of marker 1.

```
CALC:MARK:Y:DELT?
> -73.687
```

:CALCulate:MARKer:REFerence:X:POSition?

Reference Marker Position Query

Function

This command queries the position of the marker specified by Relative To of the active marker by the display points from the left edge of the screen.

Query

```
:CALCulate:MARKer:REFerence:X:POSition?
```

Response

```
<integer>
```

Parameter

<integer>		Marker position set in Relative To (Number of display points from the left edge of the screen)
	Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only) (The upper limit varies depending on the number of the trace display points.)
	Resolution	1

Details

–999.0 is returned when Marker Mode is set to other than Delta.
This command queries the result in absolute values even if the marker mode specified by Relative To is set to Delta.
This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query the position of the marker point set in Relative To.

```
CALC:MARK:REF:X:POS?
> 123
```

:CALCulate:MARKer:REFerence:X?

Reference Marker Frequency (Time) Query

Function

This command queries the frequency or time at the marker point set in Relative To of the active marker.

Query

```
:CALCulate:MARKer:REFerence:X?
```

Response

```
<freq>
<time>
```

Parameter

<freq>

Resolution	0.01 Hz
Suffix code	None. Value is returned in Hz units.

<time>

Resolution	0.1 ns
Suffix code	None. Value is returned in s units.

Details

–999.0 is returned when Marker Mode is set to other than Delta.
This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query the time at the marker point set in Relative To of the active marker.

```
CALC:MARK:REF:X?
> 1.0
```

:CALCulate:MARKer:REFerence:Y?

Reference Marker Level Query

Function

This command queries the level data at the marker point set in Relative To of the active marker.

Query

```
:CALCulate:MARKer:REFerence:Y?
```

Response

```
<real>
```

Parameter

`<real>` Level at reference marker point

When scale unit settings are dB-system units.

Resolution	0.001 dB
Suffix code	None. Value is returned in the unit specified by Scale Unit.

When scale unit settings are V-system units.

Resolution	0.01 pV
Suffix code	None. Value is returned in V units.

When scale unit settings are W-system units.

Resolution	0.01 yW
Suffix code	None. Value is returned in W units.

Details

–999.0 is returned when Marker Mode is set to other than Delta.
This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query the level at the marker point set in Relative To of the active marker.

```
CALC:MARK:REF:Y?
> 1.234
```

:CALCulate:PMARker[1]|2|3|4|5|6|7|8|9|10:Y?

Power Marker Result Query

Function

This command queries the total power and the power density within the range of the zone marker.

Query

```
:CALCulate:PMARker[n]:Y?
```

Response

```
<power>,<density>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<power>	Total power within the range of zone marker (/Zone)
<density>	Power density within the range of zone marker (/Hz)

When scale unit settings are dB-system units.

Resolution	0.001 dB
Suffix code	None. Value is returned in the unit specified by Scale Unit.
	–999.0 is returned when no measurement is performed or an error occurs.
	–999.0 is returned when Marker Mode is set to Fixed or Off.
	–999.0 is returned when Zone Width Type is set to Spot.

When scale unit settings are V-system units.

Resolution	0.001 dB
Suffix code	None. Value is returned in dBm units.
	–999.0 is returned when no measurement is performed or an error occurs.

–999.0 is returned when Marker Mode is set to Fixed or Off.

–999.0 is returned when Zone Width Type is set to Spot.

When scale unit settings are W-system units.

Resolution	0.01 yW
Suffix code	None. Value is returned in W units.
	–999.0 is returned when no measurement is performed or an error occurs. –999.0 is returned when Marker Mode is set to Fixed or Off.

–999.0 is returned when Zone Width Type is set to Spot.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query the total power and the power density within the range of the zone marker.

```
CALC:PMAR:Y?
> -8.000,-50.000
```

:CALCulate:PMARker:DELTa:Y?

Power Marker Result Query

Function

This command queries the total power ratio and the power density ratio within the range of the zone marker, regarding the active marker and the marker specified by Relative To.

Query

```
:CALCulate:PMARker:DELTa:Y?
```

Response

```
<power>,<density>
```

Parameter

<power>	Relative value of the difference of the total power (/Zone) between the active marker and the marker specified by Relative To.
<density>	Relative value of the difference of the power density (/Hz) between the active marker and the marker specified by Relative To.
Resolution	0.001 dB
Suffix code	None. Value is returned in dB units.
	–999.0 is returned when not measured or an error occurs.
	–999.0 is returned when Marker Mode of the marker specified by Relative To is set to Fixed .
	–999.0 is returned when Marker Mode is set to other than Delta.
	–999.0 is returned when Zone Width Type is set to Spot.
	–999.0 is returned when Scale Mode is set to Lin.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query the total power ratio and the power density ratio within the ratio of the zone marker, regarding the active marker and the marker specified by Relative To.

```
CALC:PMAR:DELT:Y?
> 2.230,2.230
```

:CALCulate:MARKer:AOFF

All Marker Off

Function

This command sets all the markers to Off.

Command

```
:CALCulate:MARKer:AOFF
```

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set all the markers to Off.

```
CALC:MARK:AOFF
```

Related command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer:AOFF
:CALCulate:CHPower:MARKer:AOFF
:CALCulate:OBWidth:MARKer:AOFF
:CALCulate:BPOWer|:TXPower:MARKer:AOFF
```

:CALCulate:MARKer:READout?

Marker READout Query

Function

This command queries all the marker values.

Query

```
:CALCulate:MARKer:READout?
```

Response

```
<freq_1>,<power_1>,<freq_2>,<power_2>,...,
<freq_10>,<power_10>
```

(in frequency domain)

```
<time_1>,<power_1>,<time_2>,<power_2>,...,
<time_10>,<power_10>
```

(in time domain)

Parameter

`<freq_n>` Frequency of maker n

- Resolution: 0.01 Hz
- Suffix code: None. Value is returned in Hz units. –999999999999 is returned when no measurement is performed, an error has occurred, or the marker is Off.

`<power_n>` Level of Marker n

When marker level display units are dB-system units.

- Resolution: 0.001 dB
- Suffix code: None. Value is returned in the unit specified by Scale Unit. –999.0 is returned when no measurement is performed, an error has occurred, or the marker is Off.

When marker level display units are V units.

- Resolution: 0.01 pV
- Suffix code: None. Value is returned in V units. –999.0 is returned when no measurement is performed, an error has occurred, or the marker is Off.

When marker level display units are W units.

- Resolution: 0.01 yW

	Suffix code	None. Value is returned in W units. –999.0 is returned when no measurement is performed, an error has occurred, or the marker is Off.
	When marker level display units are X multiple-system units.	
	Resolution	0.0001
	Suffix code	None 1:1 when X = 1. –999.0 is returned when no measurement is performed, an error has occurred, or the marker is Off.
<time_n>		time of marker n
	Resolution	0.1 ns
	Suffix code	None. Value is returned in s units. –999999999999 is returned when no measurement is performed, an error has occurred, or the marker is Off.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.

Example of Use

To query all the marker values (frequency domain).

```
CALC:MARK:READ?
> 1000000.00,-15.321,1100000.00,-23.000,
1200000.00,-15.321,1300000.00,-12.680,
1400000.00,-5.622,1500000.00,-65.056,
1600000.00,-26.534,1700000.00,-34.264,
1800000.00,-35.644,-999999999999,-999.0
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt:GATetime <time>

Frequency Counter Gate Time

Function

This command sets the counter gate time for frequency counter.

Command

```
:CALCulate:MARKer[n]:FCOunt:GATetime <time>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<time>	Center time of zone marker
Range	100 µs to 1 s
Resolution	50 µs
Suffix code	NS, US, MS, S S is used when the suffix code is omitted.

Details

This command is not available when frequency counter is set to Off.
The setting value is shared by all the markers.

Example of Use

To set the counter gate time for frequency counter to 100 ms.

```
CALC:MARK:FCO:GAT 100MS
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt:GATetime?

Frequency Counter Gate Time Query

Function

This command queries the counter gate time of the frequency counter.

Query

```
:CALCulate:MARKer[n]:FCOunt:GATetime?
```

Response

```
<time>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<time>	Center time of zone marker
Range	100 µs to 1 s
Resolution	0.00001 s
Suffix code	None

Details

The setting value is shared by all the markers.

Example of Use

To query the counter gate time of the frequency counter.

```
CALC:MARK:FCO:GAT?
> 0.00001
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt[:STATe] OFF|ON|0|1

Frequency Counter State

Function

This command turns On/Off the frequency counter.

Command

```
:CALCulate:MARKer[n]:FCOunt[:STATe] <switch>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<switch>	Frequency counter On/Off
ON|1	Sets marker n as the active marker and switches on the frequency counter function.
OFF|0	Switches off the frequency counter function of marker n.

Details

The frequency counter is available only for the active markers. Following execution of this command, the marker with the specified marker number becomes active.
The setting value is shared by all the markers.
This command is not available when Gate Sweep is On.
This command is not available when Marker Result is Integration or Density.
This command is not available when RBW is equal to or lower than 30 Hz.
This command is disabled during the Spurious Emission measurement.
This command is disabled during the Spectrum Emission Mask measurement.
This command is disabled when Noise Cancel is set to On.

Example of Use

To set marker 1 as the active marker and switch on the frequency counter function.

```
CALC:MARK:FCO ON
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt[:STATe]?

Frequency Counter State Query

Function

This command queries the On/Off status of frequency counter.

Query

```
:CALCulate:MARKer[n]:FCOunt[:STATe]?
```

Response

```
<switch>
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
<switch>	Frequency counter On/Off
1	Frequency counter is On.
0	Frequency counter is Off.

Details

This setting is shared in common for all the markers.

Example of Use

To query the On/Off status of the frequency counter.

```
CALC:MARK:FCO?
> 1
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:FCOunt:X?

Frequency Counter Query

Function

This command queries the measured value of the frequency counter.

Query

```
:CALCulate:MARKer[n]:FCOunt:X?
```

Response

```
<freq>
```

Parameter

<n>		Marker number
	1	Marker 1
	2	Marker 2
	3	Marker 3
	4	Marker 4
	5	Marker 5
	6	Marker 6
	7	Marker 7
	8	Marker 8
	9	Marker 9
	10	Marker 10
	When omitted:	Marker 1
<freq>		Center frequency of zone maker
	Range	–99.999999999999 GHz to 99.999999999999 GHz
	Resolution	0.001 Hz
	Suffix code	None
		–999999999999 is returned when no measurement is executed or when there is an error.

Details

A non-measurement value is returned when a marker number other than that of the active marker has been specified.
A non-measurement value is returned when the Marker Mode is either Fixed or Off.

Example of Use

To query the frequency counter value of marker 1.

```
CALC:MARK:FCO:X?
> 100000000.00
```

:CALCulate:MARKer:TRCKing[:STATe] OFF|ON|0|1

Marker Tracking

Function

This command sets the Marker tracking function to On/Off.

Command

```
:CALCulate:MARKer:TRCKing[:STATe] <switch>
```

Parameter

<switch>	Marker tracking function On/Off
ON|1	Marker tracking On
OFF|0	Marker tracking Off

Details

Conducts sweep after adjusting the center frequency of trace to that of the active marker frequency.

Example of Use

To enable Marker tracking

```
CALC:MARK:TRCK ON
```

:CALCulate:MARKer:TRCKing[:STATe]?

Marker Tracking Query

Function

This command queries the Marker tracking function to On/Off.

Query

```
:CALCulate:MARKer:TRCKing[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Marker tracking function On/Off
1	Marker tracking function On
0	Marker tracking function Off

Example of Use

To query the marker tracking setting

```
CALC:MARK:TRCK?
> 1
```

2.5 Signal Search

Table 2.5-1 lists device messages for signal search.

Table 2.5-1 Device messages for signal search

Function	Device Message
Peak Search	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
Next Peak Search	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT
Power Peak Search	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
Next Power Peak Search	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT
Minimum Search	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
Next Minimum Search	:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT
Marker Peak Excursion	:CALCulate:MARKer:PEAK:RESolution|EXCursion <rel_ampl>|<percent>
	:CALCulate:MARKer:PEAK:RESolution|EXCursion?
Peak Search Threshold Level	:CALCulate:MARKer:PEAK:THReshold <ampl>
	:CALCulate:MARKer:PEAK:THReshold?
Peak Search Threshold Level On/Off	:CALCulate:MARKer:PEAK:THReshold:STATe ON|OFF|1|0
	:CALCulate:MARKer:PEAK:THReshold:STATe?
Peak Search Mode	:CALCulate:MARKer:PEAK:THReshold:MODE ABOVe|BELow
	:CALCulate:MARKer:PEAK:THReshold:MODE?
All Peak Search and Query	:CALCulate:DATA:PEAKs[:LOGarithmic]? <threshold>,<resolution>[,<sort>]
Search Peaks Sort Y	:CALCulate:MARKer:PEAK:SORT:Y
Search Peaks Sort X	:CALCulate:MARKer:PEAK:SORT:X
Search Peaks Number	:CALCulate:MARKer:PEAK:SORT:COUNt <integer>
	:CALCulate:MARKer:PEAK:SORT:COUNt?

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

Peak Search

Function

This command searches for the peak point of active trace and moves the marker point.

Command

```
:CALCulate:MARKer[n]:MAXimum
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To move the marker 1 to the maximum level point.

```
CALC:MARK:MAX
```

Related command

This command has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:
MAXimum
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT

Next Peak Search

Function

This command searches for the characteristics of the active trace and moves the marker to a smaller level peak than the present marker level.

Command

```
:CALCulate:MARKer[n]:MAXimum:NEXT
```

Parameter

<n>	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To move the marker 1 to the next peak.

```
CALC:MARK:MAX:NEXT
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:
NEXT
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

Power Peak Search

Function

This command moves the active marker to the position where the peak power of the zone width of the active marker becomes maximum in the measurement band.

Command

```
:CALCulate:MARKer[n]:MAXimum:POWer
```

Parameter

<n>	Marker Number
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10
When omitted:	Specifies marker 1

Details

This cannot be executed under the following conditions:

- In Time Domain
- When Scale Mode is Linear
- When active trace is Blank
- When Spurious Emission measurement is On and Displayed Segment Mode is Auto
- When Spectrum Emission Mask measurement is On

Example of Use

To move marker 1 to position where peak power of zone width is maximum value.

```
CALC:MARK:MAX:POW
```

Related command

This has the same function as the following commands.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:
POWer
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:
POWer
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:
POWer
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:
MAXimum:POWer
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:POWer
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT

Next Power Peak Search

Function

This command searches for the next largest peak power in the zone width compared to the total power of the zone width of the active marker in the measurement band and moves the active marker.

Command

```
:CALCulate:MARKer[n]:MAXimum:POWer:NEXT
```

Parameter

<n>	Marker No.
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10
When omitted:	Specifies marker 1

Details

This function is not available under the following condition:

- When in Time Domain
- When Scale Mode is Linear scale.
- When Active Trace is Blank.
- When Spurious Emission measurement is enabled, and also Displayed Segment Mode is set to Auto.
- When Spectrum Emission Mask measurement is enabled.

Example of Use

To move marker 1 to the position with the next largest peak power

```
CALC:MARK:MAX:POW:NEXT
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:
POWer:NEXT
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:POWer:NEXT
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

Minimum Search

Function

This command moves the marker so that the minimum level point in the measurement band becomes the center frequency of the zone marker.

Command

```
:CALCulate:MARKer[n]:MINimum
```

Parameter

<n>	Marker Number
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10
When omitted:	Specifies marker 1

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To move the marker 1 to the minimum level point.

```
CALC:MARK:MIN
```

Related Command

This command has the same function as the following command.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:
MINimum
```

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT

Next Minimum Search

Function

This command searches for the next dip of the active marker and moves the marker so that it becomes the center frequency of the zone marker.

Command

```
:CALCulate:MARKer[n]:MINimum:NEXT
```

Parameter

<n>	Marker Number
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10
When omitted:	Specifies marker 1

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To move the marker 1 to the next dip.

```
CALC:MARK:MIN:NEXT
```

Related Command

This command has the same function as the following command.

```
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:
NEXT
```

:CALCulate:MARKer:PEAK:RESolution|EXCursion <rel_ampl>|<percent>

Marker Peak Excursion

Function

This command sets the resolution in detecting the peak point.

Command

When Scale Mode is set to Log.

```
:CALCulate:MARKer:PEAK:RESolution|EXCursion <rel_ampl>
```

When Scale Mode is set to Lin.

```
:CALCulate:MARKer:PEAK:RESolution|EXCursion <percent>
```

Parameter

`<rel_ampl>`

Range	0.001 to 100.000 dB
Suffix code	DB dB is used even when omitted.
Default	2 dB

`<percent>`

Range	0.01 to 100.00%
Suffix code	None
Default	2%

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the resolution to 20 dB.

```
CALC:MARK:PEAK:RES 20DB
```

:CALCulate:MARKer:PEAK:RESolution|EXCursion?

Marker Peak Excursion Query

Function

This command queries the resolution when a peak point is detected.

Query

```
:CALCulate:MARKer:PEAK:RESolution|EXCursion?
```

Response

<rel_ampl>	(When Scale Mode is set to Log.)
<percent>	(When Scale Mode is set to Lin.)

Parameter

<rel_ampl>

Range	0.001 to 100.000 dB
Suffix code	None. Value is returned in dB units.
Default	2 dB

<percent>

Range	0.01 to 100.00%
Suffix code	None. Value is returned in % units.
Default	2%

Example of Use

To query the resolution.

```
CALC:MARK:PEAK:RES?
> 20.000
```

:CALCulate:MARKer:PEAK:THReshold <ampl>

Peak Search Threshold Level

Function

This command sets the threshold when a peak point is detected.

Command

```
:CALCulate:MARKer:PEAK:THReshold <ampl>
```

Parameter

<ampl>			Threshold when searching for the peak point
Range			Full width of Y axis
Resolution			0.01 dB (When Scale Unit settings are dB-system.) 0.01 pV (When the setting of Scale Unit is V.) 0.01 yW (When the setting of Scale Unit is W.)
Suffix code	DBM,DM	dBm	
	DBMV	dBmV	
	DBUV	dBµV	
	DBUVE	dBµV (emf)	
	DBUVM	dBµV/m	
	V	V	
	MV	mV	
	UV	µV	
	W	W	
	MW	mW	
	UW	µW	
	NW	nW	
	PW	pW	
	FW	fW	
			Follows the setting of Scale Unit, when omitted. V is used when it is Linear Scale.
Default			Y-axis center

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the threshold when searching for the peak point to –10 dBm.

```
CALC:MARK:PEAK:THR -10DBM
```

:CALCulate:MARKer:PEAK:THReshold?

Peak Search Threshold Level Query

Function

This command queries the threshold when searching for the peak point.

Query

```
:CALCulate:MARKer:PEAK:THReshold?
```

Response

```
<ampl>
```

Parameter

<ampl>		Threshold when searching for the peak point
	Range	Full width of Y-axis
	Resolution	0.01 dB (When scale unit settings are dB-system units) 0.01 pV (When scale unit settings are V-system units) 0.01 yW (When scale unit settings are W-system units) No suffix code. Returns a value based on the unit setting of Scale Unit. V is used when the unit is V, and W when W.

Example of Use

To query the threshold when searching for the peak point.

```
CALC:MARK:PEAK:THR?
> -10.00
```

:CALCulate:MARKer:PEAK:THReshold:STATe ON|OFF|1|0

Peak Search Threshold Level On/Off

Function

This command sets the threshold On/Off, when searching for the peak point.

Command

```
:CALCulate:MARKer:PEAK:THReshold:STATe <switch>
```

Parameter

<switch>	Threshold when searching for the peak point
0|OFF	Sets the threshold to Off (Default).
1|ON	Sets the threshold to On.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the threshold when searching for the peak point to On.

```
CALC:MARK:PEAK:THR:STAT ON
```

:CALCulate:MARKer:PEAK:THReshold:STATe?

Peak Search Threshold Level On/Off Query

Function

This command queries the On/Off state of the threshold when searching for the peak point.

Query

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

Response

```
<switch>
```

Parameter

<switch>	Threshold when searching for the peak point
0	Sets the threshold to Off.
1	Sets the threshold to On.

Example of Use

To query the On/Off state of the threshold when searching for the peak point.

```
CALC:MARK:PEAK:THR:STAT?
> 1
```


:CALCulate:MARKer:PEAK:THReshold:MODE ABOVe|BELow

Peak Search Mode

Function

This command specifies the detection mode for the threshold value (Peak Search Threshold Level) in peak point detection.

Command

```
:CALCulate:MARKer:PEAK:THReshold:MODE <mode>
```

Parameter

<mode>		Threshold value detection mode
	ABOVe	Detects only in the range above the threshold value (Default).
	BELow	Detects only in the range below the threshold value.

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To search for the peak point from the data greater than the threshold value.

```
CALC:MARK:PEAK:THR:MODE ABOV
```

:CALCulate:MARKer:PEAK:THReshold:MODE?

Peak Search Mode Query

Function

This command queries the detection mode for the threshold (Peak Search Threshold Level) when searching for the peak point.

Query

```
:CALCulate:MARKer:PEAK:THReshold:MODE?
```

Response

```
<mode>
```

Parameter

<mode>	Detection mode for threshold
ABOV	Searches for only the upper side of the threshold
BEL	Searches for only the lower side of the threshold

Example of Use

To query the detection mode for the threshold.

```
CALC:MARK:PEAK:THR:MODE?
> ABOV
```

:CALCulate:DATA:PEAKs[:LOGarithmic]? <threshold>,<resolution>[,<sort>]

All Peak Search and Query

Function

This command queries the frequency (or time) and level of all the peak points in the trace data of the active trace in a lump sum.

Query

```
:CALCulate:DATA:PEAKs[:LOGarithmic]?
<threshold>,<resolution>[,<sort>]
```

Response

```
<total_number>,
<level_1>,<freq_1>,
<level_2>,<freq_2>,
...
```

(In frequency domain)

```
<total_number>,
<level_1>,<time_1>,
<level_2>,<time_2>,
...
```

(In time domain)

Parameter

`<threshold>` Threshold when searching for the peak point

Range: Full width of Y-axis

Resolution:
0.01 dB (when scale unit settings are dB-system units.)
0.01 pV (when scale unit settings are V-system units.)
0.01 yW (when scale unit settings are W-system units.)

Suffix code

`DBM,DM`	dBm
`DBMV`	dBmV
`DBUV`	dBμV
`DBUVE`	dBμV (emf)
`DBUVM`	dBμV/m
`V`	V
`MV`	mV
`UV`	μV
`W`	W
`MW`	mW

	UW	μW
	NW	nW
	PW	pW
	FW	fW

Follows the setting of Scale Unit, when omitted.
V is used when it is Linear Scale.

<resolution>

when Scale Mode is Log.

Range	0.001 to 100.000 dB
Suffix code	DB
	dB is used even when omitted.

when Scale Mode is Lin.

Range	0.01 to 100.00%
Suffix code	None

<sort>

AMPLitude	Outputs in the order of level from the highest.
FREQuency	Outputs in the order of level from lowest.(only frequency domain)
TIME	Outputs in the order of time from the earliest (only time domain)
When omitted:	Outputs in the order of level from highest.

<total_number> Number of the output peak value

<level_n> Level value of peak

When marker level display unit are dB-system units.

Resolution	0.01 dB
Suffix code	None. Value is returned in the unit specified by Scale Unit.
	–999.0 is returned when not measured or an error occurs.

When marker level display units are V-system units.

Resolution	0.01 pV
Suffix code	None. Value is returned in V units.
	–999.0 is returned when not measured or an error occurs.

When marker level display units are W-system units.

Resolution	0.01 yW
Suffix code	None. Value is returned in W units.
	–999.0 is returned when not measured or an error occurs.

<freq_n> Peak frequency

resolution,	0.01 Hz
Suffix code	None. Value is returned in Hz units.
	–999999999999 is returned when not measured or an error occurs.

<time_n> Peak time
Resolution 0.01 µs
Suffix code None. Value is returned in s units.
–999999999999 is returned when not measured or an error occurs.

Example of Use

To query the frequency and level of the active trace at once.

```
CALC:DATA:PEAK? -40.000,10.000
```

:CALCulate:MARKer:PEAK:SORT:Y

Search Peaks Sort Y

Function

This command sorts as many markers as the number set in Search Peaks Number by level on the trace.

Command

```
:CALCulate:MARKer:PEAK:SORT:Y
```

Details

This command is not available in the following cases:

- During the Spurious Emission measurement AND when Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.
- When Blank is set for the active trace.

Example of Use

To sort the markers by level.

```
CALC:MARK:PEAK:SORT:Y
```

:CALCulate:MARKer:PEAK:SORT:X

Search Peaks Sort X

Function

This command sorts as many markers as the number set in Search Peaks Number by frequency (time) on the trace.

Command

```
:CALCulate:MARKer:PEAK:SORT:X
```

Details

This command is not available in the following cases:

- During the Spurious Emission measurement AND when Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.
- When Blank is set for the active trace.

Example of Use

To sort the markers by frequency.

```
CALC:MARK:PEAK:SORT:X
```

:CALCulate:MARKer:PEAK:SORT:COUNt <integer>

Search Peaks Number

Function

This command sets the number of searches when executing Search Peaks Sort Y/X.

Command

```
:CALCulate:MARKer:PEAK:SORT:COUNt <integer>
```

Parameter

<integer>	Number of searches
Range	1 to 10
Resolution	1
Default	10

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the search number to 6.

```
CALC:MARK:PEAK:SORT:COUN 6
```

:CALCulate:MARKer:PEAK:SORT:COUNt?

Search Peaks Number Query

Function

This command queries the number of searches when executing Search Peaks Sort Y/X.

Query

```
:CALCulate:MARKer:PEAK:SORT:COUNt?
```

Response

```
<integer>
```

Parameter

<integer>	Number of searches
Range	1 to 10
Resolution	1

Example of Use

To query the number of searches.

```
CALC:MARK:PEAK:SORT:COUN?
> 6
```

2.6 Trace

Table 2.6-1 lists device messages for trace.

Note:

All commands can be also executed even when `LIMit` is described instead of `LLINe`.

Table 2.6-1 Device message for trace

Function	Device Message
Active Trace	:TRACe:ACTive A|B|C|D|E|F
	:TRACe:ACTive?
Trace Write Mode	:TRACe[1]|2|3|4|5|6:TYPE WRITe|VIEW|BLANk
	:TRACe[1]|2|3|4|5|6:TYPE?
Storage Mode	:TRACe[1]|2|3|4|5|6:STORage:MODE OFF|MAXHold|AVERage|MINHold|LAVerage
	:TRACe[1]|2|3|4|5|6:STORage:MODE?
Average Count	[:SENSe]:AVERage:COUNt <integer>
	[:SENSe]:AVERage:COUNt?
Sweep Count Query	:TRACe:SWEep:COUNt?
Limit Edit	:CALCulate:LLINe[1]|2|3|4|5|6:DATA <x-axis_1>,<ampl_1>,<connected_1>[,<x-axis_2>,<ampl_2>,<connected_2>],,,[,<x-axis_n>,<ampl_n>,<connected_n>]
	:CALCulate:LLINe[1]|2|3|4|5|6:DATA?
Limit Type	:CALCulate:LLINe[1]|2|3|4|5|6:TYPE UPPer|LOWer
	:CALCulate:LLINe[1]|2|3|4|5|6:TYPE?
Limit Display	:CALCulate:LLINe[1]|2|3|4|5|6:DISPlay OFF|ON|0|1
	:CALCulate:LLINe[1]|2|3|4|5|6:DISPlay?
Limit Test	:CALCulate:LLINe[1]|2|3|4|5|6:STATe OFF|ON|0|1
	:CALCulate:LLINe[1]|2|3|4|5|6:STATe?
Limit Test Result	:CALCulate:LLINe[1]|2|3|4|5|6:FAIL?
Margin	:CALCulate:LLINe[1]|2|3|4|5|6:MARGin:STATe OFF|ON|0|1
	:CALCulate:LLINe[1]|2|3|4|5|6:MARGin:STATe?
Margin Value	:CALCulate:LLINe[1]|2|3|4|5|6:MARGin <ampl_rel>
	:CALCulate:LLINe[1]|2|3|4|5|6:MARGin?
Delete Limit	:CALCulate:LLINe[1]|2|3|4|5|6:DELete
Delete All Limits	:CALCulate:LLINe:ALL:DELete
Limits Line Type (Amplitude)	:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:AMPLitude FIXed| ABSolute|RELative
	:CALCulate:LLINe:CMODe:AMPLitude?
Limits Line Type (Frequency)	:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:FREQuency FIXed|ABSolute|RELative
	:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:FREQuency?

Table 2.6-1 Device message for trace (Cont'd)

Function	Device Message
Save Wave Data	:MMEMory:STORe:TRACe TRACe1|TRACe2|TRACe3|TRACe4|TRACe5|TRACe6|ALL[,<filename>[,<device>]]
Query Trace Data	:TRACe[:DATA]? TRACe1|TRACe2|TRACe3|TRACe4|TRACe5|TRACe6|GVIew
Query Negative Trace Data	:TRACe[:DATA]:NEGative? TRACe1|TRACe2|TRACe3|TRACe4|TRACe5|TRACe6|GVIew
Query Trace Data Spectrum Emission Mask	:TRACe[:DATA]:SEMask? REFerence|LOWer1|LOWer2|LOWer3|LOWer4|LOWer5|LOWer6|UPPer1|UPPer2|UPPer3|UPPer4|UPPer5|UPPer6|ALL
Query Negative Trace Data Spectrum Emission Mask	:TRACe[:DATA]:SEMask:NEGative? REFerence|LOWer1|LOWer2|LOWer3|LOWer4|LOWer5|LOWer6|UPPer1|UPPer2|UPPer3|UPPer4|UPPer5|UPPer6|ALL
Binary Data Byte Order	:FORMat:BORDer NORMal|SWAPped
	:FORMat:BORDer?
Numeric Data Format	:FORMat[:DATA] ASCii|REAL|INTeger[,<length>]
	:FORMat[:DATA]?
Test Trace	:CALCulate:LLINe[1]|2|3|4|5|6:TRACe <Trace>
	:CALCulate:LLINe[1]|2|3|4|5|6:TRACe?
Previous Pt Level Offset	:CALCulate:LLINe[1]|2|3|4|5|6:POINt:LEVel:OFFSet <ampl_rel>[,<ampl_rel>],,,[,<ampl_rel>]
	:CALCulate:LLINe[1]|2|3|4|5|6:POINt:LEVel:OFFSet?
Mirror Limit	:CALCulate:LLINe[1]|2|3|4|5|6:MIRRor ON|OFF|1|0
	:CALCulate:LLINe[1]|2|3|4|5|6:MIRRor?
Create Envelope	:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:CREate
Update Envelope	:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:UPDate:Y
Envelope Points	:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:POINt <number>
	:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:POINt?
Envelope Offset	:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope[:LEVel]:OFFSet <amplitude>
	:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope[:LEVel]:OFFSet?
Envelope Shape	:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:SHAPe SQUare|SLOPe
	:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:SHAPe?
Save Limit	:MMEMory:STORe:LLINe[1]|2|3|4|5|6:[<filename>[,<device>]]
Recall Limit Data file	:MMEMory:LOAD:LLINe[1]|2|3|4|5|6 <filename>[,<device>]
Delete Limit Data File	:MMEMory:DELete:LLINe <filename>[,<device>]
Delete All Limit Data Files	:MMEMory:DELete:LLINe:ALL [<device>]
Delete Waveform Data File	:MMEMory:DELete:WAVEform <foldername>[,<device>]
Delete All Waveform Data Files	:MMEMory:DELete:WAVEform:ALL [<device>]

:TRACe:ACTive A|B|C|D|E|F

Active Trace

Function

This command selects the trace (active trace) to operate the marker.

Command

```
:TRACe:ACTive <trace>
```

Parameter

<trace>	Type of trace to set to active.
A	Trace A (Default)
B	Trace B
C	Trace C
D	Trace D
E	Trace E
F	Trace F

Details

This command is not available during Spectrum Emission Mask measurement or Spurious Emission measurement.

Example of Use

To set Trade B to active.

```
TRAC:ACT B
```

Related command

This command has the same function as the following command.

```
:CALCulate:MARKer:TRACe
```

:TRACe:ACTive?

Active Trace Query

Function

This command queries the trace (active trace) to operate the marker.

Command

```
:TRACe:ACTive?
```

Response

```
<trace>
```

Parameter

<trace>	Type of trace to be activated
A	Trace A
B	Trace B
C	Trace C
D	Trace D
E	Trace E
F	Trace F

Example of Use

To query the active trace.

```
TRAC:ACT?
> B
```

:TRACe[1]|2|3|4|5|6:TYPE WRITe|VIEW|BLANk

Trace Write Mode

Function

This command sets the trace-writing mode.

Command

```
:TRACe[n]:TYPE <mode>
```

Parameter

<n>	Target trace
1	Trace A
2	Trace B
3	Trace C
4	Trace D
5	Trace E
6	Trace F
When omitted:	Trace A
<mode>	Trace-writing mode
WRITe	Updates the display per measurement (Write mode)
VIEW	Does not update the display per measurement (View mode)
BLANk	Does not display (Blank mode)

Details

This command is not available in the following cases:

- During the Spurious Emission measurement
- During the Spectrum Emission Mask measurement

Example of Use

To update the display of the active trace every time the measurement is performed.

```
TRAC:TYPE WRIT
```

:TRACe[1]|2|3|4|5|6:TYPE?

Trace Write Mode Query

Function

This command queries the writing mode for trace.

Command

```
:TRACe[n]:TYPE?
```

Response

```
<mode>
```

Parameter

<n>		Target trace
	1	Trace A
	2	Trace B
	3	Trace C
	4	Trace D
	5	Trace E
	6	Trace F
	When omitted:	Trace A
<mode>		Trace-writing mode
	WRIT	Updates the display per measurement (Write mode)
	VIEW	Does not update the display per measurement (View mode)
	BLAN	Does not display (Blank mode).

Example of Use

To query the trace-writing mode.

```
TRAC:TYPE?
> WRIT
```

:TRACe[1]|2|3|4|5|6:STORage:MODE OFF|MAXHold|AVERage|MINHold|LAVerage

Storage Mode

Function

This command sets the storage mode of trace data.

Command

```
:TRACe[n]:STORage:MODE <mode>
```

Parameter

<n>	Target trace
1	Trace A
2	Trace B
3	Trace C
4	Trace D
5	Trace E
6	Trace F
When omitted:	Trace A
<mode>	Storage mode
OFF	Does not store trace data.
MAXHold	Holds the maximum value.
AVERage	Executes Log averaging.
MINHold	Holds the minimum value.
LAVerage	Executes Linear averaging.

Details

Trace B, C, D, E, and F cannot be set during the Spectrum Emission Mask measurement.
Trace B, C, D, E, and F cannot be set during the Spurious Emission measurement.

Example of Use

To set the storage mode of Trace B to Average.

```
TRAC2:STOR:MODE AVER
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:AVERage[:STATe]
[:SENSe]:CHPower:AVERage[:STATe]
[:SENSe]:OBWidth:AVERage[:STATe]
[:SENSe]:SEMask:AVERage[:STATe]
[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]
[:SENSe]:SPURious:AVERage[:STATe]
```

:TRACe[1]|2|3|4|5|6:STORage:MODE?

Storage Mode Query

Function

This command queries the storage mode of trace data.

Query

```
:TRACe[n]:STORage:MODE?
```

Response

```
<mode>
```

Parameter

<n>	Target trace
1	Trace A
2	Trace B
3	Trace C
4	Trace D
5	Trace E
6	Trace F
When omitted:	Trace A
<mode>	Storage mode
OFF	Does not store trace data.
MAXH	Holds the maximum value.
AVER	Executes Log averaging.
MINH	Holds the minimum value.
LAV	Executes Linear averaging.

Example of Use

To query the storage mode of Trace B.

```
TRAC2:STOR:MODE?
> AVER
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:AVERage[:STATe]?
[:SENSe]:CHPower:AVERage[:STATe]?
[:SENSe]:OBWidth:AVERage[:STATe]?
[:SENSe]:SEMask:AVERage[:STATe]?
[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?
[:SENSe]:SPURious:AVERage[:STATe]?
```

[:SENSe]:AVERage:COUNt <integer>

Average Count

Function

This command sets the storage count.

Command

```
[:SENSe]:AVERage:COUNt <integer>
```

Parameter

<integer>	Storage count
Range	2 to 9999
Default	10

Details

This command is not available during the Spurious Emission measurement.

Example of Use

To set the storage count to 110.

```
AVER:COUN 110
```

Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:AVERage:COUNt
[:SENSe]:CHPower:AVERage:COUNt
[:SENSe]:OBWidth:AVERage:COUNt
[:SENSe]:SEMask:AVERage:COUNt
[:SENSe]:BPOWer|:TXPower:AVERage:COUNt
```

[:SENSe]:AVERage:COUNt?

Average Count Query

Function

This command queries the storage count.

Query

```
[:SENSe]:AVERage:COUNt?
```

Response

```
<integer>
```

Parameter

<integer>	Storage count
Range	2 to 9999

Example of Use

To query the storage count.

```
AVER:COUN?
> 110
```

Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:AVERage:COUNt?
[:SENSe]:CHPower:AVERage:COUNt?
[:SENSe]:OBWidth:AVERage:COUNt?
[:SENSe]:SEMask:AVERage:COUNt?
[:SENSe]:BPOWer|:TXPower:AVERage:COUNt?
```

:TRACe:SWEep:COUNt?

Sweep Count Query

Function

This command queries the sweep count.

Query

```
:TRACe:SWEep:COUNt?
```

Response

```
<integer>
```

Parameter

`<integer>`	Storage count
Range	2 to 9999

Details

During the Spectrum Emission Mask measurement, the sweep count is displayed as a percentage in the screen.
Formula to convert into percentage:
Integer / Specified storage count × 100

Example of Use

To query the sweep count.

```
TRAC:SWE:COUN?
> 1
```

:CALCulate:LLINe[1]|2|3|4|5|6:DATA <x-axis_1>,<ampl_1>,<connected_1>[,<x-axis_2>,<ampl_2>,<connected_2>],,,[,<x-axis_n>,<ampl_n>,<connected_n>]

Limit Edit

Function

This command sets the **Frequency**, **Amplitude**, and **Connected to Previous Pt** parameters for Limit Points on the specified Limit Line.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:DATA
<x-axis_1>,<ampl_1>,<connected_1>[,<x-axis_2>,<ampl_2>,<
connected_2>],,,[,<x-axis_n>,<ampl_n>,<connected_n>]
```

Parameter

<x-axis_n>	Frequency Offset
Range	0 to 325 GHz (Fixed/Absolute)
	–100 GHz to 100 GHz (Relative)
Default	Start Frequency (Fixed/Absolute)
	0 Hz (Relative)
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
	Hz is used when omitted.
<ampl_n>	Amplitude
Range	–300 to dBm (Fixed/Absolute)
	–300 to 300 dB (Relative)
Default	Reference Level (Fixed/Absolute)
	0 dB (Relative)
Resolution	0.01 dB
Suffix code	None
<connected_n>	Connected to Previous point
OFF|0	Disabled (No Connected)
ON|1	Enabled (Connected) (Default)

Details

Up to 100 points can be set.
When you try to set more than 100 points, the error message "Insufficient data" is displayed.
When a Limit point's Frequency value is higher than the other Limit point's value and this relationship reverses, the order of Limit points changes.

Example of Use

To set on Limit line1 to 1 GHz, –20 dBm, and No Connected for Point1, and set to 2 GHz, –30 dBm, and Connected for Point2.

```
CALC:LLIN1:DATA 1000000000,-20,0,2000000000,-30,1
```

:CALCulate:LLINe[1]|2|3|4|5|6:DATA?

Limit Edit Query

Function

This command queries the parameter settings for Limit Points on the specified Limit Line.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:DATA?
```

Response

```
<x-axis_1>,<ampl_1>,<connected_1>,<x-axis_2>,<ampl_2>,<connected_2>,,,,<x-axis_n>,<ampl_n>,<connected_n>
```

Parameter

<x-axis>	Frequency Offset
Range	0 to 325 GHz (Fixed/Absolute)
	–100 GHz to 100 GHz (Relative)
<ampl>	Amplitude
Range	–300 to 300 dBm (Fixed/Absolute)
	–300 to 300 dB (Relative)
<connected>	Connected to Previous point
0	Disables (No Connected)
1	Enables (Connected)

Example of Use

To query the setting for Limit Point1 on Limit Line1.

```
CALC:LLIN:DATA?
> 1000000000,-20.00,0,20000000000,-30,1
```

:CALCulate:LLINe[1]|2|3|4|5|6:TYPE UPPer|LOWer

Limit Type

Function

This command sets the Limit Line type to either Upper Limit or Lower Limit.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:TYPE <mode>
```

Parameter

<mode>	Type of Limit Line
UPPer	Upper Limit (Default)
LOWer	Lower Limit

Details

References for judging Pass/Fail depend on the types: Upper and Lower.
When the type is Upper and the signal is below Limit Line, it is determined as Pass.
When the type is Lower and the signal exceeds Limit Line, it is determined as Pass.

Example of Use

To set a type for Limit Line to Lower.

```
CALC:LLIN:TYPE LOW
```

:CALCulate:LLINe[1]|2|3|4|5|6:TYPE?

Limit Type Query

Function

This command queries the Limit Line type setting.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:TYPE?
```

Response

```
<mode>
```

Parameter

`<mode>`	Type of Limit Line
`UPP`	Upper Limit
`LOW`	Lower Limit

Example of Use

To query the Limit Line type setting.

```
CALC:LLIN:TYPE?
> LOW
```

:CALCulate:LLINe[1]|2|3|4|5|6:DISPlay OFF|ON|0|1

Limit Display

Function

This command sets the Limit Display to On/Off.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:DISPlay <switch>
```

Parameter

`<switch>`	Limit Display On/Off
`OFF|0`	Limit Line display Off (Default)
`ON|1`	Limit Line display On

Details

When Limit Display is set to On, Limit Line is displayed on the measurement screens. When Limit Display is set to Off, Limit Line is not displayed on the measurement screens.

Example of Use

To set Limit Display to Off.

```
CALC:LLIN:DISP OFF
```

:CALCulate:LLINe[1]|2|3|4|5|6:DISPlay?

Limit Display Query

Function

This command queries the Limit Display settings.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:DISPlay?
```

Response

```
<switch>
```

Parameter

<switch>	Limit Display On/Off
0	Limit Display Off
1	Limit Display On

Example of Use

To query the Limit Display setting.

```
CALC:LLIN:DISP?
> 0
```

:CALCulate:LLINe[1]|2|3|4|5|6:STATe OFF|ON|0|1

Limit Test

Function

This command selects whether to judge Pass/Fail.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:STATe <switch>
```

Parameter

<switch>	Pass/Fail
OFF|0	Does not judge Pass/Fail (Default)
ON|1	Judges Pass/Fail

Example of Use

To judge Pass/Fail.

```
CALC:LLIN:STAT 1
```

:CALCulate:LLINe[1]|2|3|4|5|6:STATe?

Limit Test Query

Function

This command queries whether to judge Pass/Fail.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:STATe?
```

Response

```
<switch>
```

Parameter

`<switch>`	Pass/Fail
`0`	Pass/Fail judgment is Off.
`1`	Pass/Fail judgment is On.

Example of Use

To query the Pass/Fail judgment.

```
CALC:LLIN:STAT?
> 1
```

:CALCulate:LLINe[1]|2|3|4|5|6:FAIL?

Limit Test Result Query

Function

This command queries a result of Pass/Fail judgment.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:FAIL?
```

Response

```
<switch>
```

Parameter

`<switch>`	Result
`0`	Pass
`1`	Fail

Example of Use

To query a result of Pass/Fail judgment.

```
CALC:LLIN:FAIL?
> 0
```

:CALCulate:LLINe[1]|2|3|4|5|6:MARGin:STATe OFF|ON|0|1

Margin

Function

This command enables/disables the Offset (Margin) function of Limit Line.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:MARGin:STATe <switch>
```

Parameter

<switch>

OFF|0	Sets the Margin function to Off. (Default)
ON|1	Sets the Margin function to On.

Example of Use

To set the Margin function to On.

```
CALC:LLIN:MARG:STAT 1
```

:CALCulate:LLINe[1]|2|3|4|5|6:MARGin:STATe?

Margin Query

Function

This command queries the Offset (Margin) function status of Limit Line.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:MARGin:STATe?
```

Response

<switch>

Parameter

<switch>	Margin function
0	Margin Off
1	Margin On

Example of Use

To query the Margin setting.

```
CALC:LLIN:MARG:STAT?
> 1
```

:CALCulate:LLINe[1]|2|3|4|5|6:MARGin <ampl_rel>

Margin Value

Function

This command sets the Offset value of Limit Line.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:MARGin <ampl_rel>
```

Parameter

<ampl_rel>	Offset value
Range	–40.00 to 0.00 (Upper)
	0.000 to 40.00 (Lower)
Resolution	0.01 dB
Unit	dB
Suffix code	DB
	dB is used when omitted.
Default	0

Example of Use

To set the Offset value to 10 dB.

```
CALC:LLIN:MARG 10
```

:CALCulate:LLINe[1]|2|3|4|5|6:MARGin?

Margin Value Query

Function

This command queries the Offset value of Limit Line.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:MARGin?
```

Response

```
<ampl_rel>
```

Parameter

<ampl_rel>	Offset value
Range	–40.00 to 0.00 (Upper)
	0.00 to 40.00 (Lower)
Resolution	0.01 dB
Unit	dB
Suffix code	DB

Example of Use

To query the Offset value of Limit Line.

```
CALC:LLIN:MARG?
> 10.00
```


:CALCulate:LLINe[1]|2|3|4|5|6:DELete

Delete Limit

Function

This command deletes all Limit Points of the currently selected Limit Line.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:DELete
```

Example of Use

To delete all Limit Points of the currently selected Limit Line.

```
CALC:LLIN:DEL
```

:CALCulate:LLINe:ALL:DELete

Delete All Limits

Function

This command deletes all Limit Points of Limit Lines 1, 2, 3, 4, 5 and 6.

Command

```
:CALCulate:LLINe:ALL:DELete
```

Example of Use

To delete all Limit Points of Limit Lines 1, 2, 3, 4, 5 and 6.

```
CALC:LLIN:ALL:DEL
```

:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:AMPLitude FIXed|RELative

Limits Line Type (Amplitude)

Function

This command sets the vertical axis of Limit Line to represent in absolute or relative values.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:AMPLitude <mode>
```

Parameter

<mode>	Vertical axis
FIXed/ABSolute	Represent vertical axis in absolute values
RELative	Represent vertical axis in relative values (Default)

Example of Use

To represent the vertical axis of Limit Line in absolute values.

```
CALC:LLIN:CMOD:AMPL ABS
```

:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:AMPLitude?

Limits Line Type (Amplitude) Query

Function

This command queries whether the vertical axis of Limit Line represents in absolute or relative values.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:AMPLitude?
```

Response

```
<mode>
```

Parameter

<mode>	Vertical axis
FIX	Representation in absolute values.
REL	Representation in relative values.

Example of Use

To query the vertical axis setting of Limit Line.

```
CALC:LLIN:CMOD:AMPL?
> FIX
```

:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:FREQuency FIXed|ABSolute|RELative

Limit Line Type (Frequency)

Function

This command sets the horizontal axis of Limit Line to represent in absolute or relative values.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:FREQuency <mode>
```

Parameter

<mode>	Representation of setting values for horizontal axis
FIXed/ABSolute	Absolute values
RELative	Relative values (Default)

Example of Use

To represent the horizontal axis of Limit Line in absolute values.

```
CALC:LLIN:CMOD:FREQ ABS
```

:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:FREQuency?

Limit Line Type (Frequency) Query

Function

This command queries whether the horizontal axis of Limit Line represents in absolute or relative values.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:CMODe:FREQuency?
```

Response

```
<mode>
```

Parameter

<mode>	Representation of setting values for horizontal axis
FIX	Absolute values
REL	Relative values

Example of Use

To query the horizontal axis setting of Limit Line.

```
CALC:LLIN:CMOD:FREQ?
> FIX
```

:MMEMory:STORe:TRACe TRACe1|TRACe2|TRACe3|TRACe4|TRACe5|TRACe6|GVIew|ALL[,<filename>[,<device>]]

Save Wave Data

Function

This command saves the waveform data into a CSV file.

Command

```
:MMEMory:STORe:TRACe <trace>[,<filename>[,<device>]]
```

Parameter

`<trace>`	Trace to be saved
`TRACe1`	Trace A
`TRACe2`	Trace B
`TRACe3`	Trace C
`TRACe4`	Trace D
`TRACe5`	Trace E
`TRACe6`	Trace F
`GVIew`	Gate View
`ALL`	All traces.
`<filename>`	File name to be saved String of up to 32 characters, not including the extension, enclosed in double quotes (") or single quotes (') The following characters are not available. `\ / : * ? " " ' ' < > |` When omitted, it is named "Wave Data date_sequential number.csv".

`<device>`	`Drive name`
	`A,B,D,E,F,...`
	Defaults to D when omitted.

Details

0 to 99 are added to a file when a file name is omitted. No more file can be saved if 99 files are used.
Files are saved in the following directory of the specified drive.

\Anritsu Corporation\Signal Analyzer\User Data\TraceData\Spectrum Analyzer

Up to 1000 files can be saved in the folder.
Trace A, B, C, D, E, and F cannot be set during the Spectrum Emission Mask measurement.

Trace B, C, D, E, and F cannot be set during the Spurious Emission measurement.
Gate View cannot be set when Gate View is set to Off.
This command is not available when all the traces are set to Blank.

Example of Use

To save the waveform data file “trace” of Trace B into E drive.

```
MMEM:STOR:TRAC TRAC2,"trace",E
```

:TRACe[:DATA]? TRACe1|TRACe2|TRACe3|TRACe4|TRACe5|TRACe6|GVIew

Query Trace Data

Function

This command queries the trace data.

Query

```
:TRACe[:DATA]? <trace>
```

Response

```
<data_1>,<data_2>,...
```

Parameter

`<trace>`	Trace to be saved
`TRACe1`	Trace A
`TRACe2`	Trace B
`TRACe3`	Trace C
`TRACe4`	Trace D
`TRACe5`	Trace E
`TRACe6`	Trace F
`GVIew`	Gate View
`<data_n>`	Level data
Resolution	0.001 dB resolution (in Log scale) {Voltage value (V)/Reference level (V)} × 10000 (in Linear scale) –999.0 is returned, when not measured/an error occurs.

: If REAL,32, or INTeger,32 is set for :FORMat[:DATA], the output of "# (ASCII format)" is followed by the output of "Range of character string indicating byte length of binary data (ASCII format", "Byte length of binary data (ASCII format)", and "Trace data string (binary format)", in this order. In the case of the binary format too, the response message terminator is attached (refer to "1.7.2 SCPI response message format" in the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control).*

Example: :If 1001 point trace data is read out when REAL,32 is set for :FORMat[:DATA],

> #44004<4004 bytes of data>
the “4” after “#” indicates that “this is followed by 4 characters indicating the binary data length.”“4004” indicates that “this is followed by 4004 bytes of binary data.”

Details

This function writes or queries the trace data of the Positive detection, when the detection mode is Positive & Negative (Normal mode).
–999.0 is returned for traces A, B, C, D, E and F while the Spectrum Emission Mask measurement is performed.
–999.0 is returned for traces B, C, D, E and F while the Spurious Emission measurement is performed.
–999.0 is returned for Gate View when Gate View is set to Off.

Example of Use

To query the data of Trace A.

```
TRAC? TRAC1
> -20.000,-20.231,-21.233,...
```

:TRACe[:DATA]:NEGative? TRACe1|TRACe2|TRACe3|TRACe4|TRACe5|TRACe6|GVIew

Query Negative Trace Data

Function

This command queries the trace data of Negative detection when the detection mode is Pos&Neg (Normal mode).

Query

```
:TRACe[:DATA]:NEGative? <trace>
```

Response

```
<data_1>,<data_2>,...
```

Parameter

`<trace>`	Trace to be saved
`TRACe1`	Trace A
`TRACe2`	Trace B
`TRACe3`	Trace C
`TRACe4`	Trace D
`TRACe5`	Trace E
`TRACe6`	Trace F
GVIew	Gate View
`<data_n>`	Level data line
Resolution	0.001 dB resolution (in Log scale) {Voltage value (V)/Reference level (V)}× 10000 (in Linear scale) –999.0 is returned, when not measured/an error occurs.

If REAL,32, or INTeger,32 is set for :FORMat[:DATA], the output of "# (ASCII format)" is followed by the output of "Range of character string indicating byte length of binary data (ASCII format", "Byte length of binary data (ASCII format)", and "Trace data string (binary format)", in this order. In the case of the binary format too, the response message terminator is attached (refer to "1.7.2 SCPI response message format" in the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control)*.

Example:
If 1001 point trace data is read out when REAL,32 is set for :FORMat[:DATA],

> #44004<4004 bytes of data>

the "4" after "#" indicates that "this is followed by 4 characters indicating the binary data length.""4004" indicates that "this is followed by 4004 bytes of binary data."

Details

This function queries the trace data of the Negative detection, when the detection mode is Positive & Negative (Normal mode).
–999.0 is returned for traces A, B, C, D, E and F while Spectrum Emission Mask measurement is performed.
–999.0 is returned for traces B, C, D, E and F while Spurious Emission measurement is performed.
–999.0 is returned for Gate View when Gate View is set to Off.

Example of Use

To query the data of Trace A.

```
TRAC:NEG? TRAC1
> -20.000,-20.231,-21.233,...
```

:TRACe[:DATA]:SEMask? REFerence|LOWer1|LOWer2|LOWer3|LOWer4|LOWer5|LOWer6|UPPer1|UPPer2|UPPer3|UPPer4|UPPer5|UPPer6|ALL

Query Trace Data Spectrum Emission Mask

Function

This command reads trace data for Spectrum Emission Mask measurement.

Query

```
:TRACe[:DATA]:SEMask? <trace>
```

Response

```
<data_1>,<data_2>,...
```

Parameter

`<trace>`	Trace to save
`REFerence`	Reference trace
`LOWer1`	Offset1 Lower side trace
`LOWer2`	Offset2 Lower side trace
`LOWer3`	Offset3 Lower side trace
`LOWer4`	Offset4 Lower side trace
`LOWer5`	Offset5 Lower side trace
`LOWer6`	Offset6 Lower side trace
`UPPer1`	Offset1 Lower side trace
`UPPer2`	Offset2 Lower side trace
`UPPer3`	Offset3 Lower side trace
`UPPer4`	Offset4 Lower side trace
`UPPer5`	Offset5 Lower side trace
`UPPer6`	Offset6 Lower side trace
`ALL`	Reference and trace of all offsets
`<data_n>`	Level data
Resolution	Integer value for 0.001 dB units

If REAL,32, or INTeger,32 is set for :FORMat[:DATA], the output of "# (ASCII format)" is followed by the output of "Range of character string indicating byte length of binary data (ASCII format", "Byte length of binary data (ASCII format)", and "Trace data string (binary format)", in this order. In the case of the binary format too, the response message terminator is attached (refer to "1.7.2 SCPI response message format" in the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control)*.

Example:
If 1001 point trace data is read out when REAL,32 is set for :FORMat[:DATA],
> #44004<4004 bytes of data>
the "4" after "#" indicates that "this is followed by 4 characters indicating the binary data length.""4004" indicates that "this is followed by 4004 bytes of binary data."

Details

This function reads the Positive trace data when the Detection mode is Positive & Negative (Normal mode). When Spectrum Emission Mask measurement is Off, –999.0 is returned as the trace point minutes and seconds.
For All, the linked data are output in the following sequence:
Lower6, Lower5, Lower4, Lower3, Lower2, Lower1, Reference, Upper1, Upper2, Upper3, Upper4, Upper5, Upper6
Each segment data count is defined by the trace points.

Example of Use

To read Reference data.

```
TRAC:SEM? REF
> -20.000,-20.231,-21.233,...
```

:TRACe[:DATA]:SEMask:NEGative? REFerence|LOWer1|LOWer2|LOWer3|LOWer4|LOWer5|LOWer6|UPPer1|UPPer2|UPPer3|UPPer4|UPPer5|UPPer6|ALL

Query Negative Trace Data Spectrum Emission Mask

Function

This command reads the Negative Spectrum Emission Mask trace data when the Detection mode is Pos&Neg (Normal mode).

Query

```
:TRACe[:DATA]:SEMask:NEGative? <trace>
```

Response

```
<data_1>,<data_2>,...
```

Parameter

`<trace>`	Trace to save
`REFerence`	Reference trace
`LOWer1`	Offset1 Lower side trace
`LOWer2`	Offset2 Lower side trace
`LOWer3`	Offset3 Lower side trace
`LOWer4`	Offset4 Lower side trace
`LOWer5`	Offset5 Lower side trace
`LOWer6`	Offset6 Lower side trace
`UPPer1`	Offset1 Lower side trace
`UPPer2`	Offset2 Lower side trace
`UPPer3`	Offset3 Lower side trace
`UPPer4`	Offset4 Lower side trace
`UPPer5`	Offset5 Lower side trace
`UPPer6`	Offset6 Lower side trace
`ALL`	Reference and trace of all offsets
`<data_n>`	Level data string
Resolution	Integer value for 0.001 dB units

If REAL,32, or INTeger,32 is set for :FORMat[:DATA], the output of "# (ASCII format)" is followed by the output of "Range of character string indicating byte length of binary data (ASCII format", "Byte length of binary data (ASCII format)", and "Trace data string (binary format)", in this order. In the case of the binary format too, the response message terminator is attached (refer to "1.7.2 SCPI response message format" in the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control)*.

Example:
If 1001 point trace data is read out when REAL,32 is set for :FORMat[:DATA],

> #44004<4004 bytes of data>

the "4" after "#" indicates that "this is followed by 4 characters indicating the binary data length.""4004" indicates that "this is followed by 4004 bytes of binary data."

Details

This function reads the Negative trace data when the Detection mode is Positive & Negative (Normal mode). When Spectrum Emission Mask measurement is Off, –999.0 is returned as the trace point minutes and seconds.
For All, the linked data are output in the following sequence:
Lower6, Lower5, Lower4, Lower3, Lower2, Lower1, Reference, Upper1, Upper2, Upper3, Upper4, Upper5, Upper6
Each segment data count is defined by the trace points.

Example of Use

To read Reference data.

```
TRAC:SEM:NEG? REF
> -20.000,-20.231,-21.233,...
```

:FORMat:BORDer NORMal|SWAPped

Binary Data Byte Order

Function

This command sets the byte order of the query data when REAL,32 or INTeger,32 is set for
`:FORMat[:DATA].`

Command

```
:FORMat:BORDer <border>
```

Parameter

`<border>`	Byte order
`NORMal`	Sets the byte order to big endian (Default).
`SWAPped`	Sets the byte order to little endian.

Details

This function sets the data arrangement format when data is output in the binary format. In the case of big endian, the data is arranged from the highest byte, and in the case of little endian, from the lowest byte. For example, in the case of the 4-byte data of 0x01234567, the data is arranged as 01 23 45 67 in the case of big endian, and as 67 45 23 01 in the case of little endian.

Example of Use

To set the byte order to little endian.

```
FORM:BORD SWAP
```

:FORMat:BORDer?

Binary Data Byte Order Query

Function

This command reads the byte order of the query data when REAL,32 or INTeger,32 is set for
`:FORMat[:DATA].`

Query

```
:FORMat:BORDer?
```

Response

```
<border>
```

Parameter

`<border>`	Byte order
`NORM`	Byte order: big endian
`SWAP`	Byte order: little endian

Example of Use

To query the byte order.

```
FORM:BORD?
> SWAP
```

:FORMat[:DATA] ASCii|REAL|INTeger[,<length>]

Numeric Data Format

Function

This command sets the format of the data that is read out with `[:SENSe]:DATA?`.

Command

```
:FORMat[:DATA] <format>[,<length>]
```

Parameter

`<format>`	Data format
`ASCii`	ASCii format (Default).
`REAL`	32-bit binary floating point format
`INTeger`	32-bit binary fixed point format.
`<length>`	Supplementary setting for selected format This can be set only when ASCii is specified for format.
`32`	If REAL is specified for format, the results are returned in the 32-bit floating point format. If INTeger is specified for format, the results are returned in the 32-bit fixed point format. This can be set only when REAL or INTeger is specified for format.
When omitted:	This will be 0 when ASCii is specified for format. This will be 32 when REAL or INTeger is specified for format.

Details

When REAL is specified for format, the trace data is output in the 32-bit single-precision floating point format specified in IEEE754.

Example of Use

To set the trace data format to the ASCii format.

```
FORM ASC
```

:FORMat[:DATA]?

Numeric Data Format Query

Function

This command queries the format of the data that is read out with [:SENSe]:DATA?.

Query

```
:FORMat[:DATA]?
```

Response

```
<format>,<length>
```

Parameter

<format>	Data format
ASC	ASCii format.
REAL	32-bit binary floating point format
INT	32-bit binary fixed point format.
<length>	Supplementary setting for selected format
0	Result is sent back in number of significant figures of this instrument.
32	The results are returned in the 32-bit floating point format or the 32-bit fixed point format .

Example of Use

To query the format of the trace data.

```
FORM?
> REAL,32
```

:CALCulate:LLINe[1]|2|3|4|5|6:TRACe <trace>

Test Trace

Function

This command sets the evaluation target trace of the current Limit Line.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:TRACe <Trace>
```

Parameter

<Trace>	Trace to be evaluated
A	Trace A (Default)
B	Trace B
C	Trace C
D	Trace D
E	Trace E
F	Trace F
When omitted	A

Example of Use

To set Trace C of Limit Line3 as an evaluation target.

```
CALC:LLIN3:TRAC C
```

:CALCulate:LLINe[1]|2|3|4|5|6:TRACe?

Test Trace Query

Function

This command queries the evaluation target trace of the current Limit Line.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:TRACe?
```

Response

```
<Trace>
```

Parameter

<Trace>	Trace to be evaluated
A	Trace A
B	Trace B
C	Trace C
D	Trace D
E	Trace E
F	Trace F

Example of Use

To query the evaluation target trace of Limit Line3.

```
CALC:LLIN3:TRAC?
> REAL,32
```

:CALCulate:LLINe[1]|2|3|4|5|6:POINt:LEVel:OFFSet <ampl_1>[,<ampl_2>,,,<ampl_n>]

Previous Pt Level Offset

Function

This command sets the offset from the current Limit point for making linear interpolation between Limit Points.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:POINt:LEVel:OFFSet
<amp_1>[,<ampl_2>,,,<ampl_n>]
```

Parameter

<amp_n>	Offset level	
Range	–300.00 to 300.00 dB	
Resolution	0.01 dB	
Unit	dB	
Suffix code	DB	dB is used when omitted.
Default	0 dB	

Example of Use

To set the offset of 3 dB from the current Limit point for making linear interpolation between Limit Points.

```
CALC:LLIN:POIN:OFFS 3,3,3,3,3
```

:CALCulate:LLINe[1]|2|3|4|5|6:POINt:LEVel:OFFSet?

Previous Pt Level Offset Query

Function

This command queries the specified offset value from the current Limit point for making linear interpolation between Limit Points.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:POINt:LEVel:OFFSet?
```

Response

```
<amp_1>[,<ampl_2>,,,<ampl_n>]
```

Parameter

<amp_n>		Offset level
	Range	–300.00 to 300.00 dB
	Resolution	0.01 dB
	Unit	dB

Example of Use

To query the specified offset value from the current Limit point for making linear interpolation between Limit Points.

```
CALC:LLIN:POIN:LEV:OFFS?
> 3,3,3,3
```

:CALCulate:LLINe[1]|2|3|4|5|6:MIRRor ON|OFF|1|0

Mirror Limit

Function

This command turns on or off the mirroring function that copies the Limit Line settings of the right half to the left half.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:MIRRor <switch>
```

Parameter

`<switch>`	Mirroring function
`OFF|0`	OFF (Default)
`ON|1`	ON

Details

This command is available only when the Limit Line Type (Frequency) is set to Relative.

Example of Use

To set the mirroring function to ON.

```
:CALC:LLIN:MIRR ON
```

:CALCulate:LLINe[1]|2|3|4|5|6:MIRRor?

Mirror Limit Query

Function

This command queries the setting of the mirroring function that copies the Limit Line settings of the right half to the left half.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:MIRRor?
```

Response

```
<switch>
```

Parameter

<switch>	Mirroring function
0	OFF
1	ON

Example of Use

To query the mirroring function setting.

```
:CALC:LLIN:MIRR?
> 1
```

:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:CREate

Create Envelope

Function

This command automatically creates a Limit Line from the current Trace data.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:CREate
```

Details

This command automatically creates a Limit Line from the current Trace data according to the following settings: Envelope Points, Envelope Offset and Envelope Shape.
This command is unavailable when the Mirror Limit is set to On.

Example of Use

To automatically create a Limit Line.

```
CALC:LIM:ENV:CRE
```

:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:UPDate:Y

Update Envelope

Function

This command automatically updates a Limit Line of the Peak Level that includes a Trace Point evaluated as “Fail”, referring to the current trace data.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:UPDate:Y
```

Details

This command does not return any results if the Limit Test is not evaluated as “Fail”.
This command is unavailable when the Mirror Limit is set to On.

Example of Use

To automatically update a Limit Point of the Peak Level that includes a Trace Point evaluated as “Fail”.

```
CALC:LLIN:ENV:UPD:Y
```

:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:POINt <number>

Envelope Points

Function

This command sets the number of Envelope Points for automatically creating a Limit Line from the current Trace Point value.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:POINt <number>
```

Parameter

<number>	The number of Envelope Points
Range	2 to Trace Point (Max 100)
Resolution	1
Default	41

Details

When the Create Envelope function is executed, the set value applies.

Example of Use

To set the number of Envelope Points to 20.

```
CALC:LLIN:ENV:POIN 20
```

:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:POINt?

Envelope Points Query

Function

This command queries the set number of Envelope Points.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:POINt?
```

Response

```
<number>
```

Parameter

`<number>`	The number of Envelope Points
Range	2 to Trace Point (Max 100)

Example of Use

To query the number of Envelope Points.

```
CALC:LLIN:ENV:POIN?
> 20
```

:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope[:LEVel]:OFFSet <amplitude>

Envelope Offset

Function

This command sets the offset level (from the current peak Trace Point to the Limit Point).

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope[:LEVel]:OFFSet
<amplitude>
```

Parameter

<amplitude>	Offset level
Range	–300.00 to 300.00 dB
Resolution	0.01 dB
Unit	dB
Default	3.00 dB

Details

When the Create Envelope or Update Envelope function is executed, the set value applies.

Example of Use

To set the offset level (from the peak Trace Point to the Limit Point) to 3 dB.

```
CALC:LLIN:ENV:OFFS 3
```

:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope[:LEVel]:OFFSet?

Envelope Offset Query

Function

This command queries the offset level (from the current peak Trace Point to the Limit Point).

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope[:LEVel]:OFFSet?
```

Response

```
<amplitude>
```

Parameter

`<amplitude>`	Offset level
Range	–300.00 to 300.00 dB

Example of Use

To query the offset level to the Limit Point.

```
:CALC:LLIN:ENV:OFFS?
> 3
```

:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:SHAPe SQUare|SLOPe

Envelope Shape

Function

This command sets the shape of Limit Lines to be automatically created.

Command

```
:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:SHAPe <mode>
```

Parameter

<mode>	Shape of Limit Lines
SQUare	Connects Limit Points by vertical and horizontal lines.
SLOPe	Connects Limit Points by straight lines. (Default)

Details

This command is unavailable when the Mirror Limit is set to On.

Example of Use

To connect Limit Points by straight lines.

```
CALC:LLIN:ENV:SHAP SLOP
```

:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:SHAPe?

Envelope Shape Query

Function

This command queries the shape setting of Limit Lines to be automatically created.

Query

```
:CALCulate:LLINe[1]|2|3|4|5|6:ENVelope:SHAPe?
```

Response

```
<mode>
```

Parameter

`<mode>`	Shape of the Limit Line
`SQU`	Connects Limit Points by vertical and horizontal lines.
`SLOP`	Connects Limit Points by straight lines. (Default)

Example of Use

To query the shape setting of the Limit Lines.

```
CALC:LLIN:ENV:SHAP?
> SLOP
```

:MMEMory:STORe:LLINe[1]|2|3|4|5|6 [<filename>[,<device>]]

Save Limit

Function

This command saves the Limit data settings to a CSV file.

Command

```
:MMEMory:STORe:LLINe[1]|2|3|4|5|6
[,<filename>[,<device>]]
```

Parameter

<filename>	"Name of file to save" String of up to 32 characters, not including the extension, enclosed in double quotes (") or single quotes (') The following characters cannot be used: \ / : * ? " ″ ` ′ < > | When omitted it is saved as a csv file with the following default file name: Limit "Date"_"Sequential Number".
<device>	Drive name A,B,D,E,F,... Defaults to D when omitted.

Details

- When the file name is omitted, a sequential number from 0 to 999 is added to the default file name. When the sequential number reaches 999, no more files can be saved.
- Files are saved to the following directory in the specified drive.
  \Anritsu Corporation\Signal Analyzer\User Data\Limit
- Up to 1000 files can be stored in the folder.

Example of Use

To save the Limit data "Limit" of Limit3 to E drive.

```
MMEM:STOR:LLIN3 "Limit",E
```

:MMEMory:LOAD:LLINe[1]|2|3|4|5|6 <filename>[,<device>]

Recall Limit Data file

Function

This command recalls the contents of the Limit data file.

Command

```
:MMEMory:LOAD:LLINe[1]|2|3|4|5|6 <filename>[,<pass>]
```

Parameter

<filename>	"Name of file to recall" String of up to 32 characters, not including the extension, enclosed in double quotes (") or single quotes (') The following characters cannot be used: \ / : * ? " " ' ' < > |
<device>	Drive name A,B,D,E,F,... Defaults to D when omitted.

Details

- This command can recall Limit files in csv, lim, or xml format.
- From the following folder in the specified drive, the specified file is loaded:
  \Anritsu Corporation\Signal Analyzer\User Data\Limit

Example of Use

To load the Limit data file “Limit.csv” from E drive to Limit3.

```
MMEM:LOAD:LLIN3 "Limit.csv",E
```

:MMEMory:DELete:LLINe <filename>[,<device>]

Delete Limit Data File

Function

This command deletes the specified Limit data file.

Command

```
:MMEMory:DELete:LLINe <filename>[,<device>]
```

Parameter

<filename>	"Name of Limit data file to delete" String of up to 32 characters, not including the extension, enclosed in double quotes (") or single quotes (') The following characters cannot be used: \ / : * ? " < > |
<device>	Drive name A,B,D,E,F,... Defaults to D when omitted.

Details

From the following folder in the specified drive, the specified file is deleted:
\Anritsu Corporation\Signal Analyzer\User Data\Limit

Example of Use

To delete the Limit data file “Limit.csv”.

```
MMEM:DEL:LLIN "Limit.csv"
```

:MMEMory:DELete:LLINe:ALL [<device>]

Delete All Limit Data Files

Function

This command deletes all Limit data files stored in the specified drive.

Command

```
:MMEMory:DELete:LLINe:DATA:ALL [<device>]
```

Parameter

`<device>`	Drive name A,B,D,E,F,... Defaults to D when omitted.

Details

From the following folder in the specified drive, all Limit Data Files are deleted:
\Anritsu Corporation\Signal Analyzer\User Data\Limit

Example of Use

To delete all Limit data files stored in D drive.

```
MMEM:DEL:LLIN:ALL
```

:MMEMory:DELete:WAVEform <foldername>[,<device>]

Delete Waveform Data File

Function

This command deletes the specified Waveform data folder.

Command

```
:MMEMory:DELete:WAVEform <foldername>[,<device>]
```

Parameter

<filename>	"Name of Waveform data folder to delete" String of up to 32 characters, not including the extension, enclosed in double quotes (") or single quotes (') The following characters cannot be used: \ / : * ? " " ' ' < > |
<device>	Drive name A,B,D,E,F,... Defaults to D when omitted.

Details

This command deletes a waveform data folder from the following folder in the specified drive:
\Anritsu Corporation\Signal Analyzer\User Data\Waveform

Example of Use

To delete the Waveform data folder "Waveform".

```
MMEM:DEL:WAVE "Waveform"
```

:MMEMory:DELete:WAVEform:ALL [<device>]

Delete All Waveform Data Files

Function

This command deletes all Waveform data folders and all files in those folders.

Command

```
:MMEMory:DELete:WAVEform:ALL [<device>]
```

Parameter

<device>	Drive name A,B,D,E,F,... Defaults to D when omitted.

Details

From the following folder in the specified drive, all data folders and all files in those folders are deleted:
\Anritsu Corporation\Signal Analyzer\User Data\Waveform

Example of Use

To delete the Waveform data folders and all files in those folders.

```
MMEM:DEL:WAVE:ALL
```

2.7 Sweep/Trigger/Gate

Table 2.7-1 lists device messages for sweep/trigger/gate.

Table 2.7-1 Device messages for sweep/trigger/gate

Function	Device Message
Continuous Measurement	:INITiate:CONTinuous OFF|ON|0|1
	:INITiate:CONTinuous?
	:INITiate:MODE:CONTinuous
Single Measurement	:INITiate:MODE:SINGle
Initiate	:INITiate[:IMMediate]
Single Sweep	:INITiate:SWP
	:INITiate:SWP?
Sweep Time	[:SENSe]:SWEep:TIME <time>
	[:SENSe]:SWEep:TIME?
Sweep Time Auto/Manual	[:SENSe]:SWEep:TIME:AUTO OFF|ON|0|1
	[:SENSe]:SWEep:TIME:AUTO?
Auto Sweep Time Mode	[:SENSe]:SWEep:TIME:AUTO:MODE NORMal|FAST
	[:SENSe]:SWEep:TIME:AUTO:MODE?
Trace Point	[:SENSe]:SWEep:POINts <integer>
	[:SENSe]:SWEep:POINts?
Auto Sweep Type Select Rules	[:SENSe]:SWEep[:TYPE][:AUTO]:RULes DRANge|SPEed|OSWeep|PSWeep|PFFT
	[:SENSe]:SWEep[:TYPE][:AUTO]:RULes?
Sweep Type Select Rules FFT Width	[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:WIDTh <freq>
	[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:WIDTh?
Sweep Type Select Rules Real FFT Width	[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:RWIDth?
Sweep Type Select Rules Real Type	[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:RTYPe?
Detection Mode	[:SENSe]:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS
	[:SENSe]:DETector[:FUNCtion]?
	:CALCulate:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS
	:CALCulate:DETector[:FUNCtion]?
Trigger Switch	:TRIGger[:SEQuence][:STATe] ON|OFF|1|0
	:TRIGger[:SEQuence][:STATe]?
Trigger Source	:TRIGger[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe
	:TRIGger[:SEQuence]:SOURce?
Log Scale Video Trigger Level	:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic] <level>
	:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic]?
Linear Scale Video Trigger Level	:TRIGger[:SEQuence]:VIDeo:LEVel:LINear <level>
	:TRIGger[:SEQuence]:VIDeo:LEVel:LINear?

Table 2.7-1 Device messages for sweep/trigger/gate (Cont'd)

Function	Device Message
Wide IF Trigger Level	:TRIGger[:SEQuence]:WIF|:RFBurst:LEVel:ABSolute <level>
	:TRIGger[:SEQuence]:WIF|:RFBurst:LEVel:ABSolute?
Trigger Slope	:TRIGger[:SEQuence]:EXTernal1:SLOPe POSitive|NEGative
	:TRIGger[:SEQuence]:EXTernal1:SLOPe?
	:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe POSitive|NEGative
	:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe?
	:TRIGger[:SEQuence]:VIDeo:SLOPe POSitive|NEGative
	:TRIGger[:SEQuence]:VIDeo:SLOPe?
Trigger Delay	:TRIGger[:SEQuence]:EXTernal[1]:DELay <time>
	:TRIGger[:SEQuence]:EXTernal[1]:DELay?
	:TRIGger[:SEQuence]:WIF|:RFBurst:DELay <time>
	:TRIGger[:SEQuence]:WIF|:RFBurst:DELay?
	:TRIGger[:SEQuence]:VIDeo:DELay <time>
	:TRIGger[:SEQuence]:VIDeo:DELay?
Trigger Hold	:TRIGger[:SEQuence]:HOLDoff <time>
	:TRIGger[:SEQuence]:HOLDoff?
Trigger Hold On/Off	:TRIGger[:SEQuence]:HOLDoff:STATe OFF|ON|0|1
	:TRIGger[:SEQuence]:HOLDoff:STATe?
Frame Trigger Period	:TRIGger[:SEQuence]:FRAMe:PERiod <time>
	:TRIGger[:SEQuence]:FRAMe:PERiod?
Frame Sync Source	:TRIGger[:SEQuence]:FRAMe:SYNC EXTernal[1]|IMMediate|Off|WIF|RFBurst
	:TRIGger[:SEQuence]:FRAMe:SYNC?
Frame Sync Offset	:TRIGger[:SEQuence]:FRAMe:OFFSet <time>
	:TRIGger[:SEQuence]:FRAMe:OFFSet?
Gate Sweep	[:SENSe]:SWEep:EGATe[:STATe] ON|OFF|1|0
	[:SENSe]:SWEep:EGATe[:STATe]?
Gate Source	[:SENSe]:SWEep:EGATe:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|SG|BBIF|FRAMe
	[:SENSe]:SWEep:EGATe:SOURce?
Gate Level	[:SENSe]:SWEep:EGATe:WIF|:RFBurst:LEVel:ABSolute <ampl>
	[:SENSe]:SWEep:EGATe:WIF|:RFBurst:LEVel:ABSolute?
Gate Slope	[:SENSe]:SWEep:EGATe:SLOPe POSitive|NEGative
	[:SENSe]:SWEep:EGATe:SLOPe?
Gate Delay	[:SENSe]:SWEep:EGATe:DELay <time>
	[:SENSe]:SWEep:EGATe:DELay?
Gate Length	[:SENSe]:SWEep:EGATe:LENGth <time>
	[:SENSe]:SWEep:EGATe:LENGth?
Gate View	[:SENSe]:SWEep:EGATe:VIEW[:STATe] ON|OFF|1|0
	[:SENSe]:SWEep:EGATe:VIEW[:STATe]?
Gate View Sweep Time	[:SENSe]:SWEep:EGATe[:VIEW]:TIME <time>
	[:SENSe]:SWEep:EGATe[:VIEW]:TIME?

Table 2.7-1 Device messages for sweep/trigger/gate (Cont'd)

Function	Device Message
Gate View Resolution Bandwidth Auto/Manual	[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]:AUTO ON|OFF|1|0
	[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]:AUTO?
Gate View Resolution Bandwidth	[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution] <freq>
	[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]?
Gate View Video Bandwidth Auto/Manual	[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo:AUTO ON|OFF|1|0
	[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo:AUTO?
Gate View Video Bandwidth	[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo <freq>
	[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo?
Gate View Detection Mode	[:SENSe]:SWEep:EGATe:VIEW:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS
	[:SENSe]:SWEep:EGATe:VIEW:DETector[:FUNCtion]?
Gate View Trace Point	[:SENSe]:SWEep:EGATe:VIEW:POINts <integer>
	[:SENSe]:SWEep:EGATe:VIEW:POINts?
Gate View Frequency Mode	[:SENSe]:SWEep:EGATe:VIEW:FREQuency:AUTO ON|OFF|1|0
	[:SENSe]:SWEep:EGATe:VIEW:FREQuency:AUTO?
Gate View Frequency	[:SENSe]:SWEep:EGATe:VIEW:FREQuency <freq>
	[:SENSe]:SWEep:EGATe:VIEW:FREQuency?
Gate Hold	[:SENSe]:SWEep:EGATe:HOLDoff <time>
	[:SENSe]:SWEep:EGATe:HOLDoff?
Gate Hold On/Off	[:SENSe]:SWEep:EGATe:HOLDoff:STATe OFF|ON|0|1
	[:SENSe]:SWEep:EGATe:HOLDoff:STATe?
Restart Sweep	:INITiate:RESTart
Stop Sweep	:ABORt

:INITiate:CONTinuous OFF|ON|0|1

Continuous Measurement

Function

This command switches Single/Continuous of the sweep mode.

Command

```
:INITiate:CONTinuous <switch>
```

Parameter

<switch>	Sweep mode
0|OFF	Single measurement
1|ON	Continuous measurement (Default)

Example of Use

To execute the Continuous measurement.

```
INIT:CONT ON
```

:INITiate:CONTinuous?

Continuous Measurement Query

Function

This command queries the sweep mode.

Query

```
:INITiate:CONTinuous?
```

Response

```
<switch>
```

Parameter

<switch>	Sweep mode
0	Single measurement
1	Continuous measurement

Example of Use

To query the sweep mode.

```
INIT:CONT?
> 0
```

:INITiate:MODE:CONTinuous

Continuous Measurement

Function

This command sets the sweep mode to Continuous and starts continuous sweep.

Command

```
:INITiate:MODE:CONTinuous
```

Example of Use

To start continuous sweep.

```
INIT:MODE:CONT
```

:INITiate:MODE:SINGle

Single Measurement

Function

This command sets the sweep mode to Single and starts the single sweep.

Command

```
:INITiate:MODE:SINGle
```

Example of Use

To start single sweep.

```
INIT:MODE:SING
```

Details

To read out the measurement results after executing this command, perform the synchronization control using the "*WAI" command.

:INITiate[:IMMediate]

Initiate

Function

This command starts sweeping in the presently set sweep mode.

Command

```
:INITiate:[IMMediate]
```

Details

To read out the measurement results after executing this command, perform the synchronization control using the "`*WAI`" command.

Example of Use

To start sweeping in the presently set sweep mode.

```
INIT:IMM
```

:INITiate:SWP

Single Sweep

Function

This command sets the sweep mode to single and starts single sweep.

Command

```
:INITiate:SWP
```

Details

Starting sweep with this function makes the following command wait without being processed until sweep is finished.

Example of Use

To start single sweep.

```
INIT:SWP
```

:INITiate:SWP?

Single Sweep Query

Function

This command queries the sweep status (sweep done/during sweep).

Query

```
:INITiate:SWP?
```

Response

```
<status>
```

Parameter

<status>	Sweep status
0	Sweep done
1	During sweep

Example of Use

To query the sweep status.

```
INIT:SWP?
> 0
```

[:SENSe]:SWEep:TIME <time>

Sweep Time

Function

This command sets the sweep time. Each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
[:SENSe]:SWEep:TIME <time>
```

Parameter

<time>	Sweep Time
Range	
[MS269xA]	2 ms to 1000 s (in frequency axis measurement) 1 µs to 1000 s (in time axis measurement)
[MS2830A]	1 ms to 1000 s (in frequency axis measurement) 1 µs to 1000 s (in time axis measurement)
[MS2840A]	1 ms to 1000 s (in frequency axis measurement) 1 µs to 1000 s (in time axis measurement)
Suffix code	None Value is returned in s units.
Default	
[MS269xA]	10 ms (MS2690A) 135 ms (MS2691A) 265 ms (MS2692A)
[MS2830A]	1 ms (Option 040)

	2 ms (Option 041) 4 ms (Option 043) 89 ms (Option 044) 86 ms (Option 045)
[MS2840A]	1 ms (Option 040) 2 ms (Option 041) 89 ms (Option 044) 86 ms (Option 046)

Details

This command is not available when in FFT sweep.
This command is not available during the Spectrum Emission Mask or the Spurious Emission measurement.

Example of Use

To set the sweep time to 100 ms.

```
SWE:TIME 0.1
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:SWEep:TIME
[:SENSe]:CHPower:SWEep:TIME
[:SENSe]:OBWidth:SWEep:TIME
[:SENSe]:BPOWer|:TXPower:SWEep:TIME
```

[:SENSe]:SWEep:TIME?

Sweep Time Query

Function

This command queries the sweep time. Each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
[:SENSe]:SWEep:TIME?
```

Response

```
<time>
```

Parameter

<time>		Sweep time
Range		
[MS269xA]		2 ms to 1000 s (in frequency axis measurement) 1 µs to 1000 s (in time axis measurement)
[MS2830A]		1 ms to 1000 s (in frequency axis measurement) 1 µs to 1000 s (in time axis measurement)
[MS2840A]		1 ms to 1000 s (in frequency axis measurement) 1 µs to 1000 s (in time axis measurement)
Suffix code		None. S is used when omitted.

Example of Use

To query the sweep time.

```
SWE:TIME?
> 0.100000
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:SWEep:TIME?
[:SENSe]:CHPower:SWEep:TIME?
[:SENSe]:OBWidth:SWEep:TIME?
[:SENSe]:BPOWer|:TXPower:SWEep:TIME?
```

[:SENSe]:SWEep:TIME:AUTO OFF|ON|0|1

Sweep Time Auto/Manual

Function

This command enables/disables the automatic sweep time setting function. Each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
[:SENSe]:SWEep:TIME:AUTO <switch>
```

Parameter

<switch>	Automatic sweep time setting function On/Off
0|OFF	Disables the automatic sweep time setting function.
1|ON	Enables the automatic sweep time setting function (Default).

Details

Fixed to Auto when in FFT measurement (MS2830A, MS2840A).
This command is not available during the Spectrum Emission Mask or the Spurious Emission measurement.

Example of Use

To enable the automatic sweep time setting function.

```
SWE:TIME:AUTO ON
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:SWEep:TIME:AUTO
[:SENSe]:CHPower:SWEep:TIME:AUTO
[:SENSe]:OBWidth:SWEep:TIME:AUTO
```

[:SENSe]:SWEep:TIME:AUTO?

Sweep Time Auto/Manual Query

Function

This command queries the On/Off state of the automatic sweep time setting function. Each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
[:SENSe]:SWEep:TIME:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>	Automatic sweep time setting function On/Off
0	Automatic sweep time setting function is disabled.
1	Automatic sweep time setting function is enabled (Default).

Example of Use

To query the On/Off state of the automatic sweep time setting function.

```
SWE:TIME:AUTO?
> 1
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:SWEep:TIME:AUTO?
[:SENSe]:CHPower:SWEep:TIME:AUTO?
[:SENSe]:OBWidth:SWEep:TIME:AUTO?
```

[:SENSe]:SWEep:TIME:AUTO:MODE NORMal|FAST

Auto Sweep Time Mode

Function

This command sets the sweep mode (Fast or Normal) when the automatic sweep time setting function is enabled.

Command

```
[:SENSe]:SWEep:TIME:AUTO:MODE <mode>
```

Parameter

<mode>	Sweep time
FAST	Fast sweep mode (MS2830A, MS2840A Default)
NORMal	Normal sweep mode (MS269xADefault)

Details

This command is not available during the Spectrum Emission Mask measurement.

Example of Use

To set the sweep time to normal sweep mode.

```
SWE:TIME:AUTO:MODE NORM
```

[:SENSe]:SWEep:TIME:AUTO:MODE?

Auto Sweep Time Mode Query

Function

This command queries the sweep mode (Fast or Normal) when the automatic sweep time setting function is enabled.

Query

```
[:SENSe]:SWEep:TIME:AUTO:MODE?
```

Response

```
<mode>
```

Parameter

<mode>	Sweep time
FAST	Fast sweep mode
NORM	Normal sweep mode (Default)

Example of Use

To query the sweep mode.

```
SWE:TIME:AUTO:MODE?
> NORM
```

[:SENSe]:SWEep:POINts <integer>

Trace Point

Function

This command sets the number of the trace display points. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
[:SENSe]:SWEep:POINts <integer>
```

Parameter

<integer>	Number of trace display points
11	11 points
21	21 points
41	41 points
51	51 points
101	101 points
201	201 points
251	251 points
401	401 points
501	501 points
1001	1001 points
2001	2001 points
5001	5001 points
10001	10001 points (Default)
30001	30001 points (MS269xA Only)

Details

This command is not available during the Spectrum Emission Mask measurement or Spurious Emission measurement.

Example of Use

To set the number of trace display points to 2001 points.

```
SWE:POIN 2001
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:SWEep:POINts
[:SENSe]:CHPower:SWEep:POINts
[:SENSe]:OBWidth:SWEep:POINts
```

[:SENSe]:SWEep:POINts?

Trace Point Query

Function

This command queries the number of trace display points. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
[:SENSe]:SWEep:POINts?
```

Response

```
<integer>
```

Parameter

`<integer>`	Number of trace display points
`11`	11 points
`21`	21 points
`41`	41 points
`51`	51 points
`101`	101 points
`201`	201 points
`251`	251 points
`401`	401 points
`501`	501 points
`1001`	1001 points
`2001`	2001 points
`5001`	5001 points
`10001`	10001 points
`30001`	30001 points (MS269xA Only)

Example of Use

To query the number of trace display points.

```
SWE:POIN?
> 2001
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:SWEep:POINts?
[:SENSe]:CHPower:SWEep:POINts?
[:SENSe]:OBWidth:SWEep:POINts?
```

[:SENSe]:SWEep[:TYPE][:AUTO]:RULes DRANge|SPEed|OSWeep|PSWeep|PFFT

Auto Sweep Type Select Rules

Function

This command sets the rule for switching between sweep and FFT during measurement.

Command

```
[:SENSe]:SWEep[:TYPE][:AUTO]:RULes <rules>
```

Parameter

<rules>	Switching rules
DRANge	Selects sweep/FFT prioritizing dynamic range.
SPEed	Selects sweep/FFT prioritizing measurement speed.
OSWeep	Uses only sweep.
PSWeep	Prioritizes sweep for selection. Uses FFT only for RBW that cannot be measured by sweep.
PFFT	Prioritizes FFT for selection. Uses sweep only for RBW that cannot be measured by FFT.

Details

This command is not available for MS269x Series.
Uses 40 kHz or lower for the FFT width when DRANge is specified.
Uses 2 MHz or lower for the FFT width when SPEed is specified.
Uses 40 kHz or lower for the FFT width when PSWeep is specified.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions.
The setting is fixed to OSWeep during time domain (0 span).
Fixed to OSWeep when Gate Sweep is On.
Fixed to OSWeep when Sweep Time (Auto/Manual) is Manual.
Fixed to OSWeep when in Spurious Emission measurement.

Example of Use

To give priority to dynamic range for the sweep/FFT switch rule.

```
SWE:RUL DRAN
```

[:SENSe]:SWEep[:TYPE][:AUTO]:RULes?

Auto Sweep Type Select Rules Query

Function

This command queries the rule for switching between sweep and FFT during measurement.

Query

```
[:SENSe]:SWEep[:TYPE][:AUTO]:RULes?
```

Response

```
<rules>
```

Parameter

`<rules>`	Switching rules
`DRAN`	Selects sweep/FFT prioritizing dynamic range.
`SPE`	Selects sweep/FFT prioritizing measurement speed.
`OSW`	Uses only sweep.
`PSW`	Prioritizes sweep for selection. Uses FFT only for RBW that cannot be measured by sweep.
`PFFT`	Prioritizes FFT for selection. Uses sweep only for RBW that cannot be measured by FFT.

Details

This command is not available for MS269x Series.

Example of Use

To query the rule for switching between sweep and FFT.

```
SWE:RUL?
> DRAN
```

[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:WIDTh <freq>

Sweep Type Select Rules FFT Width

Function

This command sets the FFT width when FFT Priority is selected, for the sweep/FFT Switching rules during measurement.

Command

```
[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:WIDTh <freq>
```

Parameter

<freq>		FFT width
	Range	40 kHz or 2 MHz
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
	Default	40 kHz

Details

This command is not available for MS269x Series.
When a value other than 40 kHz or 2 MHz is set, the value is rounded off to the smaller value and set.
This command is available only when FFT Priority is selected for Auto Sweep Type Rules.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions.

Example of Use

To set FFT width to 40 kHz.

```
SWE:RUL:FFT:WIDT 40KHZ
```

[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:WIDTh?

Sweep Type Select Rules FFT Width Query

Function

This command queries the FFT width when FFT Priority is selected, for the sweep/FFT Switching rules during measurement.

Query

```
[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:WIDTh?
```

Response

```
<freq>
```

Parameter

<freq>	FFT width
Range	40 kHz or 2 MHz
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Details

This command is not available for MS269x Series.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions. This command queries the set value. To use the FFT width that is actually used, use the following:
`[:SENSe]:SWEep:[TYPE]:[AUTO]:RULes:FFT:RWIDth?`

Example of Use

To query FFT width.

```
SWE:RUL:FFT:WIDT?
> 40000
```

[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:RWIDth?

Sweep Type Select Rules Real FFT Width Query

Function

This command queries the FFT width that is actually used for the sweep/FFT switch rule during measurement.

Query

```
[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:FFT:RWIDth?
```

Response

```
<freq>
```

Parameter

<freq>		FFT width
	Range	40 kHz or 2 MHz
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Details

This command is not available for MS269x Series.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions.
This command queries the FFT width that is actually used.

Example of Use

To query the FFT width that is actually used.

```
SWE:RUL:FFT:RWID?
> 40000
```

[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:RTYPe?

Sweep Type Select Rules Real Type Query

Function

This command queries the sweep mode (sweep or FFT) that is executed during measurement.

Query

```
[:SENSe]:SWEep[:TYPE][:AUTO]:RULes:RTYPe?
```

Response

```
<type>
```

Parameter

`<type>`	Sweep mode
`SWE`	Performs measurement using sweep.
`FFT`	Performs measurement using FFT.

Details

This command is not available for MS269x Series.

Example of Use

To query the sweep type used for measurement under the current setting.

```
SWE:RUL:RTYP?
> FFT
```

[:SENSe]:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS

Detection Mode

Function

This command selects the waveform pattern detection mode. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
[:SENSe]:DETector[:FUNCtion] <det>
```

Parameter

<det>	Detection mode selection.
NORMal	Simultaneous positive and negative peak detection (Default)
POSitive	Positive peak detection
NEGative	Negative peak detection
SAMPle	Sample detection
RMS	RMS detection

This following functions are available when MS2830A-016/116, MS2840A-016/116 is installed.

QPEak	QP detection
CAVerage	CISPR Average detection
CRMS	RMS Average detection

Details

The set detection mode is applied to all traces.
This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.
QPEak, CAVerage, and CRMS cannot be set when the Measure function is set to On.
QPEak, CAVerage, and CRMS cannot be set when the Gate View function is set to On.
When QPEak, CAVerage, and CRMS are set, RBW MODE changes from Normal to CISPR.

Example of Use

To set the detection mode to Positive peak detection.

```
DET POS
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:DETector[:FUNCtion]
[:SENSe]:CHPower:DETector[:FUNCtion]
[:SENSe]:OBWidth:DETector[:FUNCtion]
:CALCulate:DETector[:FUNCtion]
:CALCulate:ACPower:DETector[:FUNCtion]
:CALCulate:CHPower:DETector[:FUNCtion]
:CALCulate:OBWidth:DETector[:FUNCtion]
```

[:SENSe]:DETector[:FUNCtion]?

Detection Mode Query

Function

This command selects the detection mode of the waveform pattern. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Query

```
[:SENSe]:DETector[:FUNCtion]?
```

Response

```
<det>
```

Parameter

<det>	Detection mode selection
NORM	Simultaneous positive and negative peak detection (Default)
POS	Positive peak detection
NEG	Negative peak detection
SAMP	Sample detection
RMS	RMS detection
QPE	QP detection
CAV	CISPR Average detection
CRMS	RMS Average detection

Details

The set detection mode applies to all traces.

Example of Use

To query the detection mode.

```
DET?
> POS
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:DETector[:FUNCtion]?
[:SENSe]:CHPower:DETector[:FUNCtion]?
[:SENSe]:OBWidth:DETector[:FUNCtion]?
:CALCulate:DETector[:FUNCtion]?
:CALCulate:ACPower:DETector[:FUNCtion]?
:CALCulate:CHPower:DETector[:FUNCtion]?
:CALCulate:OBWidth:DETector[:FUNCtion]?
```

:CALCulate:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS

Detection Mode

Function

This command selects the detection mode of the waveform pattern. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement. Refer to `[:SENSe]:DETector[:FUNCtion]`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:DETector[:FUNCtion]
[:SENSe]:ACPower:DETector[:FUNCtion]
[:SENSe]:CHPower:DETector[:FUNCtion]
[:SENSe]:OBWidth:DETector[:FUNCtion]
:CALCulate:ACPower:DETector[:FUNCtion]
:CALCulate:CHPower:DETector[:FUNCtion]
:CALCulate:OBWidth:DETector[:FUNCtion]
```

:CALCulate:DETector[:FUNCtion]?

Detection Mode Query

Function

This command selects the detection mode of the waveform pattern. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement. Refer to
`[:SENSe]:DETector[:FUNCtion]?`

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]?`
`[:SENSe]:ACPower:DETector[:FUNCtion]?`
`[:SENSe]:CHPower:DETector[:FUNCtion]?`
`[:SENSe]:OBWidth:DETector[:FUNCtion]?`
`:CALCulate:ACPower:DETector[:FUNCtion]?`
`:CALCulate:CHPower:DETector[:FUNCtion]?`
`:CALCulate:OBWidth:DETector[:FUNCtion]?`

:TRIGger[:SEQuence][:STATe] ON|OFF|1|0

Trigger Switch

Function

This command sets the trigger sweep to On/Off.

Command

`:TRIGger[:SEQuence][:STATe] <switch>`

Parameter

`<switch>`	Trigger sweep ON/OFF
`OFF|0`	Does not perform trigger sweep.
`ON|1`	Performs trigger sweep.

Example of Use

To set to wait for a sweep trigger.
`TRIG ON`

:TRIGger[:SEQuence][:STATe]?

Trigger Switch Query

Function

This command queries the On/Off state of the trigger sweep.

Query

```
:TRIGger[:SEQuence][:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Trigger sweep On/Off
0	Does not perform trigger sweep.
1	Performs trigger sweep.

Example of Use

To query the On/Off state of the trigger sweep.

```
TRIG?
> 0
```

:TRIGger[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe

Trigger Source

Function

This command selects trigger source.

Command

```
:TRIGger[:SEQuence]:SOURce <source>
```

Parameter

<source>	Trigger signal source
[MS269xA]	
EXTernal[1]	External input (External)
IMMediate	Free run
WIF|RFBurst	Wide bandwidth IF detection (Wide IF Video)
VIDeo	Video detection (Video)
SG	SG Marker
BBIF	Baseband Interface (BBIF)

[MS2830A], [MS2840A]

EXTernal[1]	External input (External)
IMMediate	Free run
WIF|RFBurst	Wide bandwidth IF detection (Wide IF Video)
VIDeo	Video detection (Video)
SG	SG Marker
FRAMe	Frame period trigger

Details

[MS269xA]

SG marker trigger can be selected only when the Option 020/120 Vector Signal Generator is installed.

BBIF trigger cannot be selected only when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.

[**MS2830A], [MS2840A]**

SG marker trigger can be selected only when the Option 020/120/021/121 Vector Signal Generator is installed.

Example of Use

To set the trigger signal source to video trigger.

```
TRIG:SOUR VID
```

Related command

This command has the same function as the following commands.

```
:TRIGger:ACPower[:SEQuence]:SOURce
:TRIGger:CHPower[:SEQuence]:SOURce
:TRIGger:OBWidth[:SEQuence]:SOURce
:TRIGger:SEMask[:SEQuence]:SOURce
:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce
```

:TRIGger[:SEQuence]:SOURce?

Trigger Source Query

Function

This command queries the trigger source.

Query

```
:TRIGger[:SEQuence]:SOURce?
```

Response

```
<source>
```

Parameter

<source>	Trigger signal source
[MS269xA]	
EXT	External input (External)
IMM	Free run
WIF	Wide bandwidth IF detection (Wide IF Video)
VID	Video detection (Video)
SG	SG Marker
BBIF	Baseband Interface (BBIF)
[MS2830A], [MS2840A]	
EXT	External input (External)
IMM	Free run
WIF	Wide bandwidth IF detection (Wide IF Video)
VID	Video detection (Video)
SG	SG Marker
FRAM	Frame period trigger

Details

[MS269xA]

SG marker trigger can be selected only when the Option 020/120 Vector Signal Generator is installed.

BBIF trigger cannot be selected only when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.

[MS2830A], [MS2840A]

SG marker trigger can be selected only when the Option 020/120/021/121 Vector Signal Generator is installed.

Example of Use

To query the trigger signal source.

```
TRIG:SOUR?
> VID
```

Related command

This command has the same function as the following commands.

```
:TRIGger:ACPower[:SEQuence]:SOURce?
:TRIGger:CHPower[:SEQuence]:SOURce?
:TRIGger:OBWidth[:SEQuence]:SOURce?
:TRIGger:SEMask[:SEQuence]:SOURce?
:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce?
```

:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic] <level>

Log Scale Video Trigger Level

Function

This command sets the threshold value of the level where trigger sweep starts.

Command

```
:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic] <level>
```

Parameter

<level>	Threshold value of level where trigger sweep starts.
Range	–150 to +50 dBm
Resolution	1 dB
Suffix code	DBM, DM
Default	–40 dBm

Example of Use

To set the threshold value of the level where trigger sweep starts to –10 dBm.

```
TRIG:VID:LEV -10DBM
```

:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic]?

Log Scale Video Trigger Level Query

Function

This command queries the threshold of the level where trigger sweep starts in video trigger in Log scale mode.

Query

```
:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic]?
```

Response

```
<level>
```

Parameter

<level>		Threshold of the level where trigger sweep starts
	Range	–150 to +50 dBm
	Resolution	1 dB
	Suffix code	None. Value is returned in dBm units.

Example of Use

To query the threshold of the level where trigger sweep starts.

```
TRIG:VID:LEV?
> -10
```

:TRIGger[:SEQuence]:VIDeo:LEVel:LINear <level>

Linear Scale Video Trigger Level

Function

This command sets the threshold value of the level where trigger sweep starts.

Command

```
:TRIGger[:SEQuence]:VIDeo:LEVel:LINear <level>
```

Parameter

<level>		Threshold value of level where trigger sweep starts
	Range	0 to 100%
	Resolution	1%
	Suffix code	None
	Default	60%

Example of Use

To set the threshold of the level where trigger sweep starts to 50%.

```
TRIG:VID:LEV:LIN 50
```

:TRIGger[:SEQuence]:VIDeo:LEVel:LINear?

Linear Scale Video Trigger Level Query

Function

This command queries the threshold of the level where trigger sweep starts in video trigger in Linear scale mode.

Query

```
:TRIGger[:SEQuence]:VIDeo:LEVel:LINear?
```

Response

```
<level>
```

Parameter

`<level>` Threshold of the level where trigger sweep starts When the trigger signal source is video detection (Video) and in Linear scale mode.

Range	0 to 100%
Resolution	1%
Suffix code	None. Value is returned in % units.

Example of Use

To query the threshold of the level where trigger sweep starts.

```
TRIG:VID:LEV:LIN?
> 50
```

:TRIGger[:SEQuence]:WIF|:RFBurst:LEVel:ABSolute <level>

Wide IF Trigger Level

Function

This command sets the threshold of the level where trigger sweep starts in Wide IF Video trigger.

Command

```
:TRIGger[:SEQuence]:WIF|:RFBurst:LEVel:ABSolute <level>
```

Parameter

<level>		Threshold value of level where trigger sweep starts
	Range	–60 to 50 dBm
	Resolution	1 dB
	InitialDefault	–20 dBm

Example of Use

To set the threshold of the level where trigger sweep starts to 10 dBm.

```
TRIG:WIF:LEV:ABS 10
```

:TRIGger[:SEQuence]:WIF|:RFBurst:LEVel:ABSolute?

Wide IF Trigger Level Query

Function

This command queries the threshold of the level where trigger sweep starts in Wide IF Video trigger.

Query

```
:TRIGger[:SEQuence]:WIF|:RFBurst:LEVel:ABSolute?
```

Response

```
<level>
```

Parameter

<level>		Threshold of the level where trigger sweep
	Range	–60 to 50 dBm
	Resolution	1 dB
	Suffix code	None. Value is returned in dBm units.

Example of Use

To query the threshold of the level where trigger sweep starts.

```
TRIG:WIF:LEV:ABS?
> 10
```

:TRIGger[:SEQuence]:EXTernal[1]:SLOPe POSitive|NEGative

Trigger Slope

Function

This command sets the trigger detection mode (rise/fall).

Command

```
:TRIGger[:SEQuence]:EXTernal1:SLOPe <mode>
```

Parameter

<mode>	Trigger detection mode
POSitive	Detects at the rising edge (Default)
NEGative	Detects at the falling edge

Details

This function selects the trigger detection mode when the trigger signal source is video detection (Video), wideband IF detection (Wide IF Video), external input (External), SG Marker, or Baseband Interface (BBIF).

Example of Use

To detect at the rising edge.

```
TRIG:EXT:SLOP POS
```

Related command

This command has the same function as the following commands.

```
:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe
:TRIGger[:SEQuence]:VIDeo:SLOPe
```

:TRIGger[:SEQuence]:EXTernal[1]:SLOPe?

Trigger Slope Query

Function

This command queries the trigger detection mode (rise/fall).

Query

```
:TRIGger[:SEQuence]:EXTernal[1]:SLOPe?
```

Response

```
<mode>
```

Parameter

<mode>	Trigger detection mode
POS	Detects at the rising edge
NEG	Detects at the rising edge

Details

This function queries the detection mode for the trigger when the trigger signal source is video detection (Video), wide bandwidth IF detection (Wide IF Video), external input (External), SG marker (SG Marker), or Baseband Interface (BBIF).

Example of Use

To query the trigger detection mode.

```
TRIG:EXT:SLOP?
> POS
```

Related command

This command has the same function as the following commands.

```
:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe?
:TRIGger[:SEQuence]:VIDeo:SLOPe?
```

:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe POSitive|NEGative

Trigger Slope

Function

This command sets the detection mode for the trigger (rise/fall).
Refer to
`:TRIGger[:SEQuence]:EXTernal[1]:SLOPe`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:EXTernal[1]:SLOPe`
`:TRIGger[:SEQuence]:VIDeo:SLOPe`

:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe?

Trigger Slope Query

Function

This command queries the detection mode for the trigger (rise/fall).
Refer to
`:TRIGger[:SEQuence]:EXTernal[1]:SLOPe?`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:EXTernal[1]:SLOPe?`
`:TRIGger[:SEQuence]:VIDeo:SLOPe?`

:TRIGger[:SEQuence]:VIDeo:SLOPe POSitive|NEGative

Trigger Slope

Function

This command sets the detection mode for the trigger (rise/fall).
Refer to
`:TRIGger[:SEQuence]:EXTernal[1]:SLOPe`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:EXTernal[1]:SLOPe`
`:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe`

:TRIGger[:SEQuence]:VIDeo:SLOPe?

Trigger Slope Query

Function

This command queries the detection mode for the trigger (rise/fall).
Refer to
`:TRIGger[:SEQuence]:EXTernal[1]:SLOPe?`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:EXTernal[1]:SLOPe?`
`:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe?`

:TRIGger[:SEQuence]:EXTernal[1]:DELay <time>

Trigger Delay

Function

This command sets the delay from the trigger occurrence point to sweep start.

Command

`:TRIGger[:SEQuence]:EXTernal[1]:DELay <time>`

Parameter

`<time>`	Delay time to start gating
Range	–1 to 1 s
Resolution	20 ns
Suffix Code	NS, US, MS, S S is used when omitted.
Default	0 ns

Example of Use

To set the trigger delay time to 20 ms.
`TRIG:EXT:DEL 20MS`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:WIF|:RFBurst:DELay`
`:TRIGger[:SEQuence]:VIDeo:DELay`

:TRIGger[:SEQuence]:EXTernal[1]:DELay?

Trigger Delay Query

Function

This command queries the delay from the trigger occurrence point to sweep start.

Query

```
:TRIGger[:SEQuence]:EXTernal[1]:DELay?
```

Response

```
<time>
```

Parameter

<time>	Delay time to the time when the gate starts.
Range	–1 to 1 s
Resolution	20 ns
Suffix code	None. Value is returned in S units.

Example of Use

To query the trigger delay time.

```
TRIG:EXT:DEL?
> 0.02000000
```

Related command

This command has the same function as the following commands.

```
:TRIGger[:SEQuence]:WIF|:RFBurst:DELay?
:TRIGger[:SEQuence]:VIDeo:DELay?
```

:TRIGger[:SEQuence]:WIF|:RFBurst:DELay <time>

Trigger Delay

Function

This command sets the delay time from generating the trigger to starting the sweep. Refer to

```
:TRIGger[:SEQuence]:EXTernal[1]:DELay
```

Related command

This command has the same function as the following commands.

```
:TRIGger[:SEQuence]:EXTernal[1]:DELay
:TRIGger[:SEQuence]:VIDeo:DELay
```

:TRIGger[:SEQuence]:WIF|:RFBurst:DELay?

Trigger Delay Query

Function

This command queries the delay time from generating the trigger to starting the sweep. Refer to
`:TRIGger[:SEQuence]:EXTernal[1]:DELay?`.

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:EXTernal[1]:DELay?`
`:TRIGger[:SEQuence]:VIDeo:DELay?`

:TRIGger[:SEQuence]:VIDeo:DELay <time>

Trigger Delay

Function

This command sets the delay time from generating the trigger to starting the sweep. Refer to
`:TRIGger[:SEQuence]:EXTernal[1]:DELay`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:EXTernal[1]:DELay`
`:TRIGger[:SEQuence]:WIF|:RFBurst:DELay`

:TRIGger[:SEQuence]:VIDeo:DELay?

Trigger Delay Query

Function

This command sets the delay time from generating the trigger to starting the sweep.
Refer to :TRIGger[:SEQuence]:EXTernal[1]:DELay?

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:EXTernal[1]:DELay?`
`:TRIGger[:SEQuence]:WIF|:RFBurst:DELay?`

:TRIGger[:SEQuence]:HOLDoff <time>

Trigger Hold

Function

This command sets the time during which trigger input is disabled for a set time, from the first trigger input until the next trigger input.

Command

```
:TRIGger[:SEQuence]:HOLDoff <time>
```

Parameter

<time>	Offset time
Range	0 to 1 s
Resolution	10 ns
Suffix code	NS, US, MS, S
	S is used when the suffix code is omitted.
Default	100 µs

Details

This command is not available for MS269x Series.
The Trigger Hold (ON/OFF) function is set to ON when the value is changed with this function.
This function cannot be set in the case of video trigger.

Example of Use

To set the trigger input disable time to 100 ms.

```
TRIG:HOLD 100MS
```

:TRIGger[:SEQuence]:HOLDoff?

Trigger Hold Query

Function

This command queries the time during which trigger input is disabled for a set time from the first trigger input until the next trigger input.

Query

```
TRIGger[:SEQuence]:HOLDoff?
```

Response

```
<time>
```

Parameter

<time>		Offset time
	Range	0 to 1 s
	Resolution	10 ns
	Suffix code	None. Value is returned in s units.
	Default	100 µs

Details

This command is not available for MS269x Series.

Example of Use

To query the gate input disable time.

```
TRIG:HOLD?
> 0.02000000
```

:TRIGger[:SEQuence]:HOLDoff:STATe OFF|ON|0|1

Trigger Hold On/Off

Function

This command sets on/off the function to disable trigger input for a set time, from the first trigger input until the next trigger input.

Command

```
:TRIGger[:SEQuence]:HOLDoff:STATe <switch>
```

Parameter

<switch>	Trigger Hold On/Off
ON|1	Sets the Trigger Hold function to On.
OFF|0	Sets the Trigger Hold function to Off.

Details

This command is not available for MS269x Series.
The Trigger (On/Off) function is automatically set to On when this function is set to On.
This function cannot be set in the case of video trigger.

Example of Use

To set the trigger input disable time setting to On.

```
TRIG:HOLD:STAT ON
```

:TRIGger[:SEQuence]:HOLDoff:STATe?

Trigger Hold On/Off Query

Function

This command queries the on/off setting of the function to disable trigger input for a set time, from the first trigger input until the next trigger input.

Query

```
:TRIGger[:SEQuence]:HOLDoff:STATe?
```

Response

```
<switch>
```

Parameter

<switch>	Trigger Hold On/Off
1	Trigger Hold is On.
0	Trigger Hold is Off.

Details

This command is not available for MS269x Series.

Example of Use

To query the trigger input disable time setting.

```
TRIG:HOLD:STAT?
> 1
```

:TRIGger[:SEQuence]:FRAMe:PERiod <time>

Frame Trigger Period

Function

This command sets the trigger occurrence period of the frame trigger.

Command

```
:TRIGger[:SEQuence]:FRAMe:PERiod <time>
```

Parameter

<time>		Frame trigger
	Range	1 µs to 1 s
	Resolution	10 ns
	Suffix code	NS, US, MS, S S is used when the suffix code is omitted.
	Default	10 ms

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To set the frame trigger occurrence period to 10 ms.

```
TRIG:FRAM:PER 10MS
```

:TRIGger[:SEQuence]:FRAMe:PERiod?

Frame Trigger Period Query

Function

This command queries the frame trigger occurrence period.

Query

```
:TRIGger[:SEQuence]:FRAMe:PERiod?
```

Response

```
<time>
```

Parameter

`<time>`		Delay time until gate start
	Range	1 µs to 1 s
	Resolution	10 ns
	Suffix code	None. Value is returned in s units.

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To query the frame trigger occurrence period.

```
TRIG:FRAM:PER?
> 0.02000000
```

:TRIGger[:SEQuence]:FRAMe:SYNC EXTernal[1]|IMMediate|Off|WIF|RFBurst

Frame Sync Source

Function

This command selects the synchronized signal source for frame trigger start.

Command

```
:TRIGger[:SEQuence]:FRAMe:SYNC <sync>
```

Parameter

<sync>	Synchronized signal source
EXTernal[1]	External input
IMMediate|Off	Free run
WIF|RFBurst	Wideband IF detection (Wide IF Video)

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To set the frame trigger synchronized source to Wide IF Video trigger.

```
TRIG:FRAM:SYNC WIF
```

:TRIGger[:SEQuence]:FRAMe:SYNC?

Frame Sync Source Query

Function

This command queries the synchronization signal source for frame trigger start.

Query

```
:TRIGger[:SEQuence]:FRAMe:SYNC?
```

Response

```
<sync>
```

Parameter

<sync>	Synchronized signal source
EXT	External input
IMM	Free run
WIF	Wideband IF detection (Wide IF Video)

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To query the frame trigger synchronized signal source.

```
TRIG:FRAM:SYNC?
> WIF
```

:TRIGger[:SEQuence]:FRAMe:OFFSet <time>

Frame Sync Offset

Function

This command sets the offset time from frame trigger occurrence signal source input until the frame trigger occurrence.

Command

```
:TRIGger[:SEQuence]:FRAMe:OFFSet <time>
```

Parameter

<time>		Offset time
	Range	0 to 1 s
	Resolution	10 ns
	Suffix code	NS, US, MS, S S is used when the suffix code is omitted.
	Default	0 s

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To set the frame trigger occurrence offset time to 100 ms.

```
TRIG:FRAM:OFFS 100MS
```

:TRIGger[:SEQuence]:FRAMe:OFFSet?

Frame Sync Offset Query

Function

This command queries the offset time from the frame trigger occurrence signal source input until the frame trigger occurrence.

Query

```
:TRIGger[:SEQuence]:FRAMe:OFFSet?
```

Response

```
<time>
```

Parameter

`<time>`		Offset time
	Range	0 to 1 s
	Resolution	10 ns
	Suffix code	NS, US, MS, S S is used when the suffix code is omitted.

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To query the frame trigger occurrence offset time.

```
TRIG:FRAM:OFFS?
> 0.02000000
```

[:SENSe]:SWEep:EGATe[:STATe] ON|OFF|1|0

Gate Sweep

Function

This command sets the gate sweep to On/Off.

Command

```
[:SENSe]:SWEep:EGATe[:STATe] <switch>
```

Parameter

<switch>	Gate sweep On/Off
ON|1	Uses the gate sweep.
OFF|0	Does not use the gate sweep.

Example of Use

To set the gate sweep to On/Off.

```
SWE:EGAT ON
```

[:SENSe]:SWEep:EGATe[:STATe]?

Gate Sweep Query

Function

This command queries the On/Off state of the gate sweep.

Query

```
[:SENSe]:SWEep:EGATe[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Gate sweep On/Off
1	Uses the gate sweep.
0	Does not use the gate sweep.

Example of Use

To query the On/Off state of the gate sweep.

```
SWE:EGAT?
> 1
```

[:SENSe]:SWEep:EGATe:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|SG|BBIF|FRAMe

Gate Source

Function

This command selects the gate signal source.

Command

```
[:SENSe]:SWEep:EGATe:SOURce <source>
```

Parameter

`<source>`	Trigger signal source
[MS269xA]	
`EXTernal[1]`	External input (External)
`IMMediate`	Free run
`WIF|RFBurst`	Wideband IF detection (Wide IF Video)
`SG`	SG marker
`BBIF`	Baseband Interface (BBIF)
[MS2830A], [MS2840A]	
`EXTernal[1]`	External input (External)
`IMMediate`	Free run
`WIF|RFBurst`	Wideband IF detection (Wide IF Video)
`SG`	SG marker
`FRAMe`	Frame period trigger

Details

[MS269xA]

SG marker trigger can be selected only when the Option 020/120 Vector Signal Generator is installed.

BBIF trigger cannot be selected only when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.

[MS2830A], [MS2840A]

SG marker trigger can be selected only when the Option 020/120/021/121 Vector Signal Generator is installed.

Example of Use

To set the gate signal source to wide bandwidth IF detection.

```
SWE:EGAT:SOUR WIF
```

[:SENSe]:SWEep:EGATe:SOURce?

Gate Source Query

Function

This command queries the gate signal source.

Command

```
[:SENSe]:SWEep:EGATe:SOURce?
```

Response

```
<source>
```

Parameter

<source>	Trigger signal source
[MS269xA]	
EXT	External input (External)
IMM	Free run
WIF	Wideband IF detection (Wide IF Video)
SG	SG marker
BBIF	Baseband Interface (BBIF)
[MS2830A], [MS2840A]	
EXT	External input (External)
IMM	Free run
WIF	Wideband IF detection (Wide IF Video)
SG	SG marker
FRAM	Frame period trigger

Details

[MS269xA]

SG marker trigger can be selected only when the Option 020/120 Vector Signal Generator is installed.

BBIF trigger cannot be selected only when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.

[MS2830A], [MS2840A]

SG marker trigger can be selected only when the Option 020/120/021/121 Vector Signal Generator is installed.

Example of Use

To query the gate signal source.

```
SWE:EGAT:SOUR?
> WIF
```

[:SENSe]:SWEep:EGATe:WIF|:RFBurst:LEVel:ABSolute <ampl>

Gate Level

Function

This command sets the threshold of the level to start the gate sweep.

Command

```
[:SENSe]:SWEep:EGATe:WIF|:RFBurst:LEVel:ABSolute <ampl>
```

Parameter

<ampl>	Threshold of level to start gate sweep
Range	–60 to 50 dBm
Resolution	1 dB
Suffix code	DBM, DM dBm is used even when omitted.

Details

This setting is enabled when the gate signal source is wideband IF detection (Wide IF Video).

Example of Use

To set the start level of the gate sweep to –10 dBm.

```
SWE:EGAT:WIF:LEV:ABS -10
```

[:SENSe]:SWEep:EGATe:WIF|:RFBurst:LEVel:ABSolute?

Gate Level Query

Function

This command queries the threshold of the level to start the gate sweep.

Query

```
[:SENSe]:SWEep:EGATe:WIF|:RFBurst:LEVel:ABSolute?
```

Response

```
<ampl>
```

Parameter

<ampl>	Threshold of level to start gate sweep
Range	–60 to 50 dBm
Resolution	1 dB
Suffix code	None. Value is returned in dBm units.

Details

This setting is enabled when the gate signal source is wideband IF detection (Wide IF Video).

Example of Use

To query the start level of the gate sweep.

```
SWE:EGAT:WIF:LEV:ABS?
> -10
```


[:SENSe]:SWEep:EGATe:SLOPe POSitive|NEGative

Gate Slope

Function

This command sets the detection mode for the gate signal.

Command

```
[:SENSe]:SWEep:EGATe:SLOPe <mode>
```

Parameter

<mode>	Detection mode for gate signal
POSitive	Detects at the rising edge.
NEGative	Detects at the falling edge.

Details

This setting can be applied when the gate signal source is wideband IF detection (Wide IF Video), external input (External), SG marker, or Baseband Interface (BBIF).

Example of Use

To detect at the rising edge.

```
SWE:EGAT:SLOP POS
```

[:SENSe]:SWEep:EGATe:SLOPe?

Gate Slope Query

Function

This command queries the detection mode for the gate signal.

Query

```
[:SENSe]:SWEep:EGATe:SLOPe?
```

Response

```
<mode>
```

Parameter

<mode>	Detection mode for gate signal
POS	Detects at the rising edge.
NEG	Detects at the falling edge.

Details

This setting is enabled when the gate signal source is wideband IF detection (Wide IF Video), external input (External), SG marker, or Baseband Interface (BBIF).

Example of Use

To query the detection mode for the gate signal.

```
SWE:GATE:SLOP?
> POS
```

[:SENSe]:SWEep:EGATe:DELay <time>

Gate Delay

Function

This command sets the delay time to start the gate sweep.

Command

```
[:SENSe]:SWEep:EGATe:DELay <time>
```

Parameter

<time>	Delay time to start the gate.
Range	0 to 1 s
Resolution	20 ns
Suffix code	NS, US, MS, S S is used when omitted.

Example of Use

To set the gate delay time to 20 ms.

```
SWE:EGAT:DEL 20MS
```

[:SENSe]:SWEep:EGATe:DELay?

Gate Delay Query

Function

This command queries the delay time to start the gate sweep.

Query

```
[:SENSe]:SWEep:EGATe:DELay?
```

Response

```
<time>
```

Parameter

<time>	Delay time to start the gate.
Range	0 to 1 s
Resolution	20 ns
Suffix code	None. Value is returned in s units.

Example of Use

To query the gate delay time.

```
SWE:EGAT:DEL?
> 0.02000000
```

[:SENSe]:SWEep:EGATe:LENGth <time>

Gate Length

Function

This command sets the time length of the gate.

Command

```
[:SENSe]:SWEep:EGATe:LENGth <time>
```

Parameter

<time>	Time length of the gate
Range	50 µs to 1 s
Resolution	20 ns
Suffix code	NS, US, MS, S S is used when omitted.

Example of Use

To set the gate time length to 20 ms.

```
SWE:EGAT:LENG 20MS
```

[:SENSe]:SWEep:EGATe:LENGth?

Gate Length Query

Function

This command queries the time length of the gate.

Query

```
[:SENSe]:SWEep:EGATe:LENGth?
```

Response

```
<time>
```

Parameter

<time>	Time length of the gate
Range	50 µs to 1 s
Resolution	20 ns
Suffix code	None. Value is returned in s units.

Example of Use

To query the gate time length.

```
SWE:EGAT:LENG?
> 0.02000000
```

[:SENSe]:SWEep:EGATe:VIEW[:STATe] ON|OFF|1|0

Gate View

Function

This command sets whether to display the gate view.

Command

```
[:SENSe]:SWEep:EGATe:VIEW[:STATe] <switch>
```

Parameter

<switch>	Displays or hides Gate View.
OFF|0	Hides Gate View.
ON|1	Displays Gate View.

Details

This command is not available during time domain measurement. This command is not available when Gate Sweep is set to Off.

Example of Use

To display Gate View.

```
SWE:EGAT:VIEW ON
```

[:SENSe]:SWEep:EGATe:VIEW[:STATe]?

Gate View Query

Function

This command queries whether to display the gate view.

Query

```
[:SENSe]:SWEep:EGATe:VIEW[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Display/hide gate view
0	Gate View is hidden.
1	Gate View is displayed.

Example of Use

To query whether Gate View is displayed.

```
SWE:EGAT:VIEW?
> 0
```

[:SENSe]:SWEep:EGATe[:VIEW]:TIME <time>

Gate View Sweep Time

Function

This command sets the sweep time for Gate View.
This parameter and the one for setting the sweep time for time axis measurement reference the same value.

Command

```
[:SENSe]:SWEep:EGATe[:VIEW]:TIME <time>
```

Parameter

`<time>`		Sweep time
	Range	1 µs to 1000 s
	Suffix code	NS, US, MS, S S is used when omitted.
	Default	100 ms

Details

This command is not available when Gate View is set to Off.

Example of Use

To set the sweep time to 100 ms.

```
SWE:EGAT:TIME 0.1
```

[:SENSe]:SWEep:EGATe[:VIEW]:TIME?

Gate View Sweep Time Query

Function

This command queries the sweep time for Gate View.
This parameter and the one for setting the sweep time for time axis measurement reference the same value.

Query

```
[:SENSe]:SWEep:EGATe[:VIEW]:TIME?
```

Response

```
<time>
```

Parameter

`<time>`		Sweep time
	Range	1 µs to 1000 s
	Suffix code	None. Value is returned in s units.

Example of Use

To query the sweep time.

```
SWE:EGAT:TIME?
> 0.100000
```


[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]:AUTO ON|OFF|1|0

Gate View Resolution Bandwidth Auto/Manual

Function

This command automatically sets the resolution bandwidth (RBW) for Gate View.
This parameter and the one for automatically setting the RBW for time axis measurement reference the same value.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]:AUTO
<switch>
```

Parameter

<switch>	Automatic setting
0|OFF	Disables the automatic setting.
1|ON	Enables the automatic setting (Default).

Details

This command is not available when Gate View is set to Off.

Example of Use

To enable the automatic setting of the RBW for Gate View.

```
SWE:EGAT:VIEW:BAND:AUTO ON
```

[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]:AUTO?

Gate View Resolution Bandwidth Auto/Manual Query

Function

This command queries the automatic resolution bandwidth (RBW) setting for Gate View.
This parameter and the one for automatically setting the RBW for time axis measurement reference the same value.

Query

```
[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>	Automatic setting
0	Disables the automatic setting.
1	Enables the automatic setting.

Example of Use

To query the automatic resolution bandwidth setting for Gate View.

```
SWE:EGAT:VIEW:BAND:AUTO?
> 1
```

[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution] <freq>

Gate View Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW) for Gate View.
This parameter and the one for setting the RBW for time axis measurement reference the same value.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution] <freq>
```

Parameter

`<freq>`	Resolution bandwidth (RBW)
[MS269xA]	
Range/Resolution	30 Hz to 31.25 MHz However, the settable value is 30 Hz to 3 MHz (for 1 to 3 sequences), 50 kHz, 5 MHz, 10 MHz, or 20 MHz, or 31.25 MHz.
[MS2830A], [MS2840A]	
Range/Resolution	30 Hz to 31.25 MHz However, the settable value is 30 Hz to 3 MHz (for 1 to 3 sequences), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, or 31.25 MHz.
[Common]	
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default	Value that is set when RBW is set to Auto

Details

The automatic resolution bandwidth setting function is disabled when the resolution bandwidth (RBW) is changed.
This command is not available when Gate View is set to Off.

Example of Use

To set the RBW for Gate View to 3 kHz.

```
SWE:EGAT:VIEW:BAND 3KHZ
```

[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]?

Gate View Resolution Bandwidth Query

Function

This command selects the resolution bandwidth (RBW) for Gate View.
This parameter and the one for setting the RBW for time axis measurement reference the same value.

Query

```
[:SENSe]:SWEep:EGATe:VIEW:BANDwidth[:RESolution]?
```

Response

```
<freq>
```

Parameter

`<freq>`	Resolution bandwidth (RBW)
[MS269xA]	
Range/Resolution	30 Hz to 31.25 MHz However, the settable value is 30 Hz to 3 MHz (for 1 to 3 sequences), 50 kHz, 5 MHz, 10 MHz, or 20 MHz, or 31.25 MHz.
[MS2830A], [MS2840A]	
Range/Resolution	30 Hz to 31.25 MHz However, the settable value is 30 Hz to 3 MHz (for 1 to 3 sequences), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, or 31.25 MHz.
[Common]	
Suffix code	None. Value is returned in Hz units.

Example of Use

To query the RBW.

```
SWE:EGAT:VIEW:BAND?
> 3000
```

[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo:AUTO ON|OFF|1|0

Gate View Video Bandwidth Auto/Manual

Function

This command automatically sets the video bandwidth (VBW) for Gate View.
This parameter and the one for setting the VBW for time axis measurement reference the same value.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo:AUTO <switch>
```

Parameter

<switch>	Automatic setting
0|OFF	Disables the automatic setting.
1|ON	Enables the automatic setting (Default).

Details

This command is not available when Gate View is set to Off.

Example of Use

To enable the automatic setting for VBW.

```
SWE:EGAT:VIEW:BAND:VID:AUTO ON
```

[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo:AUTO?

Gate View Video Bandwidth Auto/Manual Query

Function

This command queries the automatic video bandwidth (VBW) setting for Gate View.
This parameter and the one for automatically setting the VBW for time axis measurement reference the same value.

Query

```
[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>	Automatic setting
0	Disables the automatic setting.
1	Enables the automatic setting.

Example of Use

To query the automatic video bandwidth setting for Gate View.

```
SWE:EGAT:VIEW:BAND:VID:AUTO?
> 1
```

[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo <freq>

Gate View Video Bandwidth

Function

This command sets the video bandwidth (VBW) for Gate View.
This parameter and the one for setting the VBW for time axis measurement reference the same value.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo <freq>
```

Parameter

<freq>	Video bandwidth (VBW)
Range/Resolution	1 Hz to 10 MHz (1 to 3 sequences), 5 kHz, OFF
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default	Value that is set when VBW is set to Auto.

Details

The automatic video bandwidth setting function is disabled when the video bandwidth (VBW) is changed.
This command is not available when Gate View is set to Off.
This command is not available when Gate View Detection is set to RMS.

Example of Use

To set the VBW to 3 kHz.

```
SWE:EGAT:VIEW:BAND:VID 3KHZ
```

[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo?

Gate View Video Bandwidth Query

Function

This command queries the video bandwidth (VBW) for Gate View.
This parameter and the one for setting the VBW for time axis measurement reference the same value.

Query

```
[:SENSe]:SWEep:EGATe:VIEW:BANDwidth:VIDeo?
```

Response

```
<freq>
```

Parameter

<freq>	Video bandwidth (VBW)
Range/Resolution	1 Hz to 10 MHz (1 to 3 sequences), 5 kHz, OFF
Suffix code	None. Value is returned in Hz units.

Example of Use

To query the VBW.

```
SWE:EGAT:VIEW:BAND:VID?
> 3000
```

[:SENSe]:SWEep:EGATe:VIEW:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS

Gate View Detection Mode

Function

This command selects the waveform pattern detection mode for Gate View.
This parameter and the one for setting the waveform pattern detection mode for time axis measurement reference the same value.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:DETector[:FUNCtion] <det>
```

Parameter

<det>	Detection mode
NORMal	Simultaneous detection of positive and negative peaks (Default)
POSitive	Positive peak detection
NEGative	Negative peak detection
SAMPle	Sample detection
RMS	RMS detection

Details

This command is not available when Gate View is set to Off.

Example of Use

To set the detection mode to positive peak detection.

```
SWE:EGAT:VIEW:DET POS
```

[:SENSe]:SWEep:EGATe:VIEW:DETector[:FUNCtion]?

Gate View Detection Mode Query

Function

This command queries the waveform pattern detection mode for Gate View.
This parameter and the one for setting the waveform pattern detection mode for time axis measurement reference the same value.

Query

```
[:SENSe]:SWEep:EGATe:VIEW:DETector[:FUNCtion]?
```

Response

```
<det>
```

Parameter

`<det>`	Detection mode
`NORM`	Simultaneous detection of positive and negative peaks
`POS`	Positive peak detection
`NEG`	Negative peak detection
`SAMP`	Sample detection
`RMS`	RMS detection

Example of Use

To query the detection mode.

```
SWE:EGAT:VIEW:DET?
> POS
```

[:SENSe]:SWEep:EGATe:VIEW:POINts <integer>

Gate View Trace Point

Function

This command sets the number of trace display points for Gate View. This parameter and the one for setting the number of trace display points for time axis measurement reference the same value.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:POINts <integer>
```

Parameter

<integer>	Number of trace display points
11	11 points
21	21 points
41	41 points
51	51 points
101	101 points
201	201 points
251	251 points
401	401 points
501	501 points
1001	1001 points
2001	2001 points
5001	5001 points
10001	10001 points (Default)
30001	30001 points (MS269xA Only)

Details

This command is not available when Gate View is set to Off.

Example of Use

To set the number of trace display points to 2001.

```
SWE:EGAT:VIEW:POIN 2001
```

[:SENSe]:SWEep:EGATe:VIEW:POINts?

Gate View Trace Point Query

Function

This command queries the number of trace display points for Gate View. This parameter and the one for setting the number of trace display points for time axis measurement reference the same value.

Query

```
[:SENSe]:SWEep:EGATe:VIEW:POINts?
```

Response

```
<integer>
```

Parameter

<integer>	Number of trace display points
11	11 points
21	21 points
41	41 points
51	51 points
101	101 points
201	201 points
251	251 points
401	401 points
501	501 points
1001	1001 points
2001	2001 points
5001	5001 points
10001	10001 points
30001	30001 points (MS269xA Only)

Example of Use

To query the number of trace display points.

```
SWE:EGAT:VIEW:POIN?
> 2001
```

[:SENSe]:SWEep:EGATe:VIEW:FREQuency:AUTO ON|OFF|1|0

Gate View Frequency Mode

Function

This command selects the center frequency setting mode for Gate View.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:FREQuency:AUTO <switch>
```

Parameter

<switch>	Center frequency setting mode
0|OFF	Sets the center frequency manually.
1|ON	Automatically sets the center frequency to that for the frequency domain. (Default)

Details

This command is not available when Gate View is set to Off.

Example of Use

To manually set the center frequency for Gate View.

```
SWE:EGAT:VIEW:FREQ:AUTO OFF
```

[:SENSe]:SWEep:EGATe:VIEW:FREQuency:AUTO?

Gate View Frequency Mode Query

Function

To query the center frequency setting mode for Gate View.

Query

```
[:SENSe]:SWEep:EGATe:VIEW:FREQuency:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>	Center frequency setting mode
0	The center frequency is set manually.
1	The center frequency for the frequency domain is set automatically.

Example of Use

To query the center frequency setting mode for Gate View.

```
SWE:EGAT:VIEW:FREQ:AUTO?
> 0
```

[:SENSe]:SWEep:EGATe:VIEW:FREQuency <freq>

Gate View Frequency

Function

This command sets the center frequency for Gate View.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:FREQuency <freq>
```

Parameter

<freq>		Center Frequency
	Range	
	[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
		–100 MHz to 13.6 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 13.6 GHz (Option 043)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 44.6 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
	Default	
	[MS269xA]	3.00 GHz (MS2690A)
		6.75 GHz (MS2691A)
		13.25 GHz (MS2692A)
	[MS2830A]	1.8 GHz (Option 040)
		3.0 GHz (Option 041)
		6.75 GHz (Option 043)
		13.25 GHz (Option 044)
		21.5 GHz (Option 045)
	[MS2840A]	1.8 GHz (Option 040)
		3.0 GHz (Option 041)
		13.25 GHz (Option 044)
		22.25 GHz (Option 046)

Details

This command is not available when Gate View is set to Off.

Example of Use

To set the center frequency to 123.456 kHz.

```
SWE:EGAT:VIEW:FREQ 123456
```

[:SENSe]:SWEep:EGATe:VIEW:FREQuency?

Gate View Frequency Query

Function

This commands queries the center frequency of the gate view.

Command

```
[:SENSe]:SWEep:EGATe:VIEW:FREQuency?
```

Response

```
<freq>
```

Parameter

<freq>		Center Frequency
	Range	
	[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
		–100 MHz to 13.6 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 13.6 GHz (Option 043)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 44.6 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.
	Default	
	[MS269xA]	3.00 GHz (MS2690A)
		6.75 GHz (MS2691A)
		13.25 GHz (MS2692A)
	[MS2830A]	1.8 GHz (Option 040)
		3.0 GHz (Option 041)
		6.75 GHz (Option 043)
		13.25 GHz (Option 044)
		21.5 GHz (Option 045)
	[MS2840A]	1.8 GHz (Option 040)
		3.0 GHz (Option 041)
		13.25 GHz (Option 044)
		22.25 GHz (Option 046)

Example of Use

To query the center frequency.

```
SWE:EGAT:VIEW:FREQ?
> 123456
```

[:SENSe]:SWEep:EGATe:HOLDoff <time>

Gate Hold

Function

This command sets the time during which gate input is disabled for a set time, from the first gate signal input until the next gate signal input, during gate sweep.

Command

```
[:SENSe]:SWEep:EGATe:HOLDoff <time>
```

Parameter

<time>	Set time
Range	0 to 1 s
Resolution	10 ns
Suffix code	NS, US, MS, S
	S is used when the suffix code is omitted.
Default	100 µs

Details

This command is not available for MS269x Series.
The Gate Hold (ON/OFF) function is set to ON when the value is changed with this function.

Example of Use

To set the gate input disable time to 100 ms.

```
SWE:EGAT:HOLD 100MS
```

[:SENSe]:SWEep:EGATe:HOLDoff?

Gate Hold Query

Function

This command queries the time during which gate input is disabled for a set time, from the first gate signal input until the next gate signal input, during gate sweep.

Query

```
[:SENSe]:SWEep:EGATe:HOLDoff?
```

Response

```
<time>
```

Parameter

<time>		Set time
	Range	0 to 1 s
	Resolution	10 ns
	Suffix code	None. Value is returned in s units.
	Default	100 µs

Details

This command is not available for MS269x Series.

Example of Use

To query the gate input disable time.

```
SWE:EGAT:HOLD?
> 0.02000000
```

[:SENSe]:SWEep:EGATe:HOLDoff:STATe OFF|ON|0|1

Gate Hold On/Off

Function

This command switches On/Off the function to disable gate input for a set time, from the first gate input signal until the next gate signal input, during gate sweep.

Command

```
[:SENSe]:SWEep:EGATe:HOLDoff:STATe <switch>
```

Parameter

<switch>	Gate Hold On/Off
ON|1	Gate Hold is On
OFF|0	Gate Hold is Off

Details

This command is not available for MS269x Series.
The Gate Sweep (On/Off) function is automatically set to On when this function is set to On.

Example of Use

To set the gate input disable time setting to On.

```
SWE:EGAT:HOLD:STAT ON
```

[:SENSe]:SWEep:EGATe:HOLDoff:STATe?

Gate Hold On/Off Query

Function

This command queries the on/off status of the function to disable trigger input for a set time, from the first trigger input until the next trigger input, during gate sweep.

Query

```
[:SENSe]:SWEep:EGATe:HOLDoff:STATe?
```

Response

```
<switch>
```

Parameter

<switch>	Gate Hold On/Off
1	Gate Hold is On
0	Gate Hold is Off

Details

This command is not available for MS269x Series.

Example of Use

To query the gate input disable time setting.

```
SWE:EGAT:HOLD:STAT?
> 1
```

:INITiate:RESTart

Restart Sweep

Function

This command restarts the sweep.

Command

```
:INITiate:RESTart
```

Example of Use

To restart the sweep.

```
INIT:REST
```

:ABORt

Stop Sweep

Function

This command stops the sweep.

Command

```
:ABORt
```

Example of Use

To stop the sweep.

```
ABOR
```

2.8 Measure Function

Table 2.8-1 lists device messages for measure.

Table 2.8-1 Device messages for measure

Function	Device Messages
Select Standard	[:SENSe]:RADio:STANdard[:SELect] OFF|WCDMADN|WCDMAUP|MWIMAXDL|MWIMAXUL|3GLTE_DL|3GLTE_UL|ETC_DSRC|TDSCDMA|XGPHS|CDMA2KFWD|EVDOFWD|3GLTE_TDD_DL|3GLTE_TDD_UL|ISDBTMM|WLAN|ISDBT|LRWPANS|APCO_P25|MICROLINKETSI|NXDN|ISDBTSB
	[:SENSe]:RADio:STANdard[:SELect]?
Measurement Off	:CONFigure:SANalyzer
Current Measurement Query	:CONFigure?
Load Standard Parameter	[:SENSe]:RADio:STANdard:LOAD <function>[,<pattern>]
	[:SENSe]:RADio:STANdard:LOAD? <function>

[:SENSe]:RADio:STANdard[:SELect] OFF|WCDMADN|WCDMAUP|MWIMAXDL|MWIMAXUL|3GLTE_DL|3GLTE_UL|ETC_DSRC|TDSCDMA|XGPHS|CDMA2KFWD|EVDOFWD|3GLTE_TDD_DL|3GLTE_TDD_UL|ISDBTMM|WLAN|ISDBT|LRWPANS|APCO_P25|MICROLINKETSI|NXDN|ISDBTSB

Select Standard

Function

This command selects parameter setting type for the Measure function, using a communication standard.

Command

```
[:SENSe]:RADio:STANdard[:SELect] <standard>
```

Parameter

<standard>	Communication standard
OFF	Off
WCDMADN	3GPP W-CDMA Downlink
WCDMAUP	3GPP W-CDMA Uplink
MWIMAXDL	Mobile WiMAX (IEEE802.16e) Downlink
MWIMAXUL	Mobile WiMAX (IEEE802.16e) Uplink
3GLTE_DL	3GPP LTE Downlink
3GLTE_UL	3GPP LTE Uplink
ETC_DSRC	ARIB STD-T75
TDSCDMA	3GPP TDD 1.28Mcps Option
XGPHS	XG-PHS
CDMA2KFWD	3GPP2 CDMA2000 Forward Link
EVDOFWD	3GPP2 EV-DO Forward Link
3GLTE_TDD_DL	3GPP LTE TDD Downlink
3GLTE_TDD_UL	3GPP LTE TDD Uplink
ISDBTMM	ISDB-Tmm
WLAN	WLAN (IEEE802.11)
ISDBT	ISDB-T
LRWPANS	LR-WPANs (IEEE802.15.4)
APCO_P25	APCO P25
MICROLINKETSI	Microlink ETSI
NXDN	NXDN
ISDBTSB	ISDB-T_{SB}

Example of Use

To select parameters conforming to the 3GPP W-CDMA Uplink.

```
RAD:STAN WCDMAUP
```

[:SENSe]:RADio:STANdard[:SELect]?

Select Standard Query

Function

This command queries the setting of the communication standard.

Query

```
[:SENSe]:RADio:STANdard[:SELect]?
```

Response

```
<standard>
```

Parameter

<standard>	Communication standard
OFF	Off
WCDMADN	3GPP W-CDMA Downlink
WCDMAUP	3GPP W-CDMA Uplink
MWIMAXDL	Mobile WiMAX (IEEE802.16e) Downlink
MWIMAXUL	Mobile WiMAX (IEEE802.16e) Uplink
3GLTE_DL	3GPP LTE Downlink
3GLTE_UL	3GPP LTE Uplink
ETC_DSRC	ARIB STD-T75
TDSCDMA	3GPP TDD 1.28Mcps Option
XGPHS	XG-PHS
CDMA2KFWD	3GPP2 CDMA2000 Forward Link
EVDOFWD	3GPP2 EV-DO Forward Link
3GLTE_TDD_DL	3GPP LTE TDD Downlink
3GLTE_TDD_UL	3GPP LTE TDD Uplink
ISDBTMM	ISDB-Tmm
WLAN	WLAN (IEEE802.11)
ISDBT	ISDB-T
LRWPANS	LR-WPANs (IEEE802.15.4)
APCO_P25	APCO_P25
MICROLINKETSI	Microlink ETSI
NXDN	NXDN
ISDBTSB	ISDB-T_{SB}

Example of Use

To query the setting of the communication standard.

```
RAD:STAN?
> WCDMAUP
```

:CONFigure:SANalyzer

Measurement Off

Function

This command disables currently running measure function. No operation is made if no measure function is running.

Command

```
:CONFigure:SANalyzer
```

Example of Use

To disable the currently running measure function.

```
CONF:SAN
```

:CONFigure?

Current Measurement Query

Function

This command queries the name of the current measure function.

Query

```
:CONFigure?
```

Response

```
<mode>
```

Parameter

<mode>	Measure function
ACP	ACP measurement
BPOW	Burst Average Power measurement
OBW	OBW measurement
CHP	Channel Power measurement
SEM	Spectrum Emission Mask measurement
SPUR	Spurious Emission measurement
SAN	OFF

Example of Use

To query the current Measure function.

```
CONF?
> ACP
```

[:SENSe]:RADio:STANdard:LOAD <function>[,<pattern>]

Load Standard Parameter

Function

This command selects Measure function parameter. Selectable parameters vary depending on the setting for Standard.

Command

```
[:SENSe]:RADio:STANdard:LOAD <function>[,<pattern>]
```

Parameter

<function>	Measure function
ADJ	ACP measurement
BRSTAVGPWR	Burst Average Power measurement
OBW	OBW measurement
CHPWR	Channel Power measurement
SEM	Spectrum Emission Mask measurement
SPUR	Spurious Emission measurement

When Standard is set to W-CDMA Uplink (ACP measurement)

<pattern>	Parameter to be set
UPLINK	3GPP W-CDMA Uplink, ACP measurement
When omitted:	3GPP W-CDMA Uplink, ACP measurement

When Standard is set to W-CDMA Uplink (Burst Average Power measurement)

<pattern>	Parameter to be set
MEAN	3GPP W-CDMA Uplink, Mean Power measurement
When omitted:	3GPP W-CDMA Uplink, Mean Power measurement

When Standard is set to W-CDMA Uplink (OBW measurement)

<pattern>	Parameter to be set
UPLINK	3GPP W-CDMA Uplink
When omitted:	3GPP W-CDMA Uplink

When Standard is set to W-CDMA Uplink (Channel Power measurement)

<pattern>	Parameter to be set
UPLINK	3GPP W-CDMA Uplink, Mean Power measurement
MEAN	3GPP W-CDMA Uplink, Mean Power measurement
RRCFILTER	3GPP W-CDMA Uplink, RRC Filtered Power measurement
When omitted:	3GPP W-CDMA Uplink, Mean Power measurement

When Standard is set to W-CDMA Uplink (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
UPLINK	3GPP W-CDMA Uplink, Spectrum Emission Mask measurement (Uplink)
ADD	3GPP W-CDMA Uplink, Spectrum Emission Mask measurement (Uplink (Additional)
When omitted:	3GPP W-CDMA Uplink, Spectrum Emission Mask measurement (Uplink)

When Standard is set to W-CDMA Downlink (ACP measurement)

<pattern>	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink, ACP measurement (Single Carrier)
SINGLECARR	3GPP W-CDMA Downlink, ACP measurement (Single Carrier)
2CARR	3GPP W-CDMA Downlink (2 Carriers)
3CARR	3GPP W-CDMA Downlink (3 Carriers)
4CARR	3GPP W-CDMA Downlink (4 Carriers)
When omitted:	3GPP W-CDMA Downlink, ACP measurement (Single Carrier)

When Standard is set to W-CDMA Downlink (Burst Average Power measurement)

<pattern>	Parameter to be set
MEAN	3GPP W-CDMA Downlink, Mean Power measurement
When omitted:	3GPP W-CDMA Downlink, Mean Power measurement

When Standard is set to W-CDMA Downlink (OBW measurement)

<pattern>	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink
When omitted:	3GPP W-CDMA Downlink

When Standard is set to W-CDMA Downlink (Channel Power measurement)

<pattern>	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink, Mean Power measurement
MEAN	3GPP W-CDMA Downlink, Mean Power measurement
RRCFILTER	3GPP W-CDMA Downlink, RRC Filtered Power measurement
When omitted:	3GPP W-CDMA Downlink, Mean Power measurement

When Standard is set to W-CDMA Downlink (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
43	3GPP W-CDMA Downlink (P ≥ 43 dBm)
39	3GPP W-CDMA Downlink (39 dBm ≤ P < 43 dBm)
31	3GPP W-CDMA Downlink (31 dBm ≤ P < 39 dBm)
31U	3GPP W-CDMA Downlink (P < 31 dBm)
A43	3GPP W-CDMA Downlink (P ≥ 43 dBm (Additional)
A39	3GPP W-CDMA Downlink (39 dBm ≤ P < 43 dBm (Additional)
A31	3GPP W-CDMA Downlink (31 dBm ≤ P < 39 dBm (Additional)
When omitted:	3GPP W-CDMA Downlink (P ≥ 43 dBm)

When Standard is set to Mobile WiMAX (ACP/OBW/Channel Power measurement)

<pattern>	Parameter to be set
10M	10 MHz BW (Channel Bandwidth 10 MHz)
5M	5 MHz BW (Channel Bandwidth 5 MHz)
When omitted:	10 MHz BW

When Standard is set to Mobile WiMAX (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
10M	10 MHz BW (Channel Bandwidth 10 MHz)
5M	5 MHz BW (Channel Bandwidth 5 MHz)
When omitted:	10 MHz BW

When Standard is set to Mobile WiMAX (Burst Average Power measurement)

<pattern>	Parameter to be set
5MS_FRAME	5 ms Frame (Power measurement of 1 frame)
When omitted:	5 ms Frame

When Standard is set to LTE Uplink/Downlink (ACP measurement)

<pattern>	Parameter to be set
1M4BW_UTRA5MHZ	1.4 MHz BW (UTRA 5 MHz)
1M4BW_EUTRA1M4HZ	1.4 MHz BW (E-UTRA 1.4 MHz)
3MBW_UTRA5MHZ	3 MHz BW (UTRA 5 MHz)
3MBW_EUTRA3MHZ	3 MHz BW (E-UTRA 3 MHz)
5MBW_UTRA5MHZ	5 MHz BW (UTRA 5 MHz)
5MBW_EUTRA5MHZ	5 MHz BW (E-UTRA 5 MHz)
10MBW_UTRA5MHZ	10 MHz BW (UTRA 5 MHz)
10MBW_EUTRA10MHZ	10 MHz BW (E-UTRA 10 MHz)
15MBW_UTRA5MHZ	15 MHz BW (UTRA 5 MHz)
15MBW_EUTRA15MHZ	15 MHz BW (E-UTRA 15 MHz)
20MBW_UTRA5MHZ	20 MHz BW (UTRA 5 MHz)
20MBW_EUTRA20MHZ	20 MHz BW (E-UTRA 20 MHz)
When omitted:	5 MHz BW (UTRA 5 MHz)

When Standard is set to LTE TDD Downlink (ACP Measurement)

<pattern>	Parameter to be set
1M4BW_UTRA1M6HZ	1.4 MHz BW (UTRA 1.6 MHz)
1M4BW_EUTRA1M4HZ	1.4 MHz BW (E-UTRA 1.4 MHz)
1M4BW_ADV	1.4 MHz BW (Adv Mode)
3MBW_UTRA1M6HZ	3 MHz BW (UTRA 1.6 MHz)
3MBW_EUTRA3MHZ	3 MHz BW (E-UTRA 3 MHz)
3MBW_ADV	3 MHz BW (Adv Mode)
5MBW_UTRA1M6HZ	5 MHz BW (UTRA 1.6 MHz)
5MBW_UTRA5MHZ	5 MHz BW (UTRA 5 MHz)
5MBW_UTRA10MHZ	5 MHz BW (UTRA 10 MHz)
5MBW_EUTRA5MHZ	5 MHz BW (E-UTRA 5 MHz)
5MBW_ADV	5 MHz BW (Adv Mode)
10MBW_UTRA1M6HZ	10 MHz BW (UTRA 1.6 MHz)
10MBW_UTRA5MHZ	10 MHz BW (UTRA 5 MHz)

10MBW_UTRA10MHZ	10 MHz BW (UTRA 10 MHz)
10MBW_EUTRA10MHZ	10 MHz BW (E-UTRA 10 MHz)
10MBW_ADV	10 MHz BW (Adv Mode)
15MBW_UTRA1M6HZ	15 MHz BW (UTRA 1.6 MHz)
15MBW_UTRA5MHZ	15 MHz BW (UTRA 5 MHz)
15MBW_UTRA10MHZ	15 MHz BW (UTRA 10 MHz)
15MBW_EUTRA15MHZ	15 MHz BW (E-UTRA 15 MHz)
15MBW_ADV	15 MHz BW (Adv Mode)
20MBW_UTRA1M6HZ	20 MHz BW (UTRA 1.6 MHz)
20MBW_UTRA5MHZ	20 MHz BW (UTRA 5 MHz)
20MBW_UTRA10MHZ	20 MHz BW (UTRA 10 MHz)
20MBW_EUTRA20MHZ	20 MHz BW (E-UTRA 20 MHz)
20MBW_ADV	20 MHz BW (Adv Mode)
When omitted:	5 MHz BW (E-UTRA 5 MHz)

When Standard is set to LTE TDD UPlink (ACP Measurement)

<pattern>	Parameter to be set
1M4BW_UTRA1M6HZ	1.4 MHz BW (UTRA 1.6 MHz)
1M4BW_EUTRA1M4HZ	1.4 MHz BW (E-UTRA 1.4 MHz)
3MBW_UTRA1M6HZ	3 MHz BW (UTRA 1.6 MHz)
3MBW_EUTRA3MHZ	3 MHz BW (E-UTRA 3 MHz)
5MBW_UTRA1M6HZ	5 MHz BW (UTRA 1.6 MHz)
5MBW_EUTRA5MHZ	5 MHz BW (E-UTRA 5 MHz)
10MBW_UTRA1M6HZ	10 MHz BW (UTRA 1.6 MHz)
10MBW_EUTRA10MHZ	10 MHz BW (E-UTRA 10 MHz)
15MBW_UTRA1M6HZ	15 MHz BW (UTRA 1.6 MHz)
15MBW_EUTRA15MHZ	15 MHz BW (E-UTRA 15 MHz)
20MBW_UTRA1M6HZ	20 MHz BW (UTRA 1.6 MHz)
20MBW_EUTRA20MHZ	20 MHz BW (E-UTRA 20 MHz)
When omitted:	1.4 MHz BW (UTRA 1.6 MHz)

When Standard is set to LTE Uplink/Downlink, and LTE TDD Uplink/Downlink (OBW measurement)

<pattern>	Parameter to be set
1M4BW	1.4 MHz Bandwidth
3MBW	3 MHz Bandwidth
5MBW	5 MHz Bandwidth
10MBW	10 MHz Bandwidth
15MBW	15 MHz Bandwidth
20MBW	20 MHz Bandwidth
When omitted:	5 MHz Bandwidth

When Standard is set to LTE Uplink/Downlink, and LTE TDD Uplink/Downlink (Channel Power measurement)

<pattern>	Parameter to be set
MEAN_1M4BW	Mean Power 1.4 MHz BW
MEAN_3MBW	Mean Power 3 MHz BW
MEAN_5MBW	Mean Power 5 MHz BW
MEAN_10MBW	Mean Power 10 MHz BW
MEAN_15MBW	Mean Power 15 MHz BW
MEAN_20MBW	Mean Power 20 MHz BW
FILTERED_1M4BW	Filtered Power 1.4 MHz BW
FILTERED_3MBW	Filtered Power 3 MHz BW
FILTERED_5MBW	Filtered Power 5 MHz BW
FILTERED_10MBW	Filtered Power 10 MHz BW
FILTERED_15MBW	Filtered Power 15 MHz BW
FILTERED_20MBW	Filtered Power 20 MHz BW
When omitted:	Mean Power 5 MHz BW

When Standard is set to LTE Uplink/Downlink, and LTE TDD Uplink/Downlink (Burst Average Power measurement)

<pattern>	Parameter to be set
MEAN_1M4BW	Mean Power 1.4 MHz BW
MEAN_3MBW	Mean Power 3 MHz BW
MEAN_5MBW	Mean Power 5 MHz BW
MEAN_10MBW	Mean Power 10 MHz BW
When omitted:	Mean Power 5 MHz BW

When Standard is set to LTE Downlink (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
A_UNDER1G_1M4BW	CategoryA < 1 GHz 1.4 MHz BW
A_UNDER1G_3MBW	CategoryA < 1 GHz 3 MHz BW
A_UNDER1G_5MBW	CategoryA < 1 GHz 5 MHz BW
A_UNDER1G_10MBW	CategoryA < 1 GHz 10 MHz BW
A_UNDER1G_15MBW	CategoryA < 1 GHz 15 MHz BW
A_UNDER1G_20MBW	CategoryA < 1 GHz 20 MHz BW
A_OVER1G_1M4BW	CategoryA > 1 GHz 1.4 MHz BW
A_OVER1G_3MBW	CategoryA > 1 GHz 3 MHz BW
A_OVER1G_5MBW	CategoryA > 1 GHz 5 MHz BW
A_OVER1G_10MBW	CategoryA > 1 GHz 10 MHz BW
A_OVER1G_15MBW	CategoryA > 1 GHz 15 MHz BW
A_OVER1G_20MBW	CategoryA > 1 GHz 20 MHz BW
B_UNDER1G_1M4BW	CategoryB < 1 GHz 1.4 MHz BW
B_UNDER1G_3MBW	CategoryB < 1 GHz 3 MHz BW
B_UNDER1G_5MBW	CategoryB < 1 GHz 5 MHz BW
B_UNDER1G_10MBW	CategoryB < 1 GHz 10 MHz BW
B_UNDER1G_15MBW	CategoryB < 1 GHz 15 MHz BW
B_UNDER1G_20MBW	CategoryB < 1 GHz 20 MHz BW
B_OVER1G_1M4BW	CategoryB > 1 GHz 1.4 MHz BW
B_OVER1G_3MBW	CategoryB > 1 GHz 3 MHz BW
B_OVER1G_5MBW	CategoryB > 1 GHz 5 MHz BW
B_OVER1G_10MBW	CategoryB > 1 GHz 10 MHz BW
B_OVER1G_15MBW	CategoryB > 1 GHz 15 MHz BW
B_OVER1G_20MBW	CategoryB > 1 GHz 20 MHz BW
When omitted:	CategoryA > 1 GHz 5 MHz BW

Note:

<1 GHz: BandClass when frequency smaller than 1 GHz. Band Class 5, 6, 8, 12, 13, 14, 17

>1 GHz: BandClass when frequency larger than 1 GHz. 1, 2, 3, 4, 7, 9, 10, 11

When Standard is set to LTE Uplink (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
G_1_4M	General 1.4MHz
G_3M	General 3MHz
G_5M	General 5MHz
G_10M	General 10MHz
G_15M	General 15MHz

G_20M	General 20MHz
NS3_1_4M	NS-03 1.4MHz
NS3_3M	NS-03 3MHz
NS3_5M	NS-03 5MHz
NS3_10M	NS-03 10MHz
NS3_15M	NS-03 15MHz
NS3_20M	NS-03 20MHz
NS4_1_4M	NS-04 1.4MHz
NS4_3M	NS-04 3MHz
NS4_5M	NS-04 5MHz
NS4_10M	NS-04 10MHz
NS4_15M	NS-04 15MHz
NS4_20M	NS-04 20MHz
NS6_1_4M	NS-06/07 1.4MHz
NS6_3M	NS-06/07 3MHz
NS6_5M	NS-06/07 5MHz
NS6_10M	NS-06/07 10MHz
JAPAN_5M	JAPAN 5MHz
JAPAN_10M	JAPAN 10MHz
JAPAN_15M	JAPAN 15MHz
JAPAN_20M	JAPAN 20MHz
When omitted:	General 5MHz

When Standard is set to LTE TDD Uplink (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
G_1_4M	General 1.4MHz
G_3M	General 3MHz
G_5M	General 5MHz
G_10M	General 10MHz
G_15M	General 15MHz
G_20M	General 20MHz
NS3_1_4M	NS-03 1.4MHz
NS3_3M	NS-03 3MHz
NS3_5M	NS-03 5MHz
NS3_10M	NS-03 10MHz
NS3_15M	NS-03 15MHz
NS3_20M	NS-03 20MHz
NS4_1_4M	NS-04 1.4MHz
NS4_3M	NS-04 3MHz
NS4_5M	NS-04 5MHz
NS4_10M	NS-04 10MHz
NS4_15M	NS-04 15MHz
NS4_20M	NS-04 20MHz

NS6_1_4M	NS-06/07 1.4MHz
NS6_3M	NS-06/07 3MHz
NS6_5M	NS-06/07 5MHz
NS6_10M	NS-06/07 10MHz
When omitted:	General 5MHz

When Standard is set to ETC_DSRC (Applies to all but Burst Average Power, Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
PI4DQPSK	π/4DQPSK
ASK	ASK
When omitted:	π/4DQPSK

When Standard is set to ETC_DSRC (Burst Average Power measurement)

<pattern>	Parameter to be set
MEAN	Mean Power
When omitted:	Mean Power

When Standard is set to TD-SCDMA (ACP Measurement)

<pattern>	Parameter to be set
TDD128M1C	Single Carrier
TDD128M2C	2 Carriers
TDD128M3C	3 Carriers
TDD128M4C	4 Carriers
TDD128M5C	5 Carriers
TDD128M6C	6 Carriers
When omitted:	Single Carrier

When Standard is set to TD-SCDMA (CHP, OBW Measurement)

<pattern>	Parameter to be set
TDD128M	3GPP TDD 1.28 Mcps Option
When omitted:	3GPP TDD 1.28 Mcps Option

When Standard is set to TD-SCDMA (Burst Average Power Measurement)

<pattern>	Parameter to be set
MEAN	5 ms Subframe
(Power measurement of 1 subframe)	
When omitted:	5 ms Subframe

When Standard is set to TD-SCDMA (Spectrum Emission Mask Measurement)

<pattern>	Parameter to be set

DLT34	DL Trace Point Tune 34 dBm ≤ P
DLT26	DL Trace Point Tune 26 dBm ≤ P < 34 dBm
DLT26U	DL Trace Point Tune P < 26 dBm
ULT53	UL Trace Point Tune –53.5 dBm ≤ P
ULT55	UL Trace Point Tune –55 dBm ≤ P
DL34	Downlink Actual 34 dBm ≤ P
DL26	Downlink Actual 26 dBm ≤ P < 34 dBm
DL26U	Downlink Actual P < 26 dBm
UL53	Uplink Actual –53.5 dBm ≤ P
UL55	Uplink Actual –55 dBm ≤ P
DLF34	Downlink Fast 34 dBm ≤ P
DLF26	Downlink Fast 26 dBm ≤ P < 34 dBm
DLF26U	Downlink Fast P < 26 dBm
ULF53	Uplink Fast –53.5 dBm ≤ P
ULF55	Uplink Fast –55 dBm ≤ P
When omitted:	DL Trace Point Tune 34 dBm ≤ P

When Standard is set to XG-PHS (OBW Measurement)

<pattern>	Parameter to be set
10MBW	10 MHz BW
20MBW	20 MHz BW
When omitted:	10 MHz BW

When Standard is set to XG-PHS (CHP Measurement)

<pattern>	Parameter to be set
MEAN_10MBW	Mean Power 10 MHz BW
MEAN_20MBW	Mean Power 20 MHz BW
When omitted:	Mean Power 10 MHz BW

When Standard is set to XG-PHS (Spectrum Emission Mask Measurement)

<pattern>	Parameter to be set
BS_10MBW	Base station channel interval: 10 MHz
UE_10MBW	Mobile station channel interval: 10 MHz
When omitted:	Base station channel interval: 10 MHz

When Standard is set to CDMA2000 Forward Link (ACP, Burst Average, Channel Power, OBW measurement)

<pattern>	Parameter to be set
CDMA2KFWD	CDMA2000 Forward Link
When omitted:	CDMA2000 Forward Link

When Standard is set to CDMA2000 Forward Link (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
BC0_PLT28	Band Class 0,2,5,7,9,10 (Pout < 28 dBm)
BC0_PLT33	Band Class 0,2,5,7,9,10 (28 dBm ≤ Pout < 33 dBm)
BC0_PGT33	Band Class 0,2,5,7,9,10 (Pout ≥ 33 dBm)
BC1_PLT28	Band Class 1,4,8,14,15 (Pout < 28 dBm)
BC1_PLT33	Band Class 1,4,8,14,15 (28 dBm ≤ Pout < 33 dBm)
BC1_PGT33	Band Class 1,4,8,14,15 (Pout ≥ 33 dBm)
BC6	Band Class 6(Pout<28 dBm)
BC6_PLT33	Band Class 6 (28 dBm≤Pout<33 dBm)
BC6_PGT33	Band Class 6 (Pout≥33 dBm)
BC11	Band Class 11,12
When omitted: (Pout < 28 dBm)	Band Class 0,2,5,7,9,10

When Standard is set to EV-DO Forward Link (ACP, Burst Average, Channel Power, OBW measurement)

<pattern>	Parameter to be set
EVDOFWD	EV-DO Forward Link
When omitted:	EV-DO Forward Link

When Standard is set to EV-DO Forward Link (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
BC0	Band Class 0,2,5,7,9,10
BC1	Band Class 1,4,14,15
BC6	Band Class 6,8,13
BC11	Band Class 11,12
When omitted:	Band Class 0,2,5,7,9,10

When Standard is set to ISDB-Tmm (Channel Power measurement)

<pattern>	Parameter to be set
MEAN_14M2BW	14.2 MHz BW
MEAN_5M6BW	5.6 MHz BW
When omitted:	14.2 MHz BW

When Standard is set to ISDB-Tmm (OBW measurement)

<pattern>	Parameter to be set
14M2BW	14.2 MHz BW
5M6BW	5.6 MHz BW
When omitted:	14.2 MHz BW

When Standard is set to ISDB-Tmm (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
14M2BW	14.2 MHz BW
14M2BW_ABS	14.2 MHz BW (ABS)
5M6BW	5.6 MHz BW
When omitted:	14.2 MHz BW

When Standard is set to ISDB-T_{SB} (Channel Power measurement)

<pattern>	Parameter to be set
MEAN_3M9BW	3.9 MHz BW
When omitted:	3.9 MHz BW

When Standard is set to ISDB-T_{SB} (OBW measurement)

<pattern>	Parameter to be set
3M9BW	3.9 MHz BW
When omitted:	3.9 MHz BW

When Standard is set to ISDB-T_{SB} (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
3M9BW	3.9 MHz BW
When omitted:	3.9 MHz BW

When Standard is set to ISDB-T (Channel Power measurement)

<pattern>	Parameter to be set
MEAN_5M6BW	5.6 MHz BW
When omitted:	5.6 MHz BW

When Standard is set to ISDB-T (OBW measurement)

<pattern>	Parameter to be set
5M6BW	5.6 MHz BW
When omitted:	5.6 MHz BW

When Standard is set to ISDB-T (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
5M6BW	5.6 MHz BW
When omitted:	5.6 MHz BW

When Standard is set to WLAN (ACP measurement)

<pattern>	Parameter to be set
T403_18MSPAN	TELEC T-403 5 GHz Low Power Data

	Communication System Sweep Band 18 MHz
T403_19MSPAN	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 19 MHz
T403_38MSPAN	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 38 MHz
T403_78MSPAN	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 78 MHz
T405_20MBW	TELEC T-405 5 GHz Wireless Access System 20 MHz System
T405_40MBW	TELEC T-405 5 GHz Wireless Access System 40 MHz System
When omitted:	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 18 MHz

When Standard is set to WLAN (OBW measurement)

<pattern>	Parameter to be set
T401_DCCK	TELEC T-401 2.4 GHz Enhanced Low Power Data Communication System, Direct Sequence Spread Spectrum System
T401_OFDM	TELEC T-401 2.4 GHz Enhanced Low Power Data Communication System, Orthogonal Frequency Division Multiplexing System
T403_20MBW	TELEC T-403 5 GHz Low Power Data Communication System 20 MHz System
T403_40MBW	TELEC T-403 5 GHz Low Power Data Communication System 40 MHz System
T403_80MBW	TELEC T-403 5 GHz Low Power Data Communication System 80 MHz System
T403_160MBW	TELEC T-403 5 GHz Low Power Data Communication System 160 MHz System
T405_20MBW	TELEC T-405 5 GHz Wireless Access System 20 MHz System
T405_40MBW	TELEC T-405 5 GHz Wireless Access System 40 MHz System
ETSI_OFDM_5MHZ	EN 301 893 4.3 Nominal Channel Bandwidth and Occupied Channel Bandwidth 5 MHz
ETSI_OFDM_10MHZ	EN 301 893 4.3 Nominal Channel Bandwidth and Occupied Channel Bandwidth 10 MHz
ETSI_OFDM_20MHZ	EN 301 893 4.3 Nominal Channel Bandwidth and Occupied Channel Bandwidth 20 MHz
ETSI_OFDM_40MHZ	EN 301 893 4.3 Nominal Channel Bandwidth and Occupied Channel Bandwidth 40 MHz
When omitted:	TELEC T-401 2.4 GHz Enhanced Low Power Data Communication System, Direct Sequence

Spread Spectrum System

When Standard is set to WLAN (Spectrum Emission Mask measurement)

<pattern>	Parameter to be set
W11A	IEEE802.11a
W11B	IEEE802.11b
W11GOFDM	IEEE802.11g OFDM
W11GDCCK	IEEE802.11g DSSS/CCK
W11GDOFDM	IEEE802.11g DSSS-OFDM
W11J20MHZ	IEEE802.11j 20 MHz
W11P20MHZ	IEEE802.11p 20 MHz
W11N20MHZ	IEEE802.11n 20 MHz (2.4 GHz)
W11N20MHZ5GHZ	IEEE802.11n 20 MHz (5 GHz)
W11N40MHZ	IEEE802.11n 40 MHz (2.4 GHz)
W11N40MHZ5GHZ	IEEE802.11n 40 MHz (5 GHz)
W11AC20MHZ	IEEE802.11ac 20 MHz
W11AC40MHZ	IEEE802.11ac 40 MHz
W11AC80MHZ	IEEE802.11ac 80 MHz
W11AC160MHZ	IEEE802.11ac 160 MHz
ETSI_OFDM_5MHZ	EN 301 893 4.5.2 Transmitter unwanted emissions within the 5 GHz RLAN bands 5 MHz
ETSI_OFDM_10MHZ	EN 301 893 4.5.2 Transmitter unwanted emissions within the 5 GHz RLAN bands 10 MHz
ETSI_OFDM_20MHZ	EN 301 893 4.5.2 Transmitter unwanted emissions within the 5 GHz RLAN bands 20 MHz
ETSI_OFDM_40MHZ	EN 301 893 4.5.2 Transmitter unwanted emissions within the 5 GHz RLAN bands 40 MHz
T403_18MHZ_5180_5240MHZ_LOWER	TELEC T-403 5 GHz Low Power Data Communication System 5180 to 5240 MHz Lower sideband, OBW less than 18 MHz
T403_18MHZ_5180_5240MHZ_UPPER	TELEC T-403 5 GHz Low Power Data Communication System 5180 to 5240 MHz Upper sideband,

OBW less than 18 MHz

T403_18MHZ_5260_5320MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5180 to 5240 MHz Lower sideband,
OBW less than 18 MHz

T403_18MHZ_5260_5320MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5260 to 5320 MHz Upper sideband,
OBW more than 18 MHz, less than 19 MHz

T403_18_19MHZ_5180_5240MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5180 to 5240 MHz Lower sideband,
OBW more than 18 MHz, less than 19 MHz

T403_18_19MHZ_5180_5240MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5180 to 5240 MHz Upper sideband,
OBW more than 18 MHz, less than 19 MHz

T403_18_19MHZ_5260_5320MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5260 to 5320 MHz Lower sideband,
OBW more than 18 MHz, less than 19 MHz

T403_18_19MHZ_5260_5320MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5260 to 5320 MHz Upper sideband,
OBW more than 18 MHz, less than 19 MHz

T403_5190_5230MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5190 to 5230 MHz Lower sideband

T403_5190_5230MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5190 to 5230 MHz Upper sideband

T403_5270_5310MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5270 to 5310 MHz Lower sideband

T403_5270_5310MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5270 to 5310 MHz Upper sideband

T403_5210MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5210 MHz Lower sideband

T403_5210MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5210 MHz Upper sideband

T403_5290MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5290 MHz Lower sideband

T403_5290MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5290 MHz Upper sideband

T403_5250MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5250 MHz Lower sideband

T403_5250MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5250 MHz Lower sideband

T403_5210MHZ_80-80_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5210 MHz 80+80 MHz Lower sideband

T403_5210MHZ_80-80_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5210 MHz 80+80 MHz Upper sideband

T403_5210_5530MHZ_LOWER

TELEC T-403 5 GHz Low Power Data Communication System
5210 to 5530 MHz Lower sideband

T403_5210_5610MHZ_UPPER

TELEC T-403 5 GHz Low Power Data Communication System
5210 to 5610 MHz Upper sideband

T403_5290MHZ_80-80_LOWER
TELEC T-403 5 GHz Low Power Data Communication System
5290 MHz 80+80 MHz Lower sideband

T403_5290MHZ_80-80_UPPER
TELEC T-403 5 GHz Low Power Data Communication System
5290 MHz 80+80 MHz Upper sideband

T403_5290_5530MHZ_LOWER
TELEC T-403 5 GHz Low Power Data Communication System
5290 to 5530 MHz Lower sideband

T403_5290_5610MHZ_UPPER
TELEC T-403 5 GHz Low Power Data Communication System
5290 to 5610 MHz Upper sideband

When omitted: W11A

When Standard is set to WLAN (Spurious Emission measurement)

<pattern> Parameter to be set

T401 TELEC T-401 2.4 GHz Enhanced Low Power Data Communication System

T402 TELEC T-402 2.4 GHz Low Power Data Communication System

T403_18MHz_5_2GHz
TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz OBW less than 18 MHz

T403_18MHz_5_3GHz
TELEC T-403 5 GHz Low Power Data Communication System 5.3 GHz OBW less than 18 MHz

T403_18MHz_5_6GHz
TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW less than 18 MHz

T403_18_19MHz_5_2GHz
TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz OBW more than 18 MHz, less than 19 MHz

T403_18_19MHz_5_3GHz
TELEC T-403 5 GHz Low Power Data Communication System 5.3 GHz OBW more than 18 MHz, less than 19 MHz

T403_18_19MHz_5_6GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW more than 18 MHz, less than 19 MHz

T403_19MHz_5_2GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz OBW more than 19 MHz

T403_19MHz_5_3GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.3 GHz OBW more than 19 MHz

T403_19MHz_5_6GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW more than 19 MHz

T403_38_78MHz_5_2GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz OBW more than 38 MHz, less than 78 MHz

T403_38_78MHz_5_3GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.3 GHz OBW more than 38 MHz, less than 78 MHz

T403_38_78MHz_5_6GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW more than 38 MHz, less than 78 MHz

T403_78MHz_5_2GHZ_5_3GHZ

TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz 5.3 GHz OBW more than 78 MHz

T403_78MHz_5_6GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW more than 38 MHz

T403_5500_5700M

TELEC T-403 5 GHz Low Power Data Communication System, 5500 to 5700 MHz

T403_5510_5670M

TELEC T-403 5 GHz Low Power Data Communication System, 5510 to 5670 MHz

`T403_5530_5610M`

TELEC T-403 5 GHz Low Power Data Communication System, 5530 to 5610 MHz

`T403_5570M`

TELEC T-403 5 GHz Low Power Data Communication System, 5570 MHz

`T405_5MHz_4_9GHz`

TELEC T-405 5 GHz Wireless Access System 5 MHz System 4,900 MHz to 4,950 MHz

`T405_5MHz_5_0GHz`

TELEC T-405 5 GHz Wireless Access System 5 MHz System 5,030 MHz to 5,060 MHz

`T405_10MHz_4_9GHz`

TELEC T-405 5 GHz Wireless Access System 10 MHz System 4,900 MHz to 4,950 MHz

`T405_10MHz_5_0GHz`

TELEC T-405 5 GHz Wireless Access System 10 MHz System 5,030 MHz to 5,060 MHz

`T405_20MHz_4_9GHz_OFDM`

TELEC T-405 5 GHz Wireless Access System 20 MHz System Orthogonal Frequency Division Multiplexing System 4,900 MHz to 5,000 MHz

`T405_20MHz_4_9GHz_DCCK`

TELEC T-405 5 GHz Wireless Access System 20 MHz System Direct Sequence Spread Spectrum System 4,900 MHz to 5,000 MHz

`T405_20MHz_5_0GHz_OFDM`

TELEC T-405 5 GHz Wireless Access System 20 MHz System Orthogonal Frequency Division Multiplexing System 5,030 MHz to 5,091 MHz

`T405_20MHz_5_0GHz_DCCK`

TELEC T-405 5 GHz Wireless Access System 20 MHz System Direct Sequence Spread Spectrum System 5,030 MHz to 5,091 MHz

`T405_40MHz`

TELEC T-405 5 GHz Wireless Access System 40 MHz System

`FCC_15_407_5_15GHZ`

FCC PART 15.407 5.15-5.25 GHz Band

`FCC_15_407_5_25GHZ_TX`

FCC PART 15.407 5.25-5.35 GHz Band Transmitters

FCC_15_407_5_25GHZ_DEVICES
FCC PART 15.407 5.25-5.35 GHz Band Devices
FCC_15_407_5_47GHZ
FCC PART 15.407 5.47-5.725 GHz Band
FCC_15_407_5_725GHZ
FCC PART 15.407 5.725-5.825 GHz Band
ETSI_301_893
EN 301 893 4.5.1 Transmitter unwanted emissions outside the 5 GHz RLAN bands
ETSI_300_328
EN 300 328 4.3.6 Transmitter spurious emissions
When omitted: TELEC T-401 2.4 GHz Direct Sequence Spread Spectrum System

When Standard is set to LR-WPANs(IEEE802.15.4)
(ACP Measurement)

<pattern>	Parameter to be set
BPSK_950M	BPSK 950MHz (ARIB STD-T96)
GFSK_950M_50K	GFSK 950MHz 50ksps (ARIB STD-T96)
GFSK_950M_100K	GFSK 950MHz 100ksps (ARIB STD-T96)
GFSK_950M_200K	GFSK 950MHz 200ksps (ARIB STD-T96)
GFSK_920M_50K	GFSK 920MHz 50ksps (ARIB STD-T108)
GFSK_920M_100K	GFSK 920MHz 100ksps (ARIB STD-T108)
GFSK_920M_200K	GFSK 920MHz 200ksps (ARIB STD-T108)
GFSK_50K_G	GFSK 50ksps (IEEE802.15.4g_d7)
GFSK_100K_G	GFSK 100ksps (IEEE802.15.4g_d7)
GFSK_200K_G	GFSK 200ksps (IEEE802.15.4g_d7)
When omitted:	BPSK 950MHz (ARIB STD-T96)

When Standard is set to LR-WPANs(IEEE802.15.4)
(Spectrum Emission Mask Measurement)

<pattern>	Parameter to be set
OQPSK_2450M	O-QPSK 2450MHz (IEEE802.15.4-2011)
BPSK_950M	BPSK 950MHz (ARIB STD-T96)
GFSK_950M_50K	GFSK 950MHz 50ksps (ARIB STD-T96)
GFSK_950M_100K	GFSK 950MHz 100ksps (ARIB STD-T96)
GFSK_950M_200K	GFSK 950MHz 200ksps (ARIB STD-T96)
GFSK_920M_50K	GFSK 920MHz 50ksps (ARIB STD-T108)
GFSK_920M_100K	GFSK 920MHz 100ksps (ARIB STD-T108)
GFSK_920M_200K	GFSK 920MHz 200ksps (ARIB STD-T108)
When omitted:	O-QPSK 2450MHz (IEEE802.15.4-2011)

When Standard is set to APCO P25
(ACP Measurement)

<pattern>	Parameter to be set
EXCEPT_700MHZ-BAND	Except 700MHz-band
700MHz-BW-6_25KHZ	700MHz-BW-6.25kHz
700MHz-BW-25KHZ	700MHz-BW-25kHz
700MHz-BW-100KHZ	700MHz-BW-100kHz
When omitted:	Except 700MHz-band

When Standard is set to APCO P25
(Spectrum Emission Mask Measurement)

<pattern>	Parameter to be set
FCC_12_5KHZ	FCC 12.5kHz
NTIA_12_5KHZ	NTIA 12.5kHz
When omitted:	FCC 12.5kHz

When Standard is set to Microlink ETSI
(Spectrum Emission Mask Measurement)

<pattern>	Parameter to be set
7M2	CS:7MHz Class:2
7M4L3-17G	CS:7MHz Class:4L Frequency Band:3G-17GHz
7M4L17-30G	CS:7MHz Class:4L Frequency Band:17G-30GHz
7M4LABV30G	CS:7MHz Class:4L Frequency Band:above30GHz
7M5B3-17G	CS:7MHz Class:5B Frequency Band:3G-17GHz
7M5B17-30G	CS:7MHz Class:5B Frequency Band:17G-30GHz
7M5BABV30G	CS:7MHz Class:5B Frequency Band:above30GHz
14M2	CS:14MHz Class:2
14M4L3-17G	CS:14MHz Class:4L Frequency Band:3G-17GHz
14M4L17-30G	CS:14MHz Class:4L Frequency Band:17G-30GHz
14M4LABV30G	CS:14MHz Class:4L Frequency Band:above30GHz
14M5B3-17G	CS:14MHz Class:5B Frequency Band:3G-17GHz
14M5B17-30G	CS:14MHz Class:5B Frequency Band:17G-30GHz
14M5BABV30G	CS:14MHz Class:5B

	Frequency Band:above30GHz
28M2	CS:7MHz Class:2
28M4L3-17G	CS:7MHz Class:4L
	Frequency Band:3G-17GHz
28M4L17-30G	CS:7MHz Class:4L
	Frequency Band:17G-30GHz
28M4LABV30G	CS:7MHz Class:4L
	Frequency Band:above30GHz
28M4H3-17G	CS:7MHz Class:4H
	Frequency Band:3G-17GHz
28M4H17-30G	CS:7MHz Class:4H
	Frequency Band:17G-30GHz
28M4HABV30G	CS:7MHz Class:4H
	Frequency Band:above30GHz
28M5A6A3-17G	CS:7MHz Class:5A6A
	Frequency Band:3G-17GHz
28M5A6A17-30G	CS:7MHz Class:5A6A
	Frequency Band:17G-30GHz
28M5A6AABV30G	CS:7MHz Class:5A6A
	Frequency Band:above30GHz
28M5B6B3-17G	CS:7MHz Class:5B6B
	Frequency Band:3G-17GHz
28M5B6B17-30G	CS:7MHz Class:5B6B
	Frequency Band:17G-30GHz
28M5B6BABV30G	CS:7MHz Class:5B6B
	Frequency Band:above30GHz
56M4L3-17G	CS:56MHz Class:4L
	Frequency Band:3G-17GHz
56M4L17-30G	CS:56MHz Class:4L
	Frequency Band:17G-30GHz
56M4LABV30G	CS:56MHz Class:4L
	Frequency Band:above30GHz
56M5A6A3-17G	CS:56MHz Class:5A6A
	Frequency Band:3G-17GHz
56M5A6A17-30G	CS:56MHz Class:5A6A
	Frequency Band:17G-30GHz
56M5A6AABV30G	CS:56MHz Class:5A6A
	Frequency Band:above30GHz
56M5B6B3-17G	CS:56MHz Class:5B6B
	Frequency Band:3G-17GHz
56M5B6B17-30G	CS:56MHz Class:5B6B
	Frequency Band:17G-30GHz
56M5B6BABV30G	CS:56MHz Class:5B6B
	Frequency Band:above30GHz

When omitted: CS:7MHz Class:2

When Standard is set to NXDN
(ACP Measurement)

<pattern>	Parameter to be set
BW-6_25KHZ	BW-6.25kHz
BW-12_5KHZ	BW-12.5kHz
When omitted:	BW-12.5kHz

When Standard is set to NXDN
(Spectrum Emission Mask Measurement)

<pattern>	Parameter to be set
47CFR-E_6_25KHZ	47CFR-E_6.25kHz
47CFR-D_12_5KHZ	47CFR-D_12.5kHz
When omitted:	47CFR-D_12.5kHz

Details

This command is not available when Standard is set to Off.

Example of Use

To set the ACP measurement parameter type to 3GPP W-CDMA Uplink.

```
RAD:STAN:LOAD ADJ,UPLINK
```

[:SENSe]:RADio:STANdard:LOAD? <function>

Load Standard Parameter Query

Function

This command queries the Measure function parameter. The parameter selected for the Standard setting differs.

Query

```
[:SENSe]:RADio:STANdard:LOAD? <function>
```

Response

```
<pattern>
```

Parameter

Refer to
`[:SENSe]:RADio:STANdard:LOAD <function>[,<pattern>]`

Details

If the Standard parameter is not selected or is set to Off, *** is returned.

Example of Use

To query ACP measurement parameter.

```
RAD:STAN:LOAD? ADJ
> UPLINK
```

2.9 ACP

Table 2.9-1 lists device messages for Adjacent Channel Power measurement.

Table 2.9-1 Device messages for Adjacent Channel Power measurement

Function	Device Message
Measure Adjacent Channel Power	[:SENSe]:ACPower[:STATe] ON|OFF|1|0
	[:SENSe]:ACPower[:STATe]?
	:CALCulate:ACPower[:STATe] ON|OFF|1|0
	:CALCulate:ACPower[:STATe]?
Adjacent Channel Power Reference Carrier Select	[:SENSe]:ACPower:CARRier[1]:RCARrier <integer>
	[:SENSe]:ACPower:CARRier[1]:RCARrier?
	:CALCulate:ACPower:CARRier[1]:RCARrier <integer>
	:CALCulate:ACPower:CARRier[1]:RCARrier?
Adjacent Channel Power Reference	[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod STOTal|CTOTal|BSIDes|CSELect
	[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod?
	:CALCulate:ACPower:CARRier[1]:RCARrier:METHod STOTal|CTOTal|BSIDes|CSELect
	:CALCulate:ACPower:CARRier[1]:RCARrier:METHod?
Adjacent Channel Power Noise Cancel	[:SENSe]:ACPower:CORRection:NOISe[:AUTO] ON|OFF|1|0
	[:SENSe]:ACPower:CORRection:NOISe[:AUTO]?
	:CALCulate:ACPower:CORRection:NOISe[:AUTO] ON|OFF|1|0
	:CALCulate:ACPower:CORRection:NOISe[:AUTO]?
Adjacent Channel Power Offset Channel Bandwidth	[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration] <freq>
	[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration]?
	:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration] <freq>
	:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration]?
Adjacent Channel Power Carrier Bandwidth	[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration] <freq>
	[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?
	:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration] <freq>
	:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?
Adjacent Channel Power In Band Center	[:SENSe]:ACPower:CARRier[1]:RCFRequency <freq>
	[:SENSe]:ACPower:CARRier[1]:RCFRequency?
	:CALCulate:ACPower:CARRier[1]:RCFRequency <freq>
	:CALCulate:ACPower:CARRier[1]:RCFRequency?
Adjacent Channel Power Carrier Number	[:SENSe]:ACPower:CARRier[1]:COUNt <integer>
	[:SENSe]:ACPower:CARRier[1]:COUNt?
	:CALCulate: ACPower:CARRier[1]:COUNt <integer>
	:CALCulate: ACPower:CARRier[1]:COUNt?
Adjacent Channel Power Carrier Spacing	[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh <freq>
	[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh?
	:CALCulate:ACPower:CARRier[1]:LIST:WIDTh <freq>
	:CALCulate:ACPower:CARRier[1]:LIST:WIDTh?

Table 2.9-1 Device messages for Adjacent Channel Power measurement (Cont'd)

Function	Device Message
Adjacent Channel Power Offset	[:SENSe]:ACPower:OFFSet[1]:LIST:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:ACPower:OFFSet[1]:LIST:STATe?
	:CALCulate:ACPower:OFFSet[1]:LIST:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	:CALCulate:ACPower:OFFSet[1]:LIST:STATe?
Adjacent Channel Power Offset Frequency	[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency] <freq>,<freq>,<freq>
	[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]?
	:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency] <freq>,<freq>,<freq>
	:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency]?
Adjacent Channel Power Filter Type	[:SENSe]:ACPower:CARRier[1]:LIST:METHod IBW|RRC|RC
	[:SENSe]:ACPower:CARRier[1]:LIST:METHod?
	:CALCulate:ACPower:CARRier[1]:LIST:METHod IBW|RRC|RC
	:CALCulate:ACPower:CARRier[1]:LIST:METHod?
	[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE RECT|NYQuist|RNYQuist
	[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?
	:CALCulate:ACPower:CARRier[1]:FILTer:TYPE RECT|NYQuist|RNYQuist
	:CALCulate:ACPower:CARRier[1]:FILTer:TYPE?
Adjacent Channel Power Offset Filter Type	[:SENSe]:ACPower:FILTer[:RRC][:STATe] OFF|ON|0|1
	[:SENSe]:ACPower:FILTer[:RRC][:STATe]?
	:CALCulate:ACPower:FILTer[:RRC][:STATe] OFF|ON|0|1
	:CALCulate:ACPower:FILTer[:RRC][:STATe]?
	[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE RECT|NYQuist|RNYQuist
	[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?
	:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE RECT|NYQuist|RNYQuist
	:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE?
Adjacent Channel Power Offset Setup Mode	[:SENSe]:ACPower:ADVanced:OFFSet:MODE NORMal|ADVanced
	[:SENSe]:ACPower:ADVanced:OFFSet:MODE?
Adjacent Channel Power Offset Channel Bandwidth - Advanced Mode	[:SENSe]:ACPower:ADVanced:OFFSet:BANDwidth[:INTegration] <bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>
	[:SENSe]:ACPower:ADVanced:OFFSet:BANDwidth[:INTegration]?
Adjacent Channel Power Offset - Advanced Mode	[:SENSe]:ACPower:ADVanced:OFFSet:LIST:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:ACPower:ADVanced:OFFSet:LIST:STATe?

Table 2.9-1 Device messages for Adjacent Channel Power measurement (Cont'd)

Function	Device Message
Adjacent Channel Power Offset Frequency - Advanced Mode	[:SENSe]:ACPower:ADVanced:OFFSet:LIST[:FREQuency] <freq>,<freq>,<freq>,<freq>,<freq>,<freq>,<freq>,<freq>
	[:SENSe]:ACPower:ADVanced:OFFSet:LIST[:FREQuency]?
Adjacent Channel Power Offset Filter Type - Advanced Mode	[:SENSe]:ACPower:ADVanced:OFFSet:FILTer:TYPE RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist
	[:SENSe]:ACPower:ADVanced:OFFSet:FILTer:TYPE?
Adjacent Channel Power Offset Rolloff Ratio - Advanced Mode	[:SENSe]:ACPower:ADVanced:FILTer[:RRC]:ALPHa <real>,<real>,<real>,<real>,<real>,<real>,<real>,<real>
	[:SENSe]:ACPower:ADVanced:FILTer[:RRC]:ALPHa?
Adjacent Channel Power Result Type	DISPlay:ACPower:RESult:TYPE CARRier|OFFSet|ALL
	DISPlay:ACPower:RESult:TYPE?
Adjacent Channel Power Rolloff Ratio	[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real>
	[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?
	:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real>
	:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa?
Adjacent Channel Power Offset Rolloff Ratio	[:SENSe]:ACPower:FILTer[:RRC]:ALPHa <real>
	[:SENSe]:ACPower:FILTer[:RRC]:ALPHa?
	:CALCulate:ACPower:FILTer[:RRC]:ALPHa <real>
	:CALCulate:ACPower:FILTer[:RRC]:ALPHa?
Adjacent Channel Power Configure	:CONFigure:ACP
Adjacent Channel Power Initiate	:INITiate:ACP
Adjacent Channel Power Read Fetch	:FETCh:ACP[n]?

Table 2.9-1 Device messages for Adjacent Channel Power measurement (Cont'd)

Function	Device Message
Adjacent Channel Power Read	:READ:ACP[n]?
Adjacent Channel Power Measure	:MEASure:ACP[n]?
All Marker Off	:CALCulate:ACPower:MARKer:AOFF
Peak Search	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
Next Peak Search	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT
Power Peak Search	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
Next Power Peak Search	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT
Minimum Search	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
Next Min Search	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT
Marker Mode	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF
	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
Zone Marker Frequency (Time)	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>
	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
Zone Marker Position	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition<integer>
	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
Marker Level Query	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
Title Entry	:DISPlay:ACPower:ANNotation:TITLe:DATA <string>
	:DISPlay:ACPower:ANNotation:TITLe:DATA?
Log Scale Range	:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>
	:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
Reference Level	:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>
	:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
Trigger Source	:TRIGger:ACPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe
	:TRIGger:ACPower[:SEQuence]:SOURce?
Average Count	[:SENSe]:ACPower:AVERage:COUNt <integer>
	[:SENSe]:ACPower:AVERage:COUNt?
Storage Mode	[:SENSe]:ACPower:AVERage[:STATe] ON|OFF|1|0
	[:SENSe]:ACPower:AVERage[:STATe]?
Resolution Bandwidth	[:SENSe]:ACPower:BANDwidth[:RESolution] <freq>
	[:SENSe]:ACPower:BANDwidth[:RESolution]?
	:CALCulate:ACPower:BANDwidth[:RESolution] <freq>
	:CALCulate:ACPower:BANDwidth[:RESolution]?
Resolution Bandwidth Auto/Manual	[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO ON|OFF|1|0
	[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
	:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO ON|OFF|1|0
	:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?

Table 2.9-1 Device messages for Adjacent Channel Power measurement (Cont'd)

Function	Device Message
Resolution Bandwidth Normal/CISPR	[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE NORMal|CISPr
	[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?
	:CALCulate:ACPower:BANDwidth[:RESolution]:MODE NORMal|CISPr
	:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?
Video Bandwidth	[:SENSe]:ACPower:BANDwidth:VIDeo <freq>
	[:SENSe]:ACPower:BANDwidth:VIDeo?
Video Bandwidth Auto/Manual	[:SENSe]:ACPower:BANDwidth:VIDeo:AUTO OFF|ON|0|1
	[:SENSe]:ACPower:BANDwidth:VIDeo:AUTO?
Detection Mode	[:SENSe]:ACPower:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS
	[:SENSe]:ACPower:DETector[:FUNCtion]?
	:CALCulate:ACPower:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS
	:CALCulate:ACPower:DETector[:FUNCtion]?
Span Frequency	[:SENSe]:ACPower:FREQuency:SPAN <freq>
	[:SENSe]:ACPower:FREQuency:SPAN?
Full Span	[:SENSe]:ACPower:FREQuency:SPAN:FULL
Trace Point	[:SENSe]:ACPower:SWEep:POINts <integer>
	[:SENSe]:ACPower:SWEep:POINts?
Sweep Time	[:SENSe]:ACPower:SWEep:TIME <time>
	[:SENSe]:ACPower:SWEep:TIME?
Sweep Time Auto/Manual	[:SENSe]:ACPower:SWEep:TIME:AUTO OFF|ON|0|1
	[:SENSe]:ACPower:SWEep:TIME:AUTO?
Relative To	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>
	:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

[:SENSe]:ACPower[:STATe] ON|OFF|1|0

Measure Adjacent Channel Power

Function

This command executes Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower[:STATe] <switch>
```

Parameter

<switch>	ACP measurement On/Off
ON|1	Sets ACP measurement to On.
OFF|0	Sets ACP measurement to Off (Default).

Example of Use

To set the ACP measurement to On.

```
ACP ON
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower[:STATe]
```

:CALCulate:ACPower[:STATe] ON|OFF|1|0

Measure Adjacent Channel Power

Function

This command executes Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower[:STATe]`.

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower[:STATe]
```

[:SENSe]:ACPower[:STATe]?

Measure Adjacent Channel Power Query

Function

This command queries the On/Off state of the Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower[:STATe]?
```

Response

```
<switch>
```

Parameter

`<switch>`	ACP measurement On/Off
`1`	On
`0`	Off

Example of Use

To query the On/Off state of the ACP measurement.

```
ACP?
> 1
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower[:STATe]?
```

:CALCulate:ACPower[:STATe]?

Measure Adjacent Channel Power Query

Function

This command queries the setting of Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower[:STATe]?`.

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower[:STATe]?
```

[:SENSe]:ACPower:CARRier[1]:RCARrier <integer>

Adjacent Channel Power Reference Carrier Select

Function

This command sets the reference carrier number for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:CARRier[1]:RCARrier <integer>
```

Parameter

<integer>		Reference carrier number
	Range	1 to Carrier Number
	Resolution	1
	Suffix code	None
	Default	1

Example of Use

To set the reference carrier number of ACP measurement to 2.

```
ACP:CARR:RCAR 2
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:RCARrier
```

:CALCulate:ACPower:CARRier[1]:RCARrier <integer>

Adjacent Channel Power Reference Carrier Select

Function

This command sets the reference carrier number for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:RCARrier.`

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]:RCARrier
```

[:SENSe]:ACPower:CARRier[1]:RCARrier?

Adjacent Channel Power Reference Carrier Select Query

Function

This command queries the reference carrier number for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:CARRier[1]:RCARrier?
```

Response

```
<integer>
```

Parameter

<integer>	Reference carrier number
Range	1 to Carrier Number
Resolution	1
Suffix code	None

Example of Use

To query the reference carrier number for Adjacent Channel Power measurement.

```
ACP:CARR1:RCAR?
> 2
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:RCARrier?
```

:CALCulate:ACPower:CARRier[1]:RCARrier?

Adjacent Channel Power Reference Carrier Select Query

Function

This command queries the reference carrier number for Adjacent Channel Power measurement.

Refer to

```
[:SENSe]:ACPower:CARRier[1]:RCARrier?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]:RCARrier?
```

[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod STOTal|CTOTal|BSIDes|CSELect

Adjacent Channel Power Reference

Function

This command sets the reference of the relative level display for ACP measurement.

Command

```
[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod <method>
```

Parameter

<method>	Reference method for the relative level display for ACP measurement.
STOTal	Sets the integral power on the entire screen as a reference (Span Total method).
CTOTal	Sets the total value of all carrier power as a reference (Carrier Total method)(Default).
BSIDes	Carrier power of the largest carrier number is used as a reference for the upper offset, while the carrier power of the smallest carrier number is used as reference (Both Sides of Carriers method).
CSELect	Uses the carrier selected in Carrier Select as a reference.

Example of Use

To set the ACP measurement method to Carrier Total method.

```
ACP:CARR:RCAR:METH CTOT
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:RCARrier:METHod
```

:CALCulate:ACPower:CARRier[1]:RCARrier:METHod STOTal|CTOTal|BSIDes|CSELect

Adjacent Channel Power Reference

Function

This command sets the reference of the relative level display for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod.`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod`

[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod?

Adjacent Channel Power Reference Query

Function

This command queries the reference of the relative level display for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod?
```

Response

```
<method>
```

Parameter

`<method>`	Reference method for the relative level display for ACP measurement.
`STOT`	Sets the integral power on the whole screen to the reference (Span Total method).
`CTOT`	Sets the total value of all the carrier power to the reference (Carrier Total method)(Default)
`BSID`	Upper offset uses the carrier power of the biggest carrier number as a reference, and the lower one uses the carrier power of the smallest carrier number as a reference (Both Sides of Carriers method).
`CSEL`	Uses the carrier selected in Carrier Select as a reference.

Example of Use

To query ACP measurement method.

```
ACP:CARR:RCAR:METH?
> CTOT
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:RCARrier:METHod?
```

:CALCulate:ACPower:CARRier[1]:RCARrier:METHod?

Adjacent Channel Power Reference Query

Function

This command queries the reference of the relative level display for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod?.`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod?`

[:SENSe]:ACPower:CORRection:NOISe[:AUTO] ON|OFF|1|0

Adjacent Channel Power Noise Cancel

Function

This command sets whether to enable the noise canceling function.

Command

```
[:SENSe]:ACPower:CORRection:NOISe[:AUTO] <switch>
```

Parameter

<switch>	Type of result display
ON|1	Enables the noise canceling function.
OFF|0	Disables the noise canceling function (Default).

Details

This command is fixed to Off and cannot be set in the following cases.

- ACP is Off.
- Standard is Off.
- Standard Parameter which can execute the noise canceling function is not set in Load Standard Parameter.
- Any of Span, RBW, Detection, Sweep Time, VBW (when Detection is not set to RMS), and VBW Mode (when VBW is not set to Off and when Detection is not set to RMS) has been changed from Standard Parameter.
- Scale Mode is Linear.

Example of Use

To disable the noise canceling function.

```
ACP:CORR:NOIS OFF
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CORRection:NOISe[:AUTO]
```

:CALCulate:ACPower:CORRection:NOISe[:AUTO] ON|OFF|1|0

Adjacent Channel Power Noise Cancel

Function

This command sets whether to enable the noise canceling function.
Refer to
`[:SENSe]:ACPower:CORRection:NOISe[:AUTO].`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CORRection:NOISe[:AUTO]`

[:SENSe]:ACPower:CORRection:NOISe[:AUTO]?

Adjacent Channel Power Noise Cancel Query

Function

This command queries whether the noise canceling function is enabled.

Query

`[:SENSe]:ACPower:CORRection:NOISe[:AUTO]?`

Response

`<switch>`

Parameter

`<switch>`	Type of result display
`1`	Enables the noise canceling function.
`0`	Disables the noise canceling function.

Details

This command is fixed to Off and cannot be set in the following cases:

- ACP is Off.
- Standard is Off.
- Standard Parameter which can execute the noise canceling function is not set in Load Standard Parameter.
- Any of Span, RBW, Detection, Sweep Time, VBW (when Detection is not set to RMS), and VBW Mode (when VBW is not set to Off and when Detection is not set to RMS) has been changed from Standard Parameter.
- Scale Mode is Linear.

Example of Use

To query the noise canceling function On/Off state.

```
ACP:CORR:NOIS?
> 0
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CORRection:NOISe[:AUTO]?
```

:CALCulate:ACPower:CORRection:NOISe[:AUTO]?

Adjacent Channel Power Noise Cancel Query

Function

This command queries whether to apply the noise canceling function. Refer to

```
[:SENSe]:ACPower:CORRection:NOISe[:AUTO]?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CORRection:NOISe[:AUTO]?
```

[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration] <freq>

Adjacent Channel Power Offset Channel Bandwidth

Function

This command sets the Offset Channel bandwidth for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration] <freq>
```

Parameter

<freq>	Offset Channel bandwidth
Range	1 to 1000000000 Hz
Resolution	1 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
Default	3.84 MHz

Example of Use

To set the offset channel bandwidth to 3.84 MHz.

```
ACP:OFFS:BAND 3.84MHZ
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration]
```

:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration] <freq>

Adjacent Channel Power Offset Channel Bandwidth

Function

This command sets the Offset Channel bandwidth for Adjacent Channel Power measurement.

Refer to

```
[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration].
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration]
```

[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration]?

Adjacent Channel Power Offset Channel Bandwidth Query

Function

This command queries the Offset Channel bandwidth for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration]?
```

Response

```
<freq>
```

Parameter

`<freq>`		Offset Channel bandwidth
	Range	1 to 1000000000 Hz
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the Offset Channel bandwidth.

```
ACP:OFFS:BAND?
> 3840000
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration]?
```

:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration]?

Adjacent Channel Power Offset Channel Bandwidth Query

Function

This command queries the Offset Channel bandwidth for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:OFFSet[1]:BANDwidth [:INTegration]?`.

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration]?
```

[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration] <freq>

Adjacent Channel Power Carrier Bandwidth

Function

This command sets the carrier measurement bandwidth for ACP measurement.

Command

```
[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]
<freq>
```

Parameter

<freq>		Inband channel bandwidth
	Range	1 to 1000000000 Hz
	Resolution	1 Hz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
		Hz is used when omitted.
	Default	3.84 MHz

Example of Use

To set the inband channel bandwidth to 3.84 MHz.

```
ACP:CARR:BAND 3.84MHZ
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]
```

:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration] <freq>

Adjacent Channel Power Carrier Bandwidth

Function

This command sets the measurement bandwidth of the carrier for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]`
.

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]
```

[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?

Adjacent Channel Power Carrier Bandwidth Query

Function

This command sets the measurement bandwidth of the carrier for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]
?
```

Response

```
<freq>
```

Parameter

<freq>		Inband channel bandwidth
	Range	1 to 1000000000 Hz
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the Inband channel bandwidth.

```
ACP:CARR:BAND?
> 3840000
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegratio
n]?
```

:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?

Adjacent Channel Power Carrier Bandwidth Query

Function

This command sets the measurement bandwidth of the carrier for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?`.

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?`

[:SENSe]:ACPower:CARRier[1]:RCFRequency <freq>

Adjacent Channel Power In Band Center

Function

This command sets the In Band center frequency for Adjacent Channel Power measurement.

Command

`[:SENSe]:ACPower:CARRier[1]:RCFRequency <freq>`

Parameter

`<freq>`		In Band center frequency
	Range	(Start Frequency) to (Stop Frequency)
	Resolution	1 Hz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
		Hz is used when omitted.
	Default	Center Frequency

Example of Use

To set In Band center frequency to 3 GHz.
`ACP:CARR:RCFR 3GHZ`

Related command

This command has the same function as the following command.
`:CALCulate:ACPower:CARRier[1]:RCFRequency`

:CALCulate:ACPower:CARRier[1]:RCFRequency <freq>

Adjacent Channel Power In Band Center

Function

This command sets the In Band center frequency for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:RCFRequency.`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CARRier[1]:RCFRequency`

[:SENSe]:ACPower:CARRier[1]:RCFRequency?

Adjacent Channel Power In Band Center Query

Function

This command queries the In Band center frequency for Adjacent Channel Power measurement.

Query

`[:SENSe]:ACPower:CARRier[1]:RCFRequency?`

Response

`<freq>`

Parameter

`<freq>`		In Band center frequency
	Range	(Start Frequency) to (Stop Frequency)
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz unit.

Example of Use

To query the In Band center frequency.

```
ACP:CARR:RCFR?
> 3000000000
```

Related command

This command has the same function as the following command.
`:CALCulate:ACPower:CARRier[1]:RCFRequency?`

:CALCulate:ACPower:CARRier[1]:RCFRequency?

Adjacent Channel Power In Band Center Query

Function

This command queries the In Band center frequency for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:RCFRequency?.`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CARRier[1]:RCFRequency?`

[:SENSe]:ACPower:CARRier[1]:COUNt <integer>

Adjacent Channel Power Carrier Number

Function

This command sets the carrier number for Adjacent Channel Power measurement.

Command

`[:SENSe]:ACPower:CARRier[1]:COUNt <integer>`

Parameter

`<integer>`	Carrier number
Range	1 to 12
Resolution	1
Suffix code	None
Default	1

Details

This command is not available when ACP Reference is set to the following:

- Span Total

Example of Use

To set the carrier number to 12.
`ACP:CARR:COUN 12`

Related command

This command has the same function as the following command.
`:CALCulate:ACPower:CARRier[1]:COUNt <integer>`

:CALCulate: ACPower:CARRier[1]:COUNt <integer>

Adjacent Channel Power Carrier Number

Function

This command sets the carrier number for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:COUNt.`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CARRier[1]:COUNt`

[:SENSe]:ACPower:CARRier[1]:COUNt?

Adjacent Channel Power Carrier Number Query

Function

This command queries the carrier number for Adjacent Channel Power measurement.

Query

`[:SENSe]:ACPower:CARRier[1]:COUNt?`

Response

`<integer>`

Parameter

`<integer>`	Carrier number
Range	1 to 12
Resolution	1
Suffix code	None

Details

The command is not available when ACP Reference is set to the following:

- Span Total

Example of Use

To query the carrier number.

```
ACP:CARR:COUN?
> 12
```

Related command

This command has the same function as the following command.
:CALCulate:ACPower:CARRier[1]:COUNt?

:CALCulate:ACPower:CARRier[1]:COUNt?

Adjacent Channel Power Carrier Number Query

Function

This command queries the carrier number for Adjacent Channel Power measurement.
Refer to
[:SENSe]:ACPower:CARRier[1]:COUNt?.

Related command

This command has the same function as the following command.
[:SENSe]:ACPower:CARRier[1]:COUNt?

[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh <freq>

Adjacent Channel Power Carrier Spacing

Function

This command sets the frequency interval among carriers for Adjacent Channel Power measurement.

Command

[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh <freq>

Parameter

<freq>		Frequency interval among carriers
	Range	0 to 1000000000 Hz
	Resolution	1 Hz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
	Default	5 MHz

Details

This command is not available when ACP Reference is set to the following:

- Span Total

Example of Use

To set the frequency interval among carriers to 12.3 MHz.

```
ACP:CARR:WIDT 12300000
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:LIST:WIDTh
```

:CALCulate:ACPower:CARRier[1]:LIST:WIDTh <freq>

Adjacent Channel Power Carrier Spacing

Function

This command sets the frequency interval among carriers for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh.`

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh
```

[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh?

Adjacent Channel Power Carrier Spacing Query

Function

This command queries the frequency interval among carriers for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh?
```

Response

```
<freq>
```

Parameter

`<freq>`		Frequency interval among carriers
	Range	0 to 1000000000 Hz
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Details

This command is available when ACP Reference is set to the following:

- Span Total

Example of Use

To query the frequency interval among carriers.

```
ACP:CARR:WIDT?
> 12300000
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:LIST:WIDTh?
```

:CALCulate:ACPower:CARRier[1]:LIST:WIDTh?

Adjacent Channel Power Carrier Spacing Query

Function

This command sets the frequency interval among carriers for Adjacent Channel Power measurement.

Refer to

```
[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh?
```

[:SENSe]:ACPower:OFFSet[1]:LIST:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Adjacent Channel Power Offset

Function

This command sets offset channel On/Off for ACP measurement.

Command

```
[:SENSe]:ACPower:OFFSet[1]:LIST:STATe
<switch_1>,<switch_2>,<switch_3>
```

Parameter

<switch_n>	Measurement channel “n” On/Off
ON|1	Measures offset channel “n”.
OFF|0	Does not measure offset channel “n”.
Default	
offset-1	On
offset-2	On
offset-3	Off

Example of Use

To set offset channel.

```
ACP:OFFS:LIST:STAT ON,ON,ON
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:OFFSet[1]:LIST:STATe
```

:CALCulate:ACPower:OFFSet[1]:LIST:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Adjacent Channel Power Offset

Function

This command sets offset channel On/Off for Adjacent Channel Power measurement.
Refer to

```
[:SENSe]:ACPower:OFFSet[1]:LIST:STATe.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:OFFSet[1]:LIST:STATe
```

[:SENSe]:ACPower:OFFSet[1]:LIST:STATe?

Adjacent Channel Power Offset Query

Function

This command queries the On/Off state of the offset channel for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:OFFSet[1]:LIST:STATe?
```

Response

```
<switch_1>,<switch_2>,<switch_3>
```

Parameter

<switch_n>	Measurement channel “n” On/Off
1	Measures the offset channel “n”.
0	Does not measure the offset channel “n”.

Example of Use

To query the On/Off state of the offset channel.

```
ACP:OFFS:LIST:STAT?
> 1,1,1
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:OFFSet[1]:LIST:STATe?
```

:CALCulate:ACPower:OFFSet[1]:LIST:STATe?

Adjacent Channel Power Offset Query

Function

This command queries the On/Off state of the offset channel for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:OFFSet[1]:LIST:STATe?.`

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:OFFSet[1]:LIST:STATe?
```

[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency] <freq>,<freq>,<freq>

Adjacent Channel Power Offset Frequency

Function

This command sets the offset frequency of Offset Channel for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]
<freq_1>,<freq_2>,<freq_3>
```

Parameter

<freq_n>	Offset frequency of offset channel “n”.
Range	–1000000000 to 1000000000 Hz
Resolution	1 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
	Hz is used when omitted.
Default	
freq-1	5 MHz
freq-2	10 MHz
freq-3	15 MHz

Example of Use

To set the offset frequency of the offset channel.

```
ACP:OFFS:LIST 30KHZ,50KHZ,50KHZ
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency]
```

:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency] <freq>,<freq>,<freq>

Adjacent Channel Power Offset Frequency

Function

This command sets the offset frequency of Offset Channel for Adjacent Channel Power measurement.

Refer to

```
[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency].
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]
```

[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]?

Adjacent Channel Power Offset Frequency Query

Function

This command queries the offset frequency of Offset Channel for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]?
```

Response

```
<freq_1>,<freq_2>,<freq_3>
```

Parameter

`<freq_n>`	Offset frequency of the offset channel “n”
Range	–1000000000 to 1000000000 Hz
Resolution	1 Hz
Suffix code	None. Value is returned in Hz units.

Example of Use

To query the offset frequency of the offset channel.

```
ACP:OFFS:LIST?
> 30000,50000,50000
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency]?
```

:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency]?

Adjacent Channel Power Offset Frequency Query

Function

This command queries the offset frequency of the offset channel for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]?`.

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]?
```

[:SENSe]:ACPower:CARRier[1]:LIST:METHod IBW|RRC|RC

Adjacent Channel Power Filter Type

Function

This command sets the filter type of the carrier for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:CARRier[1]:LIST:METHod <method>
```

Parameter

<method>	Filter type of carrier
IBW	Rectangle filter
RRC	Root Nyquist filter (Default)
RC	Nyquist filter

Example of Use

To set the filter type of the carrier for ACP measurement to Root Nyquist.

```
ACP:CARR:METH RRC
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:LIST:METHod
```

:CALCulate:ACPower:CARRier[1]:LIST:METHod IBW|RRC|RC

Adjacent Channel Power Filter Type

Function

This command sets filter type of the carrier forAdjacent Channel Power measurement.

Refer to

```
[:SENSe]:ACPower:CARRier[1]:LIST:METHod.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]:LIST:METHod
```

[:SENSe]:ACPower:CARRier[1]:LIST:METHod?

Adjacent Channel Power Filter Type Query

Function

This command queries the filter type of the carrier for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:CARRier[1]|2:LIST:METHod?
```

Response

```
<method>
```

Parameter

`<method>`	Filter type of carrier
`IBW`	Rectangle filter
`RRC`	Root Nyquist filter (Default)
`RC`	Nyquist filter

Example of Use

To query the filter type of the carrier for ACP measurement.

```
ACP:CARR:METH?
> RRC
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:LIST:METHod?
```

:CALCulate:ACPower:CARRier[1]:LIST:METHod?

Adjacent Channel Power Filter Type Query

Function

This command queries the filter type of the carrier for Adjacent Channel Power measurement.

Refer to

```
[:SENSe]:ACPower:CARRier[1]:LIST:METHod?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]|2:LIST:METHod?
```

[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE RECT|NYQuist|RNYQuist

Adjacent Channel Power Filter Type

Function

This command sets the filter type of the carrier for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE <filter>
```

Parameter

<filter>	Filter type
RECT	Rectangle filter
NYQuist	Nyquist filter
RNYQuist	Root Nyquist filter (Default)

Example of Use

To set the filter type for ACP measurement to Nyquist.

```
ACP:CARR:FILT:TYPE NYQ
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:FILTer:TYPE
```

:CALCulate:ACPower:CARRier[1]:FILTer:TYPE RECT|NYQuist|RNYQuist

Adjacent Channel Power Filter Type

Function

This command sets filter type of the carrier for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE.`

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE
```

[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?

Adjacent Channel Power Filter Type Query

Function

This command queries the filter type of the carrier for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE <filter>
```

Response

```
<filter>
```

Parameter

`<filter>`	Filter type
`RECT`	Rectangle filter
`NYQ`	Nyquist filter
`RNYQ`	Root Nyquist filter (Default)

Example of Use

To query the filter type for ACP measurement.

```
ACP:CARR:FILT:TYPE?
> NYQ
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:FILTer:TYPE?
```

:CALCulate:ACPower:CARRier[1]:FILTer:TYPE?

Adjacent Channel Power Filter Type Query

Function

This command queries filter type of the carrier for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?.`

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?
```

[:SENSe]:ACPower:FILTer[:RRC][:STATe] OFF|ON|0|1

Adjacent Channel Power Offset Filter Type

Function

This command sets the filter type of the offset channel for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:FILTer[:RRC][:STATe] <switch>
```

Parameter

<switch>	Filter type
OFF|0	Rectangle filter
ON|1	Root Nyquist filter

Example of Use

To set the filter type of the offset channel for ACP measurement to Root Nyquist.

```
ACP:FILT ON
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:FILTer[:RRC][:STATe]
```

:CALCulate:ACPower:FILTer[:RRC][:STATe] OFF|ON|0|1

Adjacent Channel Power Offset Filter Type

Function

This command sets filter type of the offset channel for Adjacent Channel Power measurement.

Refer to

```
[:SENSe]:ACPower:FILTer[:RRC][:STATe].
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:FILTer[:RRC][:STATe]
```

[:SENSe]:ACPower:FILTer[:RRC][:STATe]?

Adjacent Channel Power Offset Filter Type Query

Function

This command queries the filter type of the offset channel for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:FILTer[:RRC][:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Filter type
0	Rectangle filter, Nyquist filter
1	Root Nyquist filter

Example of Use

To query the filter type for ACP measurement.

```
ACP:FILT?
> 1
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:FILTer[:RRC][:STATe]?
```

:CALCulate:ACPower:FILTer[:RRC][:STATe]?

Adjacent Channel Power Offset Filter Type Query

Function

This command queries filter type of the offset channel for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:FILTer[:RRC][:STATe]?`.

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:FILTer[:RRC][:STATe]?
```

[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE RECT|NYQuist|RNYQuist

Adjacent Channel Power Offset Filter Type

Function

This command queries filter type of the offset for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE <filter>
```

Parameter

<filter>	Filter type
RECT	Rectangle filter
NYQuist	Nyquist filter
RNYQuist	Root Nyquist filter (Default)

Example of Use

To set filter type for ACP measurement to Nyquist.

```
ACP:OFFS:FILT:TYPE NYQ
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE
```

:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE RECT|NYQuist|RNYQuist

Adjacent Channel Power Offset Filter Type

Function

This command sets filter type of the offset for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE.`

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE
```

[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?

Adjacent Channel Power Offset Filter Type Query

Function

This command queries filter type of the offset for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?
```

Response

```
<filter>
```

Parameter

`<filter>`	Filter type
`RECT`	Rectangle filter
`NYQ`	Nyquist filter
`RNYQ`	Root Nyquist filter

Example of Use

To query filter type for ACP measurement.

```
ACP:OFFS:FILT:TYPE?
> NYQ
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE?
```

:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE?

Adjacent Channel Power Offset Filter Type Query

Function

This command queries filter type of the offset for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?.`

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?
```

[:SENSe]:ACPower:ADVanced:OFFSet:MODE NORMal|ADVanced

Adjacent Channel Power Offset Mode

Function

This command selects offset mode for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:ADVanced:OFFSet:MODE <mode>
```

Parameter

<mode>	Offset mode
NORMal	Normal setting
ADVanced	Advanced setting
Default	NORMal

Details

This function can be set when the following trace is active.

- Adjacent Channel Power

Selecting ADVanced supports addition of the settable Offset, setting of the channel width for each Offset, and selection of the filter selection.

Example of Use

To set the offset mode to Advanced.

```
ACP:ADV:OFFS:MODE ADV
```

[:SENSe]:ACPower:ADVanced:OFFSet:MODE?

Adjacent Channel Power Offset Mode Query

Function

This command queries offset mode for ACP measurement.

Query

```
[:SENSe]:ACPower:ADVanced:OFFSet:MODE?
```

Response

```
<mode>
```

Parameter

<mode>	Offset mode
NORM	Normal setting
ADV	Advanced setting

Details

This function can be set when the following trace is active.

- Adjacent Channel Power

Example of Use

To query the offset mode

```
ACP:ADV:OFFS:MODE?
> ADV
```

[:SENSe]:ACPower:ADVanced:OFFSet:BANDwidth[:INTegration] <bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>,<bandwidth>

Adjacent Channel Power Offset Channel Bandwidth

Function

This command sets offset channel bandwidth for Adjacent Channel Power measurement.

Command

```
:SENSe]:ACPower:ADVanced:OFFSet:BANDwidth[:INTegration]
<bandwidth_1>,<bandwidth_2>,<bandwidth_3>,<bandwidth_4>,
<bandwidth_5>,<bandwidth_6>,<bandwidth_7>,<bandwidth_8>
```

Parameter

<bandwidth_n>		Channel bandwidth of Offset_n
	Range	1 Hz to 125 MHz
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
	Default	3.84 MHz

Details

This function can be set when the following trace is active.

- Spectrum

To query the measurement results after executing this command, use the *WAI command to control synchronization.

Example of Use

To set the Offset Channel bandwidth to 3.84 MHz and query the results.

```
ACP:ADV:OFFS:BAND
3.84MHZ,3.84MHZ,3.84MHZ,3.84MHZ,3.84MHZ,3.84MHZ,3.84MHZ,
3.84MHZ
*WAI
FETC:ACP?
```

[:SENSe]:ACPower:ADVanced:OFFSet:BANDwidth[:INTegration]?

Adjacent Channel Power Offset Channel Bandwidth Query

Function

This command queries offset channel bandwidth for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:ADVanced:OFFSet:BANDwidth[:INTegration]
?
```

Response

```
<bandwidth_1>,<bandwidth_2>,<bandwidth_3>,<bandwidth_4>,
<bandwidth_5>,<bandwidth_6>,<bandwidth_7>,<bandwidth_8>
```

Parameter

<bandwidth_n>	Channel bandwidth of Offset_n
Range	1 Hz to 125 MHz
Resolution	1 Hz
Suffix code	None. Value is returned in Hz units.

Details

This function can be set when the following trace is active.

- Spectrum

Example of Use

To query offset channel bandwidth for ACP measurement.

```
ACP:ADV:OFFS:BAND?
>
3840000,3840000,3840000,3840000,3840000,3840000,3840000,
3840000
```

[:SENSe]:ACPower:ADVanced:OFFSet:LIST:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Adjacent Channel Power Offset

Function

This command sets the offset channel for Adjacent Channel Power measurement On/Off.

Command

```
[:SENSe]:ACPower:ADVanced:OFFSet:LIST:STATe
<switch_1>,<switch_2>,<switch_3>,<switch_4>,<switch_5>,<
switch_6>,<switch_7>,<switch_8>
```

Parameter

<switch_n>	Measurement Channel n On/Off
ON|1	Measures offset channel n
OFF|0	Does not measure offset channel n
Default	
switch_1	On
switch_2	On
switch_3	Off
switch_4	Off
switch_5	Off
switch_6	Off
switch_7	Off
switch_8	Off

Details

This function can be set when the following trace is active.

- Spectrum

To query the measurement results after executing this command, use the *WAI command to control synchronization.

Example of Use

To set the offset channel and query the results.

```
ACP:ADV:OFFS:LIST:STAT ON,ON,ON,ON,ON,ON,ON,ON
*WAI
FETC:ACP?
```

[:SENSe]:ACPower:ADVanced:OFFSet:LIST:STATe?

Adjacent Channel Power Offset Query

Function

This command queries the On/Off status of the offset channel for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:ADVanced:OFFSet:LIST:STATe?
```

Response

```
<switch_1>,<switch_2>,<switch_3>,<switch_4>,<switch_5>,<
switch_6>,<switch_7>,<switch_8>
```

Parameter

`<switch_n>`	Measurement Channel n On/Off
1	Measures offset channel n
0	Does not measure offset channel n

Details

This function can be set when the following trace is active.

- Spectrum

Example of Use

To query offset channel.

```
ACP:ADV:OFFS:LIST:STAT?
> 1,1,1,0,0,0,0,0
```

[:SENSe]:ACPower:ADVanced:OFFSet:LIST[:FREQuency] <freq>,<freq>,<freq>,<freq>,<freq>,<freq>,<freq>,<freq>

Adjacent Channel Power Offset Frequency

Function

This command sets the offset channel frequency for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:ADVanced:OFFSet:LIST[:FREQuency]
<freq_1>,<freq_2>,<freq_3>,<freq_4>,<freq_5>,<freq_6>,<f
req_7>,<freq_8>
```

Parameter

<freq_n>	Offset channel n offset frequency
Range	–125 to 125 MHz
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Default

freq_1	5 MHz
freq_2	10 MHz
freq_3	15 MHz
freq_4	15 MHz
freq_5	15 MHz
freq_6	15 MHz
freq_7	15 MHz
freq_8	15 MHz

Details

This function can be set when the following trace is active.

- Spectrum

To query the measurement results after executing this command, use the *WAI command to control synchronization.

Example of Use

To set offset channel offset frequency and query results.

```
ACP:ADV:OFFS:LIST
30KHZ,50KHZ,70KHZ,90KHZ,110KHZ,130KHZ,150KHZ,170KHZ
*WAI
FETC:ACP?
```

[:SENSe]:ACPower:ADVanced:OFFSet:LIST[:FREQuency]?

Adjacent Channel Power Offset Frequency Query

Function

This command queries the offset frequency of the offset channel for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:ADVanced:OFFSet:LIST[:FREQuency]?
```

Response

```
<freq_1>,<freq_2>,<freq_3>,<freq_4>,<freq_5>,<freq_6>,<freq_7>,<freq_8>
```

Parameter

<freq_n>	Offset channel n offset frequency
Range	–125 to 125 MHz
Resolution	1 Hz
Suffix code	None. Value is returned in Hz units.

Details

This function can be set when the following trace is active.

- Spectrum

Example of Use

To query offset channel offset frequency.

```
ACP:ADV:OFFS:LIST?
> 30000,50000,50000,50000,50000,50000,50000,50000
```

[:SENSe]:ACPower:ADVanced:OFFSet:FILTer:TYPE RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist, RECT|NYQuist|RNYQuist,RECT|NYQuist|RNYQuist

Adjacent Channel Power Offset Filter Type

Function

This command sets offset filter for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:ADVanced:OFFSet:FILTer:TYPE
<mode_1>,<mode_2>,<mode_3>,<mode_4>,<mode_5>,<mode_6>,<mode_7>,<mode_8>
```

Parameter

<mode_n>	Filter type of Offset_n
RECT	Rectangular filter
NYQuist	Nyquist filter
RNYQuist	Root Nyquist filter (Default)

Details

This function can be set when the following trace is active.

- Spectrum

To query the measurement results after executing this command, use the *WAI command to control synchronization.

Example of Use

To set ACP measurement offset channel filter type to Nyquist and query result.

```
ACP:ADV:OFFS:FILT:TYPE NYQ,NYQ,NYQ,NYQ,NYQ,NYQ,NYQ,NYQ
*WAI
FETC:ACP?
```

[:SENSe]:ACPower:ADVanced:OFFSet:FILTer:TYPE?

Adjacent Channel Power Offset Filter Type Query

Function

This command queries the offset filter for ACP measurement.

Query

```
[:SENSe]:ACPower:ADVanced:OFFSet:FILTer:TYPE?
```

Response

```
<mode_1>,<mode_2>,<mode_3>,<mode_4>,<mode_5>,<mode_6>,<mode_7>,<mode_8>
```

Parameter

<mode>	Filter type
RECT	Rectangular filter
NYQ	Nyquist filter
RNYQ	Root Nyquist filter

Details

This function can be set when the following trace is active.

- Spectrum

Example of Use

To query ACP measurement offset channel filter type.

```
ACP:ADV:OFFS:FILT:TYPE?
> NYQ,NYQ,NYQ,NYQ,NYQ,NYQ,NYQ,NYQ
```

[:SENSe]:ACPower:ADVanced:FILTer[:RRC]:ALPHa <real>

Adjacent Channel Power Offset Rolloff Ratio

Function

This command sets the roll-off rate of the Adjacent Channel Power measurement offset channel filter.

Command

```
[:SENSe]:ACPower:ADVanced:FILTer[:RRC]:ALPHa
<real_1>,<real_2>,<real_3>,<real_4>,<real_5>,<real_6>,<r
eal_7>,<real_8>
```

Parameter

<real_n>	Offset_n filter roll-off rate
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None

Details

This function can be set when the following trace is active.

- Spectrum

This function is enabled when the ACP measurement offset channel filter type (ACP Offset Filter Type) is one of the following:

- Nyquist
- Root Nyquist

To query the measurement results after executing this command, use the *WAI command to control synchronization.

Example of Use

To set the roll-off rate of the ACP measurement offset channel filter to 0.22 and query the result.

```
ACP:ADV:FILT:ALPH 0.22,0.22,0.22,0.22,0.22,0.22,0.22,0.22
*WAI
FETC:ACP?
```

[:SENSe]:ACPower:ADVanced:FILTer[:RRC]:ALPHa?

Adjacent Channel Power Offset Rolloff Ratio Query

Function

This command queries the roll-off rate of the Adjacent Channel Power measurement offset channel filter.

Command

```
[:SENSe]:ACPower:ADVanced:FILTer[:RRC]:ALPHa?
```

Response

```
<real_1>,<real_2>,<real_3>,<real_4>,<real_5>,<real_6>,<real_7>,<real_8>
```

Parameter

<real_n>		Offset_n filter roll-off rate
	Range	0.01 to 1.00
	Resolution	0.01
	Suffix code	None

Details

This function can be set when the following trace is active.

- Spectrum

This function is enabled when the ACP measurement offset channel filter type (ACP Offset Filter Type) is one of the following:

- Nyquist
- Root Nyquist

Example of Use

To query ACP measurement offset filter roll-off rate.

```
ACP:ADV:FILT:ALPH?
> 0.22,0.22,0.22,0.22,0.22,0.22,0.22,0.22
```

:DISPlay:ACPower:RESult:TYPE CARRier|OFFSet|ALL

Adjacent Channel Power Result Type

Function

This command switches the result display type for ACP measurement.

Command

```
:DISPlay:ACPower:RESult:TYPE <type>
```

Parameter

<type>	Result display type
CARRier	Sets the result display for ACP measurement to Carrier Power.
OFFSet	Sets the result display for ACP measurement to Offset Channel Power.
ALL	Sets to ALL

Example of Use

To set the result display for ACP measurement to Carrier Power.

```
DISP:ACP:RES:TYPE CARR
```

:DISPlay:ACPower:RESult:TYPE?

Adjacent Channel Power Result Type Query

Function

This command queries the type of the result display for Adjacent Channel Power measurement.

Command

```
:DISPlay:ACPower:RESult:TYPE?
```

Response

```
<type>
```

Parameter

`<type>`	Result display type
`CARR`	Sets the result display for ACP measurement Carrier Power.
`OFFS`	Sets the result display for ACP measurement to Offset Ch Power.
`ALL`	ALL

Example of Use

To query the type of the result display for ACP measurement.

```
DISP:ACP:RES:TYPE?
> CARR
```

[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real>

Adjacent Channel Power Rolloff Ratio

Function

This command sets the rolloff ratio of the filter of the reference channel for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real>
```

Parameter

<real>	Filter rolloff ratio
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None
Default	0.22

Details

This function can be set when the target ACP filter type is set to either of the following:

- Nyquist
- Root Nyquist

Cannot be set when ACP Reference is set to the following:

- Span Total

Example of Use

To set the filter rolloff ratio to 0.22.

```
ACP:CARR:LIST:FILT:ALPH 0.22
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa
```

:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real>

Adjacent Channel Power Rolloff Ratio

Function

This command sets the rolloff ratio of the filter of the reference channel for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa.`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa`

[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?

Adjacent Channel Power Rolloff Ratio Query

Function

This command sets the rolloff ratio of the filter of the reference channel for Adjacent Channel Power measurement.

Query

```
[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?
```

Response

```
<real>
```

Parameter

<real>		Filter rolloff ratio
	Range	0.01 to 1.00
	Resolution	0.01
	Suffix code	None

Details

This function is enabled when the filter type of the reference channel for ACP measurement (ACP Reference Filter Type) is set to either of the following:

- Nyquist
- Root Nyquist

The setting is not available when ACP Reference is set to the following:

- Span Total

Example of Use

To query the rolloff ratio of the filter for ACP measurement.

```
ACP:CARR:LIST:FILT:ALPH?
> 0.22
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa?
```

:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa?

Adjacent Channel Power Rolloff Ratio Query

Function

This command sets the rolloff ratio of the filter of the reference channel for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?.`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?`

[:SENSe]:ACPower:FILTer[:RRC]:ALPHa <real>

Adjacent Channel Power Offset Rolloff Ratio

Function

This command sets the rolloff ratio of the filter of the offset channel for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:FILTer[:RRC]:ALPHa <real>
```

Parameter

<real>	Filter rolloff ratio
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None

Details

This function is enabled when the filter type of the offset channel for ACP measurement(ACP Offset Filter Type) is set to either of the following:

- Nyquist
- Root Nyquist

Example of Use

To set the rolloff ratio of the filter for ACP measurement to 0.22.

```
ACP:FILT:ALPH 0.22
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:FILTer[:RRC]:ALPHa
```

:CALCulate:ACPower:FILTer[:RRC]:ALPHa <real>

Adjacent Channel Power Offset Rolloff Ratio

Function

This command sets the rolloff ratio of the filter of the offset channel for Adjacent Channel Power measurement.
Refer to

```
[:SENSe]:ACPower:FILTer[:RRC]:ALPHa.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:ACPower:FILTer[:RRC]:ALPHa
```

[:SENSe]:ACPower:FILTer[:RRC]:ALPHa?

Adjacent Channel Power Offset Rolloff Ratio Query

Function

This command sets the rolloff ratio of the filter of the offset channel for Adjacent Channel Power measurement.

Command

```
[:SENSe]:ACPower:FILTer[:RRC]:ALPHa?
```

Response

```
<real>
```

Parameter

<real>	Filter rolloff ratio
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None

Details

This function is enabled when the filter type of the offset channel for ACP measurement (ACP Offset Filter Type) is set to either of the following:

- Nyquist
- Root Nyquist

Example of Use

To query the rolloff ratio of the filter for ACP measurement.

```
ACP:FILT:ALPH?
> 0.22
```

Related command

This command has the same function as the following command.

```
:CALCulate:ACPower:FILTer[:RRC]:ALPHa?
```

:CALCulate:ACPower:FILTer[:RRC]:ALPHa?

Adjacent Channel Power Offset Rolloff Ratio Query

Function

This command queries the rolloff ratio of the filter of the offset channel for Adjacent Channel Power measurement.
Refer to
`[:SENSe]:ACPower:FILTer[:RRC]:ALPHa?.`

Related command

This command has the same function as the following command.
`[:SENSe]:ACPower:FILTer[:RRC]:ALPHa?`

:CONFigure:ACP

Adjacent Channel Power Configure

Function

This command sets the Adjacent Channel Power measurement to On.

Command

`:CONFigure:ACP`

Details

No measurement is performed.

Example of Use

To set ACP measurement to On.
`CONF:ACP`

:INITiate:ACP

Adjacent Channel Power Initiate

Function

This command starts Adjacent Channel Power measurement.

Command

```
:INITiate:ACP
```

Details

ACP measurement is set to On and the measurement starts, when this function is executed.

To read out the measurement results after executing this command, perform the synchronization control using the "*WAI" command.

Example of Use

To start ACP measurement.

```
INIT:ACP
```

:FETCh:ACP[n]?

Adjacent Channel Power Read Fetch

Function

This command outputs the measurement result for Adjacent Channel Power measurement.

Query

```
:FETCh:ACP[n]?
```

Response

When the result mode is “A”:
When Offset Setup Mode is Normal
When ACP measurement (ACP Result Type is OFFSet)
Two values of ref_carrier_a is output when ACP Reference is BSIDes.

<ref_carrier_a>(,<ref_carrier_a>),
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>
(in n=1 or when omitted)

In ACP measurement (when ACP Result Type is CARRier)

<integration_abs>,<total_carrier_a>,<power_1>,
<power_2>,<power_3>,<power_4>,<power_5>,<power_6>,
<power_7>,<power_8>,<power_9>,<power_10>,
<power_11>,<power_12>
(n=1 or when omitted)

In ACP measurement (when ACP Result Type is ALL)

<integration_abs>,<total_carrier_a>,
<power_1>,<power_2>,<power_3>,<power_4>,
<power_5>,<power_6>,<power_7>,<power_8>,
<power_9>,<power_10>,<power_11>,<power_12>,
<ref_carrier_a>(,<ref_carrier_a>),
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>
(n=1 or when omitted)

When Offset Setup Mode is Advanced

In ACP measurement (when ACP Result Type is OFFSet)

Two values of ref_carrier_a are output when ACP Reference is BSIDes.

<ref_carrier_a>(,<ref_carrier_a>),
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>,
<lower_offset_4_rel>,<lower_offset_4_abs>,
<upper_offset_4_rel>,<upper_offset_4_abs>,
<lower_offset_5_rel>,<lower_offset_5_abs>,
<upper_offset_5_rel>,<upper_offset_5_abs>,
<lower_offset_6_rel>,<lower_offset_6_abs>,
<upper_offset_6_rel>,<upper_offset_6_abs>,
<lower_offset_7_rel>,<lower_offset_7_abs>,
<upper_offset_7_rel>,<upper_offset_7_abs>,
<lower_offset_8_rel>,<lower_offset_8_abs>,
<upper_offset_8_rel>,<upper_offset_8_abs>

(n=1 or when omitted)

In ACP measurement (when ACP Result Type is CARRier)

<integration_abs>,<total_carrier_a>,
<power_1>,<power_2>,<power_3>,<power_4>,
<power_5>,<power_6>,<power_7>,<power_8>,
<power_9>,<power_10>,<power_11>,<power_12>

(n=1 or when omitted)

In ACP measurement (when ACP Result Type is ALL)

Two values of ref_carrier_a are output when ACP Reference is BSIDes.

<integration_abs>,<total_carrier_a>,
<power_1>,<power_2>,<power_3>,<power_4>,
<power_5>,<power_6>,<power_7>,<power_8>,
<power_9>,<power_10>,<power_11>,<power_12>,
<ref_carrier_a>(,<ref_carrier_a>),
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>,
<lower_offset_4_rel>,<lower_offset_4_abs>,
<upper_offset_4_rel>,<upper_offset_4_abs>,
<lower_offset_5_rel>,<lower_offset_5_abs>,
<upper_offset_5_rel>,<upper_offset_5_abs>,
<lower_offset_6_rel>,<lower_offset_6_abs>,
<upper_offset_6_rel>,<upper_offset_6_abs>,
<lower_offset_7_rel>,<lower_offset_7_abs>,
<upper_offset_7_rel>,<upper_offset_7_abs>,
<lower_offset_8_rel>,<lower_offset_8_abs>,
<upper_offset_8_rel>,<upper_offset_8_abs>

(n=1 or when omitted)

When the result mode is “B”.

When Offset Setup Mode is Normal

When the Carrier Number is 1 and when only the Offset-1 is On.

<ref_carrier_b>,<lower_offset_1_rel>,
<upper_offset_1_rel>

Other than the above

0.0,<total_carrier_b>,0.0,<ref_carrier_b>,
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>

(n = 1 or when omitted, and when ACP Reference is other than Both Sides of Carriers)

0.0,<total_carrier_b>,
<ref_carrier_lower>,<ref_carrier_upper>,
<lower_offset_1_rel>,<lower_offset_1_abs>,

<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>

(n = 1 or when omitted, and when ACP Reference is Both Sides of Carriers)

<channel_1_rel>,<channel_1_abs>,
<channel_2_rel>,<channel_2_abs>,
.....
<channel_12_rel>,<channel_12_abs>,
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>

(in n=2)

When Offset Setup Mode is Advanced

When Carrier Number = 1 AND only Offset-1 = On

<ref_carrier_b>,<lower_offset_1_rel>,
<upper_offset_1_rel>

Other than the above

0.0,<total_carrier_b>,0.0,<ref_carrier_b>,
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>,
<lower_offset_4_rel>,<lower_offset_4_abs>,
<upper_offset_4_rel>,<upper_offset_4_abs>,
<lower_offset_5_rel>,<lower_offset_5_abs>,
<upper_offset_5_rel>,<upper_offset_5_abs>,
<lower_offset_6_rel>,<lower_offset_6_abs>,
<upper_offset_6_rel>,<upper_offset_6_abs>,
<lower_offset_7_rel>,<lower_offset_7_abs>,
<upper_offset_7_rel>,<upper_offset_7_abs>,
<lower_offset_8_rel>,<lower_offset_8_abs>,
<upper_offset_8_rel>,<upper_offset_8_abs>

(n=1 or when omitted, and when ACP Reference is not Both Sides of Carriers)

0.0,<total_carrier_b>,
<ref_carrier_lower>,<ref_carrier_upper>,
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>,
<lower_offset_4_rel>,<lower_offset_4_abs>,
<upper_offset_4_rel>,<upper_offset_4_abs>,
<lower_offset_5_rel>,<lower_offset_5_abs>,
<upper_offset_5_rel>,<upper_offset_5_abs>,
<lower_offset_6_rel>,<lower_offset_6_abs>,
<upper_offset_6_rel>,<upper_offset_6_abs>,
<lower_offset_7_rel>,<lower_offset_7_abs>,
<upper_offset_7_rel>,<upper_offset_7_abs>,
<lower_offset_8_rel>,<lower_offset_8_abs>,
<upper_offset_8_rel>,<upper_offset_8_abs>

(n=1 or when omitted, and when ACP Reference is Both Sides of Carriers)

<channel_1_rel>,<channel_1_abs>,
<channel_2_rel>,<channel_2_abs>,
.....
<channel_12_rel>,<channel_12_abs>,
<lower_offset_1_rel>,<lower_offset_1_abs>,
<upper_offset_1_rel>,<upper_offset_1_abs>,
<lower_offset_2_rel>,<lower_offset_2_abs>,
<upper_offset_2_rel>,<upper_offset_2_abs>,
<lower_offset_3_rel>,<lower_offset_3_abs>,
<upper_offset_3_rel>,<upper_offset_3_abs>,
<lower_offset_4_rel>,<lower_offset_4_abs>,
<upper_offset_4_rel>,<upper_offset_4_abs>,
<lower_offset_5_rel>,<lower_offset_5_abs>,
<upper_offset_5_rel>,<upper_offset_5_abs>,
<lower_offset_6_rel>,<lower_offset_6_abs>,
<upper_offset_6_rel>,<upper_offset_6_abs>,
<lower_offset_7_rel>,<lower_offset_7_abs>,
<upper_offset_7_rel>,<upper_offset_7_abs>,
<lower_offset_8_rel>,<lower_offset_8_abs>,
<upper_offset_8_rel>,<upper_offset_8_abs>

(n=2)

Parameter

<lower_offset_n_rel>	Relative power of the lower Offset-n
<upper_offset_n_rel>	Relative power of the upper Offset-n
	No suffix code, dB units, 0.01 dB resolution –999.0 is returned when an error occurs/no measurement is performed.
<ref_carrier_b>	Power of the reference carrier
<ref_carrier_lower>	Power of the carrier on the left
<ref_carrier_upper>	Power of the carrier on the right
<total_carrier_b>	Total power of all the carriers
<channel_n_rel>	Relative power of the carrier “n” to the carrier “m”. However, “m” is a value rounded out from Carrier Number ÷ 2.
<lower_offset_n_abs>	Absolute power of the lower Offset-n
<upper_offset_n_abs>	Absolute power of the upper Offset-n
	No suffix code, dBm unit, 0.01 dB resolution –999.0 is returned when an error occurs/no measurement is performed.
<integration_abs>	Absolute value of the integral power on the whole screen
<ref_carrier_a>	Power of the reference carrier
<total_carrier_a>	Total power of all the carriers
<power_n>	Absolute value of the power of carrier –n
	Without a suffix code, Log Scale Unit (Note: dBm units for V, W units for W) –999.0 is returned when an error has occurred or no measurement is performed.

Details

This function outputs the measurement result of the ACP measurement last performed. It is possible to output the measurement result in a state that the measurement has already been done, and in a different style. You can use READ command if you perform a remeasurement along with starting a sweep again.
The return values of this function change according to the result mode. (cf. `:SYSTem:RESult:MODE`)

Example of Use

To query the measurement result of ACP measurement.

```
FETC:ACP?
>
0.0,-72.130,0.0,-72.130,-1.270,-73.400,-0.570,-72.700,-0
.780,-72.910,-1.030,-73.160,-999.0,-999.0,-999.0,-999.0
```

:READ:ACP[n]?

Adjacent Channel Power Read

Function

This command performs the Adjacent Channel Power measurement and outputs the measurement result.
It achieves the same result as when commands are sent in the order of

```
:INITiate:ACP
:*WAI
:FETCh:ACP[n]?
```

:MEASure:ACP[n]?

Adjacent Channel Power Measure

Function

This command performs the measurement of Adjacent Channel Power measurement and outputs the measurement result.
It achieves the same result as when commands are sent in the order of

```
:CONFigure:ACP
:INITiate:ACP
:*WAI
:FETCh:ACP[n]?
```

:CALCulate:ACPower:MARKer:AOFF

All Marker Off

Function

This command sets all the markers to Off.
Refer to
`:CALCulate:MARKer:AOFF`.

Related command

This command has the same function as the following commands.

```
:CALCulate:MARKer:AOFF
:CALCulate:ACPower:MARKer:AOFF
:CALCulate:BPOWer|:TXPower:MARKer:AOFF
```

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

Peak Search

Function

This command searches for the maximum level point of the active trace and moves the marker point.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum.`

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum`

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT

Next Peak Search

Function

This command searches for the features of the active trace and moves the marker point to a peak point whose level is smaller than the current marker level.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT.`

Related command

This command has the same function as the following command.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT`

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

Power Peak Search

Function

This command moves the active marker to the position with peak total power in the active marker zone in the measurement band.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

Related command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT

Next Power Peak Search

Function

This command searches for the next largest peak power in the zone width compared to the total power of the zone with the active marker in the measurement band and moves the active marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT

Related command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum POWer:NEXT

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

Minimum Search

Function

This command searches for the minimum level point of the active trace and moves the marker point to that point.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`

Related Command

This command has the same function as the following command.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT

Next Minimum Search

Function

This command searches for the next dip of the active trace and moves the marker point to that point.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT`

Related Command

This command has the same function as the following command.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT`

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF

Marker Mode

Function

This command sets the marker mode.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

Marker Mode Query

Function

This command queries the marker mode.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>

Zone Marker Frequency (Time)

Function

This command moves the center of the zone marker to the specified frequency or time.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X`.

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X`

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

Zone Marker Frequency (Time) Query

Function

This command queries the center of the zone marker.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`.

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>

Zone Marker Position

Function

This command moves the center of the zone marker to the specified position.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

Zone Marker Position Query

Function

This command queries the center position of the zone marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?

Marker Level Query

Function

This command queries the level at the marker point.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?.`

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?`
`:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?`

:DISPlay:ACPower:ANNotation:TITLe:DATA <string>

Title Entry

Function

This command registers the title character string.
Refer to
`:DISPlay:ANNotation:TITLe:DATA.`

Related command

This command has the same function as the following commands.
`:DISPlay:ANNotation:TITLe:DATA`
`:DISPlay:CHPower:ANNotation:TITLe:DATA`
`:DISPlay:OBWidth:ANNotation:TITLe:DATA`
`:DISPlay:SEMask:ANNotation:TITLe:DATA`
`:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA`

:DISPlay:ACPower:ANNotation:TITLe:DATA?

Title Entry Query

Function

This command queries the title character string.
Refer to
:DISPlay:ANNotation:TITLe:DATA?.

Related command

This command has the same function as the following commands.
:DISPlay:ANNotation:TITLe:DATA?
:DISPlay:CHPower:ANNotation:TITLe:DATA?
:DISPlay:OBWidth:ANNotation:TITLe:DATA?
:DISPlay:SEMask:ANNotation:TITLe:DATA?
:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA?

:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>

Log Scale Range

Function

This command sets the Y-axis scale magnification when Scale Mode is set to Log. Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

Log Scale Range Query

Function

This command queries the Y-axis scale magnification when Scale Mode is set to Log. Refer to `:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?`.

Related command

This command has the same function as the following commands.

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
```

:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>

Reference Level

Function

This command sets the reference level.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel

:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

Reference Level Query

Function

This command queries the reference level.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

:TRIGger:ACPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe

Trigger Source

Function

This command selects the trigger source.
Refer to
`:TRIGger[:SEQuence]:SOURce.`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:SOURce`
`:TRIGger:CHPower[:SEQuence]:SOURce`
`:TRIGger:OBWidth[:SEQuence]:SOURce`
`:TRIGger:SEMask[:SEQuence]:SOURce`
`:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce`

:TRIGger:ACPower[:SEQuence]:SOURce?

Trigger Source Query

Function

This command queries the trigger source.
Refer to
`:TRIGger[:SEQuence]:SOURce?.`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:SOURce?`
`:TRIGger:CHPower[:SEQuence]:SOURce?`
`:TRIGger:OBWidth[:SEQuence]:SOURce?`
`:TRIGger:SEMask[:SEQuence]:SOURce?`
`:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce?`

[:SENSe]:ACPower:AVERage:COUNt <integer>

Average Count

Function

This command sets the storage count.
Refer to
`[:SENSe]:AVERage:COUNt.`

Related command

This command has the same function as the following commands.
`[:SENSe]:AVERage:COUNt`
`[:SENSe]:CHPower:AVERage:COUNt`
`[:SENSe]:OBWidth:AVERage:COUNt`
`[:SENSe]:SEMask:AVERage:COUNt`
`[:SENSe]:BPOWer|:TXPower:AVERage:COUNt`

[:SENSe]:ACPower:AVERage:COUNt?

Average Count Query

Function

This command queries the storage count.
Refer to
`[:SENSe]:AVERage:COUNt?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:AVERage:COUNt?`
`[:SENSe]:CHPower:AVERage:COUNt?`
`[:SENSe]:OBWidth:AVERage:COUNt?`
`[:SENSe]:SEMask:AVERage:COUNt?`
`[:SENSe]:BPOWer|:TXPower:AVERage:COUNt?`

[:SENSe]:ACPower:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function

This command sets the storage mode for Trace A.
Refer to
`:TRACe[1]|2|3|4|5|6:STORage:MODE.`

Related command

This command has the same function as the following commands.
`:TRACe[1]|2|3|4|5|6:STORage:MODE`
`[:SENSe]:CHPower:AVERage[:STATe]`
`[:SENSe]:OBWidth:AVERage[:STATe]`
`[:SENSe]:SEMask:AVERage[:STATe]`
`[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]`
`[:SENSe]:SPURious:AVERage[:STATe]`

[:SENSe]:ACPower:AVERage[:STATe]?

Storage Mode Query

Function

This command queries the storage mode for Trace A.
Refer to
`:TRACe[1]|2|3|4|5|6:STORage:MODE?.`

Related command

This command has the same function as the following commands.
`:TRACe[1]|2|3|4|5|6:STORage:MODE?`
`[:SENSe]:CHPower:AVERage[:STATe]?`
`[:SENSe]:OBWidth:AVERage[:STATe]?`
`[:SENSe]:SEMask:AVERage[:STATe]?`
`[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?`
`[:SENSe]:SPURious:AVERage[:STATe]?`

[:SENSe]:ACPower:BANDwidth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW).
Refer to
[:SENSe]:BANDwidth|:BWIDth[:RESolution].

Related command

This command has the same function as the following commands.
[:SENSe]:BANDwidth|:BWIDth[:RESolution]
[:SENSe]:CHPower:BANDwidth[:RESolution]
[:SENSe]:OBWidth:BANDwidth[:RESolution]
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]
:CALCulate:BANDwidth|:BWIDth[:RESolution]
:CALCulate:ACPower:BANDwidth[:RESolution]
:CALCulate:CHPower:BANDwidth[:RESolution]
:CALCulate:OBWidth:BANDwidth[:RESolution]
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]

:CALCulate:ACPower:BANDwidth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW).
Refer to
[:SENSe]:BANDwidth|:BWIDth[:RESolution].

Related command

This command has the same function as the following commands.
[:SENSe]:BANDwidth|:BWIDth[:RESolution]
[:SENSe]:ACPower:BANDwidth[:RESolution]
[:SENSe]:CHPower:BANDwidth[:RESolution]
[:SENSe]:OBWidth:BANDwidth[:RESolution]
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]
:CALCulate:BANDwidth|:BWIDth[:RESolution]
:CALCulate:CHPower:BANDwidth[:RESolution]
:CALCulate:OBWidth:BANDwidth[:RESolution]
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]

[:SENSe]:ACPower:BANDwidth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]?`
`:CALCulate:ACPower:BANDwidth|:BWIDth[:RESolution]?`
`:CALCulate:CHPower:BANDwidth[:RESolution]?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?`

:CALCulate:ACPower:BANDwidth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]`
`[:SENSe]:ACPower:BANDwidth[:RESolution]?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]?`
`:CALCulate:CHPower:BANDwidth[:RESolution]?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?`

[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO ON|OFF|1|0

Resolution Bandwidth Auto/Manual

Function

This command enables/disables the automatic resolution bandwidth (RBW) setting function.
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO
```

:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO ON|OFF|1|0

Resolution Bandwidth Auto/Manual

Function

This command sets the resolution bandwidth (RBW) automatically.
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO
```

[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?

Resolution Bandwidth Auto/Manual Query

Function

This command queries whether the automatic setting of the resolution bandwidth (RBW) is on or off.
Refer to `[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth [:RESolution]:AUTO?
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
```

:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?

Resolution Bandwidth Auto/Manual Query

Function

This command queries whether the automatic setting of the resolution bandwidth (RBW) is on or off.
Refer to `[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO?
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
```

[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

:CALCulate:ACPower:BANDwidth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?`.

Related Command

This command has the same function as the following commands.
`[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?`
`:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?`
`:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?`

:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?`.

Related Command

This command has the same function as the following commands.
`[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?`
`:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?`
`:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?`

[:SENSe]:ACPower:BANDwidth:VIDeo <freq>

Video Bandwidth

Function

This command sets the video bandwidth (VBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo`
`[:SENSe]:CHPower:BANDwidth:VIDeo`
`[:SENSe]:OBWidth:BANDwidth:VIDeo`

[:SENSe]:ACPower:BANDwidth:VIDeo?

Video Bandwidth Query

Function

This command queries the video bandwidth (VBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo?`
`[:SENSe]:CHPower:BANDwidth:VIDeo?`
`[:SENSe]:OBWidth:BANDwidth:VIDeo?`

[:SENSe]:ACPower:BANDwidth:VIDeo:AUTO OFF|ON|0|1

Video Bandwidth Auto/Manual

Function

This command sets the video bandwidth (VBW) automatically.
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO`
`[:SENSe]:CHPower:BANDwidth:VIDeo:AUTO`
`[:SENSe]:OBWidth:BANDwidth:VIDeo:AUTO`

[:SENSe]:ACPower:BANDwidth:VIDeo:AUTO?

Video Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic video bandwidth (VBW) setting.
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?`
`[:SENSe]:CHPower:BANDwidth:VIDeo:AUTO?`
`[:SENSe]:OBWidth:BANDwidth:VIDeo:AUTO?`

[:SENSe]:ACPower:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS

Detection Mode

Function

This command selects the detection mode for the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion]`.

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]`
`[:SENSe]:CHPower:DETector[:FUNCtion]`
`[:SENSe]:OBWidth:DETector[:FUNCtion]`
`:CALCulate:DETector[:FUNCtion]`
`:CALCulate:ACPower:DETector[:FUNCtion]`
`:CALCulate:CHPower:DETector[:FUNCtion]`
`:CALCulate:OBWidth:DETector[:FUNCtion]`

:CALCulate:ACPower:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS

Detection Mode

Function

This command selects the detection mode for the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion]`.

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]`
`[:SENSe]:ACPower:DETector[:FUNCtion]`
`[:SENSe]:CHPower:DETector[:FUNCtion]`
`[:SENSe]:OBWidth:DETector[:FUNCtion]`
`[:SENSe]:SEMask:DETector:CARRier[:FUNCtion]`
`:CALCulate:DETector[:FUNCtion]`
`:CALCulate:CHPower:DETector[:FUNCtion]`
`:CALCulate:OBWidth:DETector[:FUNCtion]`

[:SENSe]:ACPower:DETector[:FUNCtion]?

Detection Mode Query

Function

This command queries the detection mode for the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion]?`.

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]?`
`[:SENSe]:CHPower:DETector[:FUNCtion]?`
`[:SENSe]:OBWidth:DETector[:FUNCtion]?`
`:CALCulate:DETector[:FUNCtion]?`
`:CALCulate:ACPower:DETector[:FUNCtion]?`
`:CALCulate:CHPower:DETector[:FUNCtion]?`
`:CALCulate:OBWidth:DETector[:FUNCtion]?`

:CALCulate:ACPower:DETector[:FUNCtion]?

Detection Mode Query

Function

This command queries the detection mode for the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion]?`.

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]?`
`[:SENSe]:ACPower:DETector[:FUNCtion]?`
`[:SENSe]:CHPower:DETector[:FUNCtion]?`
`[:SENSe]:OBWidth:DETector[:FUNCtion]?`
`:CALCulate:DETector[:FUNCtion]?`
`:CALCulate:CHPower:DETector[:FUNCtion]?`
`:CALCulate:OBWidth:DETector[:FUNCtion]?`

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

Span Frequency

Function

This command sets the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN`
`[:SENSe]:CHPower:FREQuency:SPAN`
`[:SENSe]:OBWidth:FREQuency:SPAN`

[:SENSe]:ACPower:FREQuency:SPAN?

Span Frequency Query

Function

This command queries the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN?`
`[:SENSe]:CHPower:FREQuency:SPAN?`
`[:SENSe]:OBWidth:FREQuency:SPAN?`

[:SENSe]:ACPower:FREQuency:SPAN:FULL

Full Span

Function

This command maximizes the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN:FULL.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN:FULL`
`[:SENSe]:CHPower:FREQuency:SPAN:FULL`
`[:SENSe]:OBWidth:FREQuency:SPAN:FULL`

[:SENSe]:ACPower:SWEep:POINts <integer>

Trace Point

Function

This command sets the number of the trace display points.
Refer to
`[:SENSe]:SWEep:POINts.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:POINts`
`[:SENSe]:CHPower:SWEep:POINts`
`[:SENSe]:OBWidth:SWEep:POINts`

[:SENSe]:ACPower:SWEep:POINts?

Trace Point Query

Function

This command queries the number of the trace display points.
Refer to
`[:SENSe]:SWEep:POINts?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:POINts?`
`[:SENSe]:CHPower:SWEep:POINts?`
`[:SENSe]:OBWidth:SWEep:POINts?`

[:SENSe]:ACPower:SWEep:TIME <time>

Sweep Time

Function

This command sets the sweep time.
Refer to
[:SENSe]:SWEep:TIME.

Related command

This command has the same function as the following commands.
[:SENSe]:SWEep:TIME
[:SENSe]:CHPower:SWEep:TIME
[:SENSe]:OBWidth:SWEep:TIME
[:SENSe]:BPOWer|:TXPower:SWEep:TIME

[:SENSe]:ACPower:SWEep:TIME?

Sweep Time Query

Function

This command queries the sweep time.
Refer to
[:SENSe]:SWEep:TIME?.

Related command

This command has the same function as the following commands.
[:SENSe]:SWEep:TIME?
[:SENSe]:CHPower:SWEep:TIME?
[:SENSe]:OBWidth:SWEep:TIME?
[:SENSe]:BPOWer|:TXPower:SWEep:TIME?

[:SENSe]:ACPower:SWEep:TIME:AUTO OFF|ON|0|1

Sweep Time Auto/Manual

Function

This command enables/disables the automatic sweep time setting function.
Refer to
`[:SENSe]:SWEep:TIME:AUTO`.

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME:AUTO`
`[:SENSe]:CHPower:SWEep:TIME:AUTO`
`[:SENSe]:OBWidth:SWEep:TIME:AUTO`

[:SENSe]:ACPower:SWEep:TIME:AUTO?

Sweep Time Auto/Manual Query

Function

This command queries the On/Off state of the automatic sweep time.
Refer to
`[:SENSe]:SWEep:TIME:AUTO?`.

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME:AUTO?`
`[:SENSe]:CHPower:SWEep:TIME:AUTO?`
`[:SENSe]:OBWidth:SWEep:TIME:AUTO?`

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>

Relative To

Function

This command sets the reference marker when the marker mode is set to Delta.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

Relative To

Function

This command queries the reference marker reading when the marker mode is set to Delta.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

2.10 Burst Average Power

Table 2.10-1 lists device messages for Burst Average Power measurement.

Table 2.10-1 Device messages for Burst Average Power measurement

Function	Device Message
Measure Burst Average Power	[:SENSe]:BPOWer|:TXPower[:STATe] ON|OFF|1|0
	[:SENSe]:BPOWer|:TXPower[:STATe]?
	:CALCulate:BPOWer|:TXPower[:STATe] ON|OFF|1|0
	:CALCulate:BPOWer|:TXPower[:STATe]?
Noise Cancel	[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO] ON|OFF|1|0
	[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO]?
	:CALCulate:BPOWer|:TXPower:CORRection:NOISe[:AUTO] ON|OFF|1|0
	:CALCulate:BPOWer|:TXPower:CORRection:NOISe[:AUTO]?
Burst Average Power Start Time	[:SENSe]:BPOWer|:TXPower:BURSt:STARt <time>
	[:SENSe]:BPOWer|:TXPower:BURSt:STARt?
	:CALCulate:BPOWer|:TXPower:BURSt:STARt <time>
	:CALCulate:BPOWer|:TXPower:BURSt:STARt?
Burst Average Power Stop Time	[:SENSe]:BPOWer|:TXPower:BURSt:STOP <time>
	[:SENSe]:BPOWer|:TXPower:BURSt:STOP?
	:CALCulate:BPOWer|:TXPower:BURSt:STOP <time>
	:CALCulate:BPOWer|:TXPower:BURSt:STOP?
Burst Average Power Configure	:CONFigure:BPOWer|:TXPower
Burst Average Power Initiate	:INITiate:BPOWer|:TXPower
Burst Average Power Fetch	:FETCh:BPOWer|:TXPower[n]?
Burst Average Power Read	:READ:BPOWer|:TXPower[n]?
Burst Average Power Measure	:MEASure:BPOWer|:TXPower[n]?
Burst Average Power Width	[:SENSe]:BPOWer|:TXPower:BURSt:WIDTh <time>
	[:SENSe]:BPOWer|:TXPower:BURSt:WIDTh?
Title Entry	:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA <string>
	:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA?
Log Scale Range	:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>
	:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
Reference Level	:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>
	:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

Table 2.10-1 Device messages for Burst Average Power measurement (Cont'd)

Function	Device Message
Trigger Source	:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe
	:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce?
Average Count	[:SENSe]:BPOWer|:TXPower:AVERage:COUNt <integer>
	[:SENSe]:BPOWer|:TXPower:AVERage:COUNt?
Storage Mode	[:SENSe]:BPOWer|:TXPower:AVERage[:STATe] ON|OFF|1|0
	[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?
Sweep Time	[:SENSe]:BPOWer|:TXPower:SWEep:TIME <time>
	[:SENSe]:BPOWer|:TXPower:SWEep:TIME?
Marker Mode	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF
	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
Zone Marker Frequency (Time)	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>
	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
Zone Marker Position	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>
	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition ?
Marker Level Query	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
All Marker Off	:CALCulate:BPOWer|:TXPower:MARKer:AOFF
Peak Search	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
Power Peak Search	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
Minimum Search	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
Resolution Bandwidth	[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution] <freq>
	[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?
	:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution] <freq>
	:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?
Resolution Bandwidth Normal/CISPR	[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE NORMal|CISPr
	[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
	:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE NORMal|CISPr
	:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
Relative To	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>
	:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence ?

[:SENSe]:BPOWer|:TXPower[:STATe] ON|OFF|1|0

Measure Burst Average Power

Function

This command executes Burst Average Power measurement.

Command

```
[:SENSe]:BPOWer|:TXPower[:STATe] <switch>
```

Parameter

`<switch>`	Burst Average Power measurement On/Off
`ON|1`	Sets Burst Average Power measurement On.
`OFF|0`	Sets Burst Average Power measurement Off.

Example of Use

To set Burst Average Power measurement On.

```
BPOW ON
```

Related command

This command has the same function as the following command.

```
:CALCulate:BPOWer|:TXPower[:STATe]
```

:CALCulate:BPOWer|:TXPower[:STATe] ON|OFF|1|0

Measure Burst Average Power

Function

This command executes Burst Average Power measurement.
Refer to
`[:SENSe]:BPOWer|:TXPower[:STATe]`.

Related command

This command has the same function as the following command.

```
[:SENSe]:BPOWer|:TXPower[:STATe]
```

[:SENSe]:BPOWer|:TXPower[:STATe]?

Measure Burst Average Power Query

Function

This command queries the On/Off state of the Burst Average Power measurement.

Query

```
[:SENSe]:BPOWer|:TXPower[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Burst Average Power measurement On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the Burst Average Power measurement.

```
BPOW?
> 1
```

Related command

This command has the same function as the following command.

```
:CALCulate:BPOWer|:TXPower[:STATe]?
```

:CALCulate:BPOWer|:TXPower[:STATe]?

Measure Burst Average Power Query

Function

This command queries the setting of Burst Average Power measurement. Refer to

```
[:SENSe]:BPOWer|:TXPower[:STATe]?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:BPOWer|:TXPower[:STATe]?
```

[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO] ON|OFF|1|0

Noise Cancel

Function

This command enables/disables the noise canceling function.

Command

```
[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO] <switch>
```

Parameter

`<switch>`	Noise canceling function On/Off
`ON|1`	Enables the noise canceling function.
`OFF|0`	Disables the noise canceling function.

Details

This command is fixed to Off and cannot be set in the following cases:

- Burst Average Power is Off.
- Standard is Off.
- Standard Parameter which can execute the noise canceling function is not set in Load Standard Parameter.
- Any of Span, RBW, Detection, Sweep Time, VBW (when Detection is not set to RMS), and VBW Mode (when VBW is not set to Off and when Detection is not set to RMS) has been changed from Standard Parameter.
- Scale Mode is Linear.

Example of Use

To disable the noise canceling function.

```
BPOW:CORR:NOIS OFF
```

Related command

This command has the same function as the following command.

```
:CALCulate:BPOWer|:TXPower:CORRection:NOISe[:AUTO]
```

:CALCulate:BPOWer|:TXPower:CORRection:NOISe[:AUTO] ON|OFF|1|0

Noise Cancel

Function

This command sets whether to enable the noise canceling function.
Refer to
`[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO].`

Related command

This command has the same function as the following command.
`[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO]`

[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO]?

Noise Cancel Query

Function

This command queries the On/Off state of the noise canceling function.

Query

`[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO]?`

Response

`<switch>`

Parameter

`<switch>`	Type of result display
`1`	Noise canceling function is enabled.
`0`	Noise canceling function is disabled.

Details

This command is not available in the following cases:

- Burst Average Power is Off.
- Standard is Off.
- The Standard Parameter which can execute the noise canceling function is not set in Load Standard Parameter.
- Any of Span, RBW, Detection, Sweep Time, VBW (except the case that Detection is RMS.), and VBW Mode (except the case that VBW is set to Off and the case that Detection is RMS.) has been changed from Standard Parameter.
- Scale Mode is Linear.

Example of Use

To query the noise canceling function On/Off state.

```
BPOW:CORR:NOIS?
> 0
```

Related command

This command has the same function as the following command.

```
:CALCulate:BPOWer|:TXPower:CORRection:NOISe[:AUTO]?
```

:CALCulate:BPOWer|:TXPower:CORRection:NOISe[:AUTO]?

Noise Cancel Query

Function

This command queries the setting of the noise canceling function.

Refer to

```
[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO]?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:BPOWer|:TXPower:CORRection:NOISe[:AUTO]?
```

[:SENSe]:BPOWer|:TXPower:BURSt:STARt <time>

Burst Average Power Start Time

Function

This command specifies the start position (time) for Burst Average Power measurement.

Command

```
[:SENSe]:BPOWer|:TXPower:BURSt:STARt <time>
```

Parameter

<time>		Start position (time)
	Range	Within the frequency range of trace display
	Resolution	Formula for calculating the resolution is: Sweep Time / (Trace Point – 1) (Minimum value: 1ns)
	Suffix code	NS,US,MS,S S is used when omitted.
	Default	0 s

Example of Use

To set the start position (time) for Burst Average Power measurement to 20 ms.

```
BPOW:BURS:STAR 20MS
```

Related command

This command has the same function as the following command.

```
:CALCulate:BPOWer|:TXPower:BURSt:STARt
```

:CALCulate:BPOWer|:TXPower:BURSt:STARt <time>

Burst Average Power Start Time

Function

This command specifies the start position (time) for Burst Average Power measurement.

Refer to

```
[:SENSe]:BPOWer|:TXPower:BURSt:STARt.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:BPOWer|:TXPower:BURSt:STARt
```

[:SENSe]:BPOWer|:TXPower:BURSt:STARt?

Burst Average Power Start Time Query

Function

This command queries the start position (time) for Burst Average Power measurement.

Query

```
[:SENSe]:BPOWer|:TXPower:BURSt:STARt?
```

Response

```
<time>
```

Parameter

`<time>`		Start position (time)
	Range	Within the frequency range of trace display
	Resolution	Formula for calculating the resolution is: Sweep Time / (Trace Point – 1) (Minimum value: 1ns)
	Suffix code	None. Value is returned in S units.

Example of Use

To query the start position (time) for Burst Average Power measurement.

```
BPOW:BURS:STAR?
> 0.020000000
```

Related command

This command has the same function as the following command.

```
:CALCulate:BPOWer|:TXPower:BURSt:STARt?
```

:CALCulate:BPOWer|:TXPower:BURSt:STARt?

Burst Average Power Start Time Query

Function

This command queries the start position (time) for Burst Average Power measurement.

Refer to

```
[:SENSe]:BPOWer|:TXPower:BURSt:STARt?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:BPOWer|:TXPower:BURSt:STARt?
```

[:SENSe]:BPOWer|:TXPower:BURSt:STOP <time>

Burst Average Power Stop Time

Function

This command specifies the stop position (time) for Burst Average Power measurement.

Command

```
[:SENSe]:BPOWer|:TXPower:BURSt:STOP <time>
```

Parameter

<time>		Start position (time)
	Range	Within the frequency range of trace display
	Resolution	Formula for calculating the resolution is: Sweep Time / (Trace Point – 1) (Minimum value: 1ns)
	Suffix code	NS,US,MS,S S is used when omitted.
	Default	100 ms

Example of Use

To set the stop position (time) for Burst Average Power measurement to 200 ms.

```
BPOW:BURS:STOP 200MS
```

Related command

This command has the same function as the following command.

```
:CALCulate:BPOWer|:TXPower:BURSt:STOP
```

:CALCulate:BPOWer|:TXPower:BURSt:STOP <time>

Burst Average Power Stop Time

Function

This command specifies the stop position (time) for Burst Average Power measurement. Refer to

```
[:SENSe]:BPOWer|:TXPower:BURSt:STOP.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:BPOWer|:TXPower:BURSt:STOP
```

[:SENSe]:BPOWer|:TXPower:BURSt:STOP?

Burst Average Power Stop Time Query

Function

This command queries the stop position (time) for Burst Average Power measurement.

Query

```
[:SENSe]:BPOWer|:TXPower:BURSt:STOP?
```

Response

```
<time>
```

Parameter

`<time>`		Stop position (time)
	Range	Within the frequency range of trace display
	Resolution	Formula for calculating the resolution is: Sweep Time / (Trace Point – 1) (Minimum value: 1ns)
	Suffix code	None. Value is returned in S units.

Example of Use

To query the stop position (time) for Burst Average Power measurement.

```
BPOW:BURS:STOP?
> 0.200000000
```

Related command

This command has the same function as the following command.

```
:CALCulate:BPOWer|:TXPower:BURSt:STOP?
```

:CALCulate:BPOWer|:TXPower:BURSt:STOP?

Burst Average Power Stop Time Query

Function

This command queries the stop position (time) for Burst Average Power measurement.

Refer to

```
[:SENSe]:BPOWer|:TXPower:BURSt:STOP?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:BPOWer|:TXPower:BURSt:STOP?
```

:CONFigure:BPOWer|:TXPower

Burst Average Power Configure

Function

This command sets Burst Average Power measurement to On.

Command

```
:CONFigure:BPOWer|:TXPower
```

Details

No measurement is executed.

Example of Use

To set Burst Average Power measurement to On.

```
CONF:BPOW
```

:INITiate:BPOWer|:TXPower

Burst Average Power Initiate

Function

This command starts Burst Average Power measurement.

Command

```
:INITiate:BPOWer|:TXPower
```

Details

Burst Average Power measurement is set to On and the measurement starts, when this function is executed.

To read out the measurement results after executing this command, perform the synchronization control using the “*WAI” command.

Example of Use

To start Burst Average Power measurement.

```
INIT:BPOW
```

:FETCh:BPOWer|:TXPower[n]?

Burst Average Power Fetch

Function

This command outputs the measurement result for Burst Average Power measurement.

Query

```
:FETCh:BPOWer|:TXPower[n]?
```

Response

When the result mode is “A”.

```
<power>
```

(n=1 or when omitted)

When the result mode is “B”.

```
<sweep_time>,<power>,<power>,<trace_point>,
-999.0,-999.0,-999.0,-999.9,
<burst_time>,-999.0
```

(n=1 or when omitted)

```
<tracedata_1>,<tracedata_2>,<tracedata_3>,
......
```

(n=2)

Parameter

`<sweep_time>`	Sweep Time
`<burst_time>`	Length of Burst Average Power measurement range No suffix code, s units, 1 ns resolution –999999999999 is returned when no measurement is executed.
`<power>`	Average power in burst When Scale Mode is Log. Log Scale Unit units (however, dBm in V and μW in W) Returns a value without a suffix code.
`<tracedata_n>`	Trace data in n point No suffix code, dBm units, 0.001 dB resolution –999.0 is returned when no measurement is executed.
`<trace_point>`	Number of trace display points No suffix code –999.0 is returned when no measurement is executed.

Details

This function outputs the measurement result of the Burst Average Power measurement last performed. It outputs the measurement result in a state that the measurement has already been done, or in a different style.

You can use READ command if you perform a measurement along with starting a sweep again.

The return value of this function varies according to the result mode.(cf. `:SYSTem:RESult:MODE`)

Example of Use

To obtain the measurement result for Burst Average Power measurement (n = 1 or when omitted, B mode)

```
FETC:BPOW?
> 0.000010000,-73.930,-73.930,10001,-999.0,-999.0,-999.0,
-999.0,0.099990000,-999.0
```

:READ:BPOWer|:TXPower[n]?

Burst Average Power Read

Function

This command performs a measurement for Burst Average Power and outputs the measurement result.
It achieves the same result as when commands are sent in the order of

```
:INITiate:BPOWer|:TXPower
:FETCh:BPOWer|:TXPower[n]?
```

:MEASure:BPOWer|:TXPower[n]?

Burst Average Power Measure

Function

This command performs a measurement for Burst Average Power and outputs the measurement result.
It achieves the same result as when commands are sent in the order of

```
:CONFigure:BPOWer|:TXPower
:INITiate:BPOWer|:TXPower
:FETCh:BPOWer|:TXPower[n]?
```

[:SENSe]:BPOWer|:TXPower:BURSt:WIDTh <time>

Burst Average Power Width

Function

This command sets the measurement width of the burst for Burst Average Power measurement.

Command

```
[:SENSe]:BPOWer|:TXPower:BURSt:WIDTh <time>
```

Parameter

<time>	Measurement width (time)
Range	Within the frequency range of trace display
Suffix code	NS,US,MS,KS,S S is used when omitted.

Example of Use

To set the burst width of Burst Average Power measurement to 20 ms.

```
BPOW:BURS:WIDT 20ms
```

[:SENSe]:BPOWer|:TXPower:BURSt:WIDTh?

Burst Average Power Width Query

Function

This command queries the measurement width of the burst for Burst Average Power measurement.

Query

```
[:SENSe]:BPOWer|:TXPower:BURSt:WIDTh?
```

Response

```
<time>
```

Parameter

<time>	Measurement width (time)
Range	Within the frequency range of trace display
Suffix code	None. Value is returned in S units.

Example of Use

To query the burst width of Burst Average Power measurement.

```
BPOW:BURS:WIDT?
> 0.020000000
```

:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA <string>

Title Entry

Function

This command registers the title character string.
Refer to
:DISPlay:ANNotation:TITLe:DATA.

Related command

This command has the same function as the following commands.
:DISPlay:ANNotation:TITLe:DATA
:DISPlay:ACPower:ANNotation:TITLe:DATA
:DISPlay:CHPower:ANNotation:TITLe:DATA
:DISPlay:OBWidth:ANNotation:TITLe:DATA
:DISPlay:SEMask:ANNotation:TITLe:DATA

:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA?

Title Entry Query

Function

This command queries the title character string.
Refer to
:DISPlay:ANNotation:TITLe:DATA?.

Related command

This command has the same function as the following commands.
:DISPlay:ANNotation:TITLe:DATA?
:DISPlay:ACPower:ANNotation:TITLe:DATA?
:DISPlay:CHPower:ANNotation:TITLe:DATA?
:DISPlay:OBWidth:ANNotation:TITLe:DATA?
:DISPlay:SEMask:ANNotation:TITLe:DATA?

:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>

Log Scale Range

Function

This command sets the Y-axis scale magnification when Scale Mode is set to Log. Refer to :DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision.

Related command

This command has the same function as the following commands.

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

:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

Log Scale Range Query

Function

This command sets the Y-axis scale magnification when Scale Mode is set to Log. Refer to :DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?.

Related command

This command has the same function as the following commands.

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

:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>

Reference Level

Function

This command sets the reference level.
Refer to
`:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel`.

Related command

This command has the same function as the following commands.

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
```

:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel ?

Reference Level Query

Function

This command queries the reference level.
Refer to
`:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?`.

Related command

This command has the same function as the following commands.

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
```

:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe

Trigger Source

Function

This command selects the trigger source.
Refer to
`:TRIGger[:SEQuence]:SOURce`.

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:SOURce`
`:TRIGger:ACPower[:SEQuence]:SOURce`
`:TRIGger:CHPower[:SEQuence]:SOURce`
`:TRIGger:OBWidth[:SEQuence]:SOURce`
`:TRIGger:SEMask[:SEQuence]:SOURce`

:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce?

Trigger Source Query

Function

This command queries the trigger source.
Refer to
`:TRIGger[:SEQuence]:SOURce?`.

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:SOURce?`
`:TRIGger:ACPower[:SEQuence]:SOURce?`
`:TRIGger:CHPower[:SEQuence]:SOURce?`
`:TRIGger:OBWidth[:SEQuence]:SOURce?`
`:TRIGger:SEMask[:SEQuence]:SOURce?`

[:SENSe]:BPOWer|:TXPower:AVERage:COUNt <integer>

Average Count

Function

This command sets the storage count.
Refer to
`[:SENSe]:AVERage:COUNt.`

Command

This command has the same function as the following commands.
`[:SENSe]:AVERage:COUNt`
`[:SENSe]:ACPower:AVERage:COUNt`
`[:SENSe]:CHPower:AVERage:COUNt`
`[:SENSe]:OBWidth:AVERage:COUNt`
`[:SENSe]:SEMask:AVERage:COUNt`

[:SENSe]:BPOWer|:TXPower:AVERage:COUNt?

Average Count Query

Function

This command queries the storage count.
Refer to
`[:SENSe]:AVERage:COUNt?.`

Command

This command has the same function as the following commands.
`[:SENSe]:AVERage:COUNt?`
`[:SENSe]:ACPower:AVERage:COUNt?`
`[:SENSe]:CHPower:AVERage:COUNt?`
`[:SENSe]:OBWidth:AVERage:COUNt?`
`[:SENSe]:SEMask:AVERage:COUNt?`

[:SENSe]:BPOWer|:TXPower:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function

This command sets the storage mode for Trace A.
Refer to
:TRACe[1]|2|3|4|5|6:STORage:MODE.

Related command

This command has the same function as the following commands.
:TRACe[1]|2|3|4|5|6:STORage:MODE
[:SENSe]:ACPower:AVERage[:STATe]
[:SENSe]:CHPower:AVERage[:STATe]
[:SENSe]:OBWidth:AVERage[:STATe]
[:SENSe]:SEMask:AVERage[:STATe]
[:SENSe]:SPURious:AVERage[:STATe]

[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?

Storage Mode Query

Function

This command queries the storage mode for Trace A.
Refer to
:TRACe[1]|2|3|4|5|6:STORage:MODE?.

Related command

This command has the same function as the following commands.
:TRACe[1]|2|3|4|5|6:STORage:MODE?
[:SENSe]:ACPower:AVERage[:STATe]?
[:SENSe]:CHPower:AVERage[:STATe]?
[:SENSe]:OBWidth:AVERage[:STATe]?
[:SENSe]:SEMask:AVERage[:STATe]?
[:SENSe]:SPURious:AVERage[:STATe]?

[:SENSe]:BPOWer|:TXPower:SWEep:TIME <time>

Sweep Time

Function

This command sets the sweep time.
Refer to
`[:SENSe]:SWEep:TIME`.

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME`
`[:SENSe]:ACPower:SWEep:TIME`
`[:SENSe]:CHPower:SWEep:TIME`
`[:SENSe]:OBWidth:SWEep:TIME`

[:SENSe]:BPOWer|:TXPower:SWEep:TIME?

Sweep Time Query

Function

This command queries the sweep time.
Refer to
`[:SENSe]:SWEep:TIME?`.

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME?`
`[:SENSe]:ACPower:SWEep:TIME?`
`[:SENSe]:CHPower:SWEep:TIME?`
`[:SENSe]:OBWidth:SWEep:TIME?`

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF

Marker Mode

Function

This command sets the marker mode.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

Marker Mode Query

Function

This command queries the marker mode.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>

Zone Marker Frequency (Time)

Function

This command moves the center of the zone marker to the specified frequency or time.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X`.

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X`

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

Zone Marker Frequency (Time) Query

Function

This command queries the center of the zone marker.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`.

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X?`

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>

Zone Marker Position

Function

This command moves the center of the zone marker to the specified position.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

Zone Marker Position Query

Function

This command queries the center of the zone marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?

Marker Level Query

Function

This command queries the level at the marker point.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?

:CALCulate:BPOWer|:TXPower:MARKer:AOFF

All Marker Off

Function

This command sets all the markers to Off.
Refer to
:CALCulate:MARKer:AOFF.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer:AOFF
:CALCulate:ACPower:MARKer:AOFF
:CALCulate:CHPower:MARKer:AOFF
:CALCulate:OBWidth:MARKer:AOFF

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

Peak Search

Function

This command searches for the maximum level point of the active trace and moves the marker point.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum.`

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum`

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

Power Peak Search

Function

This command moves the active marker to the position where the peak power of the zone width of the active marker becomes maximum in the measurement band.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer`

Related command

This command has the same function as the following command.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer`
`:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer`

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

Minimum Search

Function

This command searches for the minimum level point of the active trace and moves the marker point to that point.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`

Related Command

This command has the same function as the following command.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum`

[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]`.

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]`
`[:SENSe]:ACPower:BANDwidth[:RESolution]`
`[:SENSe]:CHPower:BANDwidth[:RESolution]`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]`
`:CALCulate:ACPower:BANDwidth[:RESolution]`
`:CALCulate:CHPower:BANDwidth[:RESolution]`
`:CALCulate:OBWidth:BANDwidth[:RESolution]`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]`

:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution].`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]`
`[:SENSe]:ACPower:BANDwidth[:RESolution]`
`[:SENSe]:CHPower:BANDwidth[:RESolution]`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]`
`:CALCulate:ACPower:BANDwidth[:RESolution]`
`:CALCulate:CHPower:BANDwidth[:RESolution]`
`:CALCulate:OBWidth:BANDwidth[:RESolution]`

[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:ACPower:BANDwidth[:RESolution]?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]?`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]`
`:CALCulate:ACPower:BANDwidth[:RESolution]?`
`:CALCulate:CHPower:BANDwidth[:RESolution]?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?`

:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:ACPower:BANDwidth[:RESolution]?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]?`
`:CALCulate:ACPower:BANDwidth[:RESolution]?`
`:CALCulate:CHPower:BANDwidth[:RESolution]?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]?`

[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE.`

Related Command

This command has the same function as the following commands.
`[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE`
`[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE`
`:CALCulate:ACPower:BANDwidth[:RESolution]:MODE`
`:CALCulate:CHPower:BANDwidth[:RESolution]:MODE`
`:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE`

:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
```

:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth mode.
For details, refer to
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?.

Related Command

This command has the same function as the following commands.
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>

Relative To

Function

This command sets the reference marker when the marker mode is set to Delta.
Refer To
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

Relative To

Function

This command queries the reference marker when the marker mode is set to Delta.

Refer To

`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?.`

Related command

This command has the same function as the following commands.

`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`

`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`

`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`

`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`

2.11 Channel Power

Table 2.11-1 lists device messages for Channel Power measurement.

Table 2.11-1 Device messages for Channel Power measurement

Function	Device Message
Measure Channel Power	[:SENSe]:CHPower[:STATe] ON|OFF|1|0
	[:SENSe]:CHPower[:STATe]?
	:CALCulate:CHPower[:STATe] ON|OFF|1|0
	:CALCulate:CHPower[:STATe]?
Channel Power Channel Center Frequency	[:SENSe]:CHPower:FREQuency:CENTer <freq>
	[:SENSe]:CHPower:FREQuency:CENTer?
	:CALCulate:CHPower:FREQuency:CENTer <freq>
	:CALCulate:CHPower:FREQuency:CENTer?
Channel Power Channel Bandwidth	[:SENSe]:CHPower:BANDwidth:INTegration <freq>
	[:SENSe]:CHPower:BANDwidth:INTegration?
	:CALCulate:CHPower:BANDwidth:INTegration <freq>
	:CALCulate:CHPower:BANDwidth:INTegration?
Channel Power Filter Type	[:SENSe]:CHPower:FILTer:TYPE RECT|NYQuist|RNYQuist
	[:SENSe]:CHPower:FILTer:TYPE?
	:CALCulate:CHPower:FILTer:TYPE RECT|NYQuist|RNYQuist
	:CALCulate:CHPower:FILTer:TYPE?
	[:SENSe]:CHPower:FILTer[:RRC][:STATe] ON|OFF|1|0
	[:SENSe]:CHPower:FILTer[:RRC][:STATe]?
	:CALCulate:CHPower:FILTer[:RRC][:STATe] ON|OFF|1|0
	:CALCulate:CHPower:FILTer[:RRC][:STATe]?
Channel Power Rolloff Ratio	[:SENSe]:CHPower:FILTer[:RRC]:ALPHa <real>
	[:SENSe]:CHPower:FILTer[:RRC]:ALPHa?
	:CALCulate:CHPower:FILTer[:RRC]:ALPHa <real>
	:CALCulate:CHPower:FILTer[:RRC]:ALPHa?
Channel Power Configure	:CONFigure:CHPower
Channel Power Initiate	:INITiate:CHPower
Channel Power Fetch	:FETCh:CHPower[n]?
	:FETCh:CHPower:CHPower?
	:FETCh:CHPower:DENSity?
Channel Power Read	:READ:CHPower[n]?
	:READ:CHPower:CHPower?
	:READ:CHPower:DENSity?
Channel Power Measure	:MEASure:CHPower[n]?
	:MEASure:CHPower:CHPower?
	:MEASure:CHPower:DENSity?
All Marker Off	:CALCulate:CHPower:MARKer:AOFF
Peak Search	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

Table 2.11-1 Device messages for Channel Power measurement (Cont'd)

Function	Device Message
Power Peak Search	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
Minimum Search	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
Marker Mode	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF
	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
Zone Marker Frequency (Time)	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>
	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
Zone Marker Position	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>
	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
Marker Level Query	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
Title Entry	:DISPlay:CHPower:ANNotation:TITLe:DATA <string>
	:DISPlay:CHPower:ANNotation:TITLe:DATA?
Log Scale Range	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>
	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
Reference Level	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>
	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
Trigger Source	:TRIGger:CHPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe
	:TRIGger:CHPower[:SEQuence]:SOURce?
Average Count	[:SENSe]:CHPower:AVERage:COUNt <integer>
	[:SENSe]:CHPower:AVERage:COUNt?
Storage Mode	[:SENSe]:CHPower:AVERage[:STATe] ON|OFF|1|0
	[:SENSe]:CHPower:AVERage[:STATe]?
Resolution Bandwidth	[:SENSe]:CHPower:BANDwidth[:RESolution] <freq>
	[:SENSe]:CHPower:BANDwidth[:RESolution]?
	:CALCulate:CHPower:BANDwidth[:RESolution] <freq>
	:CALCulate:CHPower:BANDwidth[:RESolution]?
Resolution Bandwidth Auto/Manual	[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO ON|OFF|1|0
	[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
	:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO ON|OFF|1|0
	:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?
Resolution Bandwidth Normal/CISPR	[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE NORMal|CISPr
	[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?
	:CALCulate:CHPower:BANDwidth[:RESolution]:MODE NORMal|CISPr
	:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?
Video Bandwidth	[:SENSe]:CHPower:BANDwidth:VIDeo <freq>
	[:SENSe]:CHPower:BANDwidth:VIDeo?

Table 2.11-1 Device messages for Channel Power measurement (Cont'd)

Function	Device Message
Video Bandwidth Auto/Manual	[:SENSe]:CHPower:BANDwidth:VIDeo:AUTO OFF|ON|0|1
	[:SENSe]:CHPower:BANDwidth:VIDeo:AUTO?
Detection Mode	[:SENSe]:CHPower:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS
	[:SENSe]:CHPower:DETector[:FUNCtion]?
	:CALCulate:CHPower:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS
	:CALCulate:CHPower:DETector[:FUNCtion]?
Span Frequency	[:SENSe]:CHPower:FREQuency:SPAN <freq>
	[:SENSe]:CHPower:FREQuency:SPAN?
Full Span	[:SENSe]:CHPower:FREQuency:SPAN:FULL
Trace Point	[:SENSe]:CHPower:SWEep:POINts <integer>
	[:SENSe]:CHPower:SWEep:POINts?
Sweep Time	[:SENSe]:CHPower:SWEep:TIME <time>
	[:SENSe]:CHPower:SWEep:TIME?
Sweep Time Auto/Manual	[:SENSe]:CHPower:SWEep:TIME:AUTO OFF|ON|0|1
	[:SENSe]:CHPower:SWEep:TIME:AUTO?
Relative To	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>
	:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

[:SENSe]:CHPower[:STATe] ON|OFF|1|0

Measure Channel Power

Function

This command executes Channel Power measurement.

Command

```
[:SENSe]:CHPower[:STATe] <switch>
```

Parameter

`<switch>`	CHP measurement On/Off
`ON|1`	Sets CHP measurement to On.
`OFF|0`	Sets CHP measurement to Off (Default).

Example of Use

To set CHP measurement to On.

```
CHP ON
```

Related command

This command has the same function as the following command.

```
:CALCulate:CHPower[:STATe]
```

:CALCulate:CHPower[:STATe] ON|OFF|1|0

Measure Channel Power

Function

This command executes Channel Power measurement.
Refer to
`[:SENSe]:CHPower[:STATe]`.

Related command

This command has the same function as the following command.

```
[:SENSe]:CHPower[:STATe]
```

[:SENSe]:CHPower[:STATe]?

Measure Channel Power Query

Function

This command queries the On/Off state of the Channel Power measurement.

Command

```
[:SENSe]:CHPower[:STATe]?
```

Parameter

<switch>	CHP measurement On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the CHP measurement.

```
CHP?
> 1
```

Related command

This command has the same function as the following command.

```
:CALCulate:CHPower[:STATe]?
```

:CALCulate:CHPower[:STATe]?

Measure Channel Power Query

Function

This command queries the Channel Power measurement On/Off state.
Refer to
`[:SENSe]:CHPower[:STATe]?.`

Related command

This command has the same function as the following command.

```
[:SENSe]:CHPower[:STATe]?
```

[:SENSe]:CHPower:FREQuency:CENTer <freq>

Channel Power Channel Center Frequency

Function

This command sets the center frequency for Channel Power measurement.

Command

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

Parameter

<freq>		Channel center frequency
	Range	(Start Frequency) to (Stop Frequency)
	Resolution	1 Hz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
	Default	Center Frequency

Example of Use

To set the channel power center frequency to 6.01 GHz.

```
CHP:FREQ:CENT 6.01GHZ
```

Related command

This command has the same function as the following command.

```
:CALCulate:CHPower:FREQuency:CENTer
```

:CALCulate:CHPower:FREQuency:CENTer <freq>

Channel Power Channel Center Frequency

Function

This command sets the center frequency for Channel Power measurement.
Refer to
`[:SENSe]:CHPower:FREQuency:CENTer.`

Related command

This command has the same function as the following command.

```
[:SENSe]:CHPower:FREQuency:CENTer
```

[:SENSe]:CHPower:FREQuency:CENTer?

Channel Power Channel Center Frequency Query

Function

This command queries the center frequency for Channel Power measurement.

Query

```
[:SENSe]:CHPower:FREQuency:CENTer?
```

Response

```
<freq>
```

Parameter

<freq>		Center frequency of channel
	Range	(Start Frequency) to (Stop Frequency)
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the center frequency for Channel Power measurement.

```
CHP:FREQ:CENT?
> 6010000000
```

Related command

This command has the same function as the following command.

```
:CALCulate:CHPower:FREQuency:CENTer?
```

:CALCulate:CHPower:FREQuency:CENTer?

Channel Power Channel Center Frequency Query

Function

This command queries the center frequency for Channel Power measurement.

Refer to

```
[:SENSe]:CHPower:FREQuency:CENTer?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:CHPower:FREQuency:CENTer?
```

[:SENSe]:CHPower:BANDwidth:INTegration <freq>

Channel Power Channel Bandwidth

Function

This command sets the channel bandwidth for Channel Power measurement.

Command

```
[:SENSe]:CHPower:BANDwidth:INTegration <freq>
```

Parameter

<freq>	Channel bandwidth
Range	1 Hz to 2.5 GHz
Resolution	1 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
Default	3.84 MHz

Example of Use

To set the channel bandwidth to 1 MHz.

```
CHP:FREQ:INT 1MHZ
```

Related command

This command has the same function as the following command.

```
:CALCulate:CHPower:BANDwidth:INTegration
```

:CALCulate:CHPower:BANDwidth:INTegration <freq>

Channel Power Channel Bandwidth

Function

This command sets the channel bandwidth for Channel Power measurement.
Refer to
`[:SENSe]:CHPower:BANDwidth:INTegration.`

Related command

This command has the same function as the following command.

```
[:SENSe]:CHPower:BANDwidth:INTegration
```

[:SENSe]:CHPower:BANDwidth:INTegration?

Channel Power Channel Bandwidth Query

Function

This command queries the channel bandwidth for Channel Power measurement.

Query

```
[:SENSe]:CHPower:BANDwidth:INTegration?
```

Response

```
<freq>
```

Parameter

<freq>		Channel bandwidth
	Range	1 Hz to 2.5 GHz
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the channel bandwidth.

```
CHP:FREQ:INT?
> 1000000
```

Related command

This command has the same function as the following command.

```
:CALCulate:CHPower:BANDwidth:INTegration?
```

:CALCulate:CHPower:BANDwidth:INTegration?

Channel Power Channel Bandwidth Query

Function

This command queries the channel bandwidth for Channel Power measurement.

Refer to

```
[:SENSe]:CHPower:BANDwidth:INTegration?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:CHPower:BANDwidth:INTegration?
```

[:SENSe]:CHPower:FILTer:TYPE RECT|NYQuist|RNYQuist

Channel Power Filter Type

Function

This command sets filter type for Channel Power measurement.

Command

```
[:SENSe]:CHPower:FILTer:TYPE <filter>
```

Parameter

<filter>	Filter type
RECT	Rectangle filter
NYQuist	Nyquist filter
RNYQuist	Root Nyquist filter (Default)

Example of Use

To set the filter type to Nyquist.

```
CHP:FILT:TYPE NYQ
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:CHPower:FILTer
:CALCulate:CHPower:FILTer:TYPE
```

:CALCulate:CHPower:FILTer:TYPE RECT|NYQuist|RNYQuist

Channel Power Filter Type

Function

This command sets filter type for Channel Power measurement.

Refer to

```
[:SENSe]:CHPower:FILTer:TYPE.
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:CHPower:FILTer
[:SENSe]:CHPower:FILTer:TYPE
```

[:SENSe]:CHPower:FILTer:TYPE?

Channel Power Filter Type Query

Function

This command queries filter type for Channel Power measurement.

Query

```
[:SENSe]:CHPower:FILTer:TYPE?
```

Response

```
<filter>
```

Parameter

<filter>	Filter type
RECT	Rectangle filter
NYQ	Nyquist filter
RNYQ	Root Nyquist filter

Example of Use

To query the filter type.

```
CHP:FILT:TYPE?
> NYQ
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:CHPower:FILTer?
:CALCulate:CHPower:FILTer:TYPE?
```

:CALCulate:CHPower:FILTer:TYPE?

Channel Power Filter Type Query

Function

This command queries filter type for Channel Power measurement.
Refer to
`[:SENSe]:CHPower:FILTer:TYPE?`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:CHPower:FILTer?
[:SENSe]:CHPower:FILTer:TYPE?
```

[:SENSe]:CHPower:FILTer[:RRC][:STATe] ON|OFF|1|0

Channel Power Filter Type

Function

This command sets filter type for Channel Power measurement.

Command

```
[:SENSe]:CHPower:FILTer[:RRC][:STATe] <filter>
```

Parameter

`<filter>`	Filter type
`0|OFF`	Rectangle filter
`1|ON`	Root Nyquist filter (Default)

Example of Use

To set filter type to Root Nyquist.

```
CHP:FILT 1
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:CHPower:FILTer:TYPE
:CALCulate:CHPower:FILTer[:RRC][:STATe]
```

:CALCulate:CHPower:FILTer[:RRC][:STATe] ON|OFF|1|0

Channel Power Filter Type

Function

This command sets filter type for Channel Power measurement.

Refer to

```
[:SENSe]:CHPower:FILTer[:RRC][:STATe].
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:CHPower:FILTer:TYPE
[:SENSe]:CHPower:FILTer[:RRC][:STATe]
```

[:SENSe]:CHPower:FILTer[:RRC][:STATe]?

Channel Power Filter Type Query

Function

This command queries filter type for Channel Power measurement.

Query

```
[:SENSe]:CHPower:FILTer[:RRC][:STATe]?
```

Response

```
<filter>
```

Parameter

<filter>	Filter type
0	Rectangle filter
1	Root Nyquist filter

Example of Use

To query the filter type.

```
CHP:FILT?
> 1
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:CHPower:FILTer:TYPE?
:CALCulate:CHPower:FILTer[:RRC][:STATe]?
```

:CALCulate:CHPower:FILTer[:RRC][:STATe]?

Channel Power Filter Type Query

Function

This command queries filter type for Channel Power measurement.
Refer to
`[:SENSe]:CHPower:FILTer[:RRC][:STATe]?`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:CHPower:FILTer:TYPE?
[:SENSe]:CHPower:FILTer[:RRC][:STATe]?
```

[:SENSe]:CHPower:FILTer[:RRC]:ALPHa <real>

Channel Power Rolloff Ratio

Function

This command sets filter rolloff ratio for Channel Power measurement.

Command

```
[:SENSe]:CHPower:FILTer[:RRC]:ALPHa <real>
```

Parameter

<real>	Rolloff ratio
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None
Default	0.22

Details

This command is available when the filter type (Channel Power Filter Type) is set to either of the following:

- Nyquist
- Root Nyquist

Example of Use

To set the rolloff ratio to 0.22.

```
CHP:FILT:ALPH 0.22
```

Related command

This command has the same function as the following command.

```
:CALCulate:CHPower:FILTer[:RRC]:ALPHa
```

:CALCulate:CHPower:FILTer[:RRC]:ALPHa <real>

Channel Power Rolloff Ratio

Function

This command sets the rolloff ratio for Channel Power measurement. Refer to

```
[:SENSe]:CHPower:FILTer[:RRC]:ALPHa.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:CHPower:FILTer[:RRC]:ALPHa
```

[:SENSe]:CHPower:FILTer[:RRC]:ALPHa?

Channel Power Rolloff Ratio Query

Function

This command queries the rolloff ratio for Channel Power measurement.

Query

```
[:SENSe]:CHPower:FILTer[:RRC]:ALPHa?
```

Response

```
<real>
```

Parameter

<real>	Filter rolloff ratio
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None
Default	0.22

Details

This function is set when the filter type (Channel Power Filter Type) is set to either of the following:

- Nyquist
- Root Nyquist

Example of Use

To query filter rolloff ratio.

```
CHP:FILT:ALPH?
> 0.22
```

Related command

This command has the same function as the following command.

```
:CALCulate:CHPower:FILTer[:RRC]:ALPHa?
```

:CALCulate:CHPower:FILTer[:RRC]:ALPHa?

Channel Power Rolloff Ratio Query

Function

This command queries the rolloff ratio for Channel Power measurement.
Refer to
`[:SENSe]:CHPower:FILTer[:RRC]:ALPHa?`.

Related command

This command has the same function as the following command.
`[:SENSe]:CHPower:FILTer[:RRC]:ALPHa?`

:CONFigure:CHPower

Channel Power Configure

Function

This command sets Channel Power measurement to On.

Command

```
:CONFigure:CHPower
```

Details

No measurement is performed.

Example of Use

To set Channel Power measurement to On.
```
CONF:CHP
```

:INITiate:CHPower

Channel Power Initiate

Function

This command starts Channel Power measurement.

Command

```
:INITiate:CHPower
```

Details

Channel Power measurement is set to On and the measurement starts, when this function is executed.

To read out the measurement results after executing this command, perform the synchronization control using the "*WAI" command.

Example of Use

To start Channel Power measurement.

```
INIT:CHP
```

:FETCh:CHPower[n]?

Channel Power Fetch

Function

This command queries the measurement result for Channel Power measurement.

Query

```
:FETCh:CHPower[n]?
```

Response

When the result mode is "A".

```
<power>,<density>
```

(n=1 or when omitted)

When the result mode is "B".

```
<power>,<density>
```

(n=1 or when omitted)

```
<tracedata_1>,<tracedata_2>,<tracedata_3>,
...
```

(n=2)

Parameter

`<power>`	In band total power specified in Channel bandwidth Channel bandwidth. Returns a value without a suffix code and of Log Scale Unit（dBm in V and W in W), when Scale Mode is set to Log. This command returns –999.0 when no measurement is performed.
`<density>`	In band power density specified in Channel bandwidth This command returns a value without a suffix code and of Log Scale Unit (dBm in V and W in W), when Scale Mode is set to Log. This command returns –999.0 when no measurement is performed.
`<tracedata_m>`	Trade data at m point. No suffix code, dBm unit, 0.001 dB resolution This command returns –999.0 when no measurement is performed.

Details

This function outputs the measurement result at the Channel Power measurement last performed. It is possible to output the measurement result in a state that the measurement has already been done, and in a different style.

You can use READ command if you perform a measurement along with starting a sweep again.

Return values of this function vary according to the result mode.(cf. `:SYSTem:RESult:MODE`)

Example of Use

To query the items of the total power and the power density.

```
FETC:CHP?
> -8.000,-50.000
```

:FETCh:CHPower:CHPower?

Channel Power Fetch

Function

This command queries the total In Band power for Channel Power measurement.

Query

```
:FETCh:CHPower:CHPower?
```

Response

```
<power>
```

Parameter

`<power>`	Total In Band power specified in Channel bandwidth. This command returns a value without a suffix code and of Log Scale Unit（dBm in V and W in W), when Scale Mode is set to Log. –999.0 is returned when no measurement is performed.

Details

This function outputs the measurement result at the Channel Power measurement last performed. It is possible to output the measurement result in a state that the measurement has already been done, and in a different style.

You can use READ command if you perform a measurement along with starting a sweep again.

Example of Use

To query the total power.

```
FETC:CHP:CHP?
> -8.000
```

:FETCh:CHPower:DENSity?

Channel Power Fetch

Function

This command queries the total In Band power density for Channel Power measurement.

Query

```
:FETCh:CHPower:DENSity?
```

Response

```
<density>
```

Parameter

`<density>`	In Band power density specified in Channel bandwidth. This command returns a value without a suffix code and of Log Scale Unit (dBm in V and W in W), when Scale Mode is set to Log. –999.0 is returned when no measurement is performed.

Details

This function queries the measurement result at the Channel Power measurement last performed. It is possible to output the measurement result in a state that the measurement has already been done, and in a different style.

You can use READ command if you perform a measurement along with starting a sweep again.

Example of Use

To query the power density.

```
FETC:CHP:DENS?
> -8.000
```

:READ:CHPower[n]?

Channel Power Read

Function

This command performs the measurement for Channel Power and outputs the measurement result.
It achieves the same result as when commands are sent in the order of
```
:INITiate:CHPower
:FETCh:CHPower[n]?
```

:READ:CHPower:CHPower?

Channel Power Read

Function

This command performs the measurement for Channel Power and outputs the total In Band power.
It achieves the same result as when commands are sent in the order of
```
:INITiate:CHPower
:FETCh:CHPower:CHPower?
```

:READ:CHPower:DENSity?

Channel Power Read

Function

This command performs the measurement for Channel Power and outputs the total In Band power density.
It achieves the same result as when commands are sent in the order of
```
:INITiate:CHPower
:FETCh:CHPower:DENSity?
```

:MEASure:CHPower[n]?

Channel Power Measure

Function

This command performs the measurement for Channel Power and outputs the measurement result.
It achieves the same result as when commands are sent in the order of
```
:CONFigure:CHPower
:INITiate:CHPower
:FETCh:CHPower[n]?
```

:MEASure:CHPower:CHPower?

Channel Power Measure

Function

This command performs the measurement for Channel Power and outputs the total In Band power.
It achieves the same result as when commands are sent in the order of
`:CONFigure:CHPower`
`:INITiate:CHPower`
`:FETCh:CHPower:CHPower?`

:MEASure:CHPower:DENSity?

Channel Power Measure

Function

This command performs the measurement for Channel Power and outputs the total In Band power density.
It achieves the same result as when commands are sent in the order of
`:CONFigure:CHPower`
`:INITiate:CHPower`
`:FETCh:CHPower:DENSity?`

:CALCulate:CHPower:MARKer:AOFF

All Marker Off

Function

This command sets all the markers to Off.
Refer to
`:CALCulate:MARKer:AOFF.`

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer:AOFF`
`:CALCulate:ACPower:MARKer:AOFF`
`:CALCulate:OBWidth:MARKer:AOFF`
`:CALCulate:BPOWer|:TXPower:MARKer:AOFF`

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

Peak Search

Function

This command searches for the maximum level point of the active trace and moves the marker point.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

Power Peak Search

Function

This command moves the active marker to the position where the peak power of the zone width of the active marker becomes maximum in the measurement band.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer.

Related command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

Minimum Search

Function

This command searches for the minimum level point of the active trace and moves the marker point to that point.

Refer to

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum.

Related Command

This command has the same function as the following command.

:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF

Marker Mode

Function

This command sets the marker mode.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE.`

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE`

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

Marker Mode Query

Function

This command queries the marker mode.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?.`

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?`

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>

Zone Marker Frequency (Time)

Function

This command moves the center of the zone marker to the specified frequency or time.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

Zone Marker Frequency (Time) Query

Function

This command queries the center of the zone marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>

Zone Marker Position

Function

This command moves the center of the zone marker to the specified position.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

Zone Marker Position Query

Function

This command queries the position of the center of the zone marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?

Marker Level Query

Function

This command queries the level at the marker point.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?

:DISPlay:CHPower:ANNotation:TITLe:DATA <string>

Title Entry

Function

This command registers the title character string.
Refer to
:DISPlay:ANNotation:TITLe:DATA.

Command

This command has the same function as the following commands.
:DISPlay:ANNotation:TITLe:DATA
:DISPlay:ACPower:ANNotation:TITLe:DATA
:DISPlay:OBWidth:ANNotation:TITLe:DATA
:DISPlay:SEMask:ANNotation:TITLe:DATA
:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA

:DISPlay:CHPower:ANNotation:TITLe:DATA?

Title Entry Query

Function

This command queries the title character string.
Refer to
:DISPlay:ANNotation:TITLe:DATA?.

Command

This command has the same function as the following commands.
:DISPlay:ANNotation:TITLe:DATA?
:DISPlay:ACPower:ANNotation:TITLe:DATA?
:DISPlay:OBWidth:ANNotation:TITLe:DATA?
:DISPlay:SEMask:ANNotation:TITLe:DATA?
:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA?

:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>

Log Scale Range

Function

This command sets the Y axis scale magnification when Scale Mode is set to Log.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

Log Scale Range Query

Function

This command queries the Y axis scale magnification when Scale Mode is set to Log.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>

Reference Level

Function

This command sets the reference level.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel

:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

Reference Level Query

Function

This command queries the reference level.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

:TRIGger:CHPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe

Trigger Source

Function

This command selects the trigger source.
Refer to
`:TRIGger[:SEQuence]:SOURce`.

Related command

This command has the same function as the following commands.

```
:TRIGger[:SEQuence]:SOURce
:TRIGger:ACPower[:SEQuence]:SOURce
:TRIGger:OBWidth[:SEQuence]:SOURce
:TRIGger:SEMask[:SEQuence]:SOURce
:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce
```

:TRIGger:CHPower[:SEQuence]:SOURce?

Trigger Source Query

Function

This command queries the trigger source.
Refer to
`:TRIGger[:SEQuence]:SOURce?`.

Related command

This command has the same function as the following commands.

```
:TRIGger[:SEQuence]:SOURce?
:TRIGger:ACPower[:SEQuence]:SOURce?
:TRIGger:OBWidth[:SEQuence]:SOURce?
:TRIGger:SEMask[:SEQuence]:SOURce?
:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce?
```

[:SENSe]:CHPower:AVERage:COUNt <integer>

Average Count

Function

This command sets the storage count.
Refer to
`[:SENSe]:AVERage:COUNt.`

Related command

This command has the same function as the following commands.
`[:SENSe]:AVERage:COUNt`
`[:SENSe]:ACPower:AVERage:COUNt`
`[:SENSe]:OBWidth:AVERage:COUNt`
`[:SENSe]:SEMask:AVERage:COUNt`
`[:SENSe]:BPOWer|:TXPower:AVERage:COUNt`

[:SENSe]:CHPower:AVERage:COUNt?

Average Count Query

Function

This command queries the storage count.
Refer to
`[:SENSe]:AVERage:COUNt?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:AVERage:COUNt?`
`[:SENSe]:ACPower:AVERage:COUNt?`
`[:SENSe]:OBWidth:AVERage:COUNt?`
`[:SENSe]:SEMask:AVERage:COUNt?`
`[:SENSe]:BPOWer|:TXPower:AVERage:COUNt?`

[:SENSe]:CHPower:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function

This command sets the storage mode for Trace A.
Refer to
:TRACe[1]|2|3|4|5|6:STORage:MODE.

Related command

This command has the same function as the following commands.
:TRACe[1]|2|3|4|5|6:STORage:MODE
[:SENSe]:ACPower:AVERage[:STATe]
[:SENSe]:OBWidth:AVERage[:STATe]
[:SENSe]:SEMask:AVERage[:STATe]
[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]
[:SENSe]:SPURious:AVERage[:STATe]

[:SENSe]:CHPower:AVERage[:STATe]?

Storage Mode Query

Function

This command queries the storage mode for Trace A.
Refer to
:TRACe[1]|2|3|4|5|6:STORage:MODE?.

Related command

This command has the same function as the following commands.
:TRACe[1]|2|3|4|5|6:STORage:MODE?
[:SENSe]:ACPower:AVERage[:STATe]?
[:SENSe]:OBWidth:AVERage[:STATe]?
[:SENSe]:SEMask:AVERage[:STATe]?
[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?
[:SENSe]:SPURious:AVERage[:STATe]?

[:SENSe]:CHPower:BANDwidth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW).
Refer to
[:SENSe]:BANDwidth|:BWIDth[:RESolution].

Related command

This command has the same function as the following commands.
[:SENSe]:BANDwidth|:BWIDth[:RESolution]
[:SENSe]:ACPower:BANDwidth[:RESolution]
[:SENSe]:OBWidth:BANDwidth[:RESolution]
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]
:CALCulate:BANDwidth|:BWIDth[:RESolution]
:CALCulate:ACPower:BANDwidth[:RESolution]
:CALCulate:CHPower:BANDwidth[:RESolution]
:CALCulate:OBWidth:BANDwidth[:RESolution]
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]

:CALCulate:CHPower:BANDwidth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW).
Refer to
[:SENSe]:BANDwidth|:BWIDth[:RESolution].

Related command

This command has the same function as the following commands.
[:SENSe]:BANDwidth|:BWIDth[:RESolution]
[:SENSe]:ACPower:BANDwidth[:RESolution]
[:SENSe]:CHPower:BANDwidth[:RESolution]
[:SENSe]:OBWidth:BANDwidth[:RESolution]
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]
:CALCulate:BANDwidth|:BWIDth[:RESolution]
:CALCulate:ACPower:BANDwidth[:RESolution]
:CALCulate:OBWidth:BANDwidth[:RESolution]
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]

[:SENSe]:CHPower:BANDwidth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:ACPower:BANDwidth[:RESolution]?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]`
`:CALCulate:ACPower:BANDwidth[:RESolution]?`
`:CALCulate:CHPower:BANDwidth[:RESolution]?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?`

:CALCulate:CHPower:BANDwidth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:ACPower:BANDwidth[:RESolution]?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]`
`:CALCulate:ACPower:BANDwidth[:RESolution]?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?`

[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO ON|OFF|1|0

Resolution Bandwidth Auto/Manual

Function

This command enables/disables the automatic resolution bandwidth (RBW) setting function.
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO
```

:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO ON|OFF|1|0

Resolution Bandwidth Auto/Manual

Function

This command sets the resolution bandwidth (RBW) automatically.
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO
```

[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?

Resolution Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic resolution bandwidth (RBW).

Refer to

`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO?
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
```

:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?

Resolution Bandwidth Auto/Manual Query

Function

This command queries the automatic setting of the resolution bandwidth (RBW).

Refer to

`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO?
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
```

[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

:CALCulate:CHPower:BANDwidth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth mode.
For details, refer to
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?.

Related Command

This command has the same function as the following commands.
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE

:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth mode.
For details, refer to
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?.

Related Command

This command has the same function as the following commands.
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE

[:SENSe]:CHPower:BANDwidth:VIDeo <freq>

Video Bandwidth

Function

This command sets the video bandwidth (VBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo`
`[:SENSe]:ACPower:BANDwidth:VIDeo`
`[:SENSe]:OBWidth:BANDwidth:VIDeo`

[:SENSe]:CHPower:BANDwidth:VIDeo?

Video Bandwidth Query

Function

This command queries the video bandwidth (VBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo?`
`[:SENSe]:ACPower:BANDwidth:VIDeo?`
`[:SENSe]:OBWidth:BANDwidth:VIDeo?`

[:SENSe]:CHPower:BANDwidth:VIDeo:AUTO OFF|ON|0|1

Video Bandwidth Auto/Manual

Function

This command enables/disables the automatic video bandwidth (VBW) setting function.
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO
[:SENSe]:ACPower:BANDwidth:VIDeo:AUTO
[:SENSe]:OBWidth:BANDwidth:VIDeo:AUTO
```

[:SENSe]:CHPower:BANDwidth:VIDeo:AUTO?

Video Bandwidth Auto/Manual Query Query

Function

This command queries the On/Off state of the automatic video bandwidth (VBW) setting.
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?
[:SENSe]:ACPower:BANDwidth:VIDeo:AUTO?
[:SENSe]:OBWidth:BANDwidth:VIDeo:AUTO?
```

[:SENSe]:CHPower:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS

Detection Mode

Function

This command selects the detection mode of the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion]`.

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]`
`[:SENSe]:ACPower:DETector[:FUNCtion]`
`[:SENSe]:OBWidth:DETector[:FUNCtion]`
`:CALCulate:ACPower:DETector[:FUNCtion]`
`:CALCulate:CHPower:DETector[:FUNCtion]`
`:CALCulate:OBWidth:DETector[:FUNCtion]`

:CALCulate:CHPower:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS

Detection Mode

Function

This command selects the detection mode of the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion]`.

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]`
`[:SENSe]:ACPower:DETector[:FUNCtion]`
`[:SENSe]:CHPower:DETector[:FUNCtion]`
`[:SENSe]:OBWidth:DETector[:FUNCtion]`
`:CALCulate:ACPower:DETector[:FUNCtion]`
`:CALCulate:OBWidth:DETector[:FUNCtion]`

[:SENSe]:CHPower:DETector[:FUNCtion]?

Detection Mode Query

Function

This command queries the detection mode of the waveform pattern.
Refer to
[:SENSe]:DETector[:FUNCtion]?.

Related command

This command has the same function as the following commands.
[:SENSe]:DETector[:FUNCtion]?
[:SENSe]:ACPower:DETector[:FUNCtion]?
[:SENSe]:OBWidth:DETector[:FUNCtion]?
[:SENSe]:SEMask:DETector:CARRier[:FUNCtion]?
:CALCulate:DETector[:FUNCtion]?
:CALCulate:ACPower:DETector[:FUNCtion]?
:CALCulate:CHPower:DETector[:FUNCtion]?
:CALCulate:OBWidth:DETector[:FUNCtion]?

:CALCulate:CHPower:DETector[:FUNCtion]?

Detection Mode Query

Function

This command queries the detection mode of the waveform pattern.
Refer to
[:SENSe]:DETector[:FUNCtion]?.

Related command

This command has the same function as the following commands.
[:SENSe]:DETector[:FUNCtion]?
[:SENSe]:ACPower:DETector[:FUNCtion]?
[:SENSe]:CHPower:DETector[:FUNCtion]?
[:SENSe]:OBWidth:DETector[:FUNCtion]?
[:SENSe]:SEMask:DETector:CARRier[:FUNCtion]?
:CALCulate:DETector[:FUNCtion]?
:CALCulate:ACPower:DETector[:FUNCtion]?
:CALCulate:OBWidth:DETector[:FUNCtion]?

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

Span Frequency

Function

This command sets the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN`
`[:SENSe]:ACPower:FREQuency:SPAN`
`[:SENSe]:OBWidth:FREQuency:SPAN`

[:SENSe]:CHPower:FREQuency:SPAN?

Span Frequency Query

Function

This command queries the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN?`
`[:SENSe]:ACPower:FREQuency:SPAN?`
`[:SENSe]:OBWidth:FREQuency:SPAN?`

[:SENSe]:CHPower:FREQuency:SPAN:FULL

Full Span

Function

This command maximizes the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN:FULL.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN:FULL`
`[:SENSe]:ACPower:FREQuency:SPAN:FULL`
`[:SENSe]:OBWidth:FREQuency:SPAN:FULL`

[:SENSe]:CHPower:SWEep:POINts <integer>

Trace Point

Function

This command sets the number of the trace display points.
Refer to
`[:SENSe]:SWEep:POINts.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:POINts`
`[:SENSe]:ACPower:SWEep:POINts`
`[:SENSe]:OBWidth:SWEep:POINts`

[:SENSe]:CHPower:SWEep:POINts?

Trace Point Query

Function

This command queries the number of the trace display points.
Refer to
`[:SENSe]:SWEep:POINts?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:POINts?`
`[:SENSe]:ACPower:SWEep:POINts?`
`[:SENSe]:OBWidth:SWEep:POINts?`

[:SENSe]:CHPower:SWEep:TIME <time>

Sweep Time

Function

This command sets the sweep time.
Refer to
`[:SENSe]:SWEep:TIME.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME`
`[:SENSe]:ACPower:SWEep:TIME`
`[:SENSe]:OBWidth:SWEep:TIME`
`[:SENSe]:BPOWer|:TXPower:SWEep:TIME`

[:SENSe]:CHPower:SWEep:TIME?

Sweep Time Query

Function

This command queries the sweep time.
Refer to
`[:SENSe]:SWEep:TIME?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME?`
`[:SENSe]:ACPower:SWEep:TIME?`
`[:SENSe]:OBWidth:SWEep:TIME?`
`[:SENSe]:BPOWer|:TXPower:SWEep:TIME?`

[:SENSe]:CHPower:SWEep:TIME:AUTO OFF|ON|0|1

Sweep Time Auto/Manual

Function

This command enables/disable the automatic sweep time setting function.
Refer to
`[:SENSe]:SWEep:TIME:AUTO.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME:AUTO`
`[:SENSe]:ACPower:SWEep:TIME:AUTO`
`[:SENSe]:OBWidth:SWEep:TIME:AUTO`

[:SENSe]:CHPower:SWEep:TIME:AUTO?

Sweep Time Auto/Manual Query

Function

This command queries the On/Off state of the automatic sweep time setting.
Refer to
`[:SENSe]:SWEep:TIME:AUTO?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME:AUTO?`
`[:SENSe]:ACPower:SWEep:TIME:AUTO?`
`[:SENSe]:OBWidth:SWEep:TIME:AUTO?`

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>

Relative To

Function

This command sets the reference marker when the marker mode is set to Delta.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence.`

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence`

:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

Relative To

Function

This command queries the reference marker when the marker mode is set to Delta.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`

Related command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?`

2.12 OBW

Table 2.12-1 lists device messages for occupied bandwidth measurement.

Table 2.12-1 Device Messages for Occupied Bandwidth measurement

Function	Device Message
Measure Occupied Bandwidth	[:SENSe]:OBWidth[:STATe] ON|OFF|1|0
	[:SENSe]:OBWidth[:STATe]?
	:CALCulate:OBWidth[:STATe] ON|OFF|1|0
	:CALCulate:OBWidth[:STATe]?
OBW Method	[:SENSe]:OBWidth:METHod NPERcent|XDB
	[:SENSe]:OBWidth:METHod?
	:CALCulate:OBWidth:METHod NPERcent|XDB
	:CALCulate:OBWidth:METHod?
OBW N% Ratio	[:SENSe]:OBWidth:PERCent <real>
	[:SENSe]:OBWidth:PERCent?
	:CALCulate:OBWidth:PERCent <real>
	:CALCulate:OBWidth:PERCent?
OBW X dB Value	[:SENSe]:OBWidth:XDB <rel_ampl>
	[:SENSe]:OBWidth:XDB?
	:CALCulate:OBWidth:XDB <rel_ampl>
	:CALCulate:OBWidth:XDB?
Occupied Bandwidth Configure	:CONFigure:OBWidth
Occupied Bandwidth Initiate	:INITiate:OBWidth
Occupied Bandwidth Fetch	:FETCh:OBWidth[n]?
	:FETCh:OBWidth:FERRor?
Occupied Bandwidth Read	:READ:OBWidth[n]?
	:READ:OBWidth:FERRor?
Occupied Bandwidth Measure	:MEASure:OBWidth[n]?
	:MEASure:OBWidth:FERRor?
All Marker Off	:CALCulate:OBWidth:MARKer:AOFF
Peak Search	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
Power Peak Search	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
Minimum Search	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

Table 2.12-1 Device Messages for Occupied Bandwidth measurement (Cont'd)

Function	Device Message
Marker Mode	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF
	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
Zone Marker Frequency (Time)	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>
	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
Zone Marker Position	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>
	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
Marker Level	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
Title Entry	:DISPlay:OBWidth:ANNotation:TITLe:DATA <string>
	:DISPlay:OBWidth:ANNotation:TITLe:DATA?
Log Scale Range	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>
	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
Reference Level	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>
	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
Trigger Source	:TRIGger:OBWidth[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe
	:TRIGger:OBWidth[:SEQuence]:SOURce?
Average Count	[:SENSe]:OBWidth:AVERage:COUNt <integer>
	[:SENSe]:OBWidth:AVERage:COUNt?
Storage Mode	[:SENSe]:OBWidth:AVERage[:STATe] ON|OFF|1|0
	[:SENSe]:OBWidth:AVERage[:STATe]?
Resolution Bandwidth	[:SENSe]:OBWidth:BANDwidth[:RESolution] <freq>
	[:SENSe]:OBWidth:BANDwidth[:RESolution]?
	:CALCulate:OBWidth:BANDwidth[:RESolution] <freq>
	:CALCulate:OBWidth:BANDwidth[:RESolution]?
Resolution Bandwidth Auto/Manual	[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO ON|OFF|1|0
	[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
	:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO ON|OFF|1|0
	:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
Resolution Bandwidth Normal/CISPR	[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE NORMal|CISPr
	[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?
	:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE NORMal|CISPr
	:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?

Table 2.12-1 Device messages for Occupied Bandwidth measurement (Cont'd)

Function	Device Message
Video Bandwidth	[:SENSe]:OBWidth:BANDwidth:VIDeo <freq>
	[:SENSe]:OBWidth:BANDwidth:VIDeo?
Video Bandwidth Auto/Manual	[:SENSe]:OBWidth:BANDwidth:VIDeo:AUTO OFF|ON|0|1
	[:SENSe]:OBWidth:BANDwidth:VIDeo:AUTO?
Detection Mode	[:SENSe]:OBWidth:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS
	[:SENSe]:OBWidth:DETector[:FUNCtion]?
	:CALCulate:OBWidth:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS
	:CALCulate:OBWidth:DETector[:FUNCtion]?
Span Frequency	[:SENSe]:OBWidth:FREQuency:SPAN <freq>
	[:SENSe]:OBWidth:FREQuency:SPAN?
Full Span	[:SENSe]:OBWidth:FREQuency:SPAN:FULL
Trace Point	[:SENSe]:OBWidth:SWEep:POINts <integer>
	[:SENSe]:OBWidth:SWEep:POINts?
Sweep Time	[:SENSe]:OBWidth:SWEep:TIME <time>
	[:SENSe]:OBWidth:SWEep:TIME?
Sweep Time Auto/Manual	[:SENSe]:OBWidth:SWEep:TIME:AUTO OFF|ON|0|1
	[:SENSe]:OBWidth:SWEep:TIME:AUTO?
Relative To	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>
	:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

[:SENSe]:OBWidth[:STATe] ON|OFF|1|0

Measure Occupied Bandwidth

Function

This command executes Occupied Bandwidth measurement.

Command

```
[:SENSe]:OBWidth[:STATe] <switch>
```

Parameter

<switch>	OBW measurement On/Off
ON|1	Sets OBW measurement to On.
OFF|0	Sets OBW measurement to Off.

Example of Use

To set OBW measurement to On.

```
OBW ON
```

Related command

This command has the same function as the following command.

```
:CALCulate:OBWidth[:STATe] ON|OFF|1|0
```

[:SENSe]:OBWidth[:STATe]?

Measure Occupied Bandwidth Query

Function

This command queries the On/Off state of the Occupied Bandwidth measurement setting.

Command

```
[:SENSe]:OBWidth[:STATe]?
```

Parameter

<switch>	OBW measurement On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the OBW measurement setting.

```
OBW?
> 1
```

Related command

This command has the same function as the following command.
:CALCulate:OBWidth[:STATe]?

:CALCulate:OBWidth[:STATe] ON|OFF|1|0

Measure Occupied Bandwidth

Function

This command executes Occupied Bandwidth measurement.
Refer to
[:SENSe]:OBWidth[:STATe].

Related command

This command has the same function as the following command.
[:SENSe]:OBWidth[:STATe] ON|OFF|1|0

:CALCulate:OBWidth[:STATe]?

Measure Occupied Bandwidth Query

Function

This command queries the setting of Occupied Bandwidth measurement.
Refer to
[:SENSe]:OBWidth[:STATe]?.

Related command

This command has the same function as the following command.
[:SENSe]:OBWidth[:STATe]?

[:SENSe]:OBWidth:METHod NPERcent|XDB

OBW Method

Function

This command sets the Occupied Bandwidth measurement method.

Command

```
[:SENSe]:OBWidth:METHod <method>
```

Parameter

`<method>`	Measurement method
`NPERcent`	N% method (Default)
`XDB`	X dB Down method

Example of Use

To set the Occupied Bandwidth measurement method to X dB Down.

```
OBW:METH XDB
```

Related command

This command has the same function as the following command.

```
:CALCulate:OBWidth:METHod NPERcent|XDB
```

[:SENSe]:OBWidth:METHod?

OBW Method Query

Function

This command queries the measurement method for Occupied Bandwidth measurement.

Query

```
[:SENSe]:OBWidth:METHod?
```

Response

```
<method>
```

Parameter

`<method>`	Measurement method
`NPER`	N% method
`XDB`	X dB Down method

Example of Use

To query the measurement method for Occupied Bandwidth measurement.

```
OBW:METH?
> XDB
```

Related command

This command has the same function as the following command.

```
:CALCulate:OBWidth:METHod?
```

:CALCulate:OBWidth:METHod NPERcent|XDB

OBW Method

Function

This command sets the measurement method for Occupied Bandwidth measurement.

Refer to

```
[:SENSe]:OBWidth:METHod.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:OBWidth:METHod NPERcent|XDB
```

:CALCulate:OBWidth:METHod?

OBW Method Query

Function

This command queries the measurement method for Occupied Bandwidth measurement.

Refer to

```
[:SENSe]:OBWidth:METHod?.
```

Related command

This command has the same function as the following command.

```
[:SENSe]:OBWidth:METHod?
```

[:SENSe]:OBWidth:PERCent <real>

OBW N% Ratio

Function

This command sets the Occupied Frequency Bandwidth (N% method) condition.

Command

```
[:SENSe]:OBWidth:PERCent <real>
```

Parameter

<real>	N%
Range	0.01 to 99.99 %
Resolution	0.01
Suffix code	None
Default	99.00%

Example of Use

To set to 12.34%.

```
OBW:PERC 12.34
```

Related command

This command has the same function as the following command.

```
:CALCulate:OBWidth:PERCent
```

[:SENSe]:OBWidth:PERCent?

OBW N% Ratio Query

Function

This command queries the Occupied Frequency Bandwidth (N% method) condition.

Query

```
[:SENSe]:OBWidth:PERCent?
```

Response

```
<real>
```

Parameter

<real>	N%
Range	0.01 to 99.99 %
Resolution	0.01
Suffix code	None. Value is returned in % units.

Example of Use

To query the Occupied Frequency Bandwidth (N% method) condition.

```
OBW:PERC?
> 12.34
```

Related command

This command has the same function as the following command.

```
:CALCulate:OBWidth:PERCent?
```

:CALCulate:OBWidth:PERCent <real>

OBW N% Ratio

Function

This command sets the Occupied Frequency Bandwidth (N% method) condition.
Refer to
`[:SENSe]:OBWidth:PERCent.`

Related command

This command has the same function as the following command.
`[:SENSe]:OBWidth:PERCent`

:CALCulate:OBWidth:PERCent?

OBW N% Ratio Query

Function

This command queries the Occupied Frequency Bandwidth (N% method) condition.
Refer to
`[:SENSe]:OBWidth:PERCent?.`

Related command

This command has the same function as the following command.
`[:SENSe]:OBWidth:PERCent?`

[:SENSe]:OBWidth:XDB <rel_ampl>

OBW X dB Value

Function

This command sets the Occupied Frequency Bandwidth (X dB) condition.

Command

```
[:SENSe]:OBWidth:XDB <rel_ampl>
```

Parameter

<rel_ampl>	X dB
Range	0.01 to 100.00 dB
Resolution	0.01 dB
Suffix code	DB dB is used even when omitted.
Default	25.00 dB

Example of Use

To set the X dB condition to 12.34 dB.

```
OBW:XDB 12.34
```

Related command

This command has the same function as the following command.

```
:CALCulate:OBWidth:XDB
```

[:SENSe]:OBWidth:XDB?

OBW X dB Value Query

Function

This command queries the Occupied Frequency Bandwidth (X dB) condition.

Query

```
[:SENSe]:OBWidth:XDB?
```

Response

```
<rel_ampl>
```

Parameter

<rel_ampl>	X dB
Range	0.01 to 100.00 dB
Resolution	0.01 dB
Suffix code	None. Value is returned in dB units.
Default	25.00 dB

Example of Use

To query the Occupied Frequency Bandwidth (X dB) condition.

```
OBW:XDB?
> 12.34
```

Related command

This command has the same function as the following command.

```
:CALCulate:OBWidth:XDB?
```

:CALCulate:OBWidth:XDB <rel_ampl>

OBW X dB Value

Function

This command sets the Occupied Frequency Bandwidth (X dB) condition.
Refer to
`[:SENSe]:OBWidth:XDB`.

Related command

This command has the same function as the following command.
`[:SENSe]:OBWidth:XDB`

:CALCulate:OBWidth:XDB?

OBW X dB Value Query

Function

This command queries the Occupied Frequency Bandwidth (X dB) condition.
Refer to
`[:SENSe]:OBWidth:XDB?`.

Related command

This command has the same function as the following command.
`[:SENSe]:OBWidth:XDB?`

:CONFigure:OBWidth

Occupied Bandwidth Configure

Function

This command sets OBW measurement to On.

Command

```
:CONFigure:OBWidth
```

Details

No measurement is performed.

Example of Use

To set OBW measurement to On.

```
CONF:OBW
```

:INITiate:OBWidth

Occupied Bandwidth Initiate

Function

This command starts OBW measurement.

Command

```
:INITiate:OBWidth
```

Details

OBW measurement is set to On and the measurement starts, when this function is executed.
To read out the measurement results after executing this command, perform the synchronization control using the “*WAI” command.

Example of Use

To initiate OBW measurement.

```
INIT:OBW
```

:FETCh:OBWidth[n]?

Occupied Bandwidth Fetch

Function

This command outputs the measurement result of OBW measurement.

Query

```
:FETCh:OBWidth[n]?
```

Response

When the result mode is "A".

```
<obw>,<center>,<start>,<stop>
```

(n=1 or when omitted)

When the result mode is "B".

```
<obw_nper>,-999.0,<span>,<trace_point>,
<rbw>,<freq_error>,<obw_xdb>
```

(n=1 or when omitted)

```
<tracedata_1>,<tracedata_2>,<tracedata_3>,
......
```

(n=2)

Parameter

	Frequency Span setting value
<freq_error>	Difference between the center frequency of Occupied Bandwidth and the center frequency.
<rbw>	RBW setting value
<obw>	Occupied Bandwidth
<obw_nper>	Occupied Bandwidth (N % method) "–999999999999" is returned, when OBW Method is X dB.
<obw_xdb>	Occupied Bandwidth (X dB method) "–999999999999" is returned, when OBW Method is N%.
	Center frequency of Occupied Bandwidth
<start>	Lower frequency of Occupied Bandwidth
<stop>	Upper frequency of Occupied Bandwidth
Suffix code	None. Hz units, 1 Hz resolution "–999999999999" is returned when an error occurs /no measurement is performed.

<trace_point>	Trace point number
Suffix code	None. "–999.0" is returned when no measurement is executed.

Details

This function outputs the measurement result of the OBW measurement performed last. It is possible to output the measurement result in a state that the measurement has already been done, and in a different style. You can use the READ command if you perform a measurement along with starting the sweep again.
Return values of this function vary according to the result mode.(cf. :SYSTem:RESult:MODE)

Example of Use

To obtain the measurement result of OBW measurement. (n=1)

```
FETC:OBW?
> 30000,1000000000,900050000,1000050000
```

:FETCh:OBWidth:FERRor?

Occupied Bandwidth Fetch

Function

This command outputs the difference between the center frequency of occupied bandwidth of OBW measurement and the center frequency.

Query

```
:FETCh:OBWidth:FERRor?
```

Response

```
<freq_error>
```

Parameter

`<freq_error>`		Difference between the center frequency of occupied bandwidth and the center frequency.
	Suffix code	None. Hz units, 1 Hz resolution "–999999999999" is returned when an error occurs /no measurement is performed.

Details

This function outputs the measurement result of the OBW measurement last performed. It is possible to output the measurement result in a state that the measurement has already been done, and in a different style. You can use READ command if you perform a measurement along with starting the sweep again.

Example of Use

To obtain the difference between the center frequency of occupied bandwidth of OBW measurement and the center frequency.

```
FETC:OBW:FERR?
> 30000
```

:READ:OBWidth[n]?

Occupied Bandwidth Read

Function

This command performs the OBW measurement and outputs the measurement result.
It achieves the same result as when commands are sent in the order of
`:INITiate:OBWidth`
`:FETCh:OBWidth[n]?`

:READ:OBWidth:FERRor?

Occupied Bandwidth Read

Function

This command performs the OBW measurement of OBW and outputs the difference between the center frequency of Occupied Bandwidth and the center frequency.
It achieves the same result as when commands are sent in the order of
`:INITiate:OBWidth`
`:FETCh:OBWidth:FERRor?`

:MEASure:OBWidth[n]?

Occupied Bandwidth Measure

Function

This command performs the OBW measurement and outputs the measurement result.
It achieves the same result as when commands are sent in the order of
`:CONFigure:OBWidth`
`:INITiate:OBWidth`
`:FETCh:OBWidth[n]?`

:MEASure:OBWidth:FERRor?

Occupied Bandwidth Measure

Function

This command performs the measurement of OBW and outputs the difference between the center frequency of Occupied Bandwidth and the center frequency.
It achieves the same result as when commands are sent in the order of
:CONFigure:OBWidth
:INITiate:OBWidth
:FETCh:OBWidth:FERRor?

:CALCulate:OBWidth:MARKer:AOFF

All Marker Off

Function

This command sets all the markers to Off.
Refer to
:CALCulate:MARKer:AOFF.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer:AOFF
:CALCulate:ACPower:MARKer:AOFF
:CALCulate:CHPower:MARKer:AOFF
:CALCulate:BPOWer|:TXPower:MARKer:AOFF

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

Peak Search

Function

This command searches for the maximum level point of the active trace and moves the marker point.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

Power Peak Search

Function

This command moves the active marker to the position where the peak power of the zone width of the active marker becomes maximum in the measurement band.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer.

Related command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

Minimum Search Function

This command searches for the minimum level point of the active trace and moves the marker point to that point.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum.

Related Command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF

Marker Mode

Function

This command sets the marker mode.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

Marker Mode Query

Function

This command queries the marker mode.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>|<time>

Zone Marker Frequency (Time)

Function

This command moves the center of the zone marker to the specified frequency or time.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

Zone Marker Frequency (Time) Query

Function

This command queries the center of the zone marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>

Zone Marker Position

Function

This command moves the center of the zone marker to the specified position.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

Zone Marker Position Query

Function

This command queries the position of the zone marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?

Marker Level Query

Function

This command queries the level at the marker point.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?

:DISPlay:OBWidth:ANNotation:TITLe:DATA <string>

Title Entry

Function

This command registers the title character string.
Refer to
`:DISPlay:ANNotation:TITLe:DATA.`

Related command

This command has the same function as the following commands.
`:DISPlay:ANNotation:TITLe:DATA`
`:DISPlay:ACPower:ANNotation:TITLe:DATA`
`:DISPlay:CHPower:ANNotation:TITLe:DATA`
`:DISPlay:SEMask:ANNotation:TITLe:DATA`
`:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA`

:DISPlay:OBWidth:ANNotation:TITLe:DATA?

Title Entry Query

Function

This command queries the title character string.
Refer to
`:DISPlay:ANNotation:TITLe:DATA?.`

Related command

This command has the same function as the following commands.
`:DISPlay:ANNotation:TITLe:DATA?`
`:DISPlay:ACPower:ANNotation:TITLe:DATA?`
`:DISPlay:CHPower:ANNotation:TITLe:DATA?`
`:DISPlay:SEMask:ANNotation:TITLe:DATA?`
`:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA?`

:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>

Log Scale Range

Function

This command sets the Y-axis scale magnification when Scale Mode is set to Log.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

Log Scale Range Query

Function

This command queries the Y-axis scale magnification when Scale Mode is set to Log.
Refer to
`:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?`.

Related command

This command has the same function as the following commands.
`:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?`
`:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?`
`:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?`
`:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?`
`:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?`

:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>

Reference Level

Function

This command sets the reference level.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel

:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

Reference Level Query

Function

This command queries the reference level.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?.

Related command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

:TRIGger:OBWidth[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe

Trigger Source

Function

This command selects the trigger source.
Refer to
`:TRIGger[:SEQuence]:SOURce.`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:SOURce`
`:TRIGger:ACPower[:SEQuence]:SOURce`
`:TRIGger:CHPower[:SEQuence]:SOURce`
`:TRIGger:SEMask[:SEQuence]:SOURce`
`:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce`

:TRIGger:OBWidth[:SEQuence]:SOURce?

Trigger Source Query

Function

This command queries the trigger source.
Refer to
`:TRIGger[:SEQuence]:SOURce?.`

Related command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:SOURce?`
`:TRIGger:ACPower[:SEQuence]:SOURce?`
`:TRIGger:CHPower[:SEQuence]:SOURce?`
`:TRIGger:SEMask[:SEQuence]:SOURce?`
`:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce?`

[:SENSe]:OBWidth:AVERage:COUNt <integer>

Average Count

Function

This command sets the storage count.
Refer to
`[:SENSe]:AVERage:COUNt.`

Related command

This command has the same function as the following commands.
`[:SENSe]:AVERage:COUNt`
`[:SENSe]:ACPower:AVERage:COUNt`
`[:SENSe]:CHPower:AVERage:COUNt`
`[:SENSe]:SEMask:AVERage:COUNt`
`[:SENSe]:BPOWer|:TXPower:AVERage:COUNt`

[:SENSe]:OBWidth:AVERage:COUNt?

Average Count Query

Function

This command queries the storage count.
Refer to
`[:SENSe]:AVERage:COUNt?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:AVERage:COUNt?`
`[:SENSe]:ACPower:AVERage:COUNt?`
`[:SENSe]:CHPower:AVERage:COUNt?`
`[:SENSe]:SEMask:AVERage:COUNt?`
`[:SENSe]:BPOWer|:TXPower:AVERage:COUNt?`

[:SENSe]:OBWidth:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function

This command sets the storage mode for Trace A.
Refer to
`:TRACe[1]|2|3|4|5|6:STORage:MODE.`

Related command

This command has the same function as the following commands.
`:TRACe[1]|2|3|4|5|6:STORage:MODE`
`[:SENSe]:ACPower:AVERage[:STATe]`
`[:SENSe]:CHPower:AVERage[:STATe]`
`[:SENSe]:SEMask:AVERage[:STATe]`
`[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]`
`[:SENSe]:SPURious:AVERage[:STATe]`

[:SENSe]:OBWidth:AVERage[:STATe]?

Storage Mode Query

Function

This command queries the storage mode for Trace A.
Refer to
`:TRACe[1]|2|3|4|5|6:STORage:MODE?.`

Related command

This command has the same function as the following commands.
`:TRACe[1]|2|3|4|5|6:STORage:MODE?`
`[:SENSe]:ACPower:AVERage[:STATe]?`
`[:SENSe]:CHPower:AVERage[:STATe]?`
`[:SENSe]:SEMask:AVERage[:STATe]?`
`[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?`
`[:SENSe]:SPURious:AVERage[:STATe]?`

[:SENSe]:OBWidth:BANDwidth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution].`

Related command

This command has the same function as the following commands.
`:CALCulate:BANDwidth|:BWIDth[:RESolution]`
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]`
`[:SENSe]:ACPower:BANDwidth[:RESolution]`
`[:SENSe]:CHPower:BANDwidth[:RESolution]`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]`
`:CALCulate:ACPower:BANDwidth[:RESolution]`
`:CALCulate:CHPower:BANDwidth[:RESolution]`
`:CALCulate:OBWidth:BANDwidth[:RESolution]`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]`

[:SENSe]:OBWidth:BANDwidth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?.`

Related command

This command has the same function as the following commands.
`:CALCulate:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:ACPower:BANDwidth[:RESolution]?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?`
`:CALCulate:ACPower:BANDwidth[:RESolution]?`
`:CALCulate:CHPower:BANDwidth[:RESolution]?`
`:CALCulate:OBWidth:BANDwidth[:RESolution]?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?`

:CALCulate:OBWidth:BANDwidth[:RESolution] <freq>

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution].`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]`
`[:SENSe]:ACPower:BANDwidth[:RESolution]`
`[:SENSe]:CHPower:BANDwidth[:RESolution]`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]`
`:CALCulate:BANDwidth|:BWIDth[:RESolution]`
`:CALCulate:ACPower:BANDwidth[:RESolution]`
`:CALCulate:CHPower:BANDwidth[:RESolution]`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]`

:CALCulate:OBWidth:BANDwidth[:RESolution]?

Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?.`

Related command

This command has the same function as the following commands.
`:CALCulate:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]?`
`[:SENSe]:ACPower:BANDwidth[:RESolution]?`
`[:SENSe]:CHPower:BANDwidth[:RESolution]?`
`[:SENSe]:OBWidth:BANDwidth[:RESolution]?`
`[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]?`
`:CALCulate:ACPower:BANDwidth[:RESolution]?`
`:CALCulate:CHPower:BANDwidth[:RESolution]?`
`:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]?`

[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO ON|OFF|1|0

Resolution Bandwidth Auto/Manual

Function

This command enables/disables the automatic resolution bandwidth (RBW) setting function.
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO`.

Related command

This command has the same function as the following commands.

```
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO
```

[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?

Resolution Bandwidth Auto/Manual Query

Function

This command queries whether the resolution bandwidth (RBW) is set to Auto.
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?`.

Related command

This command has the same function as the following commands.

```
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO?
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
```

:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO ON|OFF|1|0

Resolution Bandwidth Auto/Manual

Function

This command enables/disables the automatic resolution bandwidth(RBW) setting function.
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO`.

Related command

This command has the same function as the following commands.

```
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
```

:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?

Resolution Bandwidth Auto/Manual Query

Function

This command queries whether the resolution bandwidth (RBW) is set to Auto.
Refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?`.

Related command

This command has the same function as the following commands.

```
:CALCulate:BANDwidth|:BWIDth[:RESolution]:AUTO?
[:SENSe]:BANDwidth|:BWIDth[:RESolution]:AUTO?
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?
:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?
```

[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
```

:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE NORMal|CISPr

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE
```

:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?

Resolution Bandwidth Normal/CISPR Query

Function

This command queries the Resolution Bandwidth mode.
For details, refer to
`[:SENSe]:BANDwidth|:BWIDth[:RESolution]:MODE?`.

Related Command

This command has the same function as the following commands.

```
[:SENSe]:ACPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:CHPower:BANDwidth[:RESolution]:MODE?
[:SENSe]:OBWidth:BANDwidth[:RESolution]:MODE?
[:SENSe]:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
:CALCulate:BANDwidth|:BWIDth[:RESolution]:MODE?
:CALCulate:ACPower:BANDwidth[:RESolution]:MODE?
:CALCulate:CHPower:BANDwidth[:RESolution]:MODE?
:CALCulate:OBWidth:BANDwidth[:RESolution]:MODE?
:CALCulate:BPOWer|:TXPower:BANDwidth[:RESolution]:MODE?
```

[:SENSe]:OBWidth:BANDwidth:VIDeo <freq>

Video Bandwidth

Function

This command sets the video bandwidth (VBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo`
`[:SENSe]:ACPower:BANDwidth:VIDeo`
`[:SENSe]:CHPower:BANDwidth:VIDeo`

[:SENSe]:OBWidth:BANDwidth:VIDeo?

Video Bandwidth Query

Function

This command queries the video bandwidth (VBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo?`
`[:SENSe]:ACPower:BANDwidth:VIDeo?`
`[:SENSe]:CHPower:BANDwidth:VIDeo?`

[:SENSe]:OBWidth:BANDwidth:VIDeo:AUTO OFF|ON|0|1

Video Bandwidth Auto/Manual

Function

This command sets the video bandwidth (VBW).
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO`
`[:SENSe]:ACPower:BANDwidth:VIDeo:AUTO`
`[:SENSe]:CHPower:BANDwidth:VIDeo:AUTO`

[:SENSe]:OBWidth:BANDwidth:VIDeo:AUTO?

Video Bandwidth Auto/Manual Query

Function

This command queries whether the resolution bandwidth (RBW) is set to Auto.
Refer to
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:BANDwidth|:BWIDth:VIDeo:AUTO?`
`[:SENSe]:ACPower:BANDwidth:VIDeo:AUTO?`
`[:SENSe]:CHPower:BANDwidth:VIDeo:AUTO?`

[:SENSe]:OBWidth:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS

Detection Mode

Function

This command selects the detection mode of the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion].`

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]`
`[:SENSe]:ACPower:DETector[:FUNCtion]`
`[:SENSe]:CHPower:DETector[:FUNCtion]`
`:CALCulate:ACPower:DETector[:FUNCtion]`
`:CALCulate:CHPower:DETector[:FUNCtion]`
`:CALCulate:OBWidth:DETector[:FUNCtion]`

[:SENSe]:OBWidth:DETector[:FUNCtion]?

Detection Mode Query

Function

This command queries the detection mode of the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion]?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]?`
`[:SENSe]:ACPower:DETector[:FUNCtion]?`
`[:SENSe]:CHPower:DETector[:FUNCtion]?`
`[:SENSe]:SEMask:DETector:CARRier[:FUNCtion]?`
`:CALCulate:DETector[:FUNCtion]?`
`:CALCulate:ACPower:DETector[:FUNCtion]?`
`:CALCulate:CHPower:DETector[:FUNCtion]?`
`:CALCulate:OBWidth:DETector[:FUNCtion]?`

:CALCulate:OBWidth:DETector[:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS|QPEak|CAVerage|CRMS

Detection Mode

Function

This command selects the detection mode of the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion].`

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]`
`[:SENSe]:ACPower:DETector[:FUNCtion]`
`[:SENSe]:CHPower:DETector[:FUNCtion]`
`[:SENSe]:OBWidth:DETector[:FUNCtion]`
`:CALCulate:ACPower:DETector[:FUNCtion]`
`:CALCulate:CHPower:DETector[:FUNCtion]`

:CALCulate:OBWidth:DETector[:FUNCtion]?

Detection Mode Query

Function

This command queries the detection mode of the waveform pattern.
Refer to
`[:SENSe]:DETector[:FUNCtion]?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:DETector[:FUNCtion]?`
`[:SENSe]:ACPower:DETector[:FUNCtion]?`
`[:SENSe]:CHPower:DETector[:FUNCtion]?`
`[:SENSe]:OBWidth:DETector[:FUNCtion]?`
`[:SENSe]:SEMask:DETector:CARRier[:FUNCtion]?`
`:CALCulate:DETector[:FUNCtion]?`
`:CALCulate:ACPower:DETector[:FUNCtion]?`
`:CALCulate:CHPower:DETector[:FUNCtion]?`

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

Span Frequency

Function

This command sets the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN`
`[:SENSe]:ACPower:FREQuency:SPAN`
`[:SENSe]:CHPower:FREQuency:SPAN`

[:SENSe]:OBWidth:FREQuency:SPAN?

Span Frequency Query

Function

This command queries the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN?`
`[:SENSe]:ACPower:FREQuency:SPAN?`
`[:SENSe]:CHPower:FREQuency:SPAN?`

[:SENSe]:OBWidth:FREQuency:SPAN:FULL

Full Span

Function

This command maximizes the span frequency.
Refer to
`[:SENSe]:FREQuency:SPAN:FULL.`

Related command

This command has the same function as the following commands.
`[:SENSe]:FREQuency:SPAN:FULL`
`[:SENSe]:ACPower:FREQuency:SPAN:FULL`
`[:SENSe]:CHPower:FREQuency:SPAN:FULL`

[:SENSe]:OBWidth:SWEep:POINts <integer>

Trace Point

Function

This command sets the number of the trace display points.
Refer to
`[:SENSe]:SWEep:POINts`.

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:POINts`
`[:SENSe]:ACPower:SWEep:POINts`
`[:SENSe]:CHPower:SWEep:POINts`

[:SENSe]:OBWidth:SWEep:POINts?

Trace Point Query

Function

This command queries the number of the trace display points.
Refer to
`[:SENSe]:SWEep:POINts?`.

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:POINts?`
`[:SENSe]:ACPower:SWEep:POINts?`
`[:SENSe]:CHPower:SWEep:POINts?`

[:SENSe]:OBWidth:SWEep:TIME <time>

Sweep Time

Function

This command sets the sweep time.
Refer to
`[:SENSe]:SWEep:TIME`.

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME`
`[:SENSe]:ACPower:SWEep:TIME`
`[:SENSe]:CHPower:SWEep:TIME`
`[:SENSe]:BPOWer|:TXPower:SWEep:TIME`

[:SENSe]:OBWidth:SWEep:TIME?

Sweep Time Query

Function

This command queries the sweep time.
Refer to
`[:SENSe]:SWEep:TIME?`.

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME?`
`[:SENSe]:ACPower:SWEep:TIME?`
`[:SENSe]:CHPower:SWEep:TIME?`
`[:SENSe]:BPOWer|:TXPower:SWEep:TIME`

[:SENSe]:OBWidth:SWEep:TIME:AUTO OFF|ON|0|1

Sweep Time Auto/Manual

Function

This command enables/disables the automatic sweep time setting function.
Refer to
`[:SENSe]:SWEep:TIME:AUTO.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME:AUTO`
`[:SENSe]:ACPower:SWEep:TIME:AUTO`
`[:SENSe]:CHPower:SWEep:TIME:AUTO`

[:SENSe]:OBWidth:SWEep:TIME:AUTO?

Sweep Time Auto/Manual Query

Function

This command queries whether the automatic sweep time setting function is enabled.
Refer to
`[:SENSe]:SWEep:TIME:AUTO?.`

Related command

This command has the same function as the following commands.
`[:SENSe]:SWEep:TIME:AUTO?`
`[:SENSe]:ACPower:SWEep:TIME:AUTO?`
`[:SENSe]:CHPower:SWEep:TIME:AUTO?`

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>

Relative To

Function

This command sets the reference marker when the marker mode is set to Delta.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence

:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

Relative To Query

Function

This command queries the reference marker when the marker mode is set to Delta.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?.

Related command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

2.13 Spectrum Emission Mask

Table 2.13-1 lists device messages for Spectrum Emission Mask measurement.

Table 2.13-1 Device messages for Spectrum Emission Mask measurement

Function	Device Message
Measure Spectrum Emission Mask	[:SENSe]:SEMask[:STATe] ON|OFF|1|0
	[:SENSe]:SEMask[:STATe]?
Spectrum Emission Mask Limit Side	[:SENSe]:SEMask:OFFSet[1]:SIDE BOTH|POSitive|NEGative
	[:SENSe]:SEMask:OFFSet[1]:SIDE?
Spectrum Emission Mask Reference Type	[:SENSe]:SEMask:TYPE TPRef|PKRef|FIX
	[:SENSe]:SEMask:TYPE?
	:CALCulate:SEMask:TYPE TPRef|PKRef|FIX
	:CALCulate:SEMask:TYPE?
Spectrum Emission Mask Reference Power	[:SENSe]:SEMask:CARRier[:POWer] <ampl>
	[:SENSe]:SEMask:CARRier[:POWer]?
	:CALCulate:SEMask:CARRier[:POWer] <ampl>
	:CALCulate:SEMask:CARRier[:POWer]?
Spectrum Emission Mask Integrate Bandwidth	[:SENSe]:SEMask:BANDwidth[1]:CHANnel|:INTegration <bandwidth>
	[:SENSe]:SEMask:BANDwidth[1]:CHANnel|INTegration?
Spectrum Emission Mask Attenuator	[:SENSe]:SEMask:ATTenuation <rel_ampl>|AUTO
	[:SENSe]:SEMask:ATTenuation?
Spectrum Emission Mask Offset Attenuator	[:SENSe]:SEMask:OFFSet[1]:LIST:ATTenuation <rel_ampl_1>|AUTO [,<rel_ampl_2>|AUTO [,<rel_ampl_3>|AUTO [,<rel_ampl_4>|AUTO [,<rel_ampl_5>|AUTO [,<rel_ampl_6>|AUTO [,<rel_ampl_7>|AUTO [,<rel_ampl_8>|AUTO [,<rel_ampl_9>|AUTO [,<rel_ampl_10>|AUTO [,<rel_ampl_11>|AUTO [,<rel_ampl_12>|AUTO]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:ATTenuation?
Spectrum Emission Mask Resolution Bandwidth	[:SENSe]:SEMask:BANDwidth[1][:RESolution] <bandwidth>
	[:SENSe]:SEMask:BANDwidth[1][:RESolution]?
Spectrum Emission Mask Resolution Bandwidth Auto/Manual	[:SENSe]:SEMask:BANDwidth[1][:RESolution]:AUTO ON|OFF|1|0
	[:SENSe]:SEMask:BANDwidth[1][:RESolution]:AUTO?

Table 2.13-1 Device messages for Spectrum Emission Mask measurement (Cont'd)

Function	Device Message
Spectrum Emission Mask Offset Resolution Bandwidth	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution] <bandwidth_1>[,<bandwidth_2>[,<bandwidth_3>[,<bandwidth_4>[,<bandwidth_5>[,<bandwidth_6>[,<bandwidth_7>[,<bandwidth_8>[,<bandwidth_9>[,<bandwidth_10>[,<bandwidth_11>[,<bandwidth_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]?
Spectrum Emission Mask Offset Resolution Bandwidth Auto/Manual	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]:AUTO?
Spectrum Emission Mask Video Bandwidth	[:SENSe]:SEMask:BANDwidth[1]:VIDeo <bandwidth>|OFF
	[:SENSe]:SEMask:BANDwidth[1]:VIDeo?
Spectrum Emission Mask Offset Video Bandwidth	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo <bandwidth_1>|OFF [,<bandwidth_2>|OFF [,<bandwidth_3>|OFF [,<bandwidth_4>|OFF [,<bandwidth_5>|OFF [,<bandwidth_6>|OFF [,<bandwidth_7>|OFF [,<bandwidth_8>|OFF [,<bandwidth_9>|OFF [,<bandwidth_10>|OFF [,<bandwidth_11>|OFF [,<bandwidth_12>|OFF]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo?
Spectrum Emission Mask Video Bandwidth Auto/Manual	[:SENSe]:SEMask:BANDwidth[1]:VIDeo:AUTO ON|OFF|1|0
	[:SENSe]:SEMask:BANDwidth[1]:VIDeo:AUTO?
Spectrum Emission Mask Offset Video Bandwidth	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:AUTO?
Spectrum Emission Mask Video Bandwidth Mode	[:SENSe]:SEMask:BANDwidth[1]:VIDeo:MODE VIDeo|POWer
	[:SENSe]:SEMask:BANDwidth[1]:VIDeo:MODE?
Spectrum Emission Mask Offset Video Bandwidth Mode	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:MODE <method_1>[,<method_2>[,<method_3>[,<method_4>[,<method_5>[,<method_6>[,<method_7>[,<method_8>[,<method_9>[,<method_10>[,<method_11>[,<method_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:MODE?

Table 2.13-1 Device messages for Spectrum Emission Mask measurement (Cont'd)

Function	Device Message
Spectrum Emission Mask Sweep Time	[:SENSe]:SEMask:SWEep[1]:TIME <time>
	[:SENSe]:SEMask:SWEep[1]:TIME?
Spectrum Emission Mask Offset Sweep Time	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME <time_1>,<time_2>,<time_3>,<time_4>,<time_5>,<time_6>[,<time_7>[,<time_8>[,<time_9>[,<time_10>[,<time_11>[,<time_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME?
Spectrum Emission Mask Sweep Time Auto/Manual	[:SENSe]:SEMask:SWEep[1]:TIME:AUTO ON|OFF|1|0
	[:SENSe]:SEMask:SWEep[1]:TIME:AUTO?
Spectrum Emission Mask Offset Sweep Time Auto/Manual	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO?
Spectrum Emission Mask Auto Sweep Time Select	[:SENSe]:SEMask:SWEep[1]:TIME:AUTO:MODE NORMal|FAST
	[:SENSe]:SEMask:SWEep[1]:TIME:AUTO:MODE?
Spectrum Emission Mask Offset Auto Sweep Time Select	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO:MODE <mode_1>[,<mode_2>[,<mode_3>[,<mode_4>[,<mode_5>[,<mode_6>[,<mode_7>[,<mode_8>[,<mode_9>[,<mode_10>[,<mode_11>[,<mode_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO:MODE?
Spectrum Emission Mask Detection Mode	[:SENSe]:SEMask:DETector[:FUNCtion] NORMal|POSitive|NEGative|SAMPle|RMS|AVERage
	[:SENSe]:SEMask:DETector[:FUNCtion]?
	:CALCulate:SEMask:DETector[:FUNCtion] NORMal|POSitive|NEGative|SAMPle|RMS|AVERage
	:CALCulate:SEMask:DETector[:FUNCtion]?
Spectrum Emission Mask Offset Detection Mode	[:SENSe]:SEMask:OFFSet[1]:LIST:DETector <mode_1>[,<mode_2>[,<mode_3>[,<mode_4>[,<mode_5>[,<mode_6>[,<mode_7>[,<mode_8>[,<mode_9>[,<mode_10>[,<mode_11>[,<mode_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:DETector?
	[:SENSe]:SEMask:DETector:OFFSet[:FUNCtion] NORMal|POSitive|NEGative|SAMPle|RMS|AVERage
Spectrum Emission Mask Trace Point	[:SENSe]:SEMask:SWEep[1]:POINts <integer>
	[:SENSe]:SEMask:SWEep[1]:POINts?
Spectrum Emission Mask Offset Trace Point	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:POINts <integer_1>[,<integer_2>[,<integer_3>[,<integer_4>[,<integer_5>[,<integer_6>[,<integer_7>[,<integer_8>[,<integer_9>[,<integer_10>[,<integer_11>[,<integer_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:POINts?

Table 2.13-1 Device messages for Spectrum Emission Mask measurement (Cont'd)

Function	Device Message
Spectrum Emission Mask Reference Filter Type	[:SENSe]:SEMask:FILTer:TYPE RECT|NYQuist|RNYQuist
	[:SENSe]:SEMask:FILTer:TYPE?
Spectrum Emission Mask Reference Roll-off Factor	[:SENSe]:SEMask:FILTer[:RRC]:ALPHa <real>
	[:SENSe]:SEMask:FILTer[:RRC]:ALPHa?
Spectrum Emission Mask Offset Start Frequency	[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STARt <freq_1>[,<freq_2>[,<freq_3>[,<freq_4>[,<freq_5>[,<freq_6>[,<freq_7>[,<freq_8>[,<freq_9>[,<freq_10>[,<freq_11>[,<freq_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STARt?
Spectrum Emission Mask Offset Stop Frequency	[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STOP <freq_1>[,<freq_2>[,<freq_3>[,<freq_4>[,<freq_5>[,<freq_6>[,<freq_7>[,<freq_8>[,<freq_9>[,<freq_10>[,<freq_11>[,<freq_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STOP?
Spectrum Emission Mask Offset Integrate Bandwidth	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration <bandwidth_1>[,<bandwidth_2>[,<bandwidth_3>[,<bandwidth_4>[,<bandwidth_5>[,<bandwidth_6>[,<bandwidth_7>[,<bandwidth_8>[,<bandwidth_9>[,<bandwidth_10>[,<bandwidth_11>[,<bandwidth_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration?
Spectrum Emission Mask Offset Integrate Bandwidth Auto/Manual	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration:AUTO?
Spectrum Emission Mask Offset Reference Level	[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel?
Spectrum Emission Mask Offset Reference Level Auto/Manual	[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel:AUTO?
Spectrum Emission Mask Offset On/Off	[:SENSe]:SEMask:OFFSet[1]:LIST:STATe <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:STATe?

Table 2.13-1 Device messages for Spectrum Emission Mask measurement (Cont'd)

Function	Device Message
Spectrum Emission Mask Offset Start Frequency Absolute Limit Level	[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2 <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2?
	:CALCulate:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2 <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	:CALCulate:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2?
Spectrum Emission Mask Offset Stop Frequency Absolute Limit Level	[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2 <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2?
	:CALCulate:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2 <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	:CALCulate:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2?
Spectrum Emission Mask Offset Start Frequency Limit Level	[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:RCARrier <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:RCARrier?
	:CALCulate:SEMask:OFFSet[1]:LIST:STARt:RCARrier <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	:CALCulate:SEMask:OFFSet[1]:LIST:STARt:RCARrier?
Spectrum Emission Mask Offset Stop Frequency Limit Level	[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:RCARrier <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:RCARrier?
	:CALCulate:SEMask:OFFSet[1]:LIST:STOP:RCARrier <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]
	:CALCulate:SEMask:OFFSet[1]:LIST:STOP:RCARrier?

Table 2.13-1 Device messages for Spectrum Emission Mask measurement (Cont'd)

Function	Device Message
Spectrum Emission Mask Fail Logic	[:SENSe]:SEMask:LOGic:OFFSet[1]:LIST:TEST <logic_1>[,<logic_2>[,<logic_3>[,<logic_4>[,<logic_5>[,<logic_6>[,<logic_7>[,<logic_8>[,<logic_9>[,<logic_10>[,<logic_11>[,<logic_12>]]]]]]]]]]]
	[:SENSe]:SEMask:LOGic:OFFSet[1]:LIST:TEST?
	:CALCulate:SEMask:LOGic:OFFSet[1]:LIST:TEST <logic_1>[,<logic_2>[,<logic_3>[,<logic_4>[,<logic_5>[,<logic_6>[,<logic_7>[,<logic_8>[,<logic_9>[,<logic_10>[,<logic_11>[,<logic_12>]]]]]]]]]]]
	:CALCulate:SEMask:LOGic:OFFSet[1]:LIST:TEST?
Spectrum Emission Mask Configure	:CONFigure:SEMask
Spectrum Emission Mask Initiate	:INITiate:SEMask
Spectrum Emission Mask Fetch	:FETCh:SEMask[n]?
Spectrum Emission Mask Read	:READ:SEMask[n]?
Spectrum Emission Mask Measure	:MEASure:SEMask[n]?
Spectrum Emission Mask Root Nyquist Filter State	[:SENSe]:SEMask:FILTer[:RRC][:STATe] ON|OFF|1|0
	[:SENSe]:SEMask:FILTer[:RRC][:STATe]?
Spectrum Emission Mask Result Type	DISPlay:SEMask:RESult:TYPE PEAK|MARGin
	DISPlay:SEMask:RESult:TYPE?
Title Entry	:DISPlay:SEMask:ANNotation:TITLe:DATA <string>
	:DISPlay:SEMask:ANNotation:TITLe:DATA?
Log Scale Range	:DISPlay:SEMask:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>
	:DISPlay:SEMask:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
Reference Level	:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>
	:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
Page Number	:DISPlay:SEMask:VIEW[1]:WINDow[1]:PAGE:NUMBer <integer>
	:DISPlay:SEMask:VIEW[1]:WINDow[1]:PAGE:NUMBer?
Trigger Source	:TRIGger:SEMask[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe
	:TRIGger:SEMask[:SEQuence]:SOURce?
Average Count	[:SENSe]:SEMask:AVERage:COUNt <integer>
	[:SENSe]:SEMask:AVERage:COUNt?
Storage Mode	[:SENSe]:SEMask:AVERage[:STATe] ON|OFF|1|0
	[:SENSe]:SEMask:AVERage[:STATe]?
Couple Ref&ATT	[:SENSe]:SEMask:RACouple OFF|ON|0|1
	[:SENSe]:SEMask:RACouple?

Table 2.13-1 Device messages for Spectrum Emission Mask measurement (Cont'd)

Function	Device Message
Spectrum Emission Mask Sweep Type Select Rules Real FFT Width Query	[:SENSe]:SEMask:SWEep[1][:TYPE][:AUTO]:RULes:FFT:RWIDth?
Spectrum Emission Mask Offset Sweep Type Select Rules Real FFT Width Query	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1][:TYPE][:AUTO]:RULes:FFT:RWIDth?
Spectrum Emission Mask Sweep Type Select Rules Real Type Query	[:SENSe]:SEMask:SWEep[1][:TYPE][:AUTO]:RULes:RTYPe?
Spectrum Emission Mask Offset Sweep Type Select Rules Real Type Query	[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1][:TYPE][:AUTO]:RULes:RTYPe?

[:SENSe]:SEMask[:STATe] ON|OFF|1|0

Measure Spectrum Emission Mask

Function

This command performs Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask[:STATe] <switch>
```

Parameter

<switch>	SEM measurement On/Off
ON|1	Sets SEM measurement to On.
OFF|0	Sets SEM measurement to Off.

Example of Use

To set SEM measurement to On.

```
SEM ON
```

[:SENSe]:SEMask[:STATe]?

Measure Spectrum Emission Mask Query

Function

This command queries the On/Off state for the Spectrum Emission Mask measurement setting.

Command

```
[:SENSe]:SEMask[:STATe]?
```

Parameter

<switch>	SEM measurement On/Off
1	On
0	Off

Example of Use

To query the On/Off state for the SEM measurement setting.

```
SEM?
> 1
```

[:SENSe]:SEMask:OFFSet[1]:SIDE BOTH|POSitive|NEGative

Spectrum Emission Mask Limit Side

Function

This command selects the judgment target area for the Spectrum Emission Mask measurement.
This commend selects an area

Command

```
[:SENSe]:SEMask:OFFSet[1]:SIDE <side>
```

Parameter

`<side>`	Judgment target area
`BOTH`	Upper/Lower offset
`POSitive`	Upper offset
`NEGative`	Lower offset

Example of Use

To set the upper offset as the judgment target area.

```
SEM:OFFS:SIDE POS
```

[:SENSe]:SEMask:OFFSet[1]:SIDE?

Spectrum Emission Mask Limit Side Query

Function

This command queries the judgment target area for the Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:SIDE?
```

Response

```
<side>
```

Parameter

<side>	Judgment target area
BOTH	Upper/Lower offset
POS	Upper offset
NEG	Lower offset

Example of Use

To query the judgment target area.

```
SEM:OFFS:SIDE?
> POS
```

[:SENSe]:SEMask:TYPE TPRef|PKRef|FIX

Spectrum Emission Mask Reference Type

Function

This command sets the reference for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:TYPE <type>
```

Parameter

`<type>`	Type of reference
`TPRef`	Uses the reference power as the integral power in Channel BW.
`PKRef`	Uses the reference power as the peak power in Channel BW.
`FIX`	Uses the reference power as the fixed value.

Example of Use

To set the reference power to the integral power in Channel BW.

```
SEM:TYPE TPR
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:TYPE TPRef|PKRef|FIX
```

[:SENSe]:SEMask:TYPE?

Spectrum Emission Mask Reference Type Query

Function

This command queries the reference power type for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:TYPE?
```

Response

```
<type>
```

Parameter

<type>	Type of reference
TPR	Uses the reference power as the integral power in Channel BW.
PKR	Uses the reference power as the peak power in Channel BW.
FIX	Uses the reference power as the fixed value.

Example of Use

To query the reference power type.

```
SEM:TYPE?
> TPR
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:TYPE?
```

:CALCulate:SEMask:TYPE TPRef|PKRef|FIX

Spectrum Emission Mask Reference Type

Function

This command sets the reference for Spectrum Emission Mask measurement.

Command

```
:CALCulate:SEMask:TYPE <type>
```

Parameter

`<type>`	Type of reference
`TPRef`	Uses the reference power as the integral power in Channel BW.
`PKRef`	Uses the reference power as the peak power in Channel BW.
`FIX`	Uses the reference power as the fixed value.

Example of Use

To set the reference power to the integral power in Channel BW.

```
CALC:SEM:TYPE TPR
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:TYPE TPRef|PKRef|FIX
```

:CALCulate:SEMask:TYPE?

Spectrum Emission Mask Reference Type Query

Function

This command queries the reference power type for Spectrum Emission Mask measurement.

Query

```
:CALCulate:SEMask:TYPE?
```

Response

```
<type>
```

Parameter

<type>	Type of reference
TPR	Uses the reference power as the integral power in Channel BW.
PKR	Uses the reference power as the peak power in Channel BW.
FIX	Uses the reference power as the fixed value.

Example of Use

To query the reference power type.

```
CALC:SEM:TYPE?
> TPR
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:TYPE?
```

[:SENSe]:SEMask:CARRier[:POWer] <ampl>

Spectrum Emission Mask Reference Power

Function

This command sets the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:CARRier[:POWer] <ampl>
```

Parameter

<ampl>		Reference power
	Range	–200 to 200 dBm
	Resolution	0.01 dB
	Suffix code	DBM,DM dBm is used when omitted.

Details

This command is not available when Reference Mode is set to either of the following:

- Channel
- Peak

Example of Use

To set the reference power to –10 dBm.

```
SEM:CARR -10
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:CARRier[:POWer] <ampl>
```

[:SENSe]:SEMask:CARRier[:POWer]?

Spectrum Emission Mask Reference Power Query

Function

This command queries the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:CARRier[:POWer]?
```

Response

```
<ampl>
```

Parameter

<ampl>		Reference power
	Range	–200 to 200 dBm
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dBm units.

Details

This command is not available when Reference Mode is set to either to the following:

- Channel
- Peak

Example of Use

To query the reference power.

```
SEM:CARR?
> -10.00
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:CARRier[:POWer]?
```

:CALCulate:SEMask:CARRier[:POWer] <ampl>

Spectrum Emission Mask Reference Power

Function

This command sets the reference power for Spectrum Emission Mask measurement.

Command

```
:CALCulate:SEMask:CARRier[:POWer] <ampl>
```

Parameter

<ampl>	Reference power
Range	–200 to 200 dBm
Resolution	0.01 dB
Suffix code	DBM,DM
	dBm is used when omitted.

Details

This command is not available when Reference Mode is set to either of the following:

- Channel
- Peak

Example of Use

To set the reference power to –10 dBm.

```
CALC:SEM:CARR -10
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:CARRier[:POWer] <ampl>
```

:CALCulate:SEMask:CARRier[:POWer]?

Spectrum Emission Mask Reference Power Query

Function

This command queries the reference power for Spectrum Emission Mask measurement.

Query

```
:CALCulate:SEMask:CARRier[:POWer]?
```

Response

```
<ampl>
```

Parameter

<ampl>		Reference power
	Range	–200 to 200 dBm
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dBm units.

Details

This command is not available when Reference Mode is set to either to the following:

- Channel
- Peak

Example of Use

To query the reference power.

```
CALC:SEM:CARR?
> -10.00
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:CARRier[:POWer]?
```

[:SENSe]:SEMask:BANDwidth[1]:CHANnel|:INTegration <bandwidth>

Spectrum Emission Mask Integrate Bandwidth

Function

This command sets the measurement bandwidth of the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:BANDwidth[1]:CHANnel|:INTegration
<bandwidth>
```

Parameter

<bandwidth>	Measurement bandwidth of reference power
Range	1000 to 200000000 Hz
Resolution	1 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Example of Use

To set the measurement bandwidth of the reference power to 5 MHz.

```
SEM:BAND:CHAN 5MHZ
```

[:SENSe]:SEMask:BANDwidth[1]:CHANnel|INTegration?

Spectrum Emission Mask Integrate Bandwidth Query

Function

This command queries the measurement bandwidth of the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:BANDwidth[1]:CHANnel|:INTegration?
```

Response

```
<bandwidth>
```

Parameter

<bandwidth>		Measurement bandwidth of reference power
	Range	1000 to 200000000 Hz
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the measurement bandwidth of the reference power.

```
SEM:BAND:CHAN?
> 5000000
```

[:SENSe]:SEMask: ATTenuation <rel_ampl>|AUTO

Spectrum Emission Mask Attenuator

Function

This command sets the attenuation when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:ATTenuation <rel_ampl>|AUTO
```

Parameter

`<rel_ampl>`	Attenuation when measuring the reference power
Range	0 to 60 dB
Resolution	2 dB step
Suffix code	DB dB is used when omitted.
`AUTO`	Sets attenuation automatically.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the attenuation when measuring the reference power to 10 dB.

```
SEM:ATT 10DB
```

[:SENSe]:SEMask:ATTenuation?

Spectrum Emission Mask Attenuator Query

Function

This command queries the attenuation when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:ATTenuation?
```

Response

```
<rel_ampl>
```

Parameter

<rel_ampl>		Attenuation when measuring the reference power
	Range	0 to 60 dB
	Resolution	2 dB step
	Suffix code	None. Value is returned in dB units.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the attenuation when measuring the reference power.

```
SEM:ATT?
> 10.00
```

[:SENSe]:SEMask:OFFSet[1]:LIST:ATTenuation <rel_ampl_1>|AUTO [,<rel_ampl_2>|AUTO [,<rel_ampl_3>|AUTO [,<rel_ampl_4>|AUTO [,<rel_ampl_5>|AUTO [,<rel_ampl_6>|AUTO [,<rel_ampl_7>|AUTO [,<rel_ampl_8>|AUTO [,<rel_ampl_9>|AUTO [,<rel_ampl_10>|AUTO [,<rel_ampl_11>|AUTO [,<rel_ampl_12>|AUTO]]]]]]]]]]]

Spectrum Emission Mask Offset Attenuator

Function

This command sets the attenuation when measuring the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:ATTenuation
<rel_ampl_n>|AUTO
```

Parameter

`<rel_ampl_n>`		Attenuation when measuring Offset-n measurement
	Range	0 to 60 dB
	Resolution	2 dB step
	Suffix code	DB dB is used when omitted.
`AUTO`		Sets the attenuation automatically.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the attenuation of the offset.

```
SEM:OFFS:LIST:ATT
10DB,10DB,10DB,10DB,10DB,10DB,10DB,10DB,10DB,10DB,10DB,1
0DB
```

[:SENSe]:SEMask:OFFSet[1]:LIST:ATTenuation?

Spectrum Emission Mask Offset Attenuator Query

Function

This command sets the attenuation when measuring the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:ATTenuation?
```

Response

```
<rel_ampl_n>
```

Parameter

<rel_ampl_n>		Attenuation when measuring Offset-n measurement
	Range	0 to 60 dB
	Resolution	2 dB step
	Suffix code	None. Value is returned in dB units.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the attenuation of the offset.

```
SEM:OFFS:LIST:ATT?
> 10,10,10,10,10,10,10,10,10,10,10,10
```

[:SENSe]:SEMask:BANDwidth[1][:RESolution] <bandwidth>

Spectrum Emission Mask Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW) of the reference channel for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:BANDwidth[1][:RESolution] <bandwidth>
```

Parameter

`<bandwidth>`	Resolution bandwidth (RBW)
[MS269xA]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz
[MS2830A], [MS2840A]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz
[Common]	
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Details

For MS2830A, MS2840A, RBW 20 MHz or greater is available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.
The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the resolution bandwidth of the reference channel to 3 kHz.

```
SEM:BAND 3KHZ
```

[:SENSe]:SEMask:BANDwidth[1][:RESolution]?

Spectrum Emission Mask Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW) of the reference channel for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:BANDwidth[1][:RESolution]?
```

Response

```
<bandwidth>
```

Parameter

`<bandwidth>`	Resolution bandwidth (RBW)
[MS269xA]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz
[MS2830A], [MS2840A]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz
[Common]	
Suffix code	None. Value is returned in Hz units.

Details

For MS2830A, MS2840A, RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.
The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the resolution bandwidth (RBW) of the reference channel.

```
SEM:BAND?
> 3000
```

[:SENSe]:SEMask:BANDwidth[1][:RESolution]:AUTO ON|OFF|1|0

Spectrum Emission Mask Resolution Bandwidth Auto/Manual

Function

This command enables/disables the automatic resolution bandwidth (RBW) setting function for the reference channel for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:BANDwidth[1][:RESolution]:AUTO <switch>
```

Parameter

`<switch>`	Automatic resolution bandwidth (RBW) setting function On/Off state
`ON|1`	Enables the automatic resolution bandwidth setting function.
`OFF|0`	Disables the automatic resolution bandwidth setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To enable the automatic resolution bandwidth setting function for the reference channel.

```
SEM:BAND:AUTO ON
```

[:SENSe]:SEMask:BANDwidth[1][:RESolution]:AUTO?

Spectrum Emission Mask Resolution Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic resolution bandwidth (RBW) setting function for the reference channel for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:BANDwidth[1][:RESolution]:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>	Automatic resolution bandwidth (RBW) setting function On/Off state
1	Automatic resolution bandwidth setting function is enabled.
0	Automatic resolution bandwidth setting function is disabled.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the On/Off state of the automatic resolution bandwidth (RBW) setting function for the reference channel.

```
SEM:BAND:AUTO?
> 1
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution] <bandwidth_1>[,<bandwidth_2>[,<bandwidth_3>[,<bandwidth_4>[,<bandwidth_5>[,<bandwidth_6>[,<bandwidth_7>[,<bandwidth_8>[,<bandwidth_9>[,<bandwidth_10>[,<bandwidth_11>[,<bandwidth_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW) of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]
<bandwidth_n>
```

Parameter

<bandwidth_n>	Resolution bandwidth (RBW) of Offset-n
[MS269xA]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz
[MS2830A], [MS2840A]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz
[Common]	
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Details

For MS2830A, MS2840A, RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.
The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the resolution bandwidth of the offset.

```
SEM:OFFS:LIST:BAND
30KHZ,30KHZ,30KHZ,1MHZ,1MHZ,1MHZ,30KHZ,30KHZ,30KHZ,1MHZ,
1MHZ,1MHZ
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]?

Spectrum Emission Mask Offset Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW) of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]
?
```

Response

```
<bandwidth_n>
```

Parameter

<bandwidth_n>	Resolution bandwidth (RBW) of Offset-n
[MS269xA]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz
[MS2830A], [MS2840A]	
Range/Resolution	30 Hz to 3 MHz(1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz
[Common]	
Suffix code	None. Value is returned in Hz units.

Details

For MS2830A, MS2840A, RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.
The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Operation)* for details.

Example of Use

To query the resolution bandwidth of the offset.

```
SEM:OFFS:LIST:BAND?
>
30000,30000,30000,1000000,1000000,1000000,30000,30000,30
000,1000000,1000000,1000000
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Resolution Bandwidth Auto/Manual

Function

This command enables/disables the automatic resolution bandwidth (RBW) setting function for the offset during Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]
:AUTO <switch_n>
```

Parameter

<switch_n>	Automatic resolution bandwidth setting function On/Off when measuring Offset-n
ON|1	Enables the automatic resolution bandwidth setting function.
OFF|0	Disables the automatic resolution bandwidth setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To enable the automatic resolution bandwidth setting function for the offset.

```
SEM:OFFS:LIST:BAND:AUTO
ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]:AUTO?

Spectrum Emission Mask Offset Resolution Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic resolution bandwidth (RBW) setting function when measuring the offset for Spectrum Emission Mask measurement automatically.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1][:RESolution]
:AUTO?
```

Response

```
<switch_n>
```

Parameter

`<switch_n>`	Automatic resolution bandwidth setting function when measuring Offset-n
`1`	Enables the automatic resolution bandwidth setting function.
`0`	Disables the automatic resolution bandwidth setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the automatic resolution bandwidth setting function On/Off state for the offset.

```
SEM:OFFS:LIST:BAND:AUTO?
> 1,1,1,1,1,1,1,1,1,1,1,1
```

[:SENSe]:SEMask:BANDwidth[1]:VIDeo <bandwidth>|OFF

Spectrum Emission Mask Video Bandwidth

Function

This command sets the video bandwidth (VBW) when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:BANDwidth[1]:VIDeo <bandwidth>|OFF
```

Parameter

`<bandwidth>`	Video bandwidth (VBW)
Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
`OFF`	Sets VBW to Off.

Details

This command is fixed to Auto and cannot be set if the detection mode of the measurement target is set to the following.

- RMS

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the video bandwidth of the reference power to 3 kHz.

```
SEM:BAND:VID 3KHZ
```

[:SENSe]:SEMask:BANDwidth[1]:VIDeo?

Spectrum Emission Mask Video Bandwidth Query

Function

This command queries the video bandwidth (VBW) when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:BANDwidth[1]:VIDeo?
```

Response

```
<bandwidth>
```

Parameter

`<bandwidth>`	Video bandwidth (VBW)
Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
`OFF`	Sets VBW to Off.
Suffix code	None. Value is returned in Hz units. This command returns OFF, when the VBW is set to Off.

Details

This command is fixed to Auto and cannot be set, when Detection is set to the following:

- RMS

The setting range of this function is limited depending on the settings of RBW. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the video bandwidth when measuring the reference power.

```
SEM:BAND:VID?
> 3000
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo <bandwidth_1>|OFF [,<bandwidth_2>|OFF [,<bandwidth_3>|OFF [,<bandwidth_4>|OFF [,<bandwidth_5>|OFF [,<bandwidth_6>|OFF [,<bandwidth_7>|OFF [,<bandwidth_8>|OFF [,<bandwidth_9>|OFF [,<bandwidth_10>|OFF [,<bandwidth_11>|OFF [,<bandwidth_12>|OFF]]]]]]]]]]

Spectrum Emission Mask Offset Video Bandwidth

Function

This command sets the video bandwidth (VBW) of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo
<bandwidth_n>
```

Parameter

`<bandwidth_n>`		Video bandwidth of Offset-n (VBW)
	Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
`OFF`		Sets VBW to Off.

Details

The setting range of this function is limited depending on the settings of RBW. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the video bandwidth of the offset.

```
SEM:OFFS:LIST:BAND:VID
3KHZ,3KHZ,3KHZ,10KHZ,10KHZ,10KHZ,3KHZ,3KHZ,3KHZ,10KHZ,10
KHZ,10KHZ
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo?

Spectrum Emission Mask OffsetVideo Bandwidth Query

Function

This command queries the video bandwidth (VBW) of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo?
```

Response

```
<bandwidth_n>
```

Parameter

`<bandwidth_n>`	Video bandwidth of Offset-n (VBW)
Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
`OFF`	Sets VBW to Off.
Suffix code	None. Value is returned in Hz units. This command returns OFF, when the VBW is set to Off.

Details

This command is fixed to Auto and cannot be set, when Detection is set to the following:

- RMS

The setting range of this function is limited depending on the settings of RBW. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the video bandwidth of the offset.

```
SEM:OFFS:LIST:BAND:VID?
>
3000,3000,3000,10000,10000,10000,3000,3000,3000,10000,10
000,10000
```

[:SENSe]:SEMask:BANDwidth[1]:VIDeo:AUTO ON|OFF|1|0

Spectrum Emission Mask Video Bandwidth Auto/Manual

Function

This command enables/disables the automatic video bandwidth (VBW) setting function when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:BANDwidth[1]:VIDeo:AUTO <switch>
```

Parameter

`<switch>`	Automatic video bandwidth setting function On/Off
`ON|1`	Enables the automatic video bandwidth setting function.
`OFF|0`	Disables the automatic video bandwidth setting function.

Details

The setting range of this function is limited depending on the settings of RBW. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To enable the automatic video bandwidth setting function when measuring the reference power.

```
SEM:BAND:VID:AUTO ON
```

[:SENSe]:SEMask:BANDwidth[1]:VIDeo:AUTO?

Spectrum Emission Mask Video Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic resolution bandwidth (RBW) setting function when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:BANDwidth[1]:VIDeo:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>	Automatic resolution bandwidth setting On/Off state
1	Automatic resolution bandwidth setting function is enabled.
0	Automatic resolution bandwidth setting function is disabled.

Details

This command is fixed to Auto and cannot be set, when Detection is set to the following:

- RMS

The setting range of this function is limited depending on the settings of RBW. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the On/Off state of the automatic video bandwidth setting function when measuring the reference power.

```
SEM:BAND:VID:AUTO?
> 1
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Video Bandwidth

Function

This command enables/disables the automatic video bandwidth (VBW) setting function for the offset during Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:AUTO
<switch_n>
```

Parameter

<switch_n>	Automatic video bandwidth setting function On/Off for Offset-n
ON|1	Enables the automatic video bandwidth setting function.
OFF|0	Disables the automatic video bandwidth setting function.

Details

The setting range of this function is limited depending on the settings of RBW. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To enable the automatic video bandwidth setting function for the offset.

```
SEM:OFFS:LIST:BAND:VID:AUTO
ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:AUTO?

Spectrum Emission Mask Offset Video Bandwidth Query

Function

This command queries the On/Off state of the automatic video bandwidth (VBW) setting function for the offset during Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:AUTO?
```

Response

```
<switch_n>
```

Parameter

<switch_n>	Automatic video bandwidth setting function On/Off state for Offset-n
1	Automatic video bandwidth setting function is enabled.
0	Automatic video bandwidth setting function is disabled.

Details

The setting range of this function is limited depending on the settings of RBW. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the On/Off state of the automatic video bandwidth setting function for the offset.

```
SEM:OFFS:LIST:BAND:VID:AUTO?
> 1,1,1,1,1,1,1,1,1,1,1,1
```

[:SENSe]:SEMask:BANDwidth[1]:VIDeo:MODE VIDeo|POWer

Spectrum Emission Mask Video Bandwidth Mode

Function

This command sets the processing method for the video bandwidth (VBW) when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:BANDwidth[1]:VIDeo:MODE <method>
```

Parameter

`<method>`	Processing method for VBW
`VIDeo`	Normal VBW
`POWer`	Power VBW

Example of Use

To set the processing method for the video bandwidth when measuring the reference power to Power VBW.

```
SEM:BAND:VID:MODE POW
```

[:SENSe]:SEMask:BANDwidth[1]:VIDeo:MODE?

Spectrum Emission Mask Video Bandwidth Mode Query

Function

This command queries the processing method for the video bandwidth (VBW) when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:BANDwidth[1]:VIDeo:MODE?
```

Response

```
<method>
```

Parameter

<method>	Processing method for VBW
VID	Normal VBW
POW	Power VBW

Details

This command is fixed to Auto and cannot be set, when Detection is set to the following:

- RMS

Example of Use

To set the processing method for the video bandwidth when measuring the reference power to Power VBW.

```
SEM:BAND:VID:MODE?
> POW
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:MODE <method_1>[,<method_2>[,<method_3>[,<method_4>[,<method_5>[,<method_6>[,<method_7>[,<method_8>[,<method_9>[,<method_10>[,<method_11>[,<method_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Video Bandwidth Mode

Function

This command sets the processing method for the video bandwidth (VBW) of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:MODE
<method_n>
```

Parameter

<method_n>	Processing method for VBW of Offset-n
VIDeo	Normal VBW
POWer	Power VBW

Example of Use

To set the processing method for the video bandwidth of the offset.

```
SEM:OFFS:LIST:BAND:VID:MODE
VID,VID,VID,VID,VID,VID,VID,VID,VID,VID,VID,VID
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:MODE?

Spectrum Emission Mask Offset Video Bandwidth Mode Query

Function

This command queries the processing method for the video bandwidth (VBW) of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:VIDeo:MODE?
```

Response

```
<method_n>
```

Parameter

<method_n>	Processing method for VBW of Offset-n
VID	Normal VBW
POW	Power VBW

Details

This command is fixed to Auto and cannot be set, when Detection is set to the following:

- RMS

Example of Use

To query the processing method for the video bandwidth of the offset.

```
SEM:OFFS:LIST:BAND:VID:MODE?
> VID,VID,VID,VID,VID,VID,VID,VID,VID,VID,VID,VID
```

[:SENSe]:SEMask:SWEep[1]:TIME <time>

Spectrum Emission Mask Sweep Time

Function

This command sets the sweep time when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:SWEep[1]:TIME <time>
```

Parameter

<time>	Sweep time
Range	
[MS269xA]	2 ms to 1000 s
[MS2830A]	1 ms to 1000 s
[MS2840A]	1 ms to 1000 s
Resolution	1 ms (time ≤ 1 s)
	0.1 s (1 s < time < 10 s)
	1 s (10 s ≤ time)
Suffix code	NS,US,MS,S
	S is used when omitted.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the sweep time when measuring the reference power to 20 ms.

```
SEM:SWE:TIME 20MS
```

[:SENSe]:SEMask:SWEep[1]:TIME?

Spectrum Emission Mask Sweep Time Query

Function

This command queries the sweep time when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:SWEep[1]:TIME?
```

Response

```
<time>
```

Parameter

`<time>`		Sweep time
	Range	
	[MS269xA]	2 ms to 1000 s
	[MS2830A]	1 ms to 1000 s
	[MS2840A]	1 ms to 1000 s
	Resolution	1 ms (time ≤ 1 s)
		0.1 s (1 s < time < 10 s)
		1 s (10 s ≤ time)
	Suffix code	None. Value is returned in S units.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the sweep time when measuring the reference power.

```
SEM:SWE:TIME?
> 0.020000
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME <time_1>[,<time_2>[,<time_3>[,<time_4>[,<time_5>[,<time_6>[,<time_7>[,<time_8>[,<time_9>[,<time_10>[,<time_11>[,<time_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Sweep Time

Function

This command sets the sweep time of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME <time_n>
```

Parameter

<time_n>	Sweep time of Offset-n
Range	
[MS269xA]	2 ms to 1000 s
[MS2830A]	1 ms to 1000 s
[MS2840A]	1 ms to 1000 s
Resolution	1 ms (time ≤ 1 s)
	0.1 s (1 s < time < 10 s)
	1 s (10 s ≤ time)
Suffix code	NS,US,MS,S
	S is used when omitted.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the sweep time of the offset.

```
SEM:OFFS:LIST:SWE:TIME
40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME?

Spectrum Emission Mask Offset Sweep Time Query

Function

This command queries the sweep time for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME?
```

Response

```
<time_n>
```

Parameter

`<time_n>`		Sweep time of Offset-n
	Range	
	[MS269xA]	2 ms to 1000 s
	[MS2830A]	1 ms to 1000 s
	[MS2840A]	1 ms to 1000 s
	Resolution	1 ms (time ≤ 1 s) 0.1 s (1 s < time < 10 s) 1 s (10 s ≤ time)
	Suffix code	None. Value is returned in S units.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Operation)* for details.

Example of Use

To query the sweep time of the offset.

```
SEM:OFFS:LIST:SWE:TIME?
>
0.040000,0.040000,0.040000,0.040000,0.040000,0.040000,0.
040000,0.040000,0.040000,0.040000,0.040000,0.040000
```

[:SENSe]:SEMask:SWEep[1]:TIME:AUTO ON|OFF|1|0

Spectrum Emission Mask Sweep Time Auto/Manual

Function

This command enables/disables the automatic sweep time setting function when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:SWEep[1]:TIME:AUTO <switch>
```

Parameter

`<switch>`	Automatic sweep time setting function On/Off
`ON|1`	Enables the automatic sweep time setting function.
`OFF|0`	Disables the automatic sweep time setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)*' or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To enable the automatic sweep time setting function when measuring the reference power.

```
SEM:SWE:TIME:AUTO ON
```

[:SENSe]:SEMask:SWEep[1]:TIME:AUTO?

Spectrum Emission Mask Sweep Time Auto/Manual Query

Function

This command queries the On/Off state of the automatic sweep time setting function when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:SWEep[1]:TIME:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>>	Automatic sweep time setting function On/Off state
1	Automatic sweep time setting function is enabled.
0	Automatic sweep time setting function is disabled.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the automatic sweep time setting function On/Off state when measuring the reference power.

```
SEM:SWE:TIME:AUTO?
> 1
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Sweep Time Auto/Manual

Function

This command enables/disables the automatic sweep time setting function for the offset during Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO
<switch_n>
```

Parameter

<switch_n>	Automatic sweep time setting function On/Off for Offset-n
ON|1	Enables the automatic sweep time setting function.
OFF|0	Disables the automatic sweep time setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To enable the automatic sweep time setting function for the offset.

```
SEM:OFFS:LIST:SWE:TIME:AUTO
OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO?

Spectrum Emission Mask Offset Sweep Time Auto/Manual Query

Function

This command queries the automatic sweep time setting function On/Off state for the offset during Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO?
```

Response

```
<switch_n>
```

Parameter

`<switch_n>`	Automatic sweep time setting function On/Off state for Offset-n
`1`	Automatic sweep time setting function is enabled.
`0`	Automatic sweep time setting function is disabled.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To query the automatic sweep time setting function On/Off state for the offset.

```
SEM:OFFS:LIST:SWE:TIME:AUTO?
> 0,0,0,0,0,0,0,0,0,0,0,0
```

[:SENSe]:SEMask:SWEep[1]:TIME:AUTO:MODE NORMal|FAST

Spectrum Emission Mask Auto Sweep Time Select

Function

This command sets the sweep mode (Normal/Fast) when the automatic sweep time setting function is enabled for measuring of the reference power during Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:SWEep[1]:TIME:AUTO:MODE <mode>
```

Parameter

<mode>	Normal/Fast of sweep time
NORMal	Normal sweep mode
FAST	High-speed sweep mode

Example of Use

To set FAST for the sweep mode when the automatic sweep time setting function is enabled for measuring the reference power.

```
SEM:SWE:TIME:AUTO:MODE FAST
```

[:SENSe]:SEMask:SWEep[1]:TIME:AUTO:MODE?

Spectrum Emission Mask Auto Sweep Time Select Query

Function

This command queries the sweep mode (Normal/Fast) when the automatic sweep time setting function is enabled for measuring the reference power during Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:SWEep[1]:TIME:AUTO:MODE?
```

Response

```
<mode>
```

Parameter

<mode>	Normal/Fast of sweep time
NORM	Normal sweep mode
FAST	Fast sweep mode

Example of Use

To query the sweep mode when the automatic sweep time setting function is enabled for measuring the reference power.

```
SEM:SWE:TIME:AUTO:MODE?
> FAST
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO:MODE <mode_1>[,<mode_2>[,<mode_3>[,<mode_4>[,<mode_5>[,<mode_6>[,<mode_7>[,<mode_8>[,<mode_9>[,<mode_10>[,<mode_11>[,<mode_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Auto Sweep Time Select

Function

This command queries the sweep mode (Normal/Fast) when the automatic sweep time setting function is enabled for the offset during Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO:MODE
<mode_n>
```

Parameter

<mode_n>	Normal/Fast of sweep time of Offset-n
NORMal	Normal sweep mode
FAST	High-speed sweep mode

Example of Use

To set the sweep mode when the automatic sweep time setting function is enabled for the offset.

```
SEM:OFFS:LIST:SWE:TIME:AUTO:MODE
NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,N
ORM
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO:MODE?

Spectrum Emission Mask Offset Auto Sweep Time Select Query

Function

This command queries the sweep mode (Normal/Fast) when the automatic sweep time setting function is enabled for the offset during Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:TIME:AUTO:MODE?
```

Response

```
<mode_n>
```

Parameter

<mode_n>	Normal/Fast of sweep time of Offset-n
NORM	Normal sweep mode
FAST	High-speed sweep mode

Example of Use

To query the sweep mode when the automatic sweep time setting function is enabled for the offset.

```
SEM:OFFS:LIST:SWE:TIME:AUTO:MODE?
>
NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,N
ORM
```

[:SENSe]:SEMask:DETector[:FUNCtion] NORMal|POSitive|NEGative|SAMPle|RMS|AVERage

Spectrum Emission Mask Detection Mode

Function

This command selects the detection mode of the waveform pattern when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:DETector <mode>
```

Parameter

`<mode>`	Detection mode
`NORMal`	Simultaneous positive and negative peak detection (Default)
`POSitive`	Positive peak detection
`NEGative`	Negative peak detection
`SAMPle`	Sample detection
`RMS|AVERage`	RMS detection

Example of Use

To set the detection mode when measuring the reference power to positive peak detection.

```
SEM:DET POS
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:DETector[:FUNCtion]
```

[:SENSe]:SEMask:DETector[:FUNCtion]?

Spectrum Emission Mask Detection Mode Query

Function

This command queries the detection mode of the waveform pattern when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:DETector?
```

Response

```
<mode>
```

Parameter

<mode>	Detection mode selection
NORM	Simultaneous positive and negative peak detection
POS	Positive peak detection
NEG	Negative peak detection
SAMP	Sample detection
RMS|AVER	RMS detection

Example of Use

To query the detection mode when measuring the reference power.

```
SEM:DET?
> POS
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:DETector[:FUNCtion]?
```

:CALCulate:SEMask:DETector[:FUNCtion] NORMal|POSitive|NEGative|SAMPle|RMS|AVERage

Spectrum Emission Mask Detection Mode

Function

This command selects the detection mode of the waveform pattern when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
:CALCulate:SEMask:DETector[:FUNCtion] <mode>
```

Parameter

<mode>	Detection mode selection
NORMal	Simultaneous positive and negative peak detection (Default)
POSitive	Positive peak detection
NEGative	Negative peak detection
SAMPle	Sample detection
RMS|AVERage	RMS detection

Example of Use

To set the detection mode when measuring the reference power to positive peak detection.

```
CALC:SEM:DET POS
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:DETector[:FUNCtion]
```

:CALCulate:SEMask:DETector[:FUNCtion]?

Spectrum Emission Mask Detection Mode Query

Function

This command queries the detection mode of the waveform pattern when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
:CALCulate:SEMask:DETector[:FUNCtion]?
```

Response

```
<mode>
```

Parameter

<mode>	Detection mode selection
NORM	Simultaneous positive and negative peak detection
POS	Positive peak detection
NEG	Negative peak detection
SAMP	Sample detection
RMS|AVER	RMS detection

Example of Use

To query the detection mode when measuring the reference power.

```
CALC:SEM:DET?
> POS
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:DETector[:FUNCtion]?
```

[:SENSe]:SEMask:OFFSet[1]:LIST:DETector <mode_1>[,<mode_2>[,<mode_3>[,<mode_4>[,<mode_5>[,<mode_6>[,<mode_7>[,<mode_8>[,<mode_9>[,<mode_10>[,<mode_11>[,<mode_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Detection Mode

Function

This command selects the detection mode of the waveform pattern of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:DETector <mode_n>
```

Parameter

<mode_n>	Detection mode selection for Offset-n
NORMal	Simultaneous positive and negative peak detection (Default)
POSitive	Positive peak detection
NEGative	Negative peak detection
SAMPle	Sample detection
RMS|AVERage	RMS detection

Example of Use

To set the detection mode of the offset.

```
SEM:OFFS:LIST:DET
POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS
```

[:SENSe]:SEMask:OFFSet[1]:LIST:DETector?

Spectrum Emission Mask Offset Detection Mode Query

Function

This command queries the detection mode of the waveform pattern of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:DETector?
```

Response

```
<mode_n>
```

Parameter

<mode_n>	Detection mode selection for Offset-n
NORM	Simultaneous positive and negative peak detection
POS	Positive peak detection
NEG	Negative peak detection
SAMP	Sample detection
RMS|AVER	RMS detection

Example of Use

To query the detection of the offset.

```
SEM:OFFS:LIST:DET?
> POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS
```

[:SENSe]:SEMask:DETector:OFFSet[:FUNCtion] NORMal|POSitive|NEGative|SAMPle|RMS|AVERage

Spectrum Emission Mask Offset Detection Mode

Function

This command selects the detection mode of the waveform pattern of the offset for Spectrum Emission Mask measurement in a lump sum.

Command

```
[:SENSe]:SEMask:DETector:OFFSet[:FUNCtion] <mode>
```

Parameter

<mode>	Detection mode selection for all offsets
NORMal	Simultaneous positive and negative peak detection (Default)
POSitive	Positive peak detection
NEGative	Negative peak detection
SAMPle	Sample detection
RMS|AVERage	RMS detection

Example of Use

To set the detection mode of the offset.

```
SEM:DET:OFFS POS
```

[:SENSe]:SEMask:SWEep[1]:POINts <integer>

Spectrum Emission Mask Trace Point

Function

This command selects the number of frequency display points when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:SWEep[1]:POINts <integer>
```

Parameter

`<integer>`		Number of frequency display points
	Range	11 to 10001
	Resolution	Any of the following values can be selected: 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)
	Suffix code	None

Example of Use

To set the number of frequency display points when measuring the reference power to 2001.

```
SEM:SWE:POIN 2001
```

[:SENSe]:SEMask:SWEep[1]:POINts?

Spectrum Emission Mask Trace Point Query

Function

This command queries the number of frequency display points when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:SWEep[1]:POINts?
```

Response

```
<integer>
```

Parameter

`<integer>`		Number of frequency display points
	Range	11 to 10001
	Resolution	Any of the following values can be selected: 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)
	Suffix code	None

Example of Use

To query the number of frequency display points when measuring the reference power.

```
SEM:SWE:POIN?
> 2001
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:POINts <integer_1>[,<integer_2>[,<integer_3>[,<integer_4>[,<integer_5>[,<integer_6>[,<integer_7>[,<integer_8>[,<integer_9>[,<integer_10>[,<integer_11>[,<integer_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Trace Point

Function

This command queries the number of frequency display points of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:POINts
<integer_n>
```

Parameter

<integer_n>		Number of frequency display points of Offset-n
	Range	11 to 10001
	Resolution	Any of the following values can be selected: 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)
	Suffix code	None

Example of Use

To set the number of frequency display points of the offset.

```
SEM:OFFS:LIST:SWE:POIN
2001,2001,2001,2001,2001,2001,2001,2001,2001,2001,2001,2
001
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:POINts?

Spectrum Emission Mask Offset Trace Point Query

Function

This command queries the frequency display point number of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1]:POINts?
```

Response

```
<integer_n>
```

Parameter

<integer_n>		Number of frequency display points of Offset-n
	Range	11 to 10001
	Resolution	Any of the following values can be selected: 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)
	Suffix code	None

Example of Use

To query the number of frequency display points of the offset.

```
SEM:OFFS:LIST:SWE:POIN?
>
2001,2001,2001,2001,2001,2001,2001,2001,2001,2001,2001,2001
```

[:SENSe]:SEMask:FILTer:TYPE RECT|NYQuist|RNYQuist

Spectrum Emission Mask Reference Filter Type

Function

This command selects the filter type when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:FILTer:TYPE <type>
```

Parameter

<type>	Filter type
RECT	Rectangle Filter
NYQuist	Nyquist Filter
RNYQuist	Root Nyquist Filter

Details

This command is not available when Reference Mode is set to either of the following:

- Peak
- Fix

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:FILTer[:RRC][:STATe]
```

Example of Use

To set the filter type when measuring the reference power to Root Nyquist Filter.

```
SEM:FILT:TYPE RNYQ
```

[:SENSe]:SEMask:FILTer:TYPE?

Spectrum Emission Mask Reference Filter Type Query

Function

This command queries the filter type when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:FILTer:TYPE?
```

Response

```
<type>
```

Parameter

`<type>`	Filter type
`RECT`	Rectangle Filter
`NYQ`	Nyquist Filter
`RNYQ`	Root Nyquist Filter

Details

This command is not available when Reference Mode is set to either of the following:

- Peak
- Fix

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:FILTer[:RRC][:STATe]?
```

Example of Use

To query the filter type when measuring the reference power.

```
SEM:FILT:TYPE?
> RNYQ
```

[:SENSe]:SEMask:FILTer[:RRC]:ALPHa <real>

Spectrum Emission Mask Reference Roll-off Factor

Function

This command sets the rolloff ratio of the filter when measuring the reference power for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:FILTer[:RRC]:ALPHa <real>
```

Parameter

<real>	Rolloff ratio of the filter
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None

Details

This command is not available when Reference Mode is set to either of the following:

- Peak
- Fix

This command is not available when Filter Type is set to the following:

- Rect

Example of Use

To set the rolloff ratio of the filter when measuring the reference power to 0.22.

```
SEM:FILT:ALPH 0.22
```

[:SENSe]:SEMask:FILTer[:RRC]:ALPHa?

Spectrum Emission Mask Reference Roll-off Factor Query

Function

This command queries the rolloff ratio of the filter when measuring the reference power for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:FILTer[:RRC]:ALPHa?
```

Response

```
<real>
```

Parameter

<real>	Filter rolloff ratio
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None

Details

This command is not available when Reference Mode is set to either of the following:

- Peak
- Fix

This command is not available when Filter Type is set to the following:

- Rect

Example of Use

To query the rolloff ratio of the filter when measuring the reference power.

```
SEM:FILT:ALPH?
> 0.22
```

[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STARt <freq_1>[,<freq_2>[,<freq_3>[,<freq_4>[,<freq_5>[,<freq_6>[,<freq_7>[,<freq_8>[,<freq_9>[,<freq_10>[,<freq_11>[,<freq_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Start Frequency

Function

This command sets the start frequency of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STARt <freq_n>
```

Parameter

<freq_n>		Start frequency of Offset-n
	Range	0 to 4999999700 Hz
	Resolution	2 Hz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
		Hz is used when omitted.

Example of Use

To set the start frequency of the offset.

```
SEM:OFFS:LIST:FREQ:STAR
4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4
MHZ
```

[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STARt?

Spectrum Emission Mask Offset Start Frequency Query

Function

This command queries the start frequency of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STARt?
```

Response

```
<freq_n>
```

Parameter

`<freq_n>`		Start frequency of Offset-n
	Range	0 to 4999999700 Hz
	Resolution	2 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the start frequency of the offset.

```
SEM:OFFS:LIST:FREQ:STAR?
>
4000000,4000000,4000000,4000000,4000000,4000000,4000000,
4000000,4000000,4000000,4000000,4000000
```

[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STOP <freq_1>[,<freq_2>[,<freq_3>[,<freq_4>[,<freq_5>[,<freq_6>[,<freq_7>[,<freq_8>[,<freq_9>[,<freq_10>[,<freq_11>[,<freq_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Stop Frequency

Function

This command sets the stop frequency of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STOP <freq_n>
```

Parameter

<freq_n>		Stop frequency of Offset-n
	Range	300 to 5000000000 Hz
	Resolution	2 Hz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
		Hz is used when omitted.

Example of Use

To set the stop frequency of the offset.

```
SEM:OFFS:LIST:FREQ:STOP
6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ
```

[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STOP?

Spectrum Emission Mask Offset Stop Frequency Query

Function

This command queries the stop frequency of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:FREQuency:STOP?
```

Response

```
<freq_n>
```

Parameter

<freq_n>		Stop frequency of Offset-n
	Range	300 to 5000000000 Hz
	Resolution	2 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the stop frequency of the offset.

```
SEM:OFFS:LIST:FREQ:STOP?
>
6000000,6000000,6000000,6000000,6000000,6000000,6000000,
6000000,6000000,6000000,6000000,6000000
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration <bandwidth_1>[,<bandwidth_2>[,<bandwidth_3>[,<bandwidth_4>[,<bandwidth_5>[,<bandwidth_6>[,<bandwidth_7>[,<bandwidth_8>[,<bandwidth_9>[,<bandwidth_10>[,<bandwidth_11>[,<bandwidth_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Integrate Bandwidth

Function

This command sets Integrate BW of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration
<bandwidth_n>
```

Parameter

<bandwidth_n>		Integrate BW of Offset-n
	Range	30 Hz to 20 MHz
	Resolution	Resolutions are set as below, according to the setting values of Integrate BW. 1 Hz (30 Hz to 1 kHz) 10 Hz (1 to 10 kHz) 100 Hz (10 to 100 kHz) 1 kHz (100 kHz to 1 MHz) 10 kHz (1 to 20 MHz)
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Details

The setting range of this function is limited depending on the setting of RBW of the target offset. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

This command is not available if detection of the target offset is set to any of the following:

- Pos&Neg
- Positive
- Negative
- Sample

Example of Use

To set Integrate BW of the offset.

```
SEM:OFFS:LIST:BAND:INT
3MHZ,3MHZ,3MHZ,3MHZ,3MHZ,3MHZ,3MHZ,3MHZ,3MHZ,3MHZ,3MHZ,3
MHZ
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration?

Spectrum Emission Mask Offset Integrate Bandwidth Query

Function

This command queries Integrate BW of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration?
```

Response

```
<bandwidth_n>
```

Parameter

`<bandwidth_n>`		Integrate BW of Offset-n
	Range	30 Hz to 20 MHz
	Resolution	As below, according to Integrate BW. 1 Hz (30 Hz to 1 kHz) 10 Hz (1 to 10 kHz) 100 Hz (10 to 100 kHz) 1 kHz (100 kHz to 1 MHz) 10 kHz (1 to 20 MHz)
	Suffix code	None. Value is returned in Hz units.

Details

The setting range of this function is limited depending on the setting of RBW of the target offset. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.
This command is not available if Detection of the target offset is set to any of the following:

- Pos&Neg
- Positive
- Negative
- Sample

Example of Use

To query Integrate BW of the offset.

```
SEM:OFFS:LIST:BAND:INT?
>
3000000,3000000,3000000,3000000,3000000,3000000,3000000,
3000000,3000000,3000000,3000000,3000000
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Integrate Bandwidth Auto/Manual

Function

This command enables/disables the automatic Integrate BW setting function for the offset during Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration:
AUTO <switch_n>
```

Parameter

<switch_n>	Automatic Integrate BW setting function On/Off for Offset-n
ON|1	Enables the automatic Integrate BW setting function.
OFF|0	Disables the automatic Integrate BW setting function.

Details

The setting range of this function is limited depending on the setting of RBW of the target offset. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

This command is not available if Detection of the target offset is set to any of the following:

- Pos&Neg
- Positive
- Negative
- Sample

Example of Use

To enable the automatic Integrate BW setting function for the offset.

```
SEM:OFFS:LIST:BAND:INT:AUTO
ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON
```

[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration:AUTO?

Spectrum Emission Mask Offset Integrate Bandwidth Auto/Manual Query

Function

This command queries the On/Off state of the automatic Integrate BW setting function for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:BANDwidth[1]:INTegration:
AUTO?
```

Response

```
<switch_n>
```

Parameter

`<switch_n>`	Automatic Integrate BW setting function On/Off state for Offset-n
`1`	Automatic Integrate BW setting function is enabled.
`0`	Automatic Integrate BW setting function is disabled.

Details

The setting range of this function is limited depending on the setting of RBW of the target offset. Refer to the *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.
This command is not available if Detection of the target offset is set to any of the following:

- Pos&Neg
- Positive
- Negative
- Sample

Example of Use

To query the automatic Integrate BW setting function On/Off state for the offset

```
SEM:OFFS:LIST:BAND:INT:AUTO?
> 1,1,1,1,1,1,1,1,1,1,1
```

[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Reference Level

Function

This command sets the reference level of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel <ampl_n>
```

Parameter

<ampl_n>		Reference level of Offset-n
	Range	Value equivalent to –120 to +50 dBm
	Resolution	0.01 dB
	Suffix code	DBM,DM
		dBm is used when omitted.

Example of Use

To set the reference level of the offset to 0 dBm.

```
SEM:OFFS:LIST:RLEV 0,0,0,0,0,0,0,0,0,0,0,0
```

[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel?

Spectrum Emission Mask Offset Reference Level Query

Function

This command queries the reference level for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`		Reference level of Offset-n
	Range	Value equivalent to –120 to +50 dBm
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dBm units.

Example of Use

To query the reference level of the offset.

```
SEM:OFFS:LIST:RLEV?
>
0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00
```

[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel:AUTO <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Reference Level Auto/Manual

Function

This command enables/disables the automatic reference level setting function for the offset during Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel:AUTO <switch_n>
```

Parameter

<switch_n>	Automatic reference level setting function On/Off for Offset-n
ON|1	Enables the automatic reference level setting function.
OFF|0	Disables the automatic reference level setting function.

Details

The same value as the reference level when measuring the reference power is used in the automatic setting.

Example of Use

To enable the automatic reference level setting function for the offset.

```
SEM:OFFS:LIST:RLEV:AUTO
ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF,ON,ON
```

[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel:AUTO?

Spectrum Emission Mask Offset Reference Level Auto/Manual Query

Function

This command queries the automatic reference level setting function On/Off state for the offset during Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:RLEVel:AUTO?
```

Response

```
<switch_n>
```

Parameter

`<switch_n>`	Automatic reference level setting function On/Off for Offset-n
`1`	Automatic reference level setting function is enabled.
`0`	Automatic reference level setting function is disabled.

Details

The same value as the reference level when measuring the reference power is used in the automatic setting.

Example of Use

To query the automatic reference level setting function On/Off state for the offset.

```
SEM:OFFS:LIST:RLEV:AUTO?
> 1,1,0,0,1,1,1,1,0,0,1,1
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STATe <switch_1>[,<switch_2>[,<switch_3>[,<switch_4>[,<switch_5>[,<switch_6>[,<switch_7>[,<switch_8>[,<switch_9>[,<switch_10>[,<switch_11>[,<switch_12>]]]]]]]]]]]

Spectrum Emission Mask Offset On/Off

Function

This command sets the offset for Spectrum Emission Mask measurement On/Off.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STATe <switch_n>
```

Parameter

<switch_n>	Offset-n On/Off
ON|1	Sets the offset to On.
OFF|0	Sets the offset to Off.

Example of Use

To set the offset.

```
SEM:OFFS:LIST:STAT
ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STATe?

Spectrum Emission Mask Offset On/Off Query

Function

This command queries the On/Off state of the offset for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STATe?
```

Response

```
<switch_n>
```

Parameter

`<switch_n>`	Offset-n On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the offset.

```
SEM:OFFS:LIST:STAT?
> 1,1,1,1,0,0,1,1,1,1,0,0
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2 <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Start Frequency Absolute Limit Level

Function

This command sets the absolute level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2
<ampl_n>
```

Parameter

<ampl_n>	Absolute level upper limit of Offset-n start frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	DBM,DM dBm is set when omitted.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To set the absolute level upper limit 2 of the start frequency of the offset.

```
SEM:OFFS:LIST:STAR:ABS2 0,-2,-2,0,0,-10,0,-2,-2,0,0,-10
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2?

Spectrum Emission Mask Offset Start Frequency Absolute Limit Level Query

Function

This command queries the absolute level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`	Absolute level upper limit of Offset-n start frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	None. Value is returned in dBm units.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To query the absolute level upper limit 2 of the start frequency of the offset.

```
SEM:OFFS:LIST:STAR:ABS2?
>
0.00,-2.00,-2.00,0.00,0.00,-10.00,0.00,-2.00,-2.00,0.00,
0.00,-10.00
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2?
```

:CALCulate:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2 <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Start Frequency Absolute Limit Level

Function

This command sets the absolute level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Command

```
:CALCulate:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2
<ampl_n>
```

Parameter

<ampl_n>	Absolute level upper limit of Offset-n start frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	DBM,DM dBm is set when omitted.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To set the absolute level upper limit 2 of the start frequency of the offset.

```
CALC:SEM:OFFS:LIST:STAR:ABS2
0,-2,-2,0,0,-10,0,-2,-2,0,0,-10
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2
```

:CALCulate:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2?

Spectrum Emission Mask Offset Start Frequency Absolute Limit Level Query

Function

This command queries the absolute level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Query

```
:CALCulate:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`	Absolute level upper limit of Offset-n start frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	None. Value is returned in dBm units.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To query the absolute level upper limit 2 of the start frequency of the offset.

```
CALC:SEM:OFFS:LIST:STAR:ABS2?
>
0.00,-2.00,-2.00,0.00,0.00,-10.00,0.00,-2.00,-2.00,0.00,
0.00,-10.00
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:ABSolute[1]|2?
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2 <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Stop Frequency Absolute Limit Level

Function

This command sets the absolute level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2
<ampl_n>
```

Parameter

<ampl_n>		Absolute level upper limit of Offset-n stop frequency
	Range	–200 to +50 dBm
	Resolution	0.01 dB
	Suffix code	DBM,DM dBm is set when omitted.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To set the absolute level upper limit 2 of the stop frequency of the offset.

```
SEM:OFFS:LIST:STOP:ABS2
-10,-10,-10,-5,-5,-10,-10,-10,-10,-5,-5,-10
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2?

Spectrum Emission Mask Offset Stop Frequency Absolute Limit Level Query

Function

This command queries the absolute level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`		Absolute level upper limit of Offset-n stop frequency
	Range	–200 to +50 dBm
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dBm units.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To set the absolute level upper limit 2 of the stop frequency of the offset.

```
SEM:OFFS:LIST:STOP:ABS2?
>
-10.00,-10.00,-10.00,-5.00,-5.00,-10.00,-10.00,-10.00,-10.00,-5.00,-5.00,-10.00
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2?
```

:CALCulate:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2 <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Stop Frequency Absolute Limit Level

Function

This command sets the absolute level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Command

```
:CALCulate:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2
<ampl_n>
```

Parameter

<ampl_n>	Absolute level upper limit of Offset-n stop frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	DBM,DM dBm is set when omitted.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To set the absolute level upper limit 2 of the stop frequency of the offset.

```
CALC:SEM:OFFS:LIST:STOP:ABS2
10,-10,-10,-5,-5,-10,-10,-10,-10,-5,-5,-10
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2
```

:CALCulate:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2?

Spectrum Emission Mask Offset Stop Frequency Absolute Limit Level Query

Function

This command queries the absolute level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Query

```
:CALCulate:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`	Absolute level upper limit of Offset-n stop frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	None. Value is returned in dBm units.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To set the absolute level upper limit 2 of the stop frequency of the offset.

```
CALC:SEM:OFFS:LIST:STOP:ABS2?
>
-10.00,-10.00,-10.00,-5.00,-5.00,-10.00,-10.00,-10.00,-10.00,-5.00,-5.00,-10.00
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:ABSolute[1]|2?
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:RCARrier <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Start Frequency Limit Level

Function

This command sets the relative level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:RCARrier <ampl_n>
```

Parameter

<ampl_n>		Relative level upper limit of Offset-n start frequency
	Range	–200 to +50 dB
	Resolution	0.01 dB
	Suffix code	DB dB is set when omitted.

Example of Use

To set the relative level upper limit of the start frequency of the offset.

```
SEM:OFFS:LIST:STAR:RCAR 0,0,0,0,0,0,0,0,0,0,0,0
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:OFFSet[1]:LIST:STARt:RCARrier
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:RCARrier?

Spectrum Emission Mask Offset Start Frequency Limit Level Query

Function

This command queries the relative level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:RCARrier?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`		Relative level upper limit of Offset-n start frequency
	Range	–200 to +50 dB
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dB units.

Example of Use

To query the relative level upper limit of the start frequency of the offset.

```
SEM:OFFS:LIST:STAR:RCAR?
>
0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0
.00
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:OFFSet[1]:LIST:STARt:RCARrier?
```

:CALCulate:SEMask:OFFSet[1]:LIST:STARt:RCARrier <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Start Frequency Limit Level

Function

This command sets the relative level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Command

```
:CALCulate:SEMask:OFFSet[1]:LIST:STARt:RCARrier <ampl_n>
```

Parameter

<ampl_n>	Relative level upper limit of Offset-n start frequency
Range	–200 to +50 dB
Resolution	0.01 dB
Suffix code	DB dB is set when omitted.

Example of Use

To set the relative level upper limit of the start frequency of the offset.

```
CALC:SEM:OFFS:LIST:STAR:RCAR 0,0,0,0,0,0,0,0,0,0,0,0
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:RCARrier
```

:CALCulate:SEMask:OFFSet[1]:LIST:STARt:RCARrier?

Spectrum Emission Mask Offset Start Frequency Limit Level Query

Function

This command sets the relative level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Query

```
:CALCulate:SEMask:OFFSet[1]:LIST:STARt:RCARrier?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`		Relative level upper limit of Offset-n start frequency
	Range	–200 to +50 dB
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dB units.

Example of Use

To query the relative level upper limit of the start frequency of the offset.

```
CALC:SEM:OFFS:LIST:STAR:RCAR?
>
0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STARt:RCARrier?
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:RCARrier <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Stop Frequency Limit Level

Function

This command sets the relative level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:RCARrier <ampl_n>
```

Parameter

<ampl_n>	Relative level upper limit of Offset-n stop frequency
Range	–200 to +50 dB
Resolution	0.01 dB
Suffix code	DB dB is set when omitted.

Example of Use

To set the absolute level upper limit of the stop frequency of the offset.

```
SEM:OFFS:LIST:STOP:RCAR
-30,-30,-30,-30,-30,-30,-30,-30,-30,-30,-30,-30
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:OFFSet[1]:LIST:STOP:RCARrier
```

[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:RCARrier?

Spectrum Emission Mask Offset Stop Frequency Limit Level Query

Function

This command sets the relative level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:RCARrier?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`		Relative level upper limit of Offset-n stop frequency
	Range	–200 to +50 dB
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dB units.

Example of Use

To query the absolute level upper limit of the stop frequency of the offset.

```
SEM:OFFS:LIST:STOP:RCAR?
>
-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,
-30.00,-30.00,-30.00,-30.00
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:OFFSet[1]:LIST:STOP:RCARrier?
```

:CALCulate:SEMask:OFFSet[1]:LIST:STOP:RCARrier <ampl_1>[,<ampl_2>[,<ampl_3>[,<ampl_4>[,<ampl_5>[,<ampl_6>[,<ampl_7>[,<ampl_8>[,<ampl_9>[,<ampl_10>[,<ampl_11>[,<ampl_12>]]]]]]]]]]]

Spectrum Emission Mask Offset Stop Frequency Limit Level

Function

This command sets the relative level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Command

```
:CALCulate:SEMask:OFFSet[1]:LIST:STOP:RCARrier <ampl_n>
```

Parameter

<ampl_n>	Relative level upper limit of Offset-n stop frequency
Range	–200 to +50 dB
Resolution	0.01 dB
Suffix code	DB dB is set when omitted.

Example of Use

To set the absolute level upper limit of the stop frequency of the offset.

```
CALC:SEM:OFFS:LIST:STOP:RCAR
-30,-30,-30,-30,-30,-30,-30,-30,-30,-30,-30,-30
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:RCARrier
```

:CALCulate:SEMask:OFFSet[1]:LIST:STOP:RCARrier?

Spectrum Emission Mask Offset Stop Frequency Limit Level Query

Function

This command sets the relative level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Query

```
:CALCulate:SEMask:OFFSet[1]:LIST:STOP:RCARrier?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`		Relative level upper limit of Offset-n stop frequency
	Range	–200 to +50 dB
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dB units.

Example of Use

To query the absolute level upper limit of the stop frequency of the offset.

```
CALC:SEM:OFFS:LIST:STOP:RCAR?
>
-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,
-30.00,-30.00,-30.00,-30.00
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:OFFSet[1]:LIST:STOP:RCARrier?
```

[:SENSe]:SEMask:LOGic:OFFSet[1]:LIST:TEST <logic_1>[,<logic_2>[,<logic_3>[,<logic_4>[,<logic_5>[,<logic_6>[,<logic_7>[,<logic_8>[,<logic_9>[,<logic_10>[,<logic_11>[,<logic_12>]]]]]]]]]]]

Spectrum Emission Mask Fail Logic

Function

This command selects the judgment method of the offset for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:LOGic:OFFSet[1]:LIST:TEST <logic_n>
```

Parameter

<logic_n>	Judgment method for offset n
OFF	Does not judge.
ABSolute	ABS1 Judges by using the absolute level upper limit 1.
RELative	REL Judges by using the relative level upper limit.
AND	ABS1 and REL Judges “AND” by using the absolute level upper limit 1 and relative level upper limit.
OR	ABS1 or REL Judges “OR” by using the absolute level upper limit 1 and relative level upper limit.
AAND	(ABS1 and REL) and ABS2 Judges “AND” by using the absolute level upper limit 1 and relative level upper limit. Judges “AND” by using the result and the absolute level upper limit 2.
AOR	(ABS1 or REL) and ABS2 Judges “OR” by using the absolute level upper limit 1 and relative level upper limit. Judges “AND” using the result and the absolute level upper limit 2.
AND2	ABS1 and ABS2 Judges “AND” by using the absolute level upper limit 1 and the absolute level upper limit 2.

Example of Use

To judge by using the absolute level upper limit 1.

```
SEM:LOG:OFFS:LIST:TEST
ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS
```

Related command

This command has the same function as the following command.
`:CALCulate:SEMask:LOGic:OFFSet[1]:LIST:TEST`

[:SENSe]:SEMask:LOGic:OFFSet[1]:LIST:TEST?

Spectrum Emission Mask Fail Logic Query

Function

This command queries the judgment method of the offset for Spectrum Emission Mask measurement.

Query

`[:SENSe]:SEMask:LOGic:OFFSet[1]:LIST:TEST?`

Response

`<logic_n>`

Parameter

`<logic_n>`	Judgment method for offset n
`OFF`	Does not judge.
`ABS`	ABS1 Judges by using the absolute level upper limit 1.
`REL`	REL Judges by using the relative level upper limit.
`AND`	ABS1 and REL Judges “AND” by using the absolute level upper limit 1 and the relative level upper limit.
`OR`	ABS1 or REL Judges “OR” by using the absolute level upper limit 1 and the relative level upper limit.
`AAND`	(ABS1 and REL) and ABS2 Judges “AND” by using the absolute level upper limit 1 and relative level upper limit. Judges “AND” by using the result and the absolute level upper limit 2.
`AOR`	(ABS1 or REL) and ABS2 Judges “OR” by using the absolute level upper limit 1 and relative level upper limit. Judges “AND” by using the result and the absolute level upper limit 2.
`AND2`	ABS1 and ABS2 Judges by using the absolute level upper limit 1

and the absolute level upper limit 2.

Example of Use

To query the judgment result.

```
SEM:LOG:OFF:LIST:TEST?
> ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS
```

Related command

This command has the same function as the following command.

```
:CALCulate:SEMask:LOGic:OFFSet[1]:LIST:TEST?
```

:CALCulate:SEMask:LOGic:OFFSet[1]:LIST:TEST <logic_1>[,<logic_2>[,<logic_3>[,<logic_4>[,<logic_5>[,<logic_6>[,<logic_7>[,<logic_8>[,<logic_9>[,<logic_10>[,<logic_11>[,<logic_12>]]]]]]]]]]]

Spectrum Emission Mask Fail Logic

Function

This command selects the judgment method of the offset for Spectrum Emission Mask measurement.

Command

```
:CALCulate:SEMask:LOGic:OFFSet[1]:LIST:TEST <logic_n>
```

Parameter

<logic_n>	Judgement method of the offset n
OFF	Does not judge.
ABSolute	ABS1 Judges using the absolute level upper limit 1.
RELative	REL Judges using the relative level upper limit.
AND	ABS1 and REL Judges “AND” using the absolute level upper limit 1 and the relative level upper limit.
OR	ABS1 or REL Judges “OR” using the absolute level upper limit 1 and the relative level upper limit.
AAND	(ABS1 and REL) and ABS2 Judges “AND” using the absolute level upper limit 1 and relative level upper limit. Judges “AND” using the result and the absolute level upper limit 2.
AOR	(ABS1 or REL) and ABS2

	Judges “OR” using the absolute level upper limit 1 and relative level upper limit. Judges “AND” using the result and the absolute level upper limit 2.
AND2	ABS1 and ABS2 Judges using the absolute level upper limit 1 and the absolute level upper limit 2.

Example of Use

To judge using the absolute level upper limit 1.

```
CALC:SEM:LOG:OFFS:LIST:TEST
ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:LOGic:OFFSet[1]:LIST:TEST
```

:CALCulate:SEMask:LOGic:OFFSet[1]:LIST:TEST?

Spectrum Emission Mask Fail Logic Query

Function

This command queries the judgment method of the offset for Spectrum Emission Mask measurement.

Query

```
:CALCulate:SEMask:LOGic:OFFSet[1]:LIST:TEST?
```

Response

```
<logic_n>
```

Parameter

`<logic_n>`	Judgment method for offset n
`OFF`	Does not judge.
`ABS`	ABS1 Judges by using the absolute level upper limit 1.
`REL`	REL Judges by using the relative level upper limit.
`AND`	ABS1 and REL Judges “AND” by using the absolute level upper limit 1 and the relative level upper limit.
`OR`	ABS1 or REL Judges “OR” by using the absolute level upper limit 1 and the relative level upper limit.
`AAND`	(ABS1 and REL) and ABS2 Judges “AND” by using the absolute level upper limit 1 and relative level upper limit. Judges “AND” by using the result and the absolute level upper limit 2.
`AOR`	(ABS1 or REL) and ABS2 Judges “OR” by using the absolute level upper limit 1 and relative level upper limit. Judges “AND” by using the result and the absolute level upper limit 2.
`AND2`	ABS1 and ABS2 Judges by using the absolute level upper limit 1 and the absolute level upper limit 2.

Example of Use

To query the judgment result.

```
CALC:SEM:LOG:OFFS:LIST:TEST?
```

```
> ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,OFF,OFF
```

Related command

This command has the same function as the following command.
`[:SENSe]:SEMask:LOGic:OFFSet[1]:LIST:TEST?`

:CONFigure:SEMask

Spectrum Emission Mask Configure

Function

This command sets Spectrum Emission Mask measurement to On.

Command

`:CONFigure:SEMask`

Details

No measurement is executed.

Example of Use

To set SEM measurement to On.
`CONF:SEM`

:INITiate:SEMask

Spectrum Emission Mask Initiate

Function

This command starts Spectrum Emission Mask measurement.

Command

`:INITiate:SEMask`

Details

Spectrum Emission Mask measurement is set to On and the measurement is initiated, when this function is executed.
To read out the measurement results after executing this command, perform the synchronization control using the "*WAI" command.

Example of Use

To start SEM measurement once.
`INIT:SEM`

:FETCh:SEMask[n]?

Spectrum Emission Mask Fetch

Function

This command outputs the measurement result of Spectrum Emission Mask measurement.

Query

```
:FETCh:SEMask[n]?
```

Response

When the result mode is A:

```
<total_judge>,<ref_power>,<abs_lower_offset_1>,
<margin_lower_offset_1>,<freq_lower_offset_1>,
<lower_offset_1>,<abs_upper_offset_1>,
<margin_upper_offset_1>,<freq_upper_offset_1>,
<upper_offset_1>,<abs_lower_offset_2>,
<margin_lower_offset_2>,<freq_lower_offset_2>,
<lower_offset_2>,<abs_upper_offset_2>,
<margin_upper_offset_2>,<freq_upper_offset_2>,
<upper_offset_2>,<abs_lower_offset_3>,
<margin_lower_offset_3>,<freq_lower_offset_3>,
<lower_offset_3>,<abs_upper_offset_3>,
<margin_upper_offset_3>,<freq_upper_offset_3>,
<upper_offset_3>,<abs_lower_offset_4>,
<margin_lower_offset_4>,<freq_lower_offset_4>,
<lower_offset_4>,<abs_upper_offset_4>,
<margin_upper_offset_4>,<freq_upper_offset_4>,
<upper_offset_4>,<abs_lower_offset_5>,
<margin_lower_offset_5>,<freq_lower_offset_5>,
<lower_offset_5>,<abs_upper_offset_5>,
<margin_upper_offset_5>,<freq_upper_offset_5>,
<upper_offset_5>,<abs_lower_offset_6>,
<margin_lower_offset_6>,<freq_lower_offset_6>,
<lower_offset_6>,<abs_upper_offset_6>,
<margin_upper_offset_6>,<freq_upper_offset_6>,
<upper_offset_6>
```

(n=1 or when omitted.)

When the result mode is B:

```
-999.0,<ref_power>,-999.0,-999.0,0,
-999.0,-999.0,-999.0,-999.0,-999.0,
-999.0,-999.0,
```

```
<rel_lower_offset_1>,<abs_lower_offset_1>,
<freq_lower_offset_1>
-999.0,-999.0,
<rel_upper_offset_1>,<abs_upper_offset_1>,
<freq_upper_offset_1>
-999.0,-999.0,
<rel_lower_offset_2>,<abs_lower_offset_2>,
<freq_lower_offset_2>
-999.0,-999.0,
<rel_upper_offset_2>,<abs_upper_offset_2>,
<freq_upper_offset_2>
-999.0,-999.0,
<rel_lower_offset_3>,<abs_lower_offset_3>,
<freq_lower_offset_3>
-999.0,-999.0,
<rel_upper_offset_3>,<abs_upper_offset_3>,
<freq_upper_offset_3>
-999.0,-999.0,
<rel_lower_offset_4>,<abs_lower_offset_4>,
<freq_lower_offset_4>
-999.0,-999.0,
<rel_upper_offset_4>,<abs_upper_offset_4>,
<freq_upper_offset_4>
-999.0,-999.0,
<rel_lower_offset_5>,<abs_lower_offset_5>,
<freq_lower_offset_5>
-999.0,-999.0,
<rel_upper_offset_5>,<abs_upper_offset_5>,
<freq_upper_offset_5>
-999.0,-999.0,
<rel_lower_offset_6>,<abs_lower_offset_6>,
<freq_lower_offset_6>
-999.0,-999.0,
<rel_upper_offset_6>,<abs_upper_offset_6>,
<freq_upper_offset_6>
<margin_lower_offset_1>,<margin_upper_offset_1>,
<margin_lower_offset_2>,<margin_upper_offset_2>,
<margin_lower_offset_3>,<margin_upper_offset_3>,
<margin_lower_offset_4>,<margin_upper_offset_4>,
<margin_lower_offset_5>,<margin_upper_offset_5>,
<margin_lower_offset_6>,<margin_upper_offset_6>,
```

(n=1 or when omitted.)

-999.0,-999.0,
<lower_offset_1>,<upper_offset_1>,
<lower_offset_2>,<upper_offset_2>,
<lower_offset_3>,<upper_offset_3>,
<lower_offset_4>,<upper_offset_4>,
<lower_offset_5>,<upper_offset_5>,
<lower_offset_6>,<upper_offset_6>

(n=7 or 8)

-999.0,-999.0,
<abs_lower_offset_1>,<abs_upper_offset_1>,
<abs_lower_offset_2>,<abs_upper_offset_2>,
<abs_lower_offset_3>,<abs_upper_offset_3>,
<abs_lower_offset_4>,<abs_upper_offset_4>,
<abs_lower_offset_5>,<abs_upper_offset_5>,
<abs_lower_offset_6>,<abs_upper_offset_6>

(n=10)

-999.0,-999.0,
<rel_lower_offset_1>,<rel_upper_offset_1>,
<rel_lower_offset_2>,<rel_upper_offset_2>,
<rel_lower_offset_3>,<rel_upper_offset_3>,
<rel_lower_offset_4>,<rel_upper_offset_4>,
<rel_lower_offset_5>,<rel_upper_offset_5>,
<rel_lower_offset_6>,<rel_upper_offset_6>

(n=11)

<total_judge>,<ref_power>,
<abs_lower_offset_1>,<abs_upper_offset_1>,
<margin_lower_offset_1>,<margin_upper_offset_1>,
<freq_lower_offset_1>,<freq_upper_offset_1>,
<lower_offset_1>,<upper_offset_1>,
.....
<abs_lower_offset_6>,<abs_upper_offset_6>,
<margin_lower_offset_6>,<margin_upper_offset_6>,
<freq_lower_offset_6>,<freq_upper_offset_6>,
<lower_offset_6>,<upper_offset_6>

(n=13)

Parameter

<ref_power>	Reference absolute power
<abs_lower_offset_n>	Peak value of absolute power of lower Offset-n
<abs_upper_offset_n>	Peak value of absolute power of upper Offset-n No suffix code, dBm unit, 0.001 dB resolution. "–999.0" is returned when no measurement is performed.
<rel_lower_offset_n>	Peak value of relative power of lower Offset-n
<rel_upper_offset_n>	Peak value of relative power of upper Offset-n
<margin_lower_offset_n>	Minimum value of margin of lower Offset-n
<margin_upper_offset_n>	Minimum value of margin of upper Offset-n No suffix code, dB unit, 0.001 dB resolution. "–999.0" is returned when no measurement is performed.
<freq_lower_offset_n>	Frequency of peak level of lower Offset-n
<freq_upper_offset_n>	Frequency of peak level of upper Offset-n No suffix code, Hz unit, 1 Hz resolution. "–999999999999" is returned when no measurement is performed.
<total_judge>	Total judgment result
<lower_offset_n>	Judgment result of lower Offset-n
<upper_offset_n>	Judgment result of upper Offset-n This command returns 0 when it is PASS, and returns 1 when it is FAIL. This command returns" –999.0 "when no measurement is performed.

Details

This function outputs the measurement result at the Spectrum Emission Mask measurement performed last. It is possible to output the measurement result in a state that the measurement has already been done, and in a different style.
You can use the READ command if you perform a measurement along with starting a sweep again.
The return value of this function varies according to the result mode.(cf. :SYSTem:RESult:MODE)

Example of Use

To obtain the peak value of the absolute power for SEM measurement (n = 10).

```
FETC:SEM10?
>
-999.0,-999.0,-100.000,-100.000,-60.000,-60.000,45.000,-
45.000,-30.000,-30.000,-10.000,-10.000,0.000,0.000
```

:READ:SEMask[n]?

Spectrum Emission Mask Read

Function

This command outputs Spectrum Emission Mask measurement and outputs the measurement result.
It achieves the same result as when commands are sent in the order of
`:INITiate:SEMask`
`:FETCh:SEMask[n]?`

:MEASure:SEMask[n]?

Spectrum Emission Mask Measure

Function

This command performs Spectrum Emission Mask measurement and outputs the measurement result.
It achieves the same result as when commands are sent in the order of
`:CONFigure:SEMask`
`:INITiate:SEMask`
`:FETCh:SEMask[n]?`

[:SENSe]:SEMask:FILTer[:RRC][:STATe] ON|OFF|1|0

Spectrum Emission Mask Root Nyquist Filter State

Function

This command sets the filter type for Spectrum Emission Mask measurement.

Command

```
[:SENSe]:SEMask:FILTer[:RRC][:STATe] <filter>
```

Parameter

<filter>	Filter type
OFF|0	Rectangle filter
ON|1	Root Nyquist filter (Default)

Example of Use

To set the filter type to Root Nyquist.

```
SEM:FILT 1
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:FILTer:TYPE
```

[:SENSe]:SEMask:FILTer[:RRC][:STATe]?

Spectrum Emission Mask Root Nyquist Filter State Query

Function

This command queries the filter type for Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:FILTer[:RRC][:STATe]?
```

Response

```
<filter>
```

Parameter

<filter>	Filter type
0	Rectangle filter, Nyquist filter
1	Root Nyquist filter (Default)

Example of Use

To query the filter type.

```
SEM:FILT?
> 1
```

Related command

This command has the same function as the following command.

```
[:SENSe]:SEMask:FILTer:TYPE?
```

:DISPlay:SEMask:RESult:TYPE PEAK|MARGin

Spectrum Emission Mask Result Type

Function

This command switches the type of the result display for Spectrum Emission Mask measurement.

Command

```
DISPlay:SEMask:RESult:TYPE <type>
```

Parameter

<type>	Type of result display
PEAK	Displays the peak
MARGin	Displays the margin to the limit line.

Example of Use

To set the type of the result display to the peak.

```
DISP:SEM:RES:TYPE PEAK
```

:DISPlay:SEMask:RESult:TYPE?

Spectrum Emission Mask Result Type Query

Function

This command queries the type of the result display for Spectrum Emission Mask measurement.

Command

```
DISPlay:SEMask:RESult:TYPE?
```

Response

```
<type>
```

Parameter

<type>	Type of result display
PEAK	Displays the peak
MARG	Displays the margin to the limit line.

Example of Use

To query the type of the result display.

```
DISP:SEM:RES:TYPE?
> PEAK
```

:DISPlay:SEMask:ANNotation:TITLe:DATA <string>

Title Entry

Function

This command registers the title character string.

Command

```
:DISPlay:SEMask:ANNotation:TITLe:DATA <string>
```

Parameter

`<string>`	Character string within 32 characters enclosed by double quotation marks (" ") or single quotation marks (' ').

Example of Use

To set the title character string.

```
DISP:SEM:ANN:TITL:DATA 'SPECTRUM ANALYZER'
```

Related Command

This command has the same function as the following commands.

```
:DISPlay:ANNotation:TITLe:DATA
:DISPlay:ACPower:ANNotation:TITLe:DATA
:DISPlay:CHPower:ANNotation:TITLe:DATA
:DISPlay:OBWidth:ANNotation:TITLe:DATA
:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA
```

:DISPlay:SEMask:ANNotation:TITLe:DATA?

Title Entry Query

Function

This command queries the title character string.

Command

```
:DISPlay:SEMask:ANNotation:TITLe:DATA?
```

Parameter

<string>	Character string within 32 characters enclosed by double quotation marks (" ") or single quotation marks (' ').

Example of Use

To query the title character string.

```
DISP:SEM:ANN:TITL:DATA?
> SPECTRUM ANALYZER
```

Related Command

This command has the same function as the following commands.

```
:DISPlay:ANNotation:TITLe:DATA?
:DISPlay:ACPower:ANNotation:TITLe:DATA?
:DISPlay:CHPower:ANNotation:TITLe:DATA?
:DISPlay:OBWidth:ANNotation:TITLe:DATA?
:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA?
```

:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>

Log Scale Range

Function

This command sets the Y-axis scale magnification when Scale Mode is set to Log.

Command

```
DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVisi
on <rel_ampl>
```

Parameter

<rel_ampl>	Y-axis scale magnification
0.1	0.1 dB/div
0.2	0.2 dB/div
0.5	0.5 dB/div
1	1 dB/div
2	2 dB/div
5	5 dB/div
10	10 dB/div
20	20 dB/div
Default	10 dB/div

Example of Use

To set the scale range to 0.5 dB/div.

```
DISP:SEM:VIEW:WIND:TRAC:Y:PDIV 0.5
```

Related command

This command has the same function as the following commands.

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVisi
on
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
e]:PDIVision
```

:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

Log Scale Range Query

Function

This command queries the Y-axis scale magnification when Scale Mode is set to Log.

Query

```
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVis
ion?
```

Response

```
<rel_ampl>
```

Parameter

<rel_ampl>	Y-axis scale magnification
0.1	0.1 dB/div
0.2	0.2 dB/div
0.5	0.5 dB/div
1	1 dB/div
2	2 dB/div
5	5 dB/div
10	10 dB/div
20	20 dB/div
Default	10 dB/div

Example of Use

To query the scale magnification.

```
DISP:SEM:VIEW:WIND:TRAC:Y:PDIV?
> 0.5
```

Related command

This command has the same function as the following commands.

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVisi
on?
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
sion?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
e]:PDIVisionVision?
```

:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real>

Reference Level

Function

This command sets the reference level.

Command

```
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
<real>
```

Parameter

`<real>`		Reference level	
	Range	Value equivalent to –120 to +50 dBm	
	Resolution	0.01 dB (When scale unit settings are dB-system units.) 0.01 pV (When scale unit settings are V-system units.) 0.01 yW (When scale unit settings are W -system units.)	
	Suffix code	`DBM,DM`	dBm
		`DBMV`	dBmV
		`DBUV`	dBμV
		`DBUVE`	dBμV (emf)
		`DBUVM`	dBμV/m
		`V`	V
		`MV`	mV
		`UV`	μV
		`W`	W
		`MW`	mW
		`UW`	μW
		`NW`	nW
		`PW`	pW
		`FW`	fW
		Follows the setting of Scale Unit when omitted. V is used in Linear scale mode.	
	Default	0 dBm	

Example of Use

To set the reference level to 0 dBm.

```
DISP:SEM:VIEW:WIND:TRAC:Y:RLEV 0DBM
```

Related command

This command has the same function as the following commands.

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
l
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
l
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
l
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
e]:RLEVel
```

:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

Reference Level Query

Function

This command queries the reference level.

Query

```
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel
?
```

Response

```
<real>
```

Parameter

`<real>`		Reference level
	Range	Value equivalent to –120 to +50 dBm
	Resolution	0.01 dB (When scale unit settings are dB-system units.) 0.01 pV (When scale unit settings are V-system units.) 0.01 yW (When scale unit settings are W-system units.)
	Suffix code	None. Value is returned in dBm units.

Example of Use

To query the reference level.

```
DISP:SEM:VIEW:WIND:TRAC:Y:RLEV?
> 0.00
```

Related command

This command has the same function as the following commands.

```
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
l ?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
l?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
l?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
e]:RLEVel?
```

:DISPlay:SEMask:VIEW[1]:WINDow[1]:PAGE:NUMBer <integer>

Page Number

Function

This command sets the display page number of Spectrum Emission Mask.

Command

```
:DISPlay:SEMask:VIEW[1]:WINDow[1]:PAGE:NUMBer <integer>
```

Parameter

<integer>	Page number
Range	1 to 2
Resolution	1
Suffix code	None

Example of Use

To set the display page number of Spectrum Emission Mask to 1.

```
DISP:SEM:VIEW:WIND:PAGE:NUMB 1
```

:DISPlay:SEMask:VIEW[1]:WINDow[1]:PAGE:NUMBer?

Page Number Query

Function

This command queries the display page number of Spectrum Emission Mask.

Query

```
:DISPlay:SEMask:VIEW[1]:WINDow[1]:PAGE:NUMBer?
```

Response

```
<integer>
```

Parameter

<integer>	Page number
Range	1 to 2
Resolution	1

Example of Use

To query the display page number of Spectrum Emission Mask.

```
DISP:SEM:VIEW:WIND:PAGE:NUMB?
> 1
```

:TRIGger:SEMask[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe

Trigger Source

Function

This command selects the trigger source.

Command

```
:TRIGger:SEMask[:SEQuence]:SOURce <source>
```

Parameter

<source>	Trigger signal source

[MS269xA]

EXTernal[1]	External input (External)
IMMediate	Free run
WIF|RFBurst	Wideband IF detection (Wide IF Video)
VIDeo	Video detection(Video)
SG	SG marker
BBIF	Baseband Interface (BBIF)

[MS2830A], [MS2840A]

EXTernal[1]	External input (External)
IMMediate	Free run
WIF|RFBurst	Wideband IF detection (Wide IF Video)
VIDeo	Video detection(Video)
SG	SG marker
FRAMe	Frame period trigger

Details

[MS269xA]

SG marker trigger can be selected only when the Option 020/120 Vector Signal Generator is installed.

BBIF trigger cannot be selected only when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.

[MS2830A], [MS2840A]

SG marker trigger can be selected only when the Option 020/120/021/121 Vector Signal Generator is installed.

Example of Use

To set the trigger signal source to Video trigger.

```
TRIG:SEM:SOUR VID
```

Related command

This command has the same function as the following commands.

```
:TRIGger[:SEQuence]:SOURce
:TRIGger:ACPower[:SEQuence]:SOURce
:TRIGger:CHPower[:SEQuence]:SOURce
:TRIGger:OBWidth[:SEQuence]:SOURce
:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce
```


:TRIGger:SEMask[:SEQuence]:SOURce?

Trigger Source Query

Function

This command queries the trigger source.

Query

```
:TRIGger:SEMask[:SEQuence]:SOURce?
```

Response

```
<source>
```

Parameter

`<source>`	Trigger signal source

[MS269xA]

`EXT`	External input (External)
`IMM`	Free run
`WIF`	Wideband IF detection (Wide IF Video)
`VID`	Video detection(Video)
`SG`	SG marker
`BBIF`	Baseband Interface (BBIF)

[MS2830A], [MS2840A]

`EXT`	External input (External)
`IMM`	Free run
`WIF|RFB`	Wideband IF detection (Wide IF Video)
`VID`	Video detection(Video)
`SG`	SG marker
`FRAMe`	Frame period trigger

Details

[MS269xA]

SG marker trigger can be selected only when the Option 020/120 Vector Signal Generator is installed.

BBIF trigger cannot be selected only when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.

[MS2830A], [MS2840A

SG marker trigger can be selected only when the Option 020/120/021/121 Vector Signal Generator is installed.

Example of Use

To query the trigger signal source.

```
TRIG:SEM:SOUR?
> VID
```

Related command

This command has the same function as the following commands.

```
:TRIGger[:SEQuence]:SOURce?
:TRIGger:ACPower[:SEQuence]:SOURce?
:TRIGger:CHPower[:SEQuence]:SOURce?
:TRIGger:OBWidth[:SEQuence]:SOURce?
:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce?
```

[:SENSe]:SEMask:AVERage:COUNt <integer>

Average Count

Function

This command sets the storage count.

Command

```
[:SENSe]:SEMask:AVERage:COUNt <integer>
```

Parameter

<integer>	Storage count
Range	2 to 9999
Default	10

Example of Use

To set the storage count to 110.

```
SEM:AVER:COUN 110
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:AVERage:COUNt
[:SENSe]:ACPower:AVERage:COUNt
[:SENSe]:CHPower:AVERage:COUNt
[:SENSe]:OBWidth:AVERage:COUNt
[:SENSe]:BPOWer|:TXPower:AVERage:COUNt
```

[:SENSe]:SEMask:AVERage:COUNt?

Average Count Query

Function

This command queries the storage count.

Command

```
[:SENSe]:SEMask:AVERage:COUNt?
```

Parameter

<integer>	Storage count
Range	2 to 9999
Default	10

Example of Use

To query the storage count.

```
SEM:AVER:COUN?
> 110
```

Related command

This command has the same function as the following commands.

```
[:SENSe]:AVERage:COUNt?
[:SENSe]:ACPower:AVERage:COUNt?
[:SENSe]:CHPower:AVERage:COUNt?
[:SENSe]:OBWidth:AVERage:COUNt?
[:SENSe]:BPOWer|:TXPower:AVERage:COUNt?
```

[:SENSe]:SEMask:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function

This command sets the storage mode for Trace A.

Command

```
[:SENSe]:SEMask:AVERage[:STATe] <switch>
```

Parameter

<switch>	Setting of Storage Mode
ON|1	Sets Storage Mode to Linear Average.
OFF|0	Sets Storage Mode to Off (Default).

Example of Use

To set the storage mode for Trace A to Off.

```
SEM:AVER OFF
```

Related command

This command has the same function as the following commands.

```
:TRACe[1]|2|3|4|5|6:STORage:MODE
[:SENSe]:ACPower:AVERage[:STATe]
[:SENSe]:CHPower:AVERage[:STATe]
[:SENSe]:OBWidth:AVERage[:STATe]
[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]
[:SENSe]:SPURious:AVERage[:STATe]
```

[:SENSe]:SEMask:AVERage[:STATe]?

Storage Mode Query

Function

This command queries the storage mode for Trace A.

Query

```
[:SENSe]:SEMask:AVERage[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Setting of Storage Mode
1	Linear Average
0	Other than Linear Average

Example of Use

To query the storage mode for Trace A.

```
SEM:AVER?
> 0
```

Related command

This command has the same function as the following commands.

```
:TRACe[1]|2|3|4|5|6:STORage:MODE?
[:SENSe]:ACPower:AVERage[:STATe]?
[:SENSe]:CHPower:AVERage[:STATe]?
[:SENSe]:OBWidth:AVERage[:STATe]?
[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?
[:SENSe]:SPURious:AVERage[:STATe]?
```

[:SENSe]:SEMask:RACouple OFF|ON|0|1

Couple Ref & ATT

Function

This command sets the shared setting for Reference Level and Attenuator for Spectrum Emission Mask measurement to On/Off.

Command

```
[:SENSe]:SEMask:RACouple <switch>
```

Parameter

<switch>	Shared setting On/Off
ON|1	Sets the shared setting to On.(Default)
OFF|0	Sets the shared setting to Off.

Details

The values set in Reference Level and Attenuator of Reference Setup are set to those of Offset Setup, when this function is set to On.

Example of Use

To set the shared setting of Reference Level and Attenuator for Spectrum Emission Mask measurement to On.

```
SEM:RAC ON
```

[:SENSe]:SEMask:RACouple?

Couple Ref & ATT Query

Function

This command sets the shared setting for Reference Level and Attenuator for Spectrum Emission Mask measurement to On/Off.

Query

```
[:SENSe]:SEMask:RACouple?
```

Response

```
<switch>
```

Parameter

`<switch>`	Shared setting On/Off
`1`	Sets the shared setting to On.
`0`	Sets the shared setting to Off.

Details

The values set in Reference Level and Attenuator of Reference Setup are set to those of Offset Setup, when this function is set to On.

Example of Use

To query the shared setting of Reference Level and Attenuator for Spectrum Emission Mask measurement.

```
SEM:RAC?
> 1
```

[:SENSe]:SEMask:SWEep[1][:TYPE][:AUTO]:RULes:FFT:RWIDth?

Spectrum Emission Mask Sweep Type Select Rules Real FFT Width Query

Function

This command queries the FFT width that is actually used for the sweep/FFT switch rule during reference power measurement in the Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:SWEep[1][:TYPE][:AUTO]:RULes:FFT:RWIDth?
```

Response

```
<freq>
```

Parameter

<freq>	FFT width
Range	40 kHz or 2 MHz
Resolution	1 Hz
Suffix code	None. Value is returned in Hz units.

Details

This command is not available for MS269x Series.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions. This command queries the FFT width that is actually used.

Example of Use

To query the FFT width that is actually used.

```
SEM:SWE:RUL:FFT:RWID?
> 40000
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1][:TYPE][:AUTO]:RULes:FFT:RWIDth?

Spectrum Emission Mask Offset Sweep Type Select Rules Real FFT Width Query

Function

This command queries the FFT width that is actually used for the sweep/FFT switch rule during offset measurement in the Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1][:TYPE][:AUTO]:RULes:FFT:RWIDth?
```

Response

```
<freq_1>,<freq_2>,<freq_3>,<freq_4>,<freq_5>,<freq_6>,
<freq_7>,<freq_8>,<freq_9>,<freq_10>,<freq_11>,<freq_12>
```

Parameter

<freq_n>	FFT width
Range	40 kHz or 2 MHz
Resolution	1 Hz
Suffix code	None. Value is returned in Hz units.

Details

This command is not available for MS269x Series.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions.
This command queries the FFT width that is actually used.

Example of Use

To query the FFT width that is actually used.

```
SEM:OFFS:LIST:SWE:RUL:FFT:RWID?
>
40000,40000,40000,40000,40000,40000,40000,40000,40000,40000,40000,40000
```

[:SENSe]:SEMask:SWEep[1][:TYPE][:AUTO]:RULes:RTYPe?

Spectrum Emission Mask Sweep Type Select Rules Real Type Query

Function

This command queries the sweep mode (sweep or FFT) that is executed during reference power measurement in the Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:SWEep[1][:TYPE][:AUTO]:RULes:RTYPe?
```

Response

```
<type>
```

Parameter

<type>	Sweep mode
SWE	Performs measurement using sweep.
FFT	Performs measurement using FFT.

Details

This command is not available for MS269x Series.

Example of Use

To query the sweep type used for measurement under the current setting.

```
SEM:SWE:RUL:RTYP?
> FFT
```

[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1][:TYPE][:AUTO]:RULes:RTYPe?

Spectrum Emission Mask Offset Sweep Type Select Rules Real Type Query

Function

This command queries the sweep mode (sweep or FFT) that is executed during offset measurement in the Spectrum Emission Mask measurement.

Query

```
[:SENSe]:SEMask:OFFSet[1]:LIST:SWEep[1][:TYPE][:AUTO]:RU
Les:RTYPe?
```

Response

```
<type_1>,<type_2>,<type_3>,<type_4>,<type_5>,<type_6>,
<type_7>,<type_8>,<type_9>,<type_10>,<type_11>,<type_12>
```

Parameter

`<type_n>`	Sweep mode
`SWE`	Performs measurement using sweep.
`FFT`	Performs measurement using FFT.

Details

This command is not available for MS269x Series.

Example of Use

To query the sweep type used for measurement under the current setting.

```
SEM:OFFS:LIST:SWE:RUL:RTYP?
> FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT
```

2.14 Spurious Emission Measurement Function

Table 2.14-1 lists device messages for setting the Spurious Emission measurement functions.

Table 2.14-1 Device Messages for Spurious Emission Measurement Function

Function	Device Message
Measure Spurious Emission	[:SENSe]:SPURious[:STATe] ON|OFF|1|0
	[:SENSe]:SPURious[:STATe]?
Spurious Emission Result Type	[:SENSe]:SPURious:TYPE WORSt|EXAMine|PEAKs|FULL
	[:SENSe]:SPURious:TYPE?
Displayed Segment Mode	:DISPlay:SPURious:SEGMent:MODE ON|OFF|1|0
	:DISPlay:SPURious:SEGMent:MODE?
Displayed Segment	:DISPlay:SPURious:SEGMent <integer>
	:DISPlay:SPURious:SEGMent?
Page of Summary Auto/Manual	:DISPlay:SPURious:SEGMent:AUTO ON|OFF|1|0
	:DISPlay:SPURious:SEGMent:AUTO?
Displayed Summary Table	:DISPlay:SPURious:STABle RESult|RANGe
	:DISPlay:SPURious:STABle?
Next Page	:DISPlay:SPURious:SEGMent:NEXT
Previous Page	:DISPlay:SPURious:SEGMent:PREVious
Displayed Restart Query	:DISPlay:SPURious:SEGMent:RESTart?
Time Domain Measurement	[:SENSe]:SPURious:TDOMain:SPAN:ZERO ON|OFF|1|0
	[:SENSe]:SPURious:TDOMain:SPAN:ZERO?
Fail Stop	[:SENSe]:SPURious:FSTop ON|OFF|1|0
	[:SENSe]:SPURious:FSTop?
Edit Segment Number	[:SENSe]:SPURious:SEGMent:NUMBer <integer>
	[:SENSe]:SPURious:SEGMent:NUMBer?
Segment On/Off	[:SENSe]:SPURious[:RANGe][:LIST]:SEGMent:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:SPURious[:RANGe][:LIST]:SEGMent:STATe?
Spurious Emission Start Frequency	[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STARt <freq_1>,<freq_2>,<freq_3>,<freq_4>,<freq_5>,<freq_6>,<freq_7>,<freq_8>,<freq_9>,<freq_10>,<freq_11>,<freq_12>,<freq_13>,<freq_14>,<freq_15>,<freq_16>,<freq_17>,<freq_18>,<freq_19>,<freq_20>
	[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STARt?

Table 2.14-1 Device Messages for Spurious Emission Measurement Function (Cont'd)

Function	Device Message
Spurious Emission Stop Frequency	[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STOP <freq_1>,<freq_2>,<freq_3>,<freq_4>,<freq_5>,<freq_6>,<freq_7>,<freq_8>,<freq_9>,<freq_10>,<freq_11>,<freq_12>,<freq_13>,<freq_14>,<freq_15>,<freq_16>,<freq_17>,<freq_18>,<freq_19>,<freq_20>
	[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STOP?
Spurious Emission Reference Level	:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real_1>,<real_2>,<real_3>,<real_4>,<real_5>,<real_6>,<real_7>,<real_8>,<real_9>,<real_10>,<real_11>,<real_12>,<real_13>,<real_14>,<real_15>,<real_16>,<real_17>,<real_18>,<real_19>,<real_20>
	:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
Spurious Emission Attenuator	[:SENSe]:SPURious:ATTenuation <rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO,<rel_ampl>|AUTO
	[:SENSe]:SPURious:ATTenuation?
Spurious Emission Resolution Bandwidth Auto/Manual	[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]:AUTO ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]:AUTO?
Spurious Emission Resolution Bandwidth	[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution] <bandwidth_1>,<bandwidth_2>,<bandwidth_3>,<bandwidth_4>,<bandwidth_5>,<bandwidth_6>,<bandwidth_7>,<bandwidth_8>,<bandwidth_9>,<bandwidth_10>,<bandwidth_11>,<bandwidth_12>,<bandwidth_13>,<bandwidth_14>,<bandwidth_15>,<bandwidth_16>,<bandwidth_17>,<bandwidth_18>,<bandwidth_19>,<bandwidth_20>
	[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]?
Spurious Emission Video Bandwidth Auto/Manual	[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo:AUTO ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo:AUTO?

Table 2.14-1 Device Messages for Spurious Emission Measurement Function (Cont'd)

Function	Device Message
Spurious Emission Video Bandwidth	[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo <bandwidth_1>|OFF,<bandwidth_2>|OFF,<bandwidth_3>|OFF,<bandwidth_4>|OFF,<bandwidth_5>|OFF,<bandwidth_6>|OFF,<bandwidth_7>|OFF,<bandwidth_8>|OFF,<bandwidth_9>|OFF,<bandwidth_10>|OFF,<bandwidth_11>|OFF,<bandwidth_12>|OFF,<bandwidth_13>|OFF,<bandwidth_14>|OFF,<bandwidth_15>|OFF,<bandwidth_16>|OFF,<bandwidth_17>|OFF,<bandwidth_18>|OFF,<bandwidth_19>|OFF,<bandwidth_20>|OFF
	[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo?
Spurious Emission Sweep Time Auto/Manual	[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME:AUTO ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME:AUTO?
Spurious Emission Sweep Time	[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME <seconds_1>,<seconds_2>,<seconds_3>,<seconds_4>,<seconds_5>,<seconds_6>,<seconds_7>,<seconds_8>,<seconds_9>,<seconds_10>,<seconds_11>,<seconds_12>,<seconds_13>,<seconds_14>,<seconds_15>,<seconds_16>,<seconds_17>,<seconds_18>,<seconds_19>,<seconds_20>
	[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME?
Pause before Sweep	[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:PAUSe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:PAUSe?
Spurious Emission Preamp On/Off	[:SENSe]:SPURious:POWer[:RF]:GAIN[:STATe] ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:SPURious:POWer[:RF]:GAIN[:STATe]?

Table 2.14-1 Device Messages for Spurious Emission Measurement Function (Cont'd)

<table>
<tr><th>Function</th><th>Device Message</th></tr>
<tr><td rowspan="2">Spurious Emission Detection Mode</td><td>[:SENSe]:SPURious[:RANGe][:LIST]:DETector[1][:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS</td></tr>
<tr><td>[:SENSe]:SPURious[:RANGe][:LIST]:DETector[1][:FUNCtion]?</td></tr>
<tr><td rowspan="2">Spurious Emission Trace Point</td><td>[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:POINts <integer_1>,<integer_2>,<integer_3>,<integer_4>,<integer_5>,<integer_6>,<integer_7>,<integer_8>,<integer_9>,<integer_10>,<integer_11>,<integer_12>,<integer_13>,<integer_14>,<integer_15>,<integer_16>,<integer_17>,<integer_18>,<integer_19>,<integer_20></td></tr>
<tr><td>[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:POINts?</td></tr>
<tr><td rowspan="2">Couple Storage Count</td><td>[:SENSe]:SPURious:AVERage:COUNt:COUPle ON|OFF|1|0</td></tr>
<tr><td>[:SENSe]:SPURious:AVERage:COUNt:COUPle?</td></tr>
<tr><td rowspan="2">Spurious Emission Storage Count</td><td>[:SENSe]:SPURious[:RANGe][:LIST]:AVERage:COUNt <integer_1>,<integer_2>,<integer_3>,<integer_4>,<integer_5>,<integer_6>,<integer_7>,<integer_8>,<integer_9>,<integer_10>,<integer_11>,<integer_12>,<integer_13>,<integer_14>,<integer_15>,<integer_16>,<integer_17>,<integer_18>,<integer_19>,<integer_20></td></tr>
<tr><td>[:SENSe]:SPURious[:RANGe][:LIST]:AVERage:COUNt?</td></tr>
<tr><td>Use Common Correction Table</td><td>:CALCulate:SPURious[:RANGe][:LIST]:CORRection:COMMon <segment></td></tr>
<tr><td>Recall Correction Table</td><td>:CALCulate:SPURious[:RANGe][:LIST]:CORRection:RECall <segment>,<filename>[,<device>]</td></tr>
</table>

Table 2.14-1 Device Messages for Spurious Emission Measurement Function (Cont'd)

Function	Device Message
Spurious Emission Limit Start Level	:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA[:STARt] <ampl_1>,<ampl_2>,<ampl_3>,<ampl_4>,<ampl_5>,<ampl_6>,<ampl_7>,<ampl_8>,<ampl_9>,<ampl_10>,<ampl_11>,<ampl_12>,<ampl_13>,<ampl_14>,<ampl_15>,<ampl_16>,<ampl_17>,<ampl_18>,<ampl_19>,<ampl_20>
	:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA[:STARt]?
Spurious Emission Limit Stop Level Auto/Manual	:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP:AUTO ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP:AUTO?
Spurious Emission Limit Stop Level	:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP <ampl_1>,<ampl_2>,<ampl_3>,<ampl_4>,<ampl_5>,<ampl_6>,<ampl_7>,<ampl_8>,<ampl_9>,<ampl_10>,<ampl_11>,<ampl_12>,<ampl_13>,<ampl_14>,<ampl_15>,<ampl_16>,<ampl_17>,<ampl_18>,<ampl_19>,<ampl_20>
	:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP?
Spurious Emission Search Resolution	[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:RESolution|:EXCursion <rel_ampl_1>,<rel_ampl_2>,<rel_ampl_3>,<rel_ampl_4>,<rel_ampl_5>,<rel_ampl_6>,<rel_ampl_7>,<rel_ampl_8>,<rel_ampl_9>,<rel_ampl_10>,<rel_ampl_11>,<rel_ampl_12>,<rel_ampl_13>,<rel_ampl_14>,<rel_ampl_15>,<rel_ampl_16>,<rel_ampl_17>,<rel_ampl_18>,<rel_ampl_19>,<rel_ampl_20>
	[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:RESolution|:EXCursion?
Spurious Emission Search Threshold Level	[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:THReshold <real_1>,<real_2>,<real_3>,<real_4>,<real_5>,<real_6>,<real_7>,<real_8>,<real_9>,<real_10>,<real_11>,<real_12>,<real_13>,<real_14>,<real_15>,<real_16>,<real_17>,<real_18>,<real_19>,<real_20>
	[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:THReshold?
Spurious Emission Couple Segment RBW	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]:COUPle ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]:COUPle?

Table 2.14-1 Device Message for Spurious Emission Measurement Function (Cont'd)

Function	Device Message
Spurious Emission Time Domain RBW	[:SENSe]:SPURious:TDOMain:[:RANGe][:LIST]:BANDwidth[:RESolution] <bandwidth_1>,<bandwidth_2>,<bandwidth_3>,<bandwidth_4>,<bandwidth_5>,<bandwidth_6>,<bandwidth_7>,<bandwidth_8>,<bandwidth_9>,<bandwidth_10>,<bandwidth_11>,<bandwidth_12>,<bandwidth_13>,<bandwidth_14>,<bandwidth_15>,<bandwidth_16>,<bandwidth_17>,<bandwidth_18>,<bandwidth_19>,<bandwidth_20>
	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]?
Spurious Emission Couple Segment VBW	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo:COUPle ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0
	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo:COUPle?
Spurious Emission Time Domain VBW	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo <bandwidth_1>|OFF,<bandwidth_2>|OFF,<bandwidth_3>|OFF,<bandwidth_4>|OFF,<bandwidth_5>|OFF,<bandwidth_6>|OFF,<bandwidth_7>|OFF,<bandwidth_8>|OFF,<bandwidth_9>|OFF,<bandwidth_10>|OFF,<bandwidth_11>|OFF,<bandwidth_12>|OFF,<bandwidth_13>|OFF,<bandwidth_14>|OFF,<bandwidth_15>|OFF,<bandwidth_16>|OFF,<bandwidth_17>|OFF,<bandwidth_18>|OFF,<bandwidth_19>|OFF,<bandwidth_20>|OFF
	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo?
Spurious Emission Time Domain Sweep Time	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:SWEep:TIME <seconds_1>,<seconds_2>,<seconds_3>,<seconds_4>,<seconds_5>,<seconds_6>,<seconds_7>,<seconds_8>,<seconds_9>,<seconds_10>,<seconds_11>,<seconds_12>,<seconds_13>,<seconds_14>,<seconds_15>,<seconds_16>,<seconds_17>,<seconds_18>,<seconds_19>,<seconds_20>
	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:SWEep:TIME?
Spurious Emission Time Domain Detection	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:DETector[1][:FUNCtion] POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative, POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative, POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative, POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative, POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative, POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative, POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative, POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative, POSitive|SAMPle|NEGative,POSitive|SAMPle|NEGative
	[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:DETector[1][:FUNCtion]?
Save Spurious Emission Parameter	:MMEMory:STORe:SPURious:TABLe <register>

Table 2.14-1 Device Messages for Spurious Emission Measurement Function (Cont'd)

Function	Device Message
Recall Spurious Emission Parameter	:MMEMory:LOAD:SPURious:TABLe <register>
Spurious Emission Configure	:CONFigure:SPURious
Spurious Emission Initiate	:INITiate:SPURious
Spurious Emission Fetch	:FETCh:SPURious[n]?
Spurious Emission Read	:READ:SPURious[n]?
Spurious Emission Measure	:MEASure:SPURious[n]?
Spurious Emission Title Entry	:DISPlay:SPURious:ANNotation:TITLe:DATA <string>
	:DISPlay:SPURious:ANNotation:TITLe:DATA?
Spurious Emission Log Scale Range	:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>
	:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
Spurious Emission Storage Mode	[:SENSe]:SPURious:AVERage[:STATe] ON|OFF|1|0
	[:SENSe]:SPURious:AVERage[:STATe]?
Spurious Emission Trigger Source	:TRIGger:SPURious[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe
	:TRIGger:SPURious[:SEQuence]:SOURce?
Spurious Emission Marker Mode	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF
	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
Spurious Emission Zone Marker Frequency (Time)	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>
	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

Table 2.14-1 Device Message for Spurious Emission Measurement Function (Cont'd)

Function	Device Message
Spurious Emission Zone Marker Position	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>
	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
Spurious Emission Marker Level Query	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?
Spurious Emission All Marker Off	:CALCulate:SPURious:MARKer:AOFF
Spurious Emission Peak Search	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
Spurious Emission Next Peak Search	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT
Spurious Emission Power Peak Search	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
Spurious Emission Next Power Peak Search	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT
Spurious Emission Minimum Search	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
Spurious Emission Next Minimum Search	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT
Spurious Emission Auto Sweep Time Mode	[:SENSe]:SPURious:SWEep:TIME:AUTO:MODE NORMal|FAST
	[:SENSe]:SPURious:SWEep:TIME:AUTO:MODE?
Spurious Emission Relative To	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>
	:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?
Spurious Emission Couple Zone	:CALCulate:SPURious:MARKer:COUPle[:STATe] ON|OFF|1|0
	:CALCulate:SPURious:MARKer:COUPle[:STATe]?
Spurious Emission Continue	:INITiate:SPURious:PAUSe:CONTinue
Spurious Emission Pause Status Query	:INITiate:SPURious:PAUSe:STATe?
Low Phase Noise for Spurious Emission Measurement	[:SENSe]:SPURious:SYNThesis:LPHase ON|OFF|1|0
	[:SENSe]:SPURious:SYNThesis:LPHase?
Low Phase Noise Status Query	[:SENSe]:FREQuency:SYNThesis:LPHase:STATe??

[:SENSe]:SPURious[:STATe] ON|OFF|1|0

Measure Spurious Emission

Function

This command executes the Spurious Emission measurement.

Command

```
[:SENSe]:SPURious[:STATe] <switch>
```

Parameter

<switch>	Spurious measurement On/Off
ON|1	Spurious measurement is enabled.
OFF|0	Spurious measurement is disabled.

Details

This command is not available in the following cases:

- When Scale Mode is set to Lin.
- In Time Domain

If the Spurious Emission measurement is set to On, then the active trace is set to A.

Example of Use

To set the Spurious measurement to On.

```
SPUR ON
```

[:SENSe]:SPURious[:STATe]?

Measure Spurious Emission Query

Function

This command queries the On/Off state of the Spurious Emission measurement.

Query

```
[:SENSe]:SPURious[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Spurious measurement On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the Spurious measurement.

```
SPUR?
> 1
```

[:SENSe]:SPURious:TYPE WORSt|EXAMine|PEAKs|FULL

Spurious Emission Result Type

Function

This command selects the measurement result type.

Command

```
[:SENSe]:SPURious:TYPE <type>
```

Parameter

`<type>`		Measurement result type
	`WORSt|EXAMine`	Point with the least margin from the limit line is displayed.
	`PEAKs|FULL`	Spurious detected by the detection resolution and the threshold set in each segment is displayed.
	Default	Worst

Details

This command is not available during the Time Domain measurement.

Example of Use

To display the point with the least margin from the limit line.

```
SPUR:TYPE EXAM
```

[:SENSe]:SPURious:TYPE?

Spurious Emission Result Type Query

Function

This command queries the measurement result type.

Query

```
[:SENSe]:SPURious:TYPE?
```

Response

```
<type>
```

Parameter

`<type>`	Measurement result type
`WORS`	Point with the least margin from the limit line is displayed.
`PEAK`	Spurious detected by the detection resolution and the threshold set in each segment is displayed.

Example of Use

To query the measurement result type.

```
SPUR:TYPE?
> EXAM
```

:DISPlay:SPURious:SEGMent:MODE ON|OFF|1|0

Displayed Segment Mode

Function

This command switches the display mode of a segment.

Command

```
:DISPlay:SPURious:SEGMent:MODE <switch>
```

Parameter

`<switch>`	Display mode
`ON|1`	Auto
`OFF|0`	Manual

Example of Use

To set the display mode of a segment to Auto.

```
DISP:SPUR:SEGM:MODE ON
```

:DISPlay:SPURious:SEGMent:MODE?

Displayed Segment Mode Query

Function

This command queries the display mode of a segment.

Query

```
:DISPlay:SPURious:SEGMent:MODE?
```

Response

```
<switch>
```

Parameter

<switch>	Display mode
1	Auto
0	Manual

Example of Use

To query the display mode of a segment.

```
DISP:SPUR:SEGM:MODE?
> 1
```

:DISPlay:SPURious:SEGMent <integer>

Displayed Segment

Function

This command specifies the segment to display the trace data in.

Command

```
:DISPlay:SPURious:SEGMent <integer>
```

Parameter

<integer>	Segment
Range	1 to 20
Resolution	1

Details

A segment which is set to Off cannot be selected.
This command is not available during measurement and when the displayed segment mode is set to Auto.

Example of Use

To specify 2 as the segment in which the trace data is displayed.

```
DISP:SPUR:SEGM 2
```

:DISPlay:SPURious:SEGMent?

Displayed Segment Query

Function

This command queries the segment to display the trace data in.

Query

```
:DISPlay:SPURious:SEGMent?
```

Response

```
<integer>
```

Parameter

<integer>	Segment
Range	1 to 20
Resolution	1

Example of Use

To query the segment to display the trace data in.

```
DISP:SPUR:SEGM?
> 2
```

:DISPlay:SPURious:SEGMent:AUTO ON|OFF|1|0

Page of Summary Auto/Manual

Function

This command turns on/off the summary page auto numbering.

Command

```
:DISPlay:SPURious:SEGMent:AUTO <switch>
```

Parameter

<switch>	Auto mode On/Off
ON|1	Sets Auto mode to On.
OFF|0	Sets Auto mode to Off.

Details

Auto mode makes it possible to display the page on which the segment set in Displayed Segment is.

Example of Use

To turn on the summary page auto numbering.

```
DISP:SPUR:SEG:AUTO ON
```

:DISPlay:SPURious:SEGMent:AUTO?

Page of Summary Auto/Manual Query

Function

This command queries the On/Off state of the summary page auto numbering.

Query

```
:DISPlay:SPURious:SEGMent:AUTO?
```

Response

```
<switch>
```

Parameter

<switch>	Automatic setting On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the summary page auto numbering.

```
DISP:SPUR:SEG:AUTO?
> 1
```

:DISPlay:SPURious:STABle RESult|RANGe

Displayed Summary Table

Function

This command sets the content to be displayed in the Summary Table.

Command

```
:DISPlay:SPURious:STABle <mode>
```

Parameter

<mode>	The contents displayed for Summary Table.
RESult	Measurement result for each segment (Default)
RANGe	Frequency range for each segment

Example of Use

To display the measurement result in the Summary Table

```
DISP:SPUR:STAB RES
```

:DISPlay:SPURious:STABle?

Displayed Summary Table Query

Function

This command queries the content setting in the Summary Table.

Query

```
:DISPlay:SPURious:STABle?
```

Response

```
<mode>
```

Parameter

<mode>	The contents displayed for Summary Table.
RES	Measurement result for each segment
RANG	Frequency range for each segment

Example of Use

To query the content setting in the Summary Table.

```
DISP:SPUR:STAB?
>RES
```


:DISPlay:SPURious:SEGMent:NEXT

Next Page

Function

This command displays the summary on the next page.

Command

```
:DISPlay:SPURious:SEGMent:NEXT
```

Details

The summary set in Result Type is displayed.

Example of Use

To display the summary on the next page.

```
DISP:SPUR:SEG:NEXT
```

:DISPlay:SPURious:SEGMent:PREVious

Previous Page

Function

This command displays the summary on the previous page.

Command

```
:DISPlay:SPURious:SEGMent:PREVious
```

Details

The summary set in Result Type is displayed.

Example of Use

To display the summary on the previous page.

```
DISP:SPUR:SEG:PREV
```

:DISPlay:SPURious:SEGMent:RESTart?

Displayed Restart Query

Function

This command queries whether the remeasurement message is displayed on the trace.

Query

```
:DISPlay:SPURious:SEGMent:RESTart?
```

Response

```
<switch>
```

Parameter

<switch>	Message displayed/not displayed
1	Message is displayed.
0	Message is not displayed.

Details

When the sweep has paused and Spurious Emission is set to On, switch Time Domain Measurement into On. Then the remeasurement message ,“Please sweep again.”, is displayed.

Example of Use

To query whether the remeasurement message is displayed on the trace.

```
DISP:SPUR:SEGM:REST?
> 1
```

[:SENSe]:SPURious:TDOMain:SPAN:ZERO ON|OFF|1|0

Time Domain Measurement

Function

This command sets whether to measure the spurious power by using Time Domain.

Command

```
[:SENSe]:SPURious:TDOMain:SPAN:ZERO <switch>
```

Parameter

<switch>	Time Domain measurement On/Off
ON|1	Sets Time Domain measurement to On.
OFF|0	Sets Time Domain measurement to Off.

Example of Use

To measure the spurious power by using Time Domain.

```
SPUR:TDOM:SPAN:ZERO ON
```

[:SENSe]:SPURious:TDOMain:SPAN:ZERO?

Time Domain Measurement

Function

This command queries the On/Off state of Time Domain mode for the spurious power.

Query

```
[:SENSe]:SPURious:TDOMain:SPAN:ZERO?
```

Response

```
<switch>
```

Parameter

<switch>	Time Domain measurement On/Off
1	On
0	Off

Example of Use

To query the On/Off state of Time Domain mode.

```
SPUR:TDOM:SPAN:ZERO?
> 1
```

[:SENSe]:SPURious:FSTop ON|OFF|1|0

Fail Stop

Function

This command sets whether to stop the measurement when a “Fail” segment has been found.

Command

```
[:SENSe]:SPURious:FStop <switch>
```

Parameter

<switch>	Fail Stop On/Off
ON|1	Sets Fail Stop to On.
OFF|0	Sets Fail Stop to Off.

Example of Use

To stop the measurement when a “Fail” segment has been found.

```
SPUR:FSTop ON
```

[:SENSe]:SPURious:FSTop?

Fail Stop Query

Function

This command queries the On/Off state of Fail Stop.

Query

```
[:SENSe]:SPURious:FSTop?
```

Response

```
<switch>
```

Parameter

<switch>	Fail Stop On/Off
1	On
0	Off

Example of Use

To query the Fail Stop setting.

```
SPUR:FSTop?
> 1
```

[:SENSe]:SPURious:SEGMent:NUMBer <integer>

Edit Segment Number

Function

This command sets the number of the segment to set a parameter in.

Command

```
[:SENSe]:SPURious:SEGMent:NUMBer <integer>
```

Parameter

<integer>	Segment number
Range	1 to 20
Resolution	1

Example of Use

To set 3 for the segment to set a parameter in.

```
SPUR:SEGM:NUMB 3
```

[:SENSe]:SPURious:SEGMent:NUMBer?

Edit Segment Number Query

Function

This command queries the segment in which a parameter is set.

Query

```
[:SENSe]:SPURious:SEGMent:NUMBer?
```

Parameter

<integer>	Segment number
Range	1 to 20
Resolution	1

Example of Use

To query the segment in which a parameter is set.

```
SPUR:SEGM:NUMB?
> 3
```

[:SENSe]:SPURious[:RANGe][:LIST]:SEGMent:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Segment On/Off

Function

This command sets the segment to On/Off.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:SEGMent:STATe <switch_n>
```

Parameter

`<switch_n>`	Segment n On/Off
`ON|1`	Segment is set to On.
`OFF|0`	Segment is set to Off.
Default	
[MS269xA]	
Segment 1 to 8	On
Segment 9 to 15	On (Off for MS2690A)
Segment 16 to 20	Off
[MS2830A]	
Segment 1 to 6	On
Segment 7 to 8	On (Off for Option 040)
Segment 9 to 15	On (Off for Option 040/041)
Segment 16 to 18	On (Off for Option 040/041/043)
Segment 19 to 20	On (Off for Option 040/041/043/044)
[MS2840A]	
Segment 1 to 6	On
Segment 7 to 8	On (Off for Option 040)
Segment 9 to 18	On (Off for Option 040/041)
Segment 19 to 20	On (Off for Option 040/041/044)

Details

This command cannot set all the segments to Off at the same time.

Example of Use

To set the segment to On/Off.

```
SPUR:SEGM:STAT
ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,
OFF,ON,ON
```

[:SENSe]:SPURious[:RANGe][:LIST]:SEGMent:STATe?

Segment On/Off Query

Function

This command queries the On/Off state of the segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:SEGMent:STATe?
```

Response

```
<switch_n>
```

Parameter

<switch_n>	Segment n On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the segment.

```
SPUR:SEGM:STAT?
> 1,1,0,1,1,0,1,1,0,1,1,0,1,1,0,1,1,0,1,1
```

[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STARt <freq_1>,<freq_2>,<freq_3>,<freq_4>,<freq_5>,<freq_6>,<freq_7>,<freq_8>,<freq_9>,<freq_10>,<freq_11>,<freq_12>,<freq_13>,<freq_14>,<freq_15>,<freq_16>,<freq_17>,<freq_18>,<freq_19>,<freq_20>

Spurious Emission Start Frequency

Function

This command sets the start frequency of each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STARt <freq_n>
```

Parameter

`<freq_n>` Start frequency of segment n

Range	
[MS269xA]	–100 MHz to 6.0499997 GHz (MS2690A)
	–100 MHz to 13.5999997 GHz (MS2691A)
	–100 MHz to 26.5999997 GHz(MS2692A)
[MS2830A]	–100 MHz to 3.6999997 GHz (Option 040)
	–100 MHz to 6.0999997 GHz (Option 041)
	–100 MHz to 13.5999997 GHz (Option 043)
	–100 MHz to 26.5999997 GHz (Option 044)
	–100 MHz to 43.0999997 GHz (Option 045)
[MS2840A]	–100 MHz to 3.6999997 GHz (Option 040)
	–100 MHz to 6.0999997 GHz (Option 041)
	–100 MHz to 26.9999997 GHz (Option 044)
	–100 MHz to 44.9999997 GHz (Option 046)
Resolution	1 Hz
Suffix Code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
	Hz is used when omitted.
Default	
[MS269xA]	
Segment 1	9 kHz
Segment 2	150 kHz
Segment 3	30 MHz
Segment 4	1 GHz
Segment 5	2 GHz
Segment 6	3 GHz
Segment 7	4 GHz
Segment 8	5 GHz
Segment 9	6 GHz

Segment 10	7 GHz (1 GHz for MS2690A)
Segment 11	8 GHz (1 GHz for MS2690A)
Segment 12	9 GHz (1 GHz for MS2690A)
Segment 13	10 GHz (1 GHz for MS2690A)
Segment 14	11 GHz (1 GHz for MS2690A)
Segment 15	12 GHz (1 GHz for MS2690A)
Segment 16 to 20	1 GHz

[MS2830A]

Segment 1	9 kHz
Segment 2	150 kHz
Segment 3	30 MHz
Segment 4	1 GHz
Segment 5	2 GHz
Segment 6	3 GHz
Segment 7	4 GHz (1 GHz for Option 040)
Segment 8	5 GHz (1 GHz for Option 040)
Segment 9	6 GHz (1 GHz for Option 040/041)
Segment 10	7 GHz (1 GHz for Option 040/041)
Segment 11	8 GHz (1 GHz for Option 040/041)
Segment 12	9 GHz (1 GHz for Option 040/041)
Segment 13	10 GHz (1 GHz for Option 040/041)
Segment 14	11 GHz (1 GHz for Option 040/041)
Segment 15	12 GHz (1 GHz for Option 040/041)
Segment 16	14 GHz (1 GHz for Option 040/041/043)
Segment 17	18 GHz (1 GHz for Option 040/041/043)
Segment 18	24 GHz (1 GHz for Option 040/041/043)
Segment 19	32 GHz (1 GHz for Option 040/041/043/044)
Segment 20	42 GHz (1 GHz for Option 040/041/043/044)

[MS2840A]

Segment 1	9 kHz
Segment 2	150 kHz
Segment 3	30 MHz
Segment 4	1 GHz
Segment 5	2 GHz
Segment 6	3 GHz
Segment 7	4 GHz (1 GHz for Option 040)
Segment 8	5 GHz (1 GHz for Option 040)
Segment 9	6 GHz (1 GHz for Option 040/041)
Segment 10	7 GHz (1 GHz for Option 040/041)
Segment 11	8 GHz (1 GHz for Option 040/041)
Segment 12	9 GHz (1 GHz for Option 040/041)
Segment 13	10 GHz (1 GHz for Option 040/041)

Segment 14	11 GHz (1 GHz for Option 040/041)
Segment 15	12 GHz (1 GHz for Option 040/041)
Segment 16	14 GHz (1 GHz for Option 040/041)
Segment 17	18 GHz (1 GHz for Option 040/041)
Segment 18	24 GHz (1 GHz for Option 040/041)
Segment 19	32 GHz (1 GHz for Option 040/041/044)
Segment 20	42 GHz (1 GHz for Option 040/041/044)

Example of Use

To set the start frequency of each segment.

```
SPUR:FREQ:STAR
9KHZ,100kHz,40MHz,1.1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1
GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz
```

[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STARt?

Spurious Emission Start Frequency Query

Function

This command queries the start frequency of each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STARt?
```

Response

```
<freq_n>
```

Parameter

<freq_n>		Start frequency of segment n
	[MS269xA]	−100 MHz to 6.0499997 GHz (MS2690A)
		−100 MHz to 13.5999997 GHz (MS2691A)
		−100 MHz to 26.5999997 GHz (MS2692A)
	[MS2830A]	−100 MHz to 3.6999997 GHz (Option 040)
		−100 MHz to 6.0999997 GHz (Option 041)
		−100 MHz to 13.5999997 GHz (Option 043)
		−100 MHz to 26.5999997 GHz (Option 044)
		−100 MHz to 43.0999997 GHz (Option 045)
	[MS2840A]	−100 MHz to 3.6999997 GHz (Option 040)
		−100 MHz to 6.0999997 GHz (Option 041)
		−100 MHz to 26.9999997 GHz (Option 044)
		−100 MHz to 44.9999997 GHz (Option 046)
Resolution		1 Hz
Suffix code		None. Value is returned in Hz units.

Example of Use

To query the start frequency of each segment.

```
SPUR:FREQ:STAR?
>
9000,100000,40000000,11000000000,1000000000,1000000000,1
000000000,1000000000,1000000000,1000000000,1000000000,10
00000000,1000000000,1000000000,1000000000,1000000000,100
0000000,1000000000,1000000000,1000000000
```

[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STOP <freq_1>,<freq_2>,<freq_3>,<freq_4>,<freq_5>,<freq_6>,<freq_7>,<freq_8>,<freq_9>,<freq_10>,<freq_11>,<freq_12>,<freq_13>,<freq_14>,<freq_15>,<freq_16>,<freq_17>,<freq_18>,<freq_19>,<freq_20>

Spurious Emission Stop Frequency

Function

This command sets the stop frequency of each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STOP <freq_n>
```

Parameter

<freq_n>	Stop frequency of Segment n
[MS269xA]	–99.9997 MHz to 6.05 GHz (MS2690A)
	–99.9997 MHz to 13.6 GHz (MS2691A)
	–99.9997 MHz to 26.6 GHz (MS2692A)
[MS2830A]	–99.9997 MHz to 3.7 GHz (Option 040)
	–99.9997 MHz to 6.1 GHz (Option 041)
	–99.9997 MHz to 13.6 GHz (Option 043)
	–99.9997 MHz to 26.6 GHz (Option 044)
	–99.9997 MHz to 43.1 GHz (Option 045)
[MS2840A]	–99.9997 MHz to 3.7 GHz (Option 040)
	–99.9997 MHz to 6.1 GHz (Option 041)
	–99.9997 MHz to 27 GHz (Option 044)
	–99.9997 MHz to 45 GHz (Option 046)
Resolution	1 Hz
Suffix Code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
	Hz is used when omitted.

Default

[MS269xA]

Segment 1	150 kHz
Segment 2	30 MHz
Segment 3	1 GHz
Segment 4	2 GHz
Segment 5	3 GHz
Segment 6	4 GHz
Segment 7	5 GHz
Segment 8	6 GHz
Segment 9	7 GHz (6 GHz for MS2690A)
Segment 10	8 GHz (6 GHz for MS2690A)
Segment 11	9 GHz (6 GHz for MS2690A)
Segment 12	10 GHz (6 GHz for MS2690A)

Segment 13 11 GHz (6 GHz for MS2690A)
Segment 14 12 GHz (6 GHz for MS2690A)
Segment 15 to 20 12.75 GHz (6 GHz for MS2690A)

[MS2830A]

Segment 1 150 kHz
Segment 2 30 MHz
Segment 3 1 GHz
Segment 4 2 GHz
Segment 5 3 GHz
Segment 6 4 GHz (3.6 GHz for Option 040)
Segment 7 5 GHz (3.6 GHz for Option 040)
Segment 8 6 GHz (3.6 GHz for Option 040)
Segment 9 7 GHz
(3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 10 8 GHz
(3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 11 9 GHz
(3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 12 10 GHz
(3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 13 11 GHz
(3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 14 14 GHz
(3.6 GHz for Option 040, 6 GHz for Option 041, and 12.75 GHz for Option 043)
Segment 16 18 GHz
(3.6 GHz for Option 040, 6 GHz for Option 041, and 12.75 GHz for Option 043)
Segment 17 24 GHz
(3.6 GHz for Option 040, 6 GHz for Option 041, and 12.75 GHz for Option 043)
Segment 18 32 GHz
(3.6 GHz for Option 040, 6 GHz for Option 041, 12.75 GHz for Option 043, and 26.5 GHz for Option 044)
Segment 19 42 GHz
(3.6 GHz for Option 040, 6 GHz for Option 041, 12.75 GHz for Option 043, and 26.5 GHz for Option 044)
Segment 20 43 GHz
(3.6 GHz for Option 040, 6 GHz for Option 041, 12.75 GHz for Option 043, and 26.5 GHz for Option

	044)
[MS2840A]	
Segment 1	150 kHz
Segment 2	30 MHz
Segment 3	1 GHz
Segment 4	2 GHz
Segment 5	3 GHz
Segment 6	4 GHz (3.6 GHz for Option 040)
Segment 7	5 GHz (3.6 GHz for Option 040)
Segment 8	6 GHz (3.6 GHz for Option 040)
Segment 9	7 GHz (3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 10	8 GHz (3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 11	9 GHz (3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 12	10 GHz (3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 13	11 GHz (3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 14	14 GHz (3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 16	18 GHz (3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 17	24 GHz (3.6 GHz for Option 040 and 6 GHz for Option 041)
Segment 18	32 GHz (3.6 GHz for Option 040, 6 GHz for Option 041, and 26.5 GHz for Option 044)
Segment 19	42 GHz (3.6 GHz for Option 040, 6 GHz for Option 041, and 26.5 GHz for Option 044)
Segment 20	44.5 GHz (3.6 GHz for Option 040, 6 GHz for Option 041, and 26.5 GHz for Option 044)

Example of Use

To set the stop frequency of each segment.

```
SPUR:FREQ:STOP
150kHz,40MHz,1.1GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5
GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5
GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz
```

[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STOP?

Spurious Emission Stop Frequency Query

Function

This command queries the stop frequency of each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:FREQuency:STOP? <freq_n>
```

Response

```
<freq_n>
```

Parameter

`<freq_n>`		Stop frequency of Segment n
	[MS269xA]	–99.9997 MHz to 6.05 GHz (MS2690A)
		–99.9997 MHz to 13.6 GHz (MS2691A)
		–99.9997 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–99.9997 MHz to 3.7 GHz (Option 040)
		–99.9997 MHz to 6.1 GHz (Option 041)
		–99.9997 MHz to 13.6 GHz (Option 043)
		–99.9997 MHz to 26.6 GHz (Option 044)
		–99.9997 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–99.9997 MHz to 3.7 GHz (Option 040)
		–99.9997 MHz to 6.1 GHz (Option 041)
		–99.9997 MHz to 27 GHz (Option 044)
		–99.9997 MHz to 45 GHz (Option 046)
	Resolution	2 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the stop frequency of each segment.

```
SPUR:FREQ:STOP?
>100000,40000000,1100000000,1000000000,1000000000,1000000000,1000000000,1000000000,1000000000,1000000000,1000000000,1000000000,1000000000,1000000000,1000000000
```

:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real_1>,<real_2>,<real_3>,<real_4>,<real_5>,<real_6>,<real_7>,<real_8>,<real_9>,<real_10>,<real_11>,<real_12>,<real_13>,<real_14>,<real_15>,<real_16>,<real_17>,<real_18>,<real_19>,<real_20>

Spurious Emission Reference Level

Function

This command sets the reference level of each segment.

Command

```
:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real_n>
```

Parameter

`<real_n>`		Reference level of Segment n
	Range	Value equivalent to –120 to +50 dBm
	Resolution	0.01 dB
	Suffix Code	DBM,DM dBm is used when omitted.
	Default	0 dBm

Example of Use

To set the reference level of each segment.

```
DISP:SPUR:VIEW:WIND:TRAC:Y:RLEV
0DBM,0,0,3,0,0,0,8,0,0,0,0,0,0,0,0,0,0,0,0
```

:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?

Spurious Emission Reference Level Query

Function

This command queries the reference level of each segment.

Query

```
:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
```

Response

```
<real_n>
```

Parameter

`<real_n>`		Reference level of Segment n
	Range	Value equivalent to –120 to +50 dBm
	Resolution	0.01 dB
	Suffix Code	None. Value is returned in dBm units.

Example of Use

To query the reference level of each segment.

```
DISP:SPUR:VIEW:WIND:TRAC:Y:RLEV?
>
0.00,0.00,0.00,3.00,0.00,0.00,0.00,8.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00
```

[:SENSe]:SPURious:ATTenuation <rel_ampl_1>|AUTO,<rel_ampl_2>|AUTO,<rel_ampl_3>|AUTO,<rel_ampl_4>|AUTO,<rel_ampl_5>|AUTO,<rel_ampl_6>|AUTO,<rel_ampl_7>|AUTO,<rel_ampl_8>|AUTO,<rel_ampl_9>|AUTO,<rel_ampl_10>|AUTO,<rel_ampl_11>|AUTO,<rel_ampl_12>|AUTO,<rel_ampl_13>|AUTO,<rel_ampl_14>|AUTO,<rel_ampl_15>|AUTO,<rel_ampl_16>|AUTO,<rel_ampl_17>|AUTO,<rel_ampl_18>|AUTO,<rel_ampl_19>|AUTO,<rel_ampl_20>|AUTO

Spurious Emission Attenuator

Function

This command sets the attenuator value of each segment.

Command

```
[:SENSe]:SPURious:ATTenuation <rel_ampl_n>|AUTO
```

Parameter

`<rel_ampl_n>`		Attenuator of Segment n
	Range	0 to 60 dB
	Resolution	2 dB step
	Suffix Code	DB dB is used even when omitted.
`AUTO`		Attenuator value is automatically set (Default).

Example of Use

To set the attenuator value.

```
SPUR:ATT
10DB,10DB,12DB,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO
```

[:SENSe]:SPURious:ATTenuation?

Spurious Emission Attenuator Query

Function

This command queries the attenuator value of each segment.

Query

```
[:SENSe]:SPURious:ATTenuation?
```

Response

```
<rel_ampl_n>
```

Parameter

<rel_ampl_n>		Attenuator value of Segment n
	Range	0 to 60 dB
	Resolution	2 dB step
	Suffix code	None. Value is returned in dB units.

Example of Use

To query the attenuator value.

```
SPUR:ATT?
>
10,10,12,10,10,10,10,10,10,10,10,10,10,10,10,10,10,10
,10
```

[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]:AUTO ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Spurious Emission Resolution Bandwidth Auto/Manual

Function

This command sets RBW of each segment to Auto/Manual.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]:
AUTO <switch_n>
```

Parameter

`<switch_n>`	RBW in segment n Auto/Manual
`ON|1`	RBW is set to AUTO.
`OFF|0`	RBW is set to Manual.
Default	
[MS269xA]	
Segment 1 to 8	Manual
Segment 9 to 15	Manual (Auto for MS2690A)
Segment 16 to 20	Auto
[MS2830A]	
Segment 1 to 6	Manual
Segment 7 to 8	Manual (Auto for Option 040)
Segment 9 to 15	Manual (Auto for Option 040/041)
Segment 16 to 18	Manual (Auto for Option 040/041/043)
Segment 19 to 20	Manual (Auto for Option 040/041/043/044)
[MS2840A]	
Segment 1 to 6	Manual
Segment 7 to 8	Manual (Auto for Option 040)
Segment 9 to 18	Manual (Auto for Option 040/041)
Segment 19 to 20	Manual (Auto for Option 040/041/044)

Example of Use

To set RBW to Auto/Manual.

```
SPUR:BAND:AUTO
ON,ON,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,ON,ON,ON,ON,OFF,OF
F,ON,ON
```

[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]:AUTO?

Spurious Emission Resolution Bandwidth Auto/Manual Query

Function

This command queries the Auto/Manual state of RBW in each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]:
AUTO?
```

Response

```
<switch_n>
```

Parameter

<switch_n>	RBW in segment n Auto/Manual
1	Auto
0	Manual

Example of Use

To query the Auto/Manual state of RBW.

```
SPUR:BAND:AUTO?
> 1,1,1,1,1,1,0,0,1,1,1,1,1,1,1,1,0,0,1,1
```

[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution] <bandwidth_1>,<bandwidth_2>,<bandwidth_3>,<bandwidth_4>,<bandwidth_5>,<bandwidth_6>,<bandwidth_7>,<bandwidth_8>,<bandwidth_9>,<bandwidth_10>,<bandwidth_11>,<bandwidth_12>,<bandwidth_13>,<bandwidth_14>,<bandwidth_15>,<bandwidth_16>,<bandwidth_17>,<bandwidth_18>,<bandwidth_19>,<bandwidth_20>

Spurious Emission Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW) of each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]
<bandwidth_n>
```

Parameter

<bandwidth_n> Resolution bandwidth (RBW) of Segment n

[MS269xA]

Range/Resolution Set to any of 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, and 20 MHz.

[MS2830A], [MS2840A]

Range/Resolution Set to any of 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, and 20 MHz.

[Common]

Suffix Code HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
Hz is used when omitted.

Default

[MS269xA]

Segment 1	1 kHz
Segment 2	10 kHz
Segment 3	100 kHz
Segment 4 to 8	1 MHz
Segment 9 to 15	1 MHz (Auto for MS2690A)
Segment 16 to 20	Auto value

[MS2830A], [MS2840A]

Segment 1	1 kHz
Segment 2	10 kHz
Segment 3	100 kHz
Segment 4 to 6	1 MHz

[MS2830A]

Segment 7 to 8	1 MHz (Auto for Option 040)

Segment 9 to 15	1 MHz (Auto for Option 040/041)
Segment 16 to 18	1 MHz (Auto for Option 040/041/043)
Segment 19 to 20	1 MHz (Auto for Option 040/041/043/044)

[MS2840A]

Segment 7 to 8	1 MHz (Auto for Option 040)
Segment 9 to 18	1 MHz (Auto for Option 040/041)
Segment 19 to 20	1 MHz (Auto for Option 040/041/044)

Details

For MS2830A, MS2840A, RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.

Example of Use

To set the resolution bandwidth (RBW) of each segment.

```
SPUR:BAND
3KHZ,3KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ
```

[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]?

Spurious Emission Resolution Bandwidth Query

Function

This command queries the resolution bandwidth (RBW) of each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth[:RESolution]?
```

Response

```
<bandwidth_n>
```

Parameter

`<bandwidth_n>` Resolution bandwidth (RBW) of Segment n

[MS269xA]

Range/Resolution: Value is returned in any of 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, and 20 MHz.

[MS2830A], [MS2840A]

Range/Resolution: Value is returned in any of 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, and 20 MHz.

[Common]

Suffix code: None. Value is returned in Hz units.

Details

For MS2830A, MS2840A, RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.

Example of Use

To set the resolution bandwidth (RBW) of each segment.

```
SPUR:BAND?
>
3000,3000,10000,10000,10000,10000,10000,10000,10000,1000
0,10000,10000,10000,10000,10000,10000,10000,10000,10000,
10000
```

[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo:AUTO ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Spurious Emission Video Bandwidth Auto/Manual

Function

This command sets the video bandwidth (VBW) of each segment to Auto/Manual.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo:AUTO
<switch_n>
```

Parameter

<switch_n>	Auto mode of VBW in segment n On/Off
ON|1	Sets Auto mode to On.
OFF|0	Sets Auto mode to Off.

Example of Use

To set the resolution bandwidth of the offset to Auto.

```
SPUR:BAND:VID:AUTO
ON,ON,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,ON,ON,OFF,OFF,ON,O
N,ON,ON
```

[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo:AUTO?

Spurious Emission Video Bandwidth Auto/Manual Query

Function

This command queries the Auto/Manual state of the video bandwidth (RBW) in each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo:AUTO?
```

Parameter

<switch_n>	Auto mode On/Off
1	On
0	Off

Example of Use

To query VBW of each segment.

```
SPUR:BAND:VID:AUTO?
> 1,1,1,1,1,1,0,0,1,1,1,1,1,1,0,0,1,1,1,1
```

[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo <bandwidth_1>|OFF,<bandwidth_2>|OFF,<bandwidth_3>|OFF,<bandwidth_4>|OFF,<bandwidth_5>|OFF,<bandwidth_6>|OFF,<bandwidth_7>|OFF,<bandwidth_8>|OFF,<bandwidth_9>|OFF,<bandwidth_10>|OFF,<bandwidth_11>|OFF,<bandwidth_12>|OFF,<bandwidth_13>|OFF,<bandwidth_14>|OFF,<bandwidth_15>|OFF,<bandwidth_16>|OFF,<bandwidth_17>|OFF,<bandwidth_18>|OFF,<bandwidth_19>|OFF,<bandwidth_20>|OFF

Spurious Emission Video Bandwidth

Function

This command sets the video bandwidth (RBW) of each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo
<bandwidth_n>|OFF
```

Parameter

<bandwidth_n>	Video bandwidth of Segment n (VBW)
Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
Suffix Code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
	Hz is used when omitted.
OFF	VBW is set to Off.

Details

The setting range of this function is limited depending on the setting of RBW. For details, refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)*.

Example of Use

To set the video bandwidth of each segment.

```
SPUR:BAND:VID
3KHZ,3KHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1
MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ
```

[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo?

Spurious Emission Video Bandwidth Query

Function

This command queries the video bandwidth (VBW) of each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:BANDwidth:VIDeo?
```

Response

```
<bandwidth_n>
```

Parameter

`<bandwidth_n>`		Video bandwidth (VBW) of Segment n
	Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
	Suffix Code	None. Hz is used when omitted.
	`OFF`	VBW is set to Off.

Example of Use

To query the video bandwidth of each segment.

```
SPUR:BAND:VID?
>
3000,3000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000,1000000
```

[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME:AUTO ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Spurious Emission Sweep Time Auto/Manual

Function

This command sets the sweep time of each segment to Auto/Manual.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME:AUTO
<switch_n>
```

Parameter

<switch_n>	Sweep time of Segment n Auto/Manual
ON|1	Sweep Time is set to Auto.
OFF|0	Sweep Time is set to Manual.
Default	Auto value

Example of Use

To set the sweep time of each segment to Auto/Manual.

```
SPUR:SWE:TIME:AUTO
ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,
OFF,ON,ON
```

[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME:AUTO?

Spurious Emission Sweep Time Auto/Manual Query

Function

This command queries the Auto/Manual state of the sweep time in each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME:AUTO?
```

Response

```
<switch_n>
```

Parameter

<switch_n>	Sweep time of Segment n Auto/Manual
1	Sweep Time is set to Auto.
0	Sweep Time is set to Manual.

Example of Use

To query the Auto/Manual state of the sweep time in each segment.

```
SPUR:SWE:TIME:AUTO?
> 1,1,0,1,1,0,1,1,0,1,1,0,1,1,0,1,1,0,1,1
```

[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME <seconds_1>,<seconds_2>,<seconds_3>,<seconds_4>,<seconds_5>,<seconds_6>,<seconds_7>,<seconds_8>,<seconds_9>,<seconds_10>,<seconds_11>,<seconds_12>,<seconds_13>,<seconds_14>,<seconds_15>,<seconds_16>,<seconds_17>,<seconds_18>,<seconds_19>,<seconds_20>

Spurious Emission Sweep Time

Function

This command sets the sweep time of each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME <seconds_n>
```

Parameter

<seconds_n>	Sweep Time of Segment n
Range	
[MS269xA]	2 ms to 1000 s
[MS2830A]	1 ms to 1000 s
[MS2840A]	1 ms to 1000 s
Suffix Code	NS,US,MS,S
	S is used when omitted.
Default	Auto value

Example of Use

To set the sweep time of each segment.

```
SWE:TIME
0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.2,0.3,0.1,0.1,
0.1,0.1,0.1,0.1,0.1,0.1
```

[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME?

Spurious Emission Sweep Time Query

Function

This command queries the sweep time of each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:TIME?
```

Response

```
<seconds_n>
```

Parameter

<seconds_n>

Range	
[MS269xA]	2 ms to 1000 s
[MS2830A]	1 ms to 1000 s
[MS2840A]	1 ms to 1000 s
Suffix code	None. Value is returned in S units.

Example of Use

To query the sweep time of each segment.

```
SPUR:SWE:TIME?
>
0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.
100000,0.100000,0.100000,0.100000,0.200000,0.300000,0.10
0000,0.100000,0.100000,0.100000,0.100000,0.100000,0.1000
00,0.100000
```

[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:PAUSe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Pause before Sweep

Function

This command configures the setting to pause before sweep of each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:PAUSe <switch_n>
```

Parameter

<switch_n>	Pause before sweep On/Off
ON|1	Pause before sweep.
OFF|0	Not pause before sweep.
Default	Off

Details

When it is set to On, the dialog box is displayed before measuring the segment, and the measurement pauses.
The measurement does not pause during remote operation. Also, when it has switched to remote operation during pause, the measurement restarts.

Example of Use

To configure settings to pause before sweep of each segment.

```
SPUR:SWE:PAUS
ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF
,ON,ON,ON
```

[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:PAUSe?

Pause before Sweep Query

Function

This command queries the setting to pause before sweep of each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:PAUSe?
```

Response

```
<switch_n>
```

Parameter

`<switch_n>`	Pause before sweep On/Off
`1`	Pause before sweep.
`0`	Not pause before sweep.

Example of Use

To query the setting to pause before sweep of each segment.

```
SPUR:SWE:PAUS?
> 1,1,1,0,0,1,1,1,1,0,0,1,1,1,1,0,0,1,1,1
```

[:SENSe]:SPURious:POWer[:RF]:GAIN[:STATe] ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Spurious Emission Preamp On/Off

Function

This command sets the pre-amp of each segment to On/Off.

Command

```
[:SENSe]:SPURious:POWer[:RF]:GAIN[:STATe] <switch_n>
```

Parameter

<switch_n>	Pre-amp On/Off
ON|1	Sets Pre-amp to On
OFF|0	Sets Pre-amp to Off
Default	Off

Details

[MS269xA]
When Option 008/108 6GHz Pre-amp is not installed, the pre-amp setting is fixed to Off.
[MS2830A]
This command becomes unavailable when Option 008/108/068/168 Preamplifier is not installed.
[MS2840A]
This command becomes unavailable when Option 008/108/068/168/069/169 Preamplifier is not installed.

Example of Use

To set the pre-amp of each segment.

```
SPUR:POW:GAIN
ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF
,ON,ON,ON
```

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

Spurious Emission Preamp On/Off Query

Function

This command queries the On/Off state of the pre-amp in each segment.

Query

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

Response

```
<switch_n>
```

Parameter

<switch>	Pre-amp On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the pre-amp in each segment.

```
SPUR:POW:GAIN?
> 1,1,1,0,0,1,1,1,1,0,0,1,1,1,1,0,0,1,1,1
```

[:SENSe]:SPURious[:RANGe][:LIST]:DETector[1][:FUNCtion] NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS,NORMal|POSitive|SAMPle|NEGative|RMS

Spurious Emission Detection Mode

Function

This command selects the detection mode of the waveform pattern in each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:DETector[1][:FUNCtion] <mode_n>
```

Parameter

`<mode_n>`	Detection mode of Segment n
`NORMal`	Simultaneous detection of Positive and Negative peaks
`POSitive`	Positive peak detection
`NEGative`	Negative peak detection
`SAMPle`	Sample detection
`RMS`	RMS detection
Default	Positive.

Example of Use

To select the detection mode of the waveform pattern in each segment.

```
SPUR:DET
POS,POS,POS,NEG,NEG,NORM,NORM,RMS,SAMP,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS
```

[:SENSe]:SPURious[:RANGe][:LIST]:DETector[1][:FUNCtion]?

Spurious Emission Detection Mode Query

Function

This command queries the detection mode of the waveform pattern in each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:DETector[1][:FUNCtion]?
```

Response

```
<mode_n>
```

Parameter

<mode_n>	Detection mode of Segment n
NORM	Simultaneous detection of Positive and Negative peaks
POS	Positive peak detection
NEG	Negative peak detection
SAMP	Sample detection
RMS	RMS detection

Example of Use

To query the detection mode of the waveform in each segment.

```
SPUR:DET?
>
POS,POS,POS,NEG,NEG,NORM,NORM,RMS,SAMP,POS,POS,POS,POS,P
OS,POS,POS,POS,POS,POS,POS
```

[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:POINts <integer_1>,<integer_2>,<integer_3>,<integer_4>,<integer_5>,<integer_6>,<integer_7>,<integer_8>,<integer_9>,<integer_10>,<integer_11>,<integer_12>,<integer_13>,<integer_14>,<integer_15>,<integer_16>,<integer_17>,<integer_18>,<integer_19>,<integer_20>

Spurious Emission Trace Point

Function

This command sets the number of the points in the trace data of each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:POINts <integer_n>
```

Parameter

<integer_n>	Number of points in trace data of Segment n
11	11 points
21	21 points
41	41 points
51	51 points
101	101 points
201	201 points
251	251 points
401	401 points
501	501 points
1001	1001 points
2001	2001 points
5001	5001 points
10001	10001 points
30001	30001 points (MS269xA Only)
Default	
Segment 1	1001
Segment 2	5001
Segment 3	10001
Segment 4	10001
Segment 5 to 20	10001

Example of Use

To set the number of the points in the trace data of each segment.

```
SPUR:SWE:POIN
1001,5001,5001,5001,10001,10001,10001,10001,10001,10001,
10001,10001,10001,10001,10001,10001,10001,10001,10001,10
001
```

[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:POINts?

Spurious Emission Trace Point Query

Function

This command queries the number of the points in the trace data of each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:SWEep:POINts?
```

Response

```
<integer_n>
```

Parameter

<integer_n>	Number of points in trace data of Segment n
11	11 points
21	21 points
41	41 points
51	51 points
101	101 points
201	201 points
251	251 points
401	401 points
501	501 points
1001	1001 points
2001	2001 points
5001	5001 points
10001	10001 points
30001	30001 points (MS269xA Only)

Example of Use

To query the number of the points in the trace data of each segment.

```
SPUR:SWE:POIN?
>
1001,5001,5001,5001,10001,10001,10001,10001,10001,10001,
10001,10001,10001,10001,10001,10001,10001,10001,10001,10
001
```

[:SENSe]:SPURious:AVERage:COUNt:COUPle ON|OFF|1|0

Couple Storage Count

Function

This command sets the shared setting of the storage count in each segment to On/Off.

Command

```
[:SENSe]:SPURious:AVERage:COUNt:COUPle <switch>
```

Parameter

<switch>	Shared setting On/Off
ON|1	Sets the Shared setting to On (Default).
OFF|0	Sets the Shared setting to Off.

Details

When set to On, the same as the storage count of the segment set in Displayed segment is set to those of all other segments.

Example of Use

To set the shared setting of the storage count in each segment to On.

```
SPUR:AVER:COUN:COUP ON
```

[:SENSe]:SPURious:AVERage:COUNt:COUPle?

Couple Storage Count Query

Function

This command queries the On/Off state of the shared setting of the storage count in each segment.

Query

```
[:SENSe]:SPURious:AVERage:COUNt:COUPle?
```

Response

```
<switch>
```

Parameter

<switch>	Shared setting of Storage count On/Off
1	On
0	Off

Example of Use

To query the shared setting of the storage count in each segment.

```
SPUR:AVER:COUN:COUP?
> 1
```

[:SENSe]:SPURious[:RANGe][:LIST]:AVERage:COUNt <integer_1>,<integer_2>,<integer_3>,<integer_4>,<integer_5>,<integer_6>,<integer_7>,<integer_8>,<integer_9>,<integer_10>,<integer_11>,<integer_12>,<integer_13>,<integer_14>,<integer_15>,<integer_16>,<integer_17>,<integer_18>,<integer_19>,<integer_20>

Spurious Emission Storage Count

Function

This command sets the storage count of each segment.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:AVERage:COUNt
<integer_n>
```

Parameter

<integer_n>		Storage count of Segment n
	Range	1 to 9999
	Resolution	1
	Default	10 times

Example of Use

To set the storage count of each segment.

```
SPUR:AVER:COUN
10,10,10,20,20,5,5,5,5,5,5,5,10,10,10,10,10,10,10,10
```

[:SENSe]:SPURious[:RANGe][:LIST]:AVERage:COUNt?

Spurious Emission Storage Count Query

Function

This command queries the storage count of each segment.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:AVERage:COUNt?
```

Response

```
<integer_n>
```

Parameter

<integer_n>	Storage count of Segment n
Range	1 to 9999
Resolution	1

Example of Use

To query the storage count of each segment.

```
SPUR:AVER:COUN?
> 10,10,10,20,20,5,5,5,5,5,5,10,10,10,10,10,10,10,10
```

:CALCulate:SPURious[:RANGe][:LIST]:CORRection:COMMon

Use Common Correction Table

Function

This command configures settings to use the common correction data.

Command

```
:CALCulate:SPURious[:RANGe][:LIST]:CORRection:COMMon
<segment>
```

Parameter

	Segment number
Range	1 to 20
Resolution	1

Example of Use

To configure settings to use the common correction data in Segment 1.

```
CALC:SPUR:CORR:COMM 1
```

:CALCulate:SPURious[:RANGe][:LIST]:CORRection:RECall ,<filename>[,<device>]

Recall Correction Table

Function

This command selects the correction table to use in a segment.

Command

```
:CALCulate:SPURious[:RANGe][:LIST]:CORRection:RECall
<segment>,<filename>[,<device>]
```

Parameter

	Segment
Range	1 to 20
Resolution	1
<filename>	Name of File Character string within 32 characters enclosed by double quotation marks (" ") or single quotation marks (' ') (Not including an extension). The following characters are not available: \ / : * ? " < > |
<device>	Name of Drive A,B,D,E,F,... D drive is used when omitted.

Example of Use

To select the correction table of a file named TEST in the internal HDD or SSD.

```
CALC:SPUR:CORR:REC 1,"TEST",D
```

:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA[:STARt] <ampl_1>,<ampl_2>,<ampl_3>,<ampl_4>,<ampl_5>,<ampl_6>,<ampl_7>,<ampl_8>,<ampl_9>,<ampl_10>,<ampl_11>,<ampl_12>,<ampl_13>,<ampl_14>,<ampl_15>,<ampl_16>,<ampl_17>,<ampl_18>,<ampl_19>,<ampl_20>

Spurious Emission Limit Start Level

Function

This command sets the absolute level limit of the start frequency in each segment for the Spurious Emission measurement.

Command

```
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA[:STARt] <ampl_n>
```

Parameter

<ampl_n>	Absolute level limit of start Frequency of Segment n
Range	–200 dBm to 50 dBm
Resolution	0.01 dB
Suffix Code	DBM,DM
Default	–13 dBm

Example of Use

To set the absolute level limit of the start frequency in each segment.

```
CALC:SPUR:LIM:ABS:DATA
-13DBM,-13DBM,-13DBM,-13DBM,-13DBM,-13DBM,-10DBM,-10DBM,
-13DBM,-13DBM,-13DBM,-13DBM,-13DBM,-13DBM,-10DBM,-10DBM,
-13DBM,-13DBM,-13DBM,-13DBM
```

:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA[:STARt]?

Spurious Emission Limit Start Level Query

Function

This command queries the absolute level limit of the start frequency in each segment for the Spurious Emission measurement.

Query

```
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer
]:DATA[:STARt]?
```

Response

```
<ampl_n>
```

Parameter

`<ampl_n>`		Absolute level limit of start frequency of Segment n
	Range	–200 dBm to 50 dBm
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dBm units.

Example of Use

To query the absolute level limit of the start frequency in each segment.

```
CALC:SPUR:LIM:ABS:DATA?
>
-13.00,-13.00,-13.00,-13.00,-13.00,-13.00,-10.00,-10.00,
-13.00,-13.00,-13.00,-13.00,-13.00,-13.00,-10.00,-10.00,
-13.00,-13.00,-13.00,-13.00
```

:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP:AUTO ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Spurious Emission Limit Stop Level Auto/Manual

Function

This command sets the absolute level limit of the stop frequency in each segment for the Spurious Emission measurement to Auto/Manual.

Command

```
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer
]:DATA:STOP:AUTO <switch_n>
```

Parameter

<switch_n>	Stop frequency of Segment n Auto/Manual
ON|1	Stop frequency is set to Auto.
OFF|0	Stop frequency is set to Manual.
Default	On

Details

When set to On, the same as the value set in Limit Start Level is set to Limit Stop Level.

Example of Use

To set the absolute level limit of the stop frequency in each segment to Auto/Manual.

```
CALC:SPUR:LIM:ABS:DATA:STOP:AUTO
ON,ON,ON,ON,OFF,OFF,OFF,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON
,ON,ON
```

:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP:AUTO?

Spurious Emission Limit Stop Level Auto/Manual Query

Function

This command queries Auto/Manual of the absolute level limit of the stop frequency in each segment for the Spurious Emission measurement.

Query

```
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer
]:DATA:STOP:AUTO?
```

Response

```
<switch_n>
```

Parameter

<switch_n>	Stop frequency of Segment n Auto/Manual
ON|1	Stop frequency is set to Auto.
OFF|0	Stop frequency is set to Manual.

Example of Use

To query Auto/Manual of the absolute level limit of the stop frequency in each segment.

```
CALC:SPUR:LIM:ABS:DATA:STOP:AUTO?
> 1,1,1,1,0,0,0,1,1,1,1,1,1,1,1,1,1,1,1,1
```

:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP <ampl_1>,<ampl_2>,<ampl_3>,<ampl_4>,<ampl_5>,<ampl_6>,<ampl_7>,<ampl_8>,<ampl_9>,<ampl_10>,<ampl_11>,<ampl_12>,<ampl_13>,<ampl_14>,<ampl_15>,<ampl_16>,<ampl_17>,<ampl_18>,<ampl_19>,<ampl_20>

Spurious Emission Limit Stop Level

Function

This command sets the absolute level limit of the stop frequency of each segment for the Spurious Emission measurement.

Command

```
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP <ampl_n>
```

Parameter

<ampl_n>	Absolute level limit of stop frequency in Segment n
Range	–200 dBm to 50 dBm
Resolution	0.01 dB
Suffix Code	DBM,DM
Default	Auto value

Example of Use

To set the absolute level limit of stop frequency in each segment.

```
CALC:SPUR:LIM:ABS:DATA:STOP
-13,-13,-13,-13,-13,-13,-10,-10,-13,-13,-13,-13,-13,-13,
-10,-10,-13,-13,-13,-13
```

:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer]:DATA:STOP?

Spurious Emission Limit Stop Level Query

Function

This command queries the absolute level limit of the stop frequency in each segment for the Spurious Emission measurement.

Query

```
:CALCulate:SPURious[:RANGe][:LIST]:LIMit:ABSolute[:UPPer
]:DATA:STOP?
```

Response

```
<ampl_n>
```

Parameter

<ampl_n>	Absolute level limit of stop frequency of Segment n
Range	–200 dBm to 50 dBm
Resolution	0.01 dB
Suffix code	None. Value is returned in dBm units.

Example of Use

To set the absolute level limit of the stop frequency in each segment.

```
CALC:SPUR:LIM:ABS:DATA:STOP?
>
-13.00,-13.00,-13.00,-13.00,-13.00,-13.00,-10.00,-10.00,
-13.00,-13.00,-13.00,-13.00,-13.00,-13.00,-10.00,-10.00,
-13.00,-13.00,-13.00,-13.00
```

[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:RESolution|:EXCursion <rel_ampl_1>,<rel_ampl_2>,<rel_ampl_3>,<rel_ampl_4>,<rel_ampl_5>,<rel_ampl_6>,<rel_ampl_7>,<rel_ampl_8>,<rel_ampl_9>,<rel_ampl_10>,<rel_ampl_11>,<rel_ampl_12>,<rel_ampl_13>,<rel_ampl_14>,<rel_ampl_15>,<rel_ampl_16>,<rel_ampl_17>,<rel_ampl_18>,<rel_ampl_19>,<rel_ampl_20>

Spurious Emission Search Resolution

Function

This command sets the spurious search resolution when Result Type is set to Peaks.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:RESolution|:EXCursion <rel_ampl_n>
```

Parameter

<rel_ampl_n>	Spurious search resolution
Range	0.001 to 50.00 dB
Resolution	0.001 dB
Suffix Code	DB
Default	6 dB

Example of Use

To set the spurious search resolution.

```
SPUR:PEAK:RES 6,6,6,6,6,10,10,10,6,6,6,6,6,6,6,6,6,6,6
```

[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:RESolution|:EXCursion?

Spurious Emission Search Resolution

Function

This command queries the spurious search resolution when Result Type is Peaks.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:RESolution|:EXCursion?
```

Response

```
<rel_ampl_n>
```

Parameter

<rel_ampl_n>		Spurious search resolution
	Range	0.001 to 50.00 dB
	Resolution	0.001 dB
	Suffix code	None. Value is returned in dB units.

Example of Use

To query the spurious search resolution.

```
SPUR:PEAK:RES?
>
6.000,6.000,6.000,6.000,6.000,10.000,10.000,10.000,6.000
,6.000,6.000,6.000,6.000,6.000,6.000,6.000,6.000,6
.000,6.000
```

[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:THReshold <real_1>,<real_2>,<real_3>,<real_4>,<real_5>,<real_6>,<real_7>,<real_8>,<real_9>,<real_10>,<real_11>,<real_12>,<real_13>,<real_14>,<real_15>,<real_16>,<real_17>,<real_18>,<real_19>,<real_20>

Spurious Emission Search Threshold Level

Function

This command sets the spurious search threshold when Result Type is Peaks.

Command

```
[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:THReshold <real_n>
```

Parameter

<real_n>	Spurious search threshold
Range	–200 dBm to 50 dBm
Resolution	0.01 dB
Suffix Code	DBM,DM
Default	–90 dBm

Example of Use

To set the spurious search threshold.

```
SPUR:PEAK:THR
-70,-70,-90,-90,-90,-90,-90,-90,-90,-90,-90,-90,-90,-90,
-90,-90,-90,-90,-90,-90
```

[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:THReshold?

Spurious Emission Search Threshold Level Query

Function

This command queries the spurious search threshold when Result Type is Peaks.

Query

```
[:SENSe]:SPURious[:RANGe][:LIST]:PEAK:THReshold?
```

Response

```
<real_n>
```

Parameter

<real_n>		Spurious search threshold
	Range	–200 dBm to 50 dBm
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dBm units.

Example of Use

To query the spurious search threshold.

```
SPUR:PEAK:THR?
>
-70.00,-70.00,-90.00,-90.00,-90.00,-90.00,-90.00,-90.00,
-90.00,-90.00,-90.00,-90.00,-90.00,-90.00,-90.00,-90.00,
-90.00,-90.00,-90.00,-90.00
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]:COUPle ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Spurious Emission Couple Segment RBW

Function

This command sets whether the same as the value set in Segment Setup is automatically set to RBW Value in Time Domain Setup.

Command

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]:COUPle <switch_n>
```

Parameter

<switch_n>	Shared setting On/Off
ON|1	Sets the shared setting to On.
OFF|0	Sets the shared setting to Off.
Default	On

Example of Use

To set whether the same as the value set in Segment Setup is automatically set to RBW Value in Time Domain Setup.

```
SPUR:TDOM:BAND:COUP
ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]:COUPle?

Spurious Emission Couple Segment RBW Query

Function

This command queries the On/Off state of the setting for whether the same as the value set in Segment Setup is automatically set to RBW Value in Time Domain Setup.

Query

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]:COUPle?
```

Response

```
<switch_n>
```

Parameter

<switch_n>	Shared setting On/Off
1	On
0	Off

Example of Use

To query the On/Off state of the setting for whether the same as the value set in Segment Setup is automatically set to RBW Value in Time Domain Setup.

```
SPUR:TDOM:BAND:COUP?
> 1,1,1,1,0,0,1,1,1,1,1,1,1,1,0,0,1,1,1,1
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution] <bandwidth_1>,<bandwidth_2>,<bandwidth_3>,<bandwidth_4>,<bandwidth_5>,<bandwidth_6>,<bandwidth_7>,<bandwidth_8>,<bandwidth_9>,<bandwidth_10>,<bandwidth_11>,<bandwidth_12>,<bandwidth_13>,<bandwidth_14>,<bandwidth_15>,<bandwidth_16>,<bandwidth_17>,<bandwidth_18>,<bandwidth_19>,<bandwidth_20>

Spurious Emission Time Domain RBW

Function

This command sets RBW in Time Domain Setup.

Command

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution] <bandwidth_n>
```

Parameter

<bandwidth_n> Resolution bandwidth (RBW) of Segment n

[MS269xA]

Range/Resolution 30 Hz to 31.25 MHz
Set to any of 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz.

[MS2830A], [MS2840A]

Range/Resolution 30 Hz to 31.25 MHz
Set to any of 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz.

[Common]

Suffix Code HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
Hz is used when omitted.

Default

Segment 1	1 kHz
Segment 2	10 kHz
Segment 3	100 kHz
Segment 4	1 MHz
Segment 5 to 20	Auto value

Details

For MS2830A, MS2840A, RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.
For RBW 31.25 MHz, it is not a Gauss filter but a flat-top characteristic filter.

Example of Use

To set RBW in Time Domain Setup.

```
SPUR:TDOM:BAND
3KHZ,3KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KH
Z,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,
10KHZ
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESolution]?

Spurious Emission Time Domain RBW Query

Function

This command queries RBW in Time Domain Setup.

Query

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth[:RESo
lution]?
```

Response

```
<bandwidth_n>
```

Parameter

`<bandwidth_n>` Resolution bandwidth(RBW) of Segment n

[MS269xA]

Range/Resolution 30 Hz to 31.25 MHz
Value is returned in any of 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz.

[MS2830A], [MS2840A]

Range/Resolution 30 Hz to 31.25 MHz
Value is returned in any of 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz.

[Common]

Suffix code None. Value is returned in Hz units.

Details

For MS2830A, MS2840A, RBW 20 MHz or greater is only available for MS2830A-005/105/007/009/109, MS2840A-005/105/009/109.
For RBW 31.25 MHz, it is not a Gauss filter but a flat-top characteristic filter.

Example of Use

To query RBW in Time Domain Setup.

```
SPUR:TDOM:BAND?
>
3000,3000,10000,10000,10000,10000,10000,10000,10000,1000
0,10000,10000,10000,10000,10000,10000,10000,10000,10000,
10000
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo:COUPle ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0, ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0

Spurious Emission Couple Segment VBW

Function

This command sets whether the same as the value set in Segment Setup is automatically set to VBW Value in Time Domain Setup.

Command

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo
:COUPle <switch_n>
```

Parameter

<switch_n>	Shared setting On/Off
ON|1	On
OFF|0	Off
Default	On

Example of Use

To set whether the same as the value set in Segment Setup is automatically set to VBW Value in Time Domain Setup.

```
SPUR:TDOM:BAND:VID:COUP
ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,ON,ON,ON,ON,OFF,OFF,ON,O
N,ON,ON
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo:COUPle?

Spurious Emission Couple Segment VBW Query

Function

This command queries the On/Off state of the setting for whether the same as the value set in Segment Setup is automatically set to VBW Value in Time Domain Setup.

Query

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo
:COUPle?
```

Response

```
<switch_n>
```

Parameter

`<switch_n>`	Shared setting On/Off
`ON|1`	On
`OFF|0`	Off

Example of Use

To query the On/Off state of the setting for whether the same as the value set in Segment Setup is automatically set to VBW Value in Time Domain Setup.

```
SPUR:TDOM:BAND:VID:COUP?
> 1,1,1,1,0,0,1,1,1,1,1,1,1,1,0,0,1,1,1,1
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo <bandwidth_1>|OFF,<bandwidth_2>|OFF,<bandwidth_3>|OFF,<bandwidth_4>|OFF,<bandwidth_5>|OFF,<bandwidth_6>|OFF,<bandwidth_7>|OFF,<bandwidth_8>|OFF,<bandwidth_9>|OFF,<bandwidth_10>|OFF,<bandwidth_11>|OFF,<bandwidth_12>|OFF,<bandwidth_13>|OFF,<bandwidth_14>|OFF,<bandwidth_15>|OFF,<bandwidth_16>|OFF,<bandwidth_17>|OFF,<bandwidth_18>|OFF,<bandwidth_19>|OFF,<bandwidth_20>|OFF

Spurious Emission Time Domain VBW

Function

This command sets VBW in Time Domain Setup.

Command

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo
<bandwidth_n>|OFF
```

Parameter

<bandwidth_n>	Video bandwidth of Segment n (VBW)
Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
Suffix Code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
	Hz is used when omitted.
OFF	VBW is set to Off.

Details

The setting range of this function is limited depending on the setting of RBW. For details, refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)*.

Example of Use

To set VBW in Time Domain Setup.

```
SPUR:TDOM:BAND:VID
3KHZ,3KHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1
MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo?

Spurious Emission Time Domain VBW Query

Function

This command queries VBW in Time Domain Setup.

Query

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:BANDwidth:VIDeo
?
```

Response

```
<bandwidth_n>
```

Parameter

`<bandwidth_n>`	Video bandwidth of Segment n (VBW)
Range/Resolution	1 Hz to 10 MHz (1 to 3 sequence), 5 kHz
Suffix Code	None. Hz is used when omitted.
`OFF`	VBW is set to Off.

Example of Use

To query VBW in Time Domain Setup.

```
SPUR:TDOM:BAND:VID?
>
3000,3000,1000000,1000000,1000000,1000000,1000000,100000
0,1000000,1000000,1000000,1000000,1000000,1000000,100000
0,1000000,1000000,1000000,1000000,1000000
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:SWEep:TIME <seconds_1>,<seconds_2>,<seconds_3>,<seconds_4>,<seconds_5>,<seconds_6>,<seconds_7>,<seconds_8>,<seconds_9>,<seconds_10>,<seconds_11>,<seconds_12>,<seconds_13>,<seconds_14>,<seconds_15>,<seconds_16>,<seconds_17>,<seconds_18>,<seconds_19>,<seconds_20>

Spurious Emission Time Domain Sweep Time

Function

This command sets the sweep time in Time Domain Setup.

Command

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:SWEep:TIME
<seconds_n>
```

Parameter

<seconds_n>		Sweep time
	Range	1 μs to 1000 s (For Time-axis measurement)
	Suffix Code	NS,US,MS,S S is used when omitted.
	Default	Auto value

Example of Use

To set the sweep time in Time Domain Setup.

```
SPUR:TDOM:SWE:TIME
0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.2,0.3,0.1,0.1,
0.1,0.1,0.1,0.1,0.1,0.1
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:SWEep:TIME?

Spurious Emission Time Domain Sweep Time Query

Function

This command queries the sweep time in Time Domain Setup.

Query

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:SWEep:TIME?
```

Response

```
<seconds_n>
```

Parameter

`<seconds_n>`		Sweep time
	Range	1 μs to 1000 s
	Suffix code	None. Value is returned in S units.

Example of Use

To query the sweep time in Time Domain Setup.

```
SPUR:TDOM:SWE:TIME?
>
0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.200000,0.300000,0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.100000
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:DETector[1][:FUNCtion] POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS,POSitive|SAMPle|RMS

Spurious Emission Time Domain Detection

Function

This command selects the detection mode of the waveform pattern in Time Domain Setup.

Command

`[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:DETector[1][:FUNCtion] <mode_n>`

Parameter

<mode_n>	Detection mode of Segment n
POSitive	Positive peak detection
SAMPle	Sample detection
RMS	RMS detection
Default	RMS

Example of Use

To select the detection mode of the waveform pattern in Time Domain Setup.

```
SPUR:TDOM:DET
POS,POS,POS,RMS,POS,POS,POS,POS,POS,POS,RMS,POS,POS,POS,
POS,POS,POS,RMS,POS,POS
```

[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:DETector[1][:FUNCtion]?

Spurious Emission Time Domain Detection Query

Function

This command queries the detection mode of the waveform pattern in Time Domain Setup.

Query

```
[:SENSe]:SPURious:TDOMain[:RANGe][:LIST]:DETector[1][:FU
NCtion]?
```

Response

```
<mode_n>
```

Parameter

<mode_n>	Detection mode of Segment n
POS	Positive peak detection
SAMP	Sample detection
RMS	RMS detection

Example of Use

To query the detection mode of the waveform pattern in Time Domain Setup.

```
SPUR:TDOM:DET?
>
POS,POS,POS,RMS,POS,POS,POS,POS,POS,POS,RMS,POS,POS,POS,
POS,POS,POS,RMS,POS,POS
```

:MMEMory:STORe:SPURious:TABLe <register>

Save Spurious Emission Parameter

Function

This command saves the parameter for the Spurious Emission measurement.

Command

```
:MMEMory:STORe:SPURious:TABLe <register>
```

Parameter

<register>	Register to be saved.
Range	1 to 8

Example of Use

To save the parameter in Register 3.

```
MMEM:STOR:SPUR:TABL 3
```

:MMEMory:LOAD:SPURious:TABLe <register>

Recall Spurious Emission Parameter

Function

This command queries the saved parameter for the Spurious Emission measurement.

Command

```
:MMEMory:LOAD:SPURious:TABLe <register>
```

Parameter

<register>	Register to read parameter
Range	1 to 8

Example of Use

To query the parameter of Register 3.

```
MMEM:LOAD:SPUR:TABL 3
```

:CONFigure:SPURious

Spurious Emission Configure

Function

This command sets the Spurious Emission measurement to On.

Command

```
:CONFigure:SPURious
```

Details

No measurement is performed.
When Spurious Emission measurement is set to On, the active trace is set to A.

Example of Use

To set the Spurious measurement to On.

```
CONF:SPUR
```

:INITiate:SPURious

Spurious Emission Initiate

Function

This command starts the Spurious Emission measurement.

Command

```
:INITiate:SPURious
```

Details

When this function is executed, the Spurious measurement is set to On and the measurement starts.
To read out the measurement results after executing this command, perform the synchronization control using the "*WAI" command.

Example of Use

To start the Spurious measurement.

```
INIT:SPUR
```

:FETCh:SPURious[n]?

Spurious Emission Fetch

Function

This command outputs the measurement result for the Spurious Emission measurement.

Query

```
:FETCh:SPURious[n]?
```

Response

When Result Mode is A:
(When Spurious Emission Result Type is Worst)
<judge>,<spur_1>,<range_1>,<freq_1>,<peak_1>,<margin_1>,<limit_1>,<judge_1>,<spur_2>,<range>,<freq_2>,<peak_2>,<margin_2>,<limit_2>,<judge_2>
.....
<spur_20>,<range_20>,<freq_20>,<peak_20>,<margin_20>,<limit_20>,<judge_20>
(n=1 or when omitted)

(When Spurious Emission Result Type is Peaks)
<judge>,<spur_1>,<range_1>,<freq_1>,<peak_1>,<margin_1>,<limit_1>,<judge_1>,<spur_2>,<range_2>,<freq_2>,<peak_2>,<margin_2>,<limit_2>,<judge_2>
.....
<spur_n>,<freq_n>,<peak_n>,<margin_n>,<limit_n>,<judge_n>
(n=1 or when omitted)

When Result Mode is B:
<spur_1>,<range_1>,<freq_1>,<peak_1>,<limit_1>,<judge_1>,<spur_2>,<range_2>,<freq_2>,<peak_2>,<limit_2>,<judge_2>
.....
<spur_n>,<range_n>,<freq_n>,<peak_n>,<limit_n>,<judge_n>
(n=1 or when omitted.)

<tracedata_1>,<tracedata_2>····<tracedata_m>
(n=2 to 21)

<number>
(n=22)

<tracedata_1>,<tracedata_2>····<tracedata_m>
(n=23 to 42)

Parameter

<spur_n>	Spurious number
<range_n>	Segment number of the detected spurious
<number>	Number of the detected spurious –999.0 is returned when an error occurs/no measurement is performed.
<freq_n>	Frequency of Spurious Values have no suffix code, are in Hz units, and have 0.01 Hz Resolution. Only one value is returned when Marker Result Type is Worst. –999999999999 is returned when an error occurs/no measurement is performed.
<peak_n>	Absolute power of Spurious Values have no suffix code, are in dBm units, and have 0.01 dB Resolution. Only one value is returned when Marker Result Type is Worst. –999.0 is returned when an error occurs/no measurement is performed.
<margin_n>	Relative power from the limit line of Spurious Values have no suffix code, are in dB units, and have 0.01 dB Resolution. Only one value is returned when Marker Result Type is Worst. –999.0 is returned when an error occurs/no measurement is performed.
<limit_n>	Power value of the limit line of Spurious Values have no suffix code, are in dBm units, and have 0.01 dB Resolution. Only one value is returned when Marker Result Type is Worst. –999.0 is returned when an error occurs/no measurement is performed.
<judge_n>	Limit line judges the detected spurious as Pass or Fail.

	0 is returned when judged as Pass, and 1 is returned when judged as Fail.
<tracedata_m>	n=2 to 21 Returns a comma separated list of the trace data for the selected segment (where segment number = n-1). n=23 to 42 Returns a comma separated list of the trace data for the selected segment (where segment number = n-22). Values have no suffix code, are in dBm units, and have 0.001 dB resolution. –999.0 is returned when no measurement is performed.
<judge>	Pass/Fail judgment to the whole segment 0 is returned when judged as Pass, and 1 is returned when Fail. –999.0 is returned when no measurement is performed.

Details

This function queries the result of the Spurious Emission measurement performed lastly. This function does not accompany any sweep, thus this function is used To query the measurement result in a different type, when the measurement has already completed.
Use READ command to perform re-measurement with redoing sweep.
A return value of this command varies depending on the compatible mode.
(cf. :SYSTem:RESult:MODE)

Example of Use

To obtain the result of the Spurious Emission measurement (when Result Mode is A, and when Spurious Emission Result Type is Worst).

```
FETC:SPUR?
>
0,1,1,135618.00,-64.25,51.25,-13.00,0,2,2,155970.00,-63.
91,50.91,-13.00,0····
```

:READ:SPURious[n]?

Spurious Emission Read

Function

This command performs the Spurious Emission measurement and outputs the result.
It works in the same way as the two commands are transmitted in the following order:

```
:INITiate:SPURious
:FETCh:SPURious[n]?
```

:MEASure:SPURious[n]?

Spurious Emission Measure

Function

This command performs the Spurious Emission measurement and outputs the result.
It works in the same way as the three commands are transmitted in the following order:

```
:CONFigure:SPURious
:INITiate:SPURious
:FETCh:SPURious[n]?
```

:DISPlay:SPURious:ANNotation:TITLe:DATA <string>

Spurious Emission Title Entry

Function

This command registers the title character string.
Refer to
`:DISPlay:ANNotation:TITLe:DATA`.

Related Command

This command has the same function as the following commands.

```
:DISPlay:ANNotation:TITLe:DATA
:DISPlay:ACPower:ANNotation:TITLe:DATA
:DISPlay:CHPower:ANNotation:TITLe:DATA
:DISPlay:OBWidth:ANNotation:TITLe:DATA
:DISPlay:SEMask:ANNotation:TITLe:DATA
:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA
```

:DISPlay:SPURious:ANNotation:TITLe:DATA?

Spurious Emission Title Entry Query

Function

This command queries the title character string.
Refer to
:DISPlay:ANNotation:TITLe:DATA?.

Related Command

This command has the same function as the following commands.
:DISPlay:ANNotation:TITLe:DATA?
:DISPlay:ACPower:ANNotation:TITLe:DATA?
:DISPlay:CHPower:ANNotation:TITLe:DATA?
:DISPlay:OBWidth:ANNotation:TITLe:DATA?
:DISPlay:SEMask:ANNotation:TITLe:DATA?
:DISPlay:BPOWer|:TXPower:ANNotation:TITLe:DATA?

:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl>

Spurious Emission Log Scale Range

Function

This command sets the Y-axis scale range when the scale mode is set to Log.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision.

Related Command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision

:DISPlay:SPURious:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

Spurious Emission Log Scale Range Query

Function

This command queries the Y-axis scale range when Scale Mode is set to Log.
Refer to
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?.

Related Command

This command has the same function as the following commands.
:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:[LOGarithmic]:PDIVision?
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:SEMask:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?

[:SENSe]:SPURious:AVERage[:STATe] ON|OFF|1|0

Spurious Emission Storage Mode

Function

This command sets the storage mode of Trace A.
Refer to
`:TRACe[1]|2|3|4|5|6:STORage:MODE.`

Related Command

This command has the same function as the following commands.
`:TRACe[1]|2|3|4|5|6:STORage:MODE`
`[:SENSe]:ACPower:AVERage[:STATe]`
`[:SENSe]:CHPower:AVERage[:STATe]`
`[:SENSe]:OBWidth:AVERage[:STATe]`
`[:SENSe]:SEMask:AVERage[:STATe]`
`[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]`

[:SENSe]:SPURious:AVERage[:STATe]?

Spurious Emission Storage Mode Query

Function

This command queries the storage mode of Trace A.
Refer to
`:TRACe[1]|2|3|4|5|6:STORage:MODE?.`

Related Command

This command has the same function as the following commands.
`:TRACe[1]|2|3|4|5|6:STORage:MODE?`
`[:SENSe]:ACPower:AVERage[:STATe]?`
`[:SENSe]:CHPower:AVERage[:STATe]?`
`[:SENSe]:OBWidth:AVERage[:STATe]?`
`[:SENSe]:SEMask:AVERage[:STATe]?`
`[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?`

:TRIGger:SPURious[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe

Spurious Emission Trigger Source

Function

This command selects the trigger signal source.
Refer to
`:TRIGger[:SEQuence]:SOURce.`

Related Command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:SOURce`
`:TRIGger:ACPower[:SEQuence]:SOURce?`
`:TRIGger:CHPower[:SEQuence]:SOURce`
`:TRIGger:OBWidth[:SEQuence]:SOURce`
`:TRIGger:SEMask[:SEQuence]:SOURce`
`:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce`

:TRIGger:SPURious[:SEQuence]:SOURce?

Spurious Emission Trigger Source Query

Function

This command queries the trigger signal source.
Refer to
`:TRIGger[:SEQuence]:SOURce?.`

Related Command

This command has the same function as the following commands.
`:TRIGger[:SEQuence]:SOURce?`
`:TRIGger:ACPower[:SEQuence]:SOURce?`
`:TRIGger:CHPower[:SEQuence]:SOURce?`
`:TRIGger:OBWidth[:SEQuence]:SOURce?`
`:TRIGger:SEMask[:SEQuence]:SOURce?`
`:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce?`

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE NORMal|POSition|DELTa|FIXed|OFF

Spurious Emission Marker Mode

Function

This command sets the marker mode.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE.

Related Command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

Spurious Emission Marker Mode Query

Function

This command queries the marker mode.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?.

Related Command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MODE?

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X <freq>

Spurious Emission Zone Marker Frequency (Time)

Function

This command moves the center of the zone marker to the specified frequency (time).
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X.

Related Command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

Spurious Emission Zone Marker Frequency (Time) Query

Function

This command queries the center of the zone marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?.

Related Command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X?

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition <integer>

Spurious Emission Zone Marker Position

Function

This command moves the center of the zone marker to the specified position.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition.

Related Command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

Spurious Emission Zone Marker Position Query

Function

This command queries the center point of the zone marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?.

Related Command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:X:POSition?

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?

Spurious Emission Marker Level Query

Function

This command queries the level of the marker point.
Refer to
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?`.

Related Command

This command has the same function as the following commands.
`:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?`
`:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?`
`:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?`
`:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?`
`:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:Y?`

:CALCulate:SPURious:MARKer:AOFF

Spurious Emission All Marker Off

Function

This command sets all the markers to Off.
Refer to
`:CALCulate:MARKer:AOFF`.

Related Command

This command has the same function as the following commands.
`:CALCulate:MARKer:AOFF`
`:CALCulate:ACPower:MARKer:AOFF`
`:CALCulate:CHPower:MARKer:AOFF`
`:CALCulate:BPOWer|:TXPower:MARKer:AOFF`

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

Spurious Emission Peak Search

Function

This command searches for the maximum level point of active trace and moves the marker point to it.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum.

Related Command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT

Spurious Emission Next Peak Search

Function

This command searches for the feature point of the active trace and moves the marker point to the peak point below the level of the active marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT.

Related Command

This command has the same function as the following commands.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:NEXT

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

Spurious Emission Power Peak Search

Function

This command moves the active marker to the position where the peak power of the zone width of the active marker becomes maximum in the measurement band.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

Related command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:OBWidth:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer
:CALCulate:BPOWer|:TXPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT

Spurious Emission Next Power Peak Search

Function

This command searches for the next largest peak power in the zone width compared to the total power of the zone width of the active marker in the measurement band and moves the active marker.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT.

Related command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MAXimum:POWer:NEXT

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

Spurious Emission Minimum Search

Function

This command searches for the minimum level point of the active trace and moves the marker point to that point.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum.

Related Command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum
:CALCulate:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT

Spurious Emission Next Minimum Search

Function

This command searches for the next dip of the active trace and moves the marker point to that point.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT.

Related Command

This command has the same function as the following command.
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT
:CALCulate:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:MINimum:NEXT

[:SENSe]:SPURious:SWEep:TIME:AUTO:MODE NORMal|FAST

Spurious Emission Auto Sweep Time Mode

Function

This command sets the Fast/Normal mode when the automatic setting of the sweep time is set to On.
Refer to
`[:SENSe]:SWEep:TIME:AUTO:MODE <mode>.`

Related Command

This command has the same function as the following command.
`[:SENSe]:SWEep:TIME:AUTO:MODE`

[:SENSe]:SPURious:SWEep:TIME:AUTO:MODE?

Spurious Emission Auto Sweep Time Mode Query

Function

This command queries the Fast/Normal mode when the automatic setting of the sweep time is set to On.
Refer to
`[:SENSe]:SWEep:TIME:AUTO:MODE?.`

Related Command

This command has the same function as the following command.
`[:SENSe]:SWEep:TIME:AUTO:MODE?`

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer>

Spurious Emission Relative To

Function

This command sets the reference marker when the marker mode is set to Delta.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence.

Related Command

This command has the same function as the following commands.
:CALCulate:ACPower:MARKer[n]:REFerence
:CALCulate:CHPower:MARKer[n]:REFerence
:CALCulate:OBWidth:MARKer[n]:REFerence
:CALCulate:BPOWer|:TXPower:MARKer[n]:REFerence

:CALCulate:SPURious:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?

Spurious Emission Relative To Query

Function

This command queries the reference when the marker mode is set to Delta.
Refer to
:CALCulate:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence?.

Related Command

This command has the same function as the following commands.
:CALCulate:ACPower:MARKer[n]:REFerence?
:CALCulate:CHPower:MARKer[n]:REFerence?
:CALCulate:OBWidth:MARKer[n]:REFerence?
:CALCulate:BPOWer|:TXPower:MARKer[n]:REFerence?

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

Spurious Emission Couple Zone

Function

This command enables/disables the setting of the function that the same value is automatically set to Zone Width in each marker.
Refer to
`:CALCulate:MARKer:COUPle:ZONE[:STATe].`

Related Command

This command has the same function as the following command.
`:CALCulate:MARKer:COUPle:ZONE[:STATe]`

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

Spurious Emission Couple Zone Query

Function

This command queries On/Off of the function that the value is automatically set to Zone Width in each marker.
Refer to
`:CALCulate:MARKer:COUPle:ZONE[:STATe]?.`

Related Command

This command has the same function as the following command.
`:CALCulate:MARKer:COUPle:ZONE[:STATe]?`

:INITiate:SPURious:PAUSe:CONTinue

Spurious Emission Continue

Function

Pause is cancelled and measurement will continue when this command is sent while it is in remote control state and paused.

Command

```
:INITiate:SPURious:PAUSe:CONTinue
```

Details

It will pause before the pertinent segment is swept when Pause before Sweep is set to On. This command is used to cancel the pause and continue the measurement.

This command can only be used while it is in remote control state and paused.
Pause is cancelled and measurement will stop when this command is sent while it is in local status. Press the F1 [Continue] key to continue the measurement while it is in local status.

To read out the measurement results after executing this command, perform the synchronization control using the "*WAI" command.

Example of Use

Measurement method when pausing twice

`INIT:SPUR`	Measure until paused
`*WAI`	Wait until paused
`INIT:SPUR:PAUS:CONT`	Cancel the pause, and continue the measurement
`*WAI`	Wait until paused
`INIT:SPUR:PAUS:CONT`	Cancel the pause, and continue the measurement
`*WAI`	Wait until the measurement is completed
`FETC:SPUR?`	Read the measurement results

```
> 1,1,1,9282.00,-84.38,71.38,...
```

:INITiate:SPURious:PAUSe:STATe?

Spurious Emission Pause Status Query

Function

This command queries whether the Spurious Emission measurement is in remote control state and paused or not.

Query

```
:INITiate:SPURious:PAUSe:STATe?
```

Response

```
<switch>
```

Parameter

<switch>	Status of the Spurious Emission measurement
1	Remote control state and paused
0	All other status

Details

It pauses before the pertinent segment is swept when Pause before Sweep is set to On. This command is used to query if it is paused or not.

This command can only be used while it is in remote control state. Pause is cancelled and measurement will stop when this command is sent while it is in local status.

Example of Use

To query whether it is in remote control state and paused or not.

```
INIT:SPUR:PAUS:STAT?
> 0
```

[:SENSe]:SPURious:SYNThesis:LPHase ON|OFF|1|0

Low Phase Noise for Spurious Emission Measurement

Function

This command enables/disables Low Phase Noise function during Spurious Emission measurement.

Command

```
[:SENSe]:SPURious:SYNThesis:LPHase <switch>
```

Parameter

<switch>	Low Phase Noise switch
ON|1	Enables Low Phase Noise switch.
OFF|0	Disables Low Phase Noise switch.
Default	Off

Details

This function is available when MS2830A-062/066, MS2840A-066/166 is installed.
This function does not depend on the setting of the Low Phase Noise switch at System Config. The setting-enabled conditions are as follows:

Function status	System Config Low Phase Noise switch status	Low Phase Noise switch status
On	On	Enables the Low Phase Noise function during Spurious Emission measurement.
	Off	
Off	On	Disables the Low Phase Noise function during Spurious Emission measurement.
	Off	

The status at other than spurious emission measurement is reflected by the System Config switch.

Example of Use

To enable the Low Phase Noise function during Spurious Emission measurement.

```
SPUR:SYNT:LPH ON
```

[:SENSe]:SPURious:SYNThesis:LPHase?

Low Phase Noise for Spurious Emission Measurement Query

Function

This command queries the Low Phase Noise function On/Off state during Spurious Emission measurement.

Query

```
[:SENSe]:SPURious:SYNThesis:LPHase?
```

Response

<switch>	Low Phase Noise switch

Parameter

<switch>	Low Phase Noise switch
1	Low Phase Noise switch enabled.
0	Low Phase Noise switch disabled.

Details

This function is available when MS2830A-062/066, MS2840A-066/166 is installed.

This function does not depend on the setting of Low Phase Noise Converter at Config. The setting-enabled conditions are as follows:

Function status	System Config Low Phase Noise switch status	Low Phase Noise switch status
On	On	Enables the Low Phase Noise function during Spurious Emission measurement.
	Off	
Off	On	Disables the Low Phase Noise function during Spurious Emission measurement.
	Off	

The status at other than spurious emission measurement is reflected by the Config switch.

The phase noise characteristics can be improved using the Low Phase Noise Function when the Low Phase Noise switch is On, the frequency range is f≤3.7 GHz (f<3.5 GHz when Frequency Band Mode is Spurious) and the Span Frequency is less than 1 MHz.

However, if a signal outside the DUT frequency range is input while using the Low Phase Noise Function, it may be possible to measure

spurious noise generated within the unit.

Refer to the mainframe Operation Manual (Operation) for details about spurious noise generation and appropriate conditions for using the Low Phase Noise Function.

Example of Use

To query the On/Off state of Low Phase Noise function during Spurious Emission measurement.

```
SPUR:SYNT:LPH?
> 1
```

[:SENSe]:FREQuency:SYNThesis:LPHase:STATe?

Low Phase Noise Status Query

Function

This command queries the state of Low Phase Noise function with the current measurement conditions.

Query

```
[:SENSe]:FREQuency:SYNThesis:LPHase:STATe?
```

Response

<status>	Low Phase Noise function On/Off state

Parameter

<status>	Low Phase Noise function On/Off state
1	Uses Low Phase Noise function.
0	Do not use Low Phase Noise function.

Details

This function is available when MS2830A-062/066, MS2840A-066/166 is installed.
The phase noise characteristics can be improved using the Low Phase Noise Function when the Low Phase Noise switch is On, the frequency range is –20 MHz≤f≤3.7 GHz (–20 MHz≤f<3.5 GHz when Frequency Band Mode is Spurious) and the Span Frequency is less than 1 MHz. However, if a signal outside the DUT frequency range is input while using the Low Phase Noise Function, it may be possible to measure spurious noise generated within the unit.
Refer to the mainframe Operation Manual (Operation) for details about spurious noise generation and appropriate conditions for using the Low Phase Noise Function.

Example of Use

To query the state of Low Phase Noise function with the current measurement conditions.

```
FREQ:SYNT:LPH:STAT?
> 1
```

2.15 Setting the TOI Measurement Functions

Table 2.15-1 lists device messages for setting the TOI measurement functions.

Table 2.15-1 Device messages for setting the TOI measurement functions

Function	Device Message
Measure TOI	[:SENSe]:TOI[:STATe] ON|OFF|1|0
	[:SENSe]:TOI[:STATe]?
	:CALCulate:TOI[:STATe] ON|OFF|1|0
	:CALCulate:TOI[:STATe]?
TOI Frequency Auto Tune	[:SENSe]:TOI:FREQuency:TUNE:IMMediate
TOI Lower Tone Frequency	[:SENSe]:TOI:FREQuency:BASE:LOWer <freq>
	[:SENSe]:TOI:FREQuency:BASE:LOWer?
	:CALCulate:TOI:FREQuency:BASE:LOWer <freq>
	:CALCulate:TOI:FREQuency:BASE:LOWer?
TOI Upper Tone Frequency	[:SENSe]:TOI:FREQuency:BASE:UPPer <freq>
	[:SENSe]:TOI:FREQuency:BASE:UPPer?
	:CALCulate:TOI:FREQuency:BASE:UPPer <freq>
	:CALCulate:TOI:FREQuency:BASE:UPPer?
TOI Tone Frequency Auto/Manual	[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO ON|OFF|1|0
	[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO?
	:CALCulate:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO ON|OFF|1|0
	:CALCulate:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO?
TOI Zero Span Measurement On/Off	[:SENSe]:TOI:ZSPan[:STATe] ON|OFF|1|0
	[:SENSe]:TOI:ZSPan[:STATe]?
TOI Zero Span Measurement Resolution Bandwidth	[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution] <freq>
	[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]?
TOI Zero Span Measurement Resolution Bandwidth Auto/Manual	[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]:AUTO ON|OFF|1|0
	[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]:AUTO?
TOI Zero Span Sweep Time	[:SENSe]:TOI:ZSPan:SWEep:TIME <time>
	[:SENSe]:TOI:ZSPan:SWEep:TIME?
TOI Zero Span Measurement Sweep Time Auto/Manual	[:SENSe]:TOI:ZSPan:SWEep:TIME:AUTO ON|OFF|1|0
	[:SENSe]:TOI:ZSPan:SWEep:TIME:AUTO?

Table 2.15-1 Device messages for setting the TOI measurement functions (Continued)

Function	Device Message
TOI 3rd Frequency Search On/Off	[:SENSe]:TOI:FREQuency:IM3:SEARch ON|OFF|1|0
	[:SENSe]:TOI:FREQuency:IM3:SEARch?
	:CALCulate:TOI:FREQuency:IM3:SEARch ON|OFF|1|0
	:CALCulate:TOI:FREQuency:IM3:SEARch?
TOI Configure	:CONFigure:TOI
TOI Initiate	:INITiate:TOI
TOI Read Fetch	:FETCh:TOI[n]?
TOI Read	:READ:TOI[n]?
TOI Measure	:MEASure:TOI[n]?
TOI Read Fetch IP3	:FETCh:TOI:IP3?
TOI Read IP3	:READ:TOI:IP3?
TOI Measure IP3	:MEASure:TOI:IP3?

[:SENSe]:TOI[:STATe] ON|OFF|1|0

Measure TOI

Function

This command executes the TOI measurement.

Command

```
[:SENSe]:TOI[:STATe] <switch>
```

Parameter

<switch>	Turns on and off the TOI measurement.
ON|1	Turns on the TOI measurement.
OFF|0	Turns off the TOI measurement. (Default)

Example of use

To turn on the TOI measurement.

```
TOI ON
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI[:STATe] <switch>
```

:CALCulate:TOI[:STATe] ON|OFF|1|0

Measure TOI

Function

This command executes the TOI measurement.
Refer to
`[:SENSe]:TOI[:STATe] <switch>`.

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI[:STATe] <switch>
```

[:SENSe]:TOI[:STATe]?

Measure TOI Query

Function

This command queries whether the TOI measurement is on or off.

Query

```
[:SENSe]:TOI[:STATe]?
```

Response

```
<switch>
```

Parameter

`<switch>`	TOI measurement On/Off
`ON|1`	ON
`OFF|0`	OFF

Example of use

To query whether the TOI measurement is on or off.

```
TOI?
> 1
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI[:STATe]?
```

:CALCulate:TOI[:STATe]?

Measure TOI Query

Function

This command queries whether the TOI measurement is on or off.

Refer to

```
[:SENSe]:TOI[:STATe]?.
```

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI[:STATe]?
```

[:SENSe]:TOI:FREQuency:TUNE:IMMediate

TOI Frequency Auto Tune

Function

This command executes the Auto Tune of the TOI measurement.

Command

```
[:SENSe]:TOI:FREQuency:TUNE:IMMediate
```

Example of Use

To execute the Auto Tune of the TOI measurement.

```
TOI:FREQ:TUNE:IMM
```

[:SENSe]:TOI:FREQuency:BASE:LOWer <freq>

TOI Lower Tone Frequency

Function

This command sets the lower tone frequency for the TOI measurement.

Command

```
[:SENSe]:TOI:FREQuency:BASE:LOWer <freq>
```

Parameter

<freq>		Lower tone frequency for the TOI measurement
	Range	
	[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
		–100 MHz to 13.6 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 13.6 GHz (Option 043)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 44.6 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
	Default	

[MS269xA]	2.25 GHz (MS2690A)
	5.0625 GHz (MS2691A)
	9.9375 GHz (MS2692A)
[MS2830A]	1.125 GHz (Option 040)
	2.25 GHz (Option 041)
	5.0625 GHz (Option 043)
	9.9375 GHz (Option 044)
	16.125 GHz (Option 045)
[MS2840A]	1.125 GHz (Option 040)
	2.25 GHz (Option 041)
	9.9375 GHz (Option 044)
	16.125 GHz (Option 046)

Example of Use

To set the lower tone frequency to 1 GHz.

```
TOI:FREQ:BASE:LOW 1GHZ
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI:FREQuency:BASE:LOWer <freq>
```

:CALCulate:TOI:FREQuency:BASE:LOWer <freq>

TOI Lower Tone Frequency

Function

This command sets the lower tone frequency for the TOI measurement. Refer to

```
[:SENSe]:TOI:FREQuency:BASE:LOWer <freq>.
```

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI:FREQuency:BASE:LOWer <freq>
```

[:SENSe]:TOI:FREQuency:BASE:LOWer?

TOI Lower Tone Frequency Query

Function

This command queries the lower tone frequency for the TOI measurement.

Query

```
[:SENSe]:TOI:FREQuency:BASE:LOWer?
```

Response

<freq>

Parameter

<freq>		Lower tone frequency for the TOI measurement
	Range	
	[MS269xA]	−100 MHz to 6.05 GHz (MS2690A)
		−100 MHz to 13.6 GHz (MS2691A)
		−100 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	−100 MHz to 3.7 GHz (Option 040)
		−100 MHz to 6.1 GHz (Option 041)
		−100 MHz to 13.6 GHz (Option 043)
		−100 MHz to 26.6 GHz (Option 044)
		−100 MHz to 43.1 GHz (Option 045)
	[MS2840A]	−100 MHz to 3.7 GHz (Option 040)
		−100 MHz to 6.1 GHz (Option 041)
		−100 MHz to 26.6 GHz (Option 044)
		−100 MHz to 44.6 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the lower tone frequency.

```
TOI:FREQ:BASE:LOW?
> 1000000000
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI:FREQuency:BASE:LOWer?
```

:CALCulate:TOI:FREQuency:BASE:LOWer?

TOI Lower Tone Frequency Query

Function

This command queries the lower tone frequency for the TOI measurement.

Refer to

```
[:SENSe]:TOI:FREQuency:BASE:LOWer <freq>.
```

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI:FREQuency:BASE:LOWer?
```

[:SENSe]:TOI:FREQuency:BASE:UPPer <freq>

TOI Upper Tone Frequency

Function

This command sets the upper tone frequency for the TOI measurement.

Command

```
[:SENSe]:TOI:FREQuency:BASE:UPPer <freq>
```

Parameter

`<freq>`		Upper tone frequency for the TOI measurement
	Range	
	[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
		–100 MHz to 13.6 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 13.6 GHz (Option 043)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 44.6 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
	Default	
	[MS269xA]	3.75 GHz (MS2690A)
		8.4375 GHz (MS2691A)
		16.5625 GHz (MS2692A)
	[MS2830A]	1.875 GHz (Option 040)
		3.75 GHz (Option 041)
		8.4375 GHz (Option 043)
		16.5625 GHz (Option 044)
		26.875 GHz (Option 045)
	[MS2840A]	1.875 GHz (Option 040)
		3.75 GHz (Option 041)
		16.5625 GHz (Option 044)
		26.875 GHz (Option 046)

Example of Use

To set the upper tone frequency to 2 GHz.

```
TOI:FREQ:BASE:UPP 2GHZ
```

Related Command

This command has the same function as the following command.
:CALCulate:TOI:FREQuency:BASE:UPPer <freq>

:CALCulate:TOI:FREQuency:BASE:UPPer <freq>

TOI Upper Tone Frequency

Function

This command sets the upper tone frequency for the TOI measurement. Refer to [:SENSe]:TOI:FREQuency:BASE:UPPer <freq>.

Related Command

This command has the same function as the following command.
[:SENSe]:TOI:FREQuency:BASE:UPPer <freq>

[:SENSe]:TOI:FREQuency:BASE:UPPer?

TOI Upper Tone Frequency Query

Function

This command queries the upper tone frequency for the TOI measurement.

Query

[:SENSe]:TOI:FREQuency:BASE:UPPer?

Response

<freq>

Parameter

<freq>		Upper tone frequency for the TOI measurement
	Range	
	[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
		–100 MHz to 13.6 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 13.6 GHz (Option 043)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 44.6 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	None. Value is returned in Hz units.

Example of Use

To query the upper tone frequency.

```
TOI:FREQ:BASE:UPP?
> 2000000000
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI:FREQuency:BASE:UPPer?
```

:CALCulate:TOI:FREQuency:BASE:UPPer?

TOI Upper Tone Frequency Query

Function

This command queries the upper tone frequency for the TOI measurement.
Refer to
`[:SENSe]:TOI:FREQuency:BASE:UPPer <freq>`.

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI:FREQuency:BASE:UPPer?
```

[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO ON|OFF|1|0

TOI Tone Frequency Auto/Manual

Function

This command turns on and off the automatic setting of the tone frequency for the TOI measurement.

Command

```
[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO <switch>
```

Parameter

`<switch>`	Automatic setting of the frequency for the TOI measurement
`ON|1`	Turns on the automatic setting of the frequency for the TOI measurement. (Default)
`OFF|0`	Turns off the automatic setting of the frequency for the TOI measurement.

Example of Use

To automatically set the tone frequency.

```
TOI:FREQ:BASE:AUTO ON
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO
<switch>
```


:CALCulate:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO ON|OFF|1|0

TOI Tone Frequency Auto/Manual

Function

This command turns on and off the automatic setting of the tone frequency for the TOI measurement.
Refer to
`[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO <switch>`.

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO <switch>
```

[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO?

TOI Tone Frequency Auto/Manual Query

Function

This command queries whether the automatic setting of the tone frequency for the TOI measurement is on or off.

Query

```
[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO?
```

Response

```
<switch>
```

Parameter

`<switch>`	Automatic setting of the frequency for the TOI measurement ON/OFF
`ON|1`	ON
`OFF|0`	OFF

Example of Use

To query whether the automatic setting of the tone frequency for the TOI measurement is on or off.

```
TOI:FREQ:BASE:AUTO?
> 1
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO?
```

:CALCulate:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO?

TOI Tone Frequency Auto/Manual Query

Function

This command queries whether the automatic setting of the tone frequency for the TOI measurement is on or off.
Refer to

```
[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO?
```

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI:FREQuency:BASE[:LOWer[:UPPer]]:AUTO?
```

[:SENSe]:TOI:ZSPan[:STATe] ON|OFF|1|0

TOI Zero Span Measurement On/Off

Function

This command turns on and off the Zero Span Measurement in the TOI measurement.

Command

```
[:SENSe]:TOI:ZSPan[:STATe] <switch>
```

Parameter

`<switch>`	Setting of the Zero Span Measurement in the TOI measurement
`ON|1`	Turns on the Zero Span Measurement.
`OFF|0`	Turns off the Zero Span Measurement. (Default)

Example of Use

To turn on the Zero Span Measurement.

```
TOI:ZSP ON
```

[:SENSe]:TOI:ZSPan[:STATe]?

TOI Zero Span Measurement On/Off Query

Function

This command queries whether the Zero Span Measurement in the TOI measurement is on or off.

Query

```
[:SENSe]:TOI:ZSPan[:STATe]? <switch>
```

Response

```
<switch>
```

Parameter

<switch>	Turns on and off the Zero Span Measurement in the TOI measurement.
ON|1	Turns on the Zero Span Measurement.
OFF|0	Turns off the Zero Span Measurement.

Example of Use

To query whether the Zero Span Measurement is turned on or off.

```
TOI:ZSP?
> 1
```

[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution] <freq>

TOI Zero Span Measurement Resolution Bandwidth

Function

This command sets the resolution bandwidth for the Zero Span Measurement in the TOI measurement.

Command

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

Parameter

`<freq>` Resolution bandwidth for the Zero Span Measurement in the TOI measurement

[MS269xA]

Range/Resolution 30 Hz to 31.25 MHz
Set to any of 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz.

[MS2830A], [MS2840A]

Range/Resolution 30 Hz to 31.25 MHz
Set to any of 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz or 31.25 MHz.

[Common]

Suffix code HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
Hz is used when omitted.

Default Value set in RBW Auto

Example of Use

To set the resolution bandwidth for the Zero Span Measurement.

```
TOI:ZSP:BAND 1MHZ
```

[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]?

TOI Zero Span Measurement Resolution Bandwidth Query

Function

This command queries the resolution bandwidth for the Zero Span Measurement in the TOI measurement.

Query

```
[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]?
```

Response

```
<freq>
```

Parameter

`<freq>` Resolution bandwidth for the Zero Span Measurement in the TOI measurement

[MS269xA]

Range/Resolution 30 Hz to 31.25 MHz
Value is returned in any of 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz.

[MS2830A], [MS2840A]

Range/Resolution 30 Hz to 31.25 MHz
Value is returned in any of 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz or 31.25 MHz.

[Common]

Suffix code None. Value is returned in Hz units.

Example of Use

To query the resolution bandwidth for the Zero Span Measurement.

```
TOI:ZSP:BAND?
> 1000000
```

[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]:AUTO ON|OFF|1|0

TOI Zero Span Measurement Resolution Bandwidth Auto/Manual

Function

This command turns on and off the automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement.

Command

```
[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]:AUTO
<switch>
```

Parameter

<switch>	Automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement
ON|1	Turns on the automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement. (Default)
OFF|0	Turns off the automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement.

Example of Use

To automatically set the resolution bandwidth for the Zero Span Measurement in the TOI measurement.

```
TOI:ZSP:BAND:AUTO ON
```

[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]:AUTO?

TOI Zero Span Measurement Resolution Bandwidth Auto/Manual Query

Function

This command queries whether the automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement is on or off.

Query

```
[:SENSe]:TOI:ZSPan:BANDwidth|BWIDth[:RESolution]:AUTO?
```

Response

```
<switch>
```

Parameter

`<switch>`	Automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement
`ON|1`	Turns on the automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement.
`OFF|0`	Turns off the automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement.

Example of Use

To query whether the automatic setting of the resolution bandwidth for the Zero Span Measurement in the TOI measurement is on or off.

```
TOI:ZSP:BAND:AUTO?
> 1
```

[:SENSe]:TOI:ZSPan:SWEep:TIME <time>

TOI Zero Span Measurement Sweep Time

Function

This command sets the sweep time for the Zero Span Measurement in the TOI measurement.

Command

```
[:SENSe]:TOI:ZSPan:SWEep:TIME <time>
```

Parameter

`<time>`		Sweep time of Zero Span Measurement in the TOI measurement.
	Range	1 μs to 1000 s
	Suffix code	NS,US,MS,S S is used when the suffix code is omitted.
	Default	
	[MS269xA]	10 ms (MS2690A) 135 ms (MS2691A) 265 ms (MS2692A)
	[MS2830A]	1 ms (Option 040) 2 ms (Option 041) 4 ms (Option 043) 89 ms (Option 044) 86 ms (Option 045)
	[MS2840A]	1 ms (Option 040) 2 ms (Option 041) 89 ms (Option 044) 86 ms (Option 046)

Example of Use

To set the sweep time for the Zero Span Measurement.

```
TOI:ZSP:SWE:TIME 0.1
```

[:SENSe]:TOI:ZSPan:SWEep:TIME?

TOI Zero Span Measurement Sweep Time Query

Function

This command queries the sweep time for the Zero Span Measurement in the TOI measurement.

Query

```
[:SENSe]:TOI:ZSPan:SWEep:TIME?
```

Response

```
<time>
```

Parameter

<time>		Sweep time for the Zero Span Measurement in the TOI measurement.
	Range	1 μs to 1000 s
	Suffix code	None. Value is returned in s units.

Example of Use

To query the sweep time for the Zero Span Measurement.

```
TOI:ZSP:SWE:TIME?
> 0.1
```

[:SENSe]:TOI:ZSPan:SWEep:TIME:AUTO ON|OFF|1|0

TOI Zero Span Measurement Sweep Time Auto/Manual

Function

This command turns on and off the automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement.

Command

```
[:SENSe]:TOI:ZSPan:SWEep:TIME:AUTO <switch>
```

Parameter

`<switch>`	Automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement.
`ON|1`	Turns on the automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement. (Default)
`OFF|0`	Turns off the automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement.

Example of Use

To turn on the automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement.

```
TOI:ZSP:SWE:TIME:AUTO ON
```

[:SENSe]:TOI:ZSPan:SWEep:TIME:AUTO?

TOI Zero Span Measurement Sweep Time Auto/Manual Query

Function

This command queries whether the automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement is on or off.

Query

```
[:SENSe]:TOI:ZSPan:SWEep:TIME:AUTO?
```

Response

```
<switch>
```

Parameter

`<switch>`	Automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement.
`ON|1`	Turns on the automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement.
`OFF|0`	Turns off the automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement.

Example of Use

To query whether the automatic setting of the sweep time for the Zero Span Measurement in the TOI measurement is on or off.

```
TOI::ZSP:SWE:TIME:AUTO?
> 1
```

[:SENSe]:TOI:FREQuency:IM3:SEARch ON|OFF|1|0

TOI 3rd Frequency Search On/Off

Function

This command turns on and off the search function for the third-order distortion frequency in the TOI measurement.

Command

```
[:SENSe]:TOI:FREQuency:IM3:SEARch <switch>
```

Parameter

`<switch>`	Setting of the search function for the third-order distortion frequency in the TOI measurement
`ON|1`	Turns on the search function for the third-order distortion frequency.
`OFF|0`	Turns off the search function for the third-order distortion frequency. (Default)

Example of Use

To turn on the search function for the third-order distortion frequency.

```
TOI:FREQ:IM3:SEAR 1
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI:FREQuency:IM3:SEARch
```

:CALCulate:TOI:FREQuency:IM3:SEARch ON|OFF|1|0

TOI 3rd Frequency Search On/Off

Function

This command turns on and off the search function for the third-order distortion frequency in the TOI measurement.
Refer to
`[:SENSe]:TOI:FREQuency:IM3:SEARch.`

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI:FREQuency:IM3:SEARch
```

[:SENSe]:TOI:FREQuency:IM3:SEARch?

TOI 3rd Frequency Search On/Off

Function

This command queries whether the search function for the third-order distortion frequency in the TOI measurement is on or off.

Query

```
[:SENSe]:TOI:FREQuency:IM3:SEARch?
```

Response

```
<switch>
```

Parameter

<switch>	Setting of the search function for the third-order distortion frequency in the TOI measurement
ON|1	Turns on the search function for the third-order distortion frequency.
OFF|0	Turns off the search function for the third-order distortion frequency.

Example of Use

To query whether the search function for the third-order distortion frequency is on or off.

```
TOI:FREQ:IM3:SEAR?
> 1
```

Related Command

This command has the same function as the following command.

```
:CALCulate:TOI:FREQuency:IM3:SEARch?
```

:CALCulate:TOI:FREQuency:IM3:SEARch?

TOI 3rd Frequency Correction On/Off

Function

This command queries whether the search function for the third-order distortion frequency in the TOI measurement is on or off.
Refer to
`[:SENSe]:TOI:FREQuency:IM3:SEARch?.`

Related Command

This command has the same function as the following command.

```
[:SENSe]:TOI:FREQuency:IM3:SEARch?
```

:CONFigure:TOI

TOI Configure

Function

This command turns on the TOI measurement.

Command

```
:CONFigure:TOI
```

Details

No measurement is made.

Example of Use

To turn on the TOI measurement.

```
CONF:TOI
```

:INITiate:TOI

TOI Initiate

Function

This command starts the TOI measurement.

Command

```
:INITiate:TOI
```

Details

When this function is executed, the TOI turns on and the measurement is started.
To read out the measurement results after executing this command, perform the synchronization control using the “*WAI” command.

Example of Use

To start the TOI measurement.

```
INIT:TOI
```

:FETCh:TOI[n]?

TOI Read Fetch

Function

This command outputs the measurement result of the TOI measurement.

Query

```
:FETCh:TOI[n]?
```

Response

```
<tracedata_1>,<tracedata_2>,...
(n=0)
<worst_toi>,<worst_toi_freq>,
<lower_toi>,<lower_3rd_freq>,
<upper_toi>,<upper_3rd_freq>,
(n=1)
<worst_toi_freq>,<worst_3rd_abs>,<worst_toi>,
<lower_tone_freq>,<lower_tone_abs>,
<upper_tone_freq>,<upper_tone_abs>,
<lower_3rd_freq>,<lower_3rd_abs>,<lower_toi>,
<upper_3rd_freq>,<upper_3rd_abs>,<upper_toi>,
<worst_3rd_rel>,<lower_3rd_rel>,<upper_3rd_rel>
(n=2)
```

Parameter

<worst_toi>	Worst value of TOI
<worst_toi_freq>	3rd tone frequency that became the worst value of TOI
<worst_3rd_abs>	Worst value of 3rd tone level
<lower_toi>	TOI of the lower frequency
<lower_3rd_freq>	Lower 3rd tone frequency
<lower_tone_freq>	Lower tone frequency
<lower_tone_abs>	Lower tone absolute level
<lower_3rd_abs>	Lower 3rd tone absolute level
<upper_toi>	TOI of the upper frequency
<upper_3rd_freq>	Upper 3rd tone frequency
<upper_tone_freq>	Upper tone frequency
<upper_tone_abs>	Upper tone absolute level
<upper_3rd_abs>	Upper 3rd tone absolute level
<worst_3rd_rel>	Worst value of 3rd tone relative level
<lower_3rd_abs>	Lower 3rd tone relative level
<upper_3rd_abs>	Upper 3rd tone relative level

TOI and absolute level: No suffix code, in dBm units, 0.01 dB resolution (–999.0 is returned when there is an error or no measurement is performed.)
frequency: No suffix code, in Hz unit, 1 Hz resolution (–999999999999 is returned when there is an error or no measurement is performed.)

Details

This command outputs the result of the last performed TOI measurement. Because this function is not related to sweep, it can be used to output the results of a previously finished measurement in a different format.
To retry the measurement by using the results of another sweep attempt, use the READ command.

Example of Use

To obtain the measurement result of the TOI measurement.

```
FETC:TOI1?
> 10.0,1000000000,10.0,1000000000,5.0,1004000000
```

:READ:TOI[n]?

TOI Read

Function

This command performs the TOI measurement and outputs the measurement result.
This command has the same function as the following commands executed in this order:

```
:INITiate:TOI
:*WAI
:FETCh:TOI[n]?
```

:MEASure:TOI[n]?

TOI Measure

Function

This command performs the TOI measurement and outputs the measurement result.
This command has the same function as the following commands executed in this order:

```
:CONFigure:TOI
:INITiate:TOI
:*WAI
:FETCh:TOI[n]?
```

:FETCh:TOI:IP3?

TOI Read Fetch IP3

Function

This command outputs the measurement result of the TOI measurement.

Query

```
:FETCh:TOI:IP3?
```

Response

```
<worst_toi>
```

Parameter

<worst_toi>	Worst value of TOI No suffix code, in dB units, 0.01 dB resolution (–999.0 is returned when there is an error and no measurement is performed.)

Details

This command outputs the result of the last performed TOI measurement. Because this function is not related to sweep, it can be used to output the results of a previously finished measurement in a different format.
To retry the measurement by using the results of another sweep attempt, use the READ command.

Example of Use

To obtain the measurement result of the TOI measurement.

```
FETC:TOI:IP3?
> 10.0
```

:READ:TOI:IP3?

TOI Read IP3

Function

This command performs the TOI measurement and outputs the measurement result.
This command has the same function as the following commands executed in this order:

```
:INITiate:TOI
:*WAI
:FETCh:TOI:IP3?
```

:MEASure:TOI:IP3?

TOI Measure IP3

Function

This command performs the TOI measurement and outputs the measurement result.
This command has the same function as the following commands executed in this order:

```
:CONFigure:TOI
:INITiate:TOI
:*WAI
:FETCh:TOI:IP3?
```

2.16 Configuring Batch Measurement Settings

Table 2.16-1 lists device messages for setting the Batch Measurement function.

Table 2.16-1 Device Messages for Batch Measurement Settings

Function	Device Message
Reloading Parameter List Files	:MMEMory:RELoad:BATCh [<device>]
Adjacent Channel Power Batch Measure	:MEASure:BATCh:ACP[n]? <filename>[,<device>]
Occupied Bandwidth Batch Measure	:MEASure:BATCh:OBWidth[n]? <filename>[,<device>]
Spectrum Emission Mask Batch Measure	:MEASure:BATCh:SEMask[n]? <filename>[,<device>]
Spurious Emission Batch Measure	:MEASure:BATCh:SPURious[n]? <filename>[,<device>]
Transmit Intermodulation Batch Measure	:MEASure:BATCh:IM? <filename>,<spa_freq>[,<sg_freq>[,<device>]]
Measure Power Adjust	:MEASure:POWadj? <rbw>,<length>,<sg_start_level>,<sg_max_level>,<target>,<range>[,<frequency>[,<tracepoint>[,<count>[,<adjust_log>[,<sg_offset_switch>]]]]]

:MMEMory:RELoad:BATCh [<device>]

Reloading Parameter List Files

Function

This command reflects the changes made to the parameter list files of the specified drive.

Command

```
:MMEMory:RELoad:BATCh [<device>]
```

Parameter

<device>	Drive name A,B,D,E,F,... D drive is used when omitted.

Details

The parameter list files used for batch measurement are read in batch when the main unit is started up and during application loading. Therefore, even if the files are changed following startup (or following loading), the changes are not applied to the measurement.(Measurement is executed with the parameters before changes were made.)
This command has the effect of applying the changes made to the parameter list files. The parameter list files as they exist at the moment this command is sent are used for subsequent batch measurements.

Place the parameter list files in the following folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

This command supports updates of the parameter list files used for the following commands. To update the parameter list file of another application, first execute system change to that application, and then send the update command.

```
:MEASure:BATCh:ACP[n]?
:MEASure:BATCh:OBWidth[n]?
:MEASure:BATCh:SEM[n]?
:MEASure:BATCh:SPURious[n]?
:MEASure:BATCh:IM?
```

:MEASure:BATCh:ACP[n]? <filename>[,<device>]

Adjacent Channel Power Batch Measure

Function

This command executes ACP measurement and outputs the result after the parameters described in the specified parameter list file have been set.

Query

```
:MEASure:BATCh:ACP[n]? <filename>[,<device>]
```

Response

The same value as for :MEASure:ACP[n]? is returned.
Refer to :MEASure:ACP[n]?

Parameter

<filename>	Parameter list file Specify with any character string enclosed by double quotes (" ") or single quotes (' ').
<device>	Drive name A,B,D,E,F,... D drive is used when omitted.

Details

This command executes ACP measurement and outputs the result after the parameters described in the specified parameter list have been set.
The return values of this function vary depending on the result mode.
(cf. :SYSTem:RESut:MODE)

Place the parameter list files in the following folder on the specified drive.
<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch
If the parameter list file has been changed, the changes must be applied with the :MMEMory:RELoad:BATCh command.
(cf. :MMEMory:RELoad:BATCh)

Example of Use

To acquire the measurement result of ACP measurement using the MyParam.xls parameter list file.

```
MEAS:BATC:ACP? "MyParam"
>
0.0,-72.130,0.0,-72.130,-1.270,-73.400,-0.570,-72.700,-0
.780,-72.910,-1.030,-73.160,-999.0,-999.0,-999.0,-999.0
```

Parameter list format

Table 2.16-2 lists the parameter list example.

Table 2.16-2 Parameter List Example (ACP Measurement)

```
<?xml version=”1.0” encoding=”UTF-8"?>
<SignalAnalyzerProject>
  <ProjectDefine>
    <Attribute Name="Type" Value="Application" />
    <Attribute Name="Name" Value="Batch Parameter List" />
    <Attribute Name="FileVersion" Value="1.0.0.0" />
  </ProjectDefine>
  <Params>
    <SystemTemplate>
      <Attribute Name="ListString" Value="ACP1" />
      <Attribute Name="CommandArg" Value="ACP1" />
      <Attribute Name="AcpDefault" Value="ACP1" />
    </SystemTemplate>
    <AcpParams Name="ACP1">
      <ParamDefine>
        <Attribute Name="ListString" Value="ACP1" />
        <Attribute Name="CommandArg" Value="ACP1" />
      </ParamDefine>
      <CommonParams>
        <Attribute Name="Trace Points" Value="1001" />
        <Attribute Name="Span Freq." Value="25000000" />
        <Attribute Name="RBW Value" Value="30kHz" />
        <Attribute Name="Detection" Value="RMS" />
        <Attribute Name="Sweep Time Switch" Value="Auto" />
        <Attribute Name="Auto Sweep Time Select" Value="Normal" />
        <Attribute Name="ACP Reference" Value="Carrier Select" />
        <Attribute Name="ACP Carrier Number" Value="1" />
        <Attribute Name="ACP Carrier BW" Value="4515000" />
        <Attribute Name="ACP Carrier Spacing" Value="5000000" />
        <Attribute Name="ACP In Band Center" Value="0" />
        <Attribute Name="ACP In Band FilterType" Value="Rect" />
        <Attribute Name="ACP In Band Roll-off Factor" Value="22" />
        <Attribute Name="ACP Offset1 Value" Value="5000000" />
        <Attribute Name="ACP Offset2 Value" Value="10000000" />
        <Attribute Name="ACP Offset3 Value" Value="15000000" />
        <Attribute Name="ACP Offset1 Switch" Value="On" />
        <Attribute Name="ACP Offset2 Switch" Value="On" />
        <Attribute Name="ACP Offset3 Switch" Value="Off" />
```

Table 2.16-2 Parameter List Example (ACP Measurement) (Cont'd)

```
        <Attribute Name="ACP Ofset Ch Bw" Value="4515000" />
        <Attribute Name="ACP Offset FilterType" Value="Rect" />
        <Attribute Name="ACP Offset Roll-off Factor" Value="22" />
      </CommonParams>
    </AcpParams>
  </Params>
</SignalAnalyzerProject>
```

Describe the setting parameters in the part enclosed between the CommonParams elements. The description method consists in describing the parameter name to be set in the Name attribute in the Attribute element, and the setting value in Value. The parts in bold characters in Table 2.16-2 are an actual setting example. Describe all other parts the same as in Table 2.16-2.

Since the settings are done in sequence from the top, be careful about the description order when setting parameters that have relationships of dependence. Also, if a value that is either out of the setting range or that cannot be set has been input, that setting is ignored.

Table 2.16-3 Parameter List Settings (ACP Measurement)

Parameter	Attribute Name Setting	Attribute Value Setting
Center Frequency	"Center Freq."	Value is described in Hz units.
Spurious Mode	"Frequency Band Spurious Mode"	"Normal": Normal "Spurious": Spurious
Span Frequency	"Span Freq."	Value is described in Hz units.
Reference Level	"Reference Level"	Value is described in dBm units.
Reference Level Offset	"Reference Level Offset"	"On": On "Off": Off
Reference Level Offset Value	"Reference Level Offset Value"	Value is described in 0.01 dB units.
RBW Auto/Manual	"RBW Switch"	"Auto": Auto "Manual": Manual
VBW Auto/Manual	"VBW Switch"	"Auto": Auto "Manual": Manual
Sweep Time Auto/Manual	"Sweep Time Switch"	"Auto": Auto "Manual": Manual
Attenuator Auto/Manual	"ATTN Switch"	"Auto": Auto "Manual": Manual
RBW	"RBW Value"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz

Table 2.16-3 Parameter List Settings (ACP Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
VBW	"VBW Value"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
Sweep Time	"Sweep Time Freq. Domain"	Value is described in ms units.
Attenuator	"ATTN Value"	Value is described in dB units.
Storage Mode	"Storage Mode A"	"Lin Average": Lin Average "Average": Average "Max Hold": Max Hold "Min Hold": Min Hold "Off": Off
Storage Count	"Storage Count"	Describes the storage count.
Trace Points	"Trace Points"	Describes the number of trace points.
Detection	"Detection"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS

Table 2.16-3 Parameter List Settings (ACP Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Trigger Switch	"Trigger Switch"	"Off": Off "On": On
Trigger Source	"Trigger Source"	"Video": Video "External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Trigger Slope	"Trigger Slope"	"Rise": Rise "Fall": Fall
Trigger Level (Video)	"Trigger Level(Video)Log"	Value is described in dBm units.
Trigger Level (Wide IF Video)	"Trigger Level(Wide)"	Value is described in dBm units.
Gate Sweep	"Gate Sweep"	"Off": Off "On": On
Gate Source	"Gate Source"	"External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Gate Delay	"Gate Delay"	Value is described in ns units.
Gate Length	"Gate Length"	Value is described in ns units.
Gate Level (Wide IF Video)	"Gate Level(Wide)"	Value is described in dBm units.
Gate Slope	"Gate Slope"	"Rise": Rise "Fall": Fall
Pre-amp	"Pre-amp"	"Off": Off "On": On
VBW Mode	"VBW Mode"	"Power": Power "Video": Video
ACP Reference	"ACP Reference"	"Both Sides of
Carriers": Both Sides of Carriers "Span Total": Span Total "Carrier Total": Carrier Total "Carrier Select": Carrier Select

Table 2.16-3 Parameter List Settings (ACP Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
ACP Carrier Select Number	"ACP Carrier Select Number"	Describes reference carrier number.
ACP In Band Center	"ACP In Band Center"	Value is described in Hz units.
ACP Carrier Spacing	"ACP Carrier Spacing"	Value is described in Hz units.
ACP Carrier BW	"ACP Carrier BW"	Value is described in Hz units.
ACP In Band FilterType	"ACP In Band FilterType"	"Rect": Rect "Nyquist": Nyquist "Root Nyquist": Root Nyquist
ACP In Band Roll-off Factor	"ACP In Band Roll-off Factor"	Value is described in 0.01 units.
ACP Ofset Ch Bw	"ACP Ofset Ch Bw"	Value is described in Hz units.
ACP Offset1 Switch	"ACP Offset1 Switch"	"Off": Off "On": On
ACP Offset2 Switch	"ACP Offset2 Switch"	"Off": Off "On": On
ACP Offset3 Switch	"ACP Offset3 Switch"	"Off": Off "On": On
ACP Offset1 Value	"ACP Offset1 Value"	Value is described in Hz units.
ACP Offset2 Value	"ACP Offset2 Value"	Value is described in Hz units.
ACP Offset3 Value	"ACP Offset3 Value"	Value is described in Hz units.
ACP Offset FilterType	"ACP Offset FilterType"	"Rect": Rect "Nyquist": Nyquist "Root Nyquist": Root Nyquist
ACP Offset Roll-off Factor	"ACP Offset Roll-off Factor"	Value is described in 0.01 units.
ACP Power Result Type	"ACP Power Result Type"	"Ofs.": Offset "Carrier": Carrier
Auto Sweep Time Select	"Auto Sweep Time Select"	"Normal": Normal "Fast": Fast

:MEASure:BATCh:OBWidth[n]? <filename>[,<device>]

Occupied Bandwidth Batch Measure

Function

This command executes OBW measurement and outputs the measurement result after the parameters described in the specified parameter list file have been set.

Query

```
:MEASure:BATCh:OBWidth[n]? <filename>[,<device>]
```

Response

The same value as for `:MEASure:OBWidth[n]?` is returned.
Refer to `:MEASure:OBWidth[n]?` for details.

Parameter

`<filename>`	Parameter list file Specify with any character string enclosed by double quotes (" ") or single quotes (' ').
`<device>`	Drive name `A,B,D,E,F,...` D drive is used when omitted.

Details

OBW measurement is executed and the result is output after the parameters described in the specified parameter list have been set.
The return values of this function vary depending on the result mode.
(cf. `:SYSTem:RESult:MODE`)

Place the parameter list files in the following folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be applied with the `:MMEMory:RELoad:BATCh` command.
(cf. `:MMEMory:RELoad:BATCh`)

Example of Use

To acquire the measurement result of OBW measurement using the MyParam.xls parameter list file.
(A mode, n = 1)

```
READ:BATC:OBW? "MyParam"
> 30000,1000000000,900050000,1000050000
```

Parameter list format

Table 2.16-4 lists the parameter list example.

Table 2.16-4 Parameter List Example (OBW Measurement)

```
<?xml version="1.0" encoding="UTF-8"?>
<SignalAnalyzerProject>
  <ProjectDefine>
    <Attribute Name="Type" Value="Application" />
    <Attribute Name="Name" Value="Batch Parameter List" />
    <Attribute Name="FileVersion" Value="1.0.0.0" />
  </ProjectDefine>
  <Params>
    <SystemTemplate>
      <Attribute Name="ListString" Value="OBW1" />
      <Attribute Name="CommandArg" Value="OBW1" />
      <Attribute Name="AcpDefault" Value="OBW1" />
    </SystemTemplate>
    <ObwParams Name="OBW1">
      <ParamDefine>
        <Attribute Name="ListString" Value="OBW1" />
        <Attribute Name="CommandArg" Value="OBW1" />
      </ParamDefine>
      <CommonParams>
        <Attribute Name="Trace Points" Value="1001" />
        <Attribute Name="Span Freq." Value="10000000" />
        <Attribute Name="RBW Value" Value="30kHz" />
        <Attribute Name="Detection" Value="RMS" />
        <Attribute Name="Sweep Time Switch" Value="Auto" />
        <Attribute Name="Auto Sweep Time Select" Value="Normal" />
        <Attribute Name="OBW Method" Value="N%" />
        <Attribute Name="OBW N Ratio" Value="9900" />
      </CommonParams>
    </ObwParams>
  </Params>
</SignalAnalyzerProject>
```

The description method consists in describing the parameter name to be set in the Name attribute in the Attribute element, and the setting value in Value. The parts in bold characters in Table 2.16-4 are an actual setting example. Describe all other parts the same as in Table 2.16-4.

Since the settings are done in sequence from the top, be careful about the description order when setting parameters that have relationships of dependence. Also, if a value that is either out of the setting range or that cannot be set has been input, that setting is ignored.

Table 2.16-5 Parameter List Settings (OBW Measurement)

Parameter	Attribute Name Setting	Attribute Value Setting
Center Frequency	"Center Freq."	Value is described in Hz units.
Spurious Mode	"Frequency Band Spurious Mode"	"Normal": Normal "Spurious": Spurious
Span Frequency	"Span Freq."	Value is described in Hz units.
Reference Level	"Reference Level"	Value is described in dBm units.
Reference Level Offset	"Reference Level Offset"	"On": On "Off": Off
Reference Level Offset Value	"Reference Level Offset Value"	Value is described in 0.01 dB units.
RBW Auto/Manual	"RBW Switch"	"Auto": Auto "Manual": Manual
VBW Auto/Manual	"VBW Switch"	"Auto": Auto "Manual": Manual
Sweep Time Auto/Manual	"Sweep Time Switch"	"Auto": Auto "Manual": Manual
Attenuator Auto/Manual	"ATTN Switch"	"Auto": Auto "Manual": Manual
RBW	"RBW Value"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz

Table 2.16-5 Parameter List Settings (OBW Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
VBW	"VBW Value"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
Sweep Time	"Sweep Time Freq. Domain"	Value is described in ms units.
Attenuator	"ATTN Value"	Value is described in dB units.
Storage Mode	"Storage Mode A"	"Lin Average": Lin Average "Average": Average "Max Hold": Max Hold "Min Hold": Min Hold "Off": Off
Storage Count	"Storage Count"	Describes the storage count.
Trace Points	"Trace Points"	Describes the number of trace points.
Detection	"Detection"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS

Table 2.16-5 Parameter List Settings (OBW Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Trigger Switch	"Trigger Switch"	"Off": Off "On": On
Trigger Source	"Trigger Source"	"Video": Video "External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Trigger Slope	"Trigger Slope"	"Rise": Rise "Fall": Fall
Trigger Level (Video)	"Trigger Level(Video)Log"	Value is described in dBm units.
Trigger Level (Wide IF Video)	"Trigger Level(Wide)"	Value is described in dBm units.
Gate Sweep	"Gate Sweep"	"Off": Off "On": On
Gate Source	"Gate Source"	"External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Gate Delay	"Gate Delay"	Value is described in ns units.
Gate Length	"Gate Length"	Value is described in ns units.
Gate Level (Wide IF Video)	"Gate Level(Wide)"	Value is described in dBm units.
Gate Slope	"Gate Slope"	"Rise": Rise "Fall": Fall
Pre-amp	"Pre-amp"	"Off": Off "On": On
VBW Mode	"VBW Mode"	"Power": Power "Video": Video
OBW Method	"OBW Method"	"N%": N% "XdB": XdB
OBW N% Ratio	"OBW N Ratio"	Value is described in 0.01 % units.
OBW XdB Value	"OBW XdB Value"	Value is described in 0.01 dB units.
Auto Sweep Time Select	"Auto Sweep Time Select"	"Normal": Normal "Fast": Fast

:MEASure:BATCh:SEMask[n]? <filename>[,<device>]

Spectrum Emission Mask Batch Measure

Function

This command executes Spectrum Emission Mask measurement and outputs the measurement result after the parameters described in the specified parameter list file have been set.

Query

```
:MEASure:BATCh:SEMask[n]? <filename>[,<device>]
```

Response

The same value as for `:MEASure:SEMask[n]?` is returned.
Refer to `:MEASure:SEMask[n]?` for details.

Parameter

`<filename>`	Parameter list file Specify with any character string enclosed by double quotes (" ") or single quotes (' ').
`<device>`	Drive name `A,B,D,E,F,...` D drive is used when omitted.

Details

Spectrum Emission Mask measurement is executed and the result is output after the parameters described in the specified parameter list have been set.

The return values of this function vary depending on the result mode.
(cf. `:SYSTem:RESult:MODE`)

Place the parameter list files in the following folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be reflected with the `:MMEMory:RELoad:BATCh` command.
(cf. `:MMEMory:RELoad:BATCh`)

Example of Use

To acquire the peak value of absolute power of SEM measurement using the MyParam.xls parameter list file (n = 10).

```
MEAS:BATC:SEM10? "MyParam"
>
999.0,-999.0,-100.000,-100.000,-60.000,-60.000,45.000,-4
5.000,-30.000,-30.000,-10.000,-10.000,0.000,0.000
```

Parameter list format

Table 2.16-6 lists the parameter list example.

Table 2.16-6 Parameter List Example (SEM Measurement)

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- System Template XML Parameter -->
<SignalAnalyzerProject>
  <ProjectDefine>
    <Attribute Name="Type" Value="Application" />
    <Attribute Name="Name" Value="Batch Parameter List" />
    <Attribute Name="FileVersion" Value="1.0.0.0" />
  </ProjectDefine>
  <Params>
    <SystemTemplate>
      <Attribute Name="ListString" Value="SEM1" />
      <Attribute Name="CommandArg" Value="SEM1" />
      <Attribute Name="AcpDefault" Value="SEM1" />
    </SystemTemplate>
    <SemParams Name="SEM1">
      <ParamDefine>
        <Attribute Name="ListString" Value="SEM1" />
        <Attribute Name="CommandArg" Value="SEM1" />
      </ParamDefine>
      <CommonParams>
        <Attribute Name="Center Freq." Value="2132500000" />
        <Attribute Name="SEM Limit Side" Value="Both" />
        <Attribute Name="SEM Reference Mode" Value="Channel" />
        <Attribute Name="SEM Reference Ch BW" Value="5000000" />
        <Attribute Name="SEM RBW Value" Value="30kHz" />
        <Attribute Name="SEM Reference SweepTime Switch" Value="Auto" />
        <Attribute Name="SEM Reference Auto Sweep Time Select" Value="Normal" />
        <Attribute Name="SEM Reference Detection" Value="RMS" />
        <Attribute Name="SEM Reference TracePoint" Value="1001" />
        <Attribute Name="SEM Reference FilterType" Value="Rect" />
        <Attribute Name="SEM Offset1 Switch" Value="On" />
        <Attribute Name="SEM Offset1 Start Freq" Value="2550000" />
        <Attribute Name="SEM Offset1 Stop Freq" Value="7550000" />
        <Attribute Name="SEM Offset1 Reference Level Switch" Value="Auto" />
        <Attribute Name="SEM Offset1 RBW Value" Value="100kHz" />
        <Attribute Name="SEM Offset1 SweepTime Switch" Value="Auto" />
        <Attribute Name="SEM Offset1 Auto Sweep Time Select" Value="Normal" />
        <Attribute Name="SEM Offset1 Detection" Value="RMS" />
        <Attribute Name="SEM Offset1 TracePoint" Value="1001" />
        <Attribute Name="SEM Offset1 Integrate BW Switch" Value="Auto" />
```

Table 2.16-6 Parameter List Example (SEM Measurement) (Cont'd)

```
            <Attribute Name="SEM Offset1 ABS1 Start Level" Value="-550" />
            <Attribute Name="SEM Offset1 ABS1 Stop Level" Value="-1250" />
            <Attribute Name="SEM Offset1 Fail Logic" Value="ABS1" />
            <Attribute Name="SEM Offset2 Switch" Value="On" />
            <Attribute Name="SEM Offset2 Start Freq" Value="7550000" />
            <Attribute Name="SEM Offset2 Stop Freq" Value="12550000" />
            <Attribute Name="SEM Offset2 Reference Level Switch" Value="Auto" />
            <Attribute Name="SEM Offset2 RBW Value" Value="100kHz" />
            <Attribute Name="SEM Offset2 SweepTime Switch" Value="Auto" />
            <Attribute Name="SEM Offset2 Auto Sweep Time Select" Value="Normal" />
            <Attribute Name="SEM Offset2 Detection" Value="RMS" />
            <Attribute Name="SEM Offset2 TracePoint" Value="1001" />
            <Attribute Name="SEM Offset2 Integrate BW Switch" Value="Auto" />
            <Attribute Name="SEM Offset2 ABS1 Start Level" Value="-1250" />
            <Attribute Name="SEM Offset2 ABS1 Stop Level" Value="-1250" />
            <Attribute Name="SEM Offset2 Fail Logic" Value="ABS1" />
            <Attribute Name="SEM Offset3 Switch" Value="On" />
            <Attribute Name="SEM Offset3 Start Freq" Value="12550000" />
            <Attribute Name="SEM Offset3 Stop Freq" Value="47500000" />
            <Attribute Name="SEM Offset3 Reference Level Switch" Value="Auto" />
            <Attribute Name="SEM Offset3 RBW Value" Value="100kHz" />
            <Attribute Name="SEM Offset3 SweepTime Switch" Value="Auto" />
            <Attribute Name="SEM Offset3 Auto Sweep Time Select" Value="Normal" />
            <Attribute Name="SEM Offset3 Detection" Value="RMS" />
            <Attribute Name="SEM Offset3 TracePoint" Value="1001" />
            <Attribute Name="SEM Offset3 Integrate BW Switch" Value="Auto" />
            <Attribute Name="SEM Offset3 ABS1 Start Level" Value="-1300" />
            <Attribute Name="SEM Offset3 ABS1 Stop Level" Value="-1300" />
            <Attribute Name="SEM Offset3 Fail Logic" Value="ABS1" />
            <Attribute Name="SEM Offset4 Switch" Value="Off" />
            <Attribute Name="SEM Offset4 Fail Logic" Value="Off" />
            <Attribute Name="SEM Offset5 Switch" Value="Off" />
            <Attribute Name="SEM Offset5 Fail Logic" Value="Off" />
            <Attribute Name="SEM Offset6 Switch" Value="Off" />
            <Attribute Name="SEM Offset6 Fail Logic" Value="Off" />
        </CommonParams>
    </SemParams>
  </Params>
</SignalAnalyzerProject>
```

Describe the setting parameters in the part enclosed between the CommonParams elements. The description method consists in describing the parameter name to be set in the Name attribute in the Attribute element, and the setting value in Value. The parts in bold characters in Table 2.16-6 are an actual setting example. Describe all other parts the same as in Table 2.16-6.

Since the settings are done in sequence from the top, be careful about the description order when setting parameters that have relationships of dependence. Also, if a value that is either out of the setting range or that cannot be set has been input, that setting is ignored.

Table 2.16-7 Parameter List Settings (SEM Measurement)

Parameter	Attribute Name Setting	Attribute Value Setting
Center Frequency	"Center Freq."	Value is described in Hz units.
Spurious Mode	"Frequency Band Spurious Mode"	"Normal": Normal "Spurious": Spurious
Reference Level	"Reference Level"	Value is described in dBm units.
Reference Level Offset	"Reference Level Offset"	"On": On "Off": Off
Reference Level Offset Value	"Reference Level Offset Value"	Value is described in 0.01 dB units.
Storage Mode	"Storage Mode A"	"Lin Average": Lin Average "Average": Average "Max Hold": Max Hold "Min Hold": Min Hold "Off": Off
Storage Count	"Storage Count"	Describes the storage count.

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Trigger Switch	"Trigger Switch"	"Off": Off "On": On
Trigger Source	"Trigger Source"	"Video": Video "External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Trigger Slope	"Trigger Slope"	"Rise": Rise "Fall": Fall
Trigger Level (Video)	"Trigger Level(Video)Log"	Value is described in dBm units.
Trigger Level (Wide IF Video)	"Trigger Level(Wide)"	Value is described in dBm units.
Gate Sweep	"Gate Sweep"	"Off": Off "On": On
Gate Source	"Gate Source"	"External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Gate Delay	"Gate Delay"	Value is described in ns units.
Gate Length	"Gate Length"	Value is described in ns units.
Gate Level (Wide IF Video)	"Gate Level(Wide)"	Value is described in dBm units.
Gate Slope	"Gate Slope"	"Rise": Rise "Fall": Fall
Pre-amp	"Pre-amp"	"Off": Off "On": On

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Reference Mode	"SEM Reference Mode"	"Channel": Channel "Peak": Peak "Fix": Fix
SEM Reference Power	"SEM Reference Power"	Value is described in 0.01 dBm units.
SEM Reference Ch BW	"SEM Reference Ch BW"	Value is described in Hz units.
SEM Reference FilterType	"SEM Reference FilterType"	"Rect": Rect "Nyquist": Nyquist "Root Nyquist": Root Nyquist
SEM Reference Attenuator Auto/Manual	"SEM Reference Attenuator Switch"	"Auto": Auto "Manual": Manual
SEM Reference Attenuator	"SEM Reference Attenuator Value"	Value is described in dB units.
SEM Reference RBW Auto/Manual	"SEM RBW Switch"	"Auto": Auto "Manual": Manual
SEM Reference RBW	"SEM RBW Value"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz
SEM Reference VBW Auto/Manual	"SEM VBW Switch"	"Auto": Auto "Manual": Manual

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Reference VBW	"SEM VBW Value"	"1 Hz": 1 Hz "3 Hz": 3 Hz "10 Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
SEM Reference VBW Mode	"SEM VBW Mode"	"Power": Power "Video": Video
SEM Reference SweepTime Auto/Manual	"SEM Reference SweepTime Switch"	"Auto": Auto "Manual": Manual
SEM Reference SweepTime	"SEM Reference SweepTime Value"	Value is described in ms units.
SEM Reference Auto Sweep Time Select	"SEM Reference Auto Sweep Time Select"	"Normal": Normal "Fast": Fast
SEM Reference Detection	"SEM Reference Detection"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS
SEM Reference TracePoint	"SEM Reference TracePoint"	Describes the number of trace points.
SEM Couple Ref & Att	"SEM Couple Ref & Att"	"Off": Off "On": On

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 Switch	"SEM Offset1 Switch"	"Off": Off "On": On
SEM Offset2 Switch	"SEM Offset2 Switch"	Same as above
SEM Offset3 Switch	"SEM Offset3 Switch"	Same as above
SEM Offset4 Switch	"SEM Offset4 Switch"	Same as above
SEM Offset5 Switch	"SEM Offset5 Switch"	Same as above
SEM Offset6 Switch	"SEM Offset6 Switch"	Same as above
SEM Offset1 Start Freq	"SEM Offset1 Start Freq"	Value is described in Hz units.
SEM Offset2 Start Freq	"SEM Offset2 Start Freq"	Same as above
SEM Offset3 Start Freq	"SEM Offset3 Start Freq"	Same as above
SEM Offset4 Start Freq	"SEM Offset4 Start Freq"	Same as above
SEM Offset5 Start Freq	"SEM Offset5 Start Freq"	Same as above
SEM Offset6 Start Freq	"SEM Offset6 Start Freq"	Same as above
SEM Offset1 Stop Freq	"SEM Offset1 Stop Freq"	Value is described in Hz units.
SEM Offset2 Stop Freq	"SEM Offset2 Stop Freq"	Same as above
SEM Offset3 Stop Freq	"SEM Offset3 Stop Freq"	Same as above
SEM Offset4 Stop Freq	"SEM Offset4 Stop Freq"	Same as above
SEM Offset5 Stop Freq	"SEM Offset5 Stop Freq"	Same as above
SEM Offset6 Stop Freq	"SEM Offset6 Stop Freq"	Same as above
SEM Offset1 Reference Level Auto/Manual	"SEM Offset1 Reference Level Switch"	"Auto": Auto "Manual": Manual
SEM Offset2 Reference Level Auto/Manual	"SEM Offset2 Reference Level Switch"	Same as above
SEM Offset3 Reference Level Auto/Manual	"SEM Offset3 Reference Level Switch"	Same as above
SEM Offset4 Reference Level Auto/Manual	"SEM Offset4 Reference Level Switch"	Same as above
SEM Offset5 Reference Level Auto/Manual	"SEM Offset5 Reference Level Switch"	Same as above
SEM Offset6 Reference Level Auto/Manual	"SEM Offset6 Reference Level Switch"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 Reference Level	"SEM Offset1 Reference Level"	Value is described in 0.01 dBm units.
SEM Offset2 Reference Level	"SEM Offset2 Reference Level"	Same as above
SEM Offset3 Reference Level	"SEM Offset3 Reference Level"	Same as above
SEM Offset4 Reference Level	"SEM Offset4 Reference Level"	Same as above
SEM Offset5 Reference Level	"SEM Offset5 Reference Level"	Same as above
SEM Offset6 Reference Level	"SEM Offset6 Reference Level"	Same as above
SEM Offset1 Attenuator Auto/Manual	"SEM Offset1 Attenuator Switch"	"Auto": Auto "Manual": Manual
SEM Offset2 Attenuator Auto/Manual	"SEM Offset2 Attenuator Switch"	Same as above
SEM Offset3 Attenuator Auto/Manual	"SEM Offset3 Attenuator Switch"	Same as above
SEM Offset4 Attenuator Auto/Manual	"SEM Offset4 Attenuator Switch"	Same as above
SEM Offset5 Attenuator Auto/Manual	"SEM Offset5 Attenuator Switch"	Same as above
SEM Offset6 Attenuator Auto/Manual	"SEM Offset6 Attenuator Switch"	Same as above
SEM Offset1 Attenuator	"SEM Offset1 Attenuator Value"	Value is described in dB units.
SEM Offset2 Attenuator	"SEM Offset2 Attenuator Value"	Same as above
SEM Offset3 Attenuator	"SEM Offset3 Attenuator Value"	Same as above
SEM Offset4 Attenuator	"SEM Offset4 Attenuator Value"	Same as above
SEM Offset5 Attenuator	"SEM Offset5 Attenuator Value"	Same as above
SEM Offset6 Attenuator	"SEM Offset6 Attenuator Value"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 RBW Auto/Manual	"SEM Offset1 RBW Switch"	"Auto": Auto "Manual": Manual
SEM Offset2 RBW Auto/Manual	"SEM Offset2 RBW Switch"	Same as above
SEM Offset3 RBW Auto/Manual	"SEM Offset3 RBW Switch"	Same as above
SEM Offset4 RBW Auto/Manual	"SEM Offset4 RBW Switch"	Same as above
SEM Offset5 RBW Auto/Manual	"SEM Offset5 RBW Switch"	Same as above
SEM Offset6 RBW Auto/Manual	"SEM Offset6 RBW Switch"	Same as above
SEM Offset1 RBW	"SEM Offset1 RBW Value"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz
SEM Offset2 RBW	"SEM Offset2 RBW Value"	Same as above
SEM Offset3 RBW	"SEM Offset3 RBW Value"	Same as above
SEM Offset4 RBW	"SEM Offset4 RBW Value"	Same as above
SEM Offset5 RBW	"SEM Offset5 RBW Value"	Same as above
SEM Offset6 RBW	"SEM Offset6 RBW Value"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 Integrate BW Auto/Manual	"SEM Offset1 Integrate BW Switch"	"Auto": Auto "Manual": Manual
SEM Offset2 Integrate BW Auto/Manual	"SEM Offset2 Integrate BW Switch"	Same as above
SEM Offset3 Integrate BW Auto/Manual	"SEM Offset3 Integrate BW Switch"	Same as above
SEM Offset4 Integrate BW Auto/Manual	"SEM Offset4 Integrate BW Switch"	Same as above
SEM Offset5 Integrate BW Auto/Manual	"SEM Offset5 Integrate BW Switch"	Same as above
SEM Offset6 Integrate BW Auto/Manual	"SEM Offset6 Integrate BW Switch"	Same as above
SEM Offset1 Integrate BW	"SEM Offset1 Integrate BW Value"	Value is described in Hz units.
SEM Offset2 Integrate BW	"SEM Offset2 Integrate BW Value"	Same as above
SEM Offset3 Integrate BW	"SEM Offset3 Integrate BW Value"	Same as above
SEM Offset4 Integrate BW	"SEM Offset4 Integrate BW Value"	Same as above
SEM Offset5 Integrate BW	"SEM Offset5 Integrate BW Value"	Same as above
SEM Offset6 Integrate BW	"SEM Offset6 Integrate BW Value"	Same as above
SEM Offset1 VBW Auto/Manual	"SEM Offset1 VBW Switch"	"Auto": Auto "Manual": Manual
SEM Offset2 VBW Auto/Manual	"SEM Offset2 VBW Switch"	Same as above
SEM Offset3 VBW Auto/Manual	"SEM Offset3 VBW Switch"	Same as above
SEM Offset4 VBW Auto/Manual	"SEM Offset4 VBW Switch"	Same as above
SEM Offset5 VBW Auto/Manual	"SEM Offset5 VBW Switch"	Same as above
SEM Offset6 VBW Auto/Manual	"SEM Offset6 VBW Switch"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 VBW	"SEM Offset1 VBW Value"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
SEM Offset2 VBW	"SEM Offset2 VBW Value"	Same as above
SEM Offset3 VBW	"SEM Offset3 VBW Value"	Same as above
SEM Offset4 VBW	"SEM Offset4 VBW Value"	Same as above
SEM Offset5 VBW	"SEM Offset5 VBW Value"	Same as above
SEM Offset6 VBW	"SEM Offset6 VBW Value"	Same as above
SEM Offset1 VBW Mode	"SEM Offset1 VBW Mode"	"Power": Power "Video": Video
SEM Offset2 VBW Mode	"SEM Offset2 VBW Mode"	Same as above
SEM Offset3 VBW Mode	"SEM Offset3 VBW Mode"	Same as above
SEM Offset4 VBW Mode	"SEM Offset4 VBW Mode"	Same as above
SEM Offset5 VBW Mode	"SEM Offset5 VBW Mode"	Same as above
SEM Offset6 VBW Mode	"SEM Offset6 VBW Mode"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 SweepTime Auto/Manual	"SEM Offset1 SweepTime Switch"	"Auto": Auto "Manual": Manual
SEM Offset2 SweepTime Auto/Manual	"SEM Offset2 SweepTime Switch"	Same as above
SEM Offset3 SweepTime Auto/Manual	"SEM Offset3 SweepTime Switch"	Same as above
SEM Offset4 SweepTime Auto/Manual	"SEM Offset4 SweepTime Switch"	Same as above
SEM Offset5 SweepTime Auto/Manual	"SEM Offset5 SweepTime Switch"	Same as above
SEM Offset6 SweepTime Auto/Manual	"SEM Offset6 SweepTime Switch"	Same as above
SEM Offset1 SweepTime	"SEM Offset1 SweepTime Value"	Value is described in ms units.
SEM Offset2 SweepTime	"SEM Offset2 SweepTime Value"	Same as above
SEM Offset3 SweepTime	"SEM Offset3 SweepTime Value"	Same as above
SEM Offset4 SweepTime	"SEM Offset4 SweepTime Value"	Same as above
SEM Offset5 SweepTime	"SEM Offset5 SweepTime Value"	Same as above
SEM Offset6 SweepTime	"SEM Offset6 SweepTime Value"	Same as above
SEM Offset1 Auto Sweep Time Select	"SEM Offset1 Auto Sweep Time Select"	"Normal": Normal "Fast": Fast
SEM Offset2 Auto Sweep Time Select	"SEM Offset2 Auto Sweep Time Select"	Same as above
SEM Offset3 Auto Sweep Time Select	"SEM Offset3 Auto Sweep Time Select"	Same as above
SEM Offset4 Auto Sweep Time Select	"SEM Offset4 Auto Sweep Time Select"	Same as above
SEM Offset5 Auto Sweep Time Select	"SEM Offset5 Auto Sweep Time Select"	Same as above
SEM Offset6 Auto Sweep Time Select	"SEM Offset6 Auto Sweep Time Select"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 Detection	"SEM Offset1 Detection"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS
SEM Offset2 Detection	"SEM Offset2 Detection"	Same as above
SEM Offset3 Detection	"SEM Offset3 Detection"	Same as above
SEM Offset4 Detection	"SEM Offset4 Detection"	Same as above
SEM Offset5 Detection	"SEM Offset5 Detection"	Same as above
SEM Offset6 Detection	"SEM Offset6 Detection"	Same as above
SEM Offset1 TracePoint	"SEM Offset1 TracePoint"	Describes the number of trace points.
SEM Offset2 TracePoint	"SEM Offset2 TracePoint"	Same as above
SEM Offset3 TracePoint	"SEM Offset3 TracePoint"	Same as above
SEM Offset4 TracePoint	"SEM Offset4 TracePoint"	Same as above
SEM Offset5 TracePoint	"SEM Offset5 TracePoint"	Same as above
SEM Offset6 TracePoint	"SEM Offset6 TracePoint"	Same as above
SEM Offset1 ABS1 Start Level	"SEM Offset1 ABS1 Start Level"	Value is described in 0.01 dBm units.
SEM Offset2 ABS1 Start Level	"SEM Offset2 ABS1 Start Level"	Same as above
SEM Offset3 ABS1 Start Level	"SEM Offset3 ABS1 Start Level"	Same as above
SEM Offset4 ABS1 Start Level	"SEM Offset4 ABS1 Start Level"	Same as above
SEM Offset5 ABS1 Start Level	"SEM Offset5 ABS1 Start Level"	Same as above
SEM Offset6 ABS1 Start Level	"SEM Offset6 ABS1 Start Level"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 ABS1 Stop Level	"SEM Offset1 ABS1 Stop Level"	Value is described in 0.01 dBm units.
SEM Offset2 ABS1 Stop Level	"SEM Offset2 ABS1 Stop Level"	Same as above
SEM Offset3 ABS1 Stop Level	"SEM Offset3 ABS1 Stop Level"	Same as above
SEM Offset4 ABS1 Stop Level	"SEM Offset4 ABS1 Stop Level"	Same as above
SEM Offset5 ABS1 Stop Level	"SEM Offset5 ABS1 Stop Level"	Same as above
SEM Offset6 ABS1 Stop Level	"SEM Offset6 ABS1 Stop Level"	Same as above
SEM Offset1 ABS2 Start Level	"SEM Offset1 ABS2 Start Level"	Value is described in 0.01 dBm units.
SEM Offset2 ABS2 Start Level	"SEM Offset2 ABS2 Start Level"	Same as above
SEM Offset3 ABS2 Start Level	"SEM Offset3 ABS2 Start Level"	Same as above
SEM Offset4 ABS2 Start Level	"SEM Offset4 ABS2 Start Level"	Same as above
SEM Offset5 ABS2 Start Level	"SEM Offset5 ABS2 Start Level"	Same as above
SEM Offset6 ABS2 Start Level	"SEM Offset6 ABS2 Start Level"	Same as above
SEM Offset1 ABS2 Stop Level	"SEM Offset1 ABS2 Stop Level"	Value is described in 0.01 dBm units.
SEM Offset2 ABS2 Stop Level	"SEM Offset2 ABS2 Stop Level"	Same as above
SEM Offset3 ABS2 Stop Level	"SEM Offset3 ABS2 Stop Level"	Same as above
SEM Offset4 ABS2 Stop Level	"SEM Offset4 ABS2 Stop Level"	Same as above
SEM Offset5 ABS2 Stop Level	"SEM Offset5 ABS2 Stop Level"	Same as above
SEM Offset6 ABS2 Stop Level	"SEM Offset6 ABS2 Stop Level"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 REL Start Level	"SEM Offset1 REL Start Level"	Value is described in 0.01 dBm units.
SEM Offset2 REL Start Level	"SEM Offset2 REL Start Level"	Same as above
SEM Offset3 REL Start Level	"SEM Offset3 REL Start Level"	Same as above
SEM Offset4 REL Start Level	"SEM Offset4 REL Start Level"	Same as above
SEM Offset5 REL Start Level	"SEM Offset5 REL Start Level"	Same as above
SEM Offset6 REL Start Level	"SEM Offset6 REL Start Level"	Same as above
SEM Offset1 REL Stop Level	"SEM Offset1 REL Stop Level"	Value is described in 0.01 dBm units.
SEM Offset2 REL Stop Level	"SEM Offset2 REL Stop Level"	Same as above
SEM Offset3 REL Stop Level	"SEM Offset3 REL Stop Level"	Same as above
SEM Offset4 REL Stop Level	"SEM Offset4 REL Stop Level"	Same as above
SEM Offset5 REL Stop Level	"SEM Offset5 REL Stop Level"	Same as above
SEM Offset6 REL Stop Level	"SEM Offset6 REL Stop Level"	Same as above

Table 2.16-7 Parameter List Settings (SEM Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
SEM Offset1 Fail Logic	"SEM Offset1 Fail Logic"	"ABS1": ABS1 "REL": REL "ABS1 and REL": ABS1 and REL "ABS1 or REL": ABS1 or REL "ABS1 and ABS2": ABS1 and ABS2 "(ABS1 and REL)
and ABS2": (ABS1 and REL) and ABS2 "(ABS1 or REL)
and ABS2": (ABS1 or REL) and ABS2 "Off": Off
SEM Offset2 Fail Logic	"SEM Offset2 Fail Logic"	Same as above
SEM Offset3 Fail Logic	"SEM Offset3 Fail Logic"	Same as above
SEM Offset4 Fail Logic	"SEM Offset4 Fail Logic"	Same as above
SEM Offset5 Fail Logic	"SEM Offset5 Fail Logic"	Same as above
SEM Offset6 Fail Logic	"SEM Offset6 Fail Logic"	Same as above
SEM Limit Side	"SEM Limit Side"	"Both": Both "Upper": Upper "Lower": Lower
SEM Result Type	"SEM Result Type"	"Peak": Peak "Margin": Margin

:MEASure:BATCh:SPURious[n]? <filename>[,<device>]

Spurious Emission Batch Measure

Function

This command executes Spurious Emission measurement and outputs the measurement result after the parameters described in the specified parameter list file have been set.

Query

```
:MEASure:BATCh:SPURious[n]? <filename>[,<device>]
```

Response

The same value as for :MEASure:SPURious[n]? is returned.
Refer to :MEASure:SPURious[n]? for details.

Parameter

<filename>	Parameter list file Specify with any character string enclosed by double quotes (" ") or single quotes (' ').
<device>	Drive name A,B,D,E,F,... D drive is used when omitted.

Details

SPURious Emission measurement is executed and the result is output after the parameters described in the specified parameter list have been set.

The return values of this function vary depending on the result mode.
(cf. :SYSTem:RESult:MODE)

Place the parameter list files in the following folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be applied with the :MMEMory:RELoad:BATCh command.
(cf. :MMEMory:RELoad:BATCh)

Example of Use

To acquire the measurement result of Spurious Emission measurement using the MyParam.xls parameter list file (when Result Mode = A, Spurious Emission Result Type = Worst)

```
FETC:SPUR? "MyParam.xml"
>
0,1,1,135618.00,-64.25,51.25,-13.00,0,2,2,155970.00,-63.
91,50.91,-13.00,0····
```

Parameter list format

Table 2.16-8 lists the parameter list example.

Table 2.16-8 Parameter List Example (Spurious Emission Measurement)

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- System Template XML Parameter -->
<SignalAnalyzerProject>
  <ProjectDefine>
    <Attribute Name="Type" Value="Application" />
    <Attribute Name="Name" Value="Batch Parameter List" />
    <Attribute Name="FileVersion" Value="1.0.0.0" />
  </ProjectDefine>
  <Params>
    <SystemTemplate>
      <Attribute Name="ListString" Value="SE1" />
      <Attribute Name="CommandArg" Value="SE1" />
      <Attribute Name="AcpDefault" Value="SE1" />
    </SystemTemplate>
    <SeParams Name="SE1">
      <ParamDefine>
        <Attribute Name="ListString" Value="SE1" />
        <Attribute Name="CommandArg" Value="SE1" />
      </ParamDefine>
      <CommonParams>
        <Attribute Name="Spurious Result Type" Value="Worst" />
        <Attribute Name="Spurious Time Domain Measurement" Value="Off" />
        <Attribute Name="Spurious Fail Stop" Value="Off" />
        <Attribute Name="Spurious Couple Storage Count" Value="On" />
        <Attribute Name="Spurious Segment Switch1" Value="On" />
        <Attribute Name="Spurious Segment Switch2" Value="On" />
        <Attribute Name="Spurious Segment Switch3" Value="On" />
        <Attribute Name="Spurious Segment Switch4" Value="On" />
        <Attribute Name="Spurious Segment Switch5" Value="Off" />
        <Attribute Name="Spurious Segment Switch6" Value="Off" />
        <Attribute Name="Spurious Segment Switch7" Value="Off" />
        <Attribute Name="Spurious Segment Switch8" Value="Off" />
        <Attribute Name="Spurious Segment Switch9" Value="Off" />
        <Attribute Name="Spurious Segment Switch10" Value="Off" />
        <Attribute Name="Spurious Segment Switch11" Value="Off" />
        <Attribute Name="Spurious Segment Switch12" Value="Off" />
        <Attribute Name="Spurious Segment Switch13" Value="Off" />
        <Attribute Name="Spurious Segment Switch14" Value="Off" />
        <Attribute Name="Spurious Segment Switch15" Value="Off" />
        <Attribute Name="Spurious Segment Switch16" Value="Off" />
        <Attribute Name="Spurious Segment Switch17" Value="Off" />
```

Table 2.16-8 Parameter List Example (Spurious Emission Measurement) (Cont'd)

```
<Attribute Name="Spurious Segment Switch18" Value="Off" />
<Attribute Name="Spurious Segment Switch19" Value="Off" />
<Attribute Name="Spurious Segment Switch20" Value="Off" />
<Attribute Name="Spurious Start Freq1" Value="9000" />
<Attribute Name="Spurious Start Freq2" Value="150000" />
<Attribute Name="Spurious Start Freq3" Value="30000000" />
<Attribute Name="Spurious Start Freq4" Value="1000000000" />
<Attribute Name="Spurious Stop Freq1" Value="150000" />
<Attribute Name="Spurious Stop Freq2" Value="30000000" />
<Attribute Name="Spurious Stop Freq3" Value="1000000000" />
<Attribute Name="Spurious Stop Freq4" Value="2000000000" />
<Attribute Name="Spurious RBW Switch1" Value="Manual" />
<Attribute Name="Spurious RBW Switch2" Value="Manual" />
<Attribute Name="Spurious RBW Switch3" Value="Manual" />
<Attribute Name="Spurious RBW Switch4" Value="Manual" />
<Attribute Name="Spurious RBW1" Value="1kHz" />
<Attribute Name="Spurious RBW2" Value="10kHz" />
<Attribute Name="Spurious RBW3" Value="100kHz" />
<Attribute Name="Spurious RBW4" Value="1MHz" />
<Attribute Name="Spurious VBW Switch1" Value="Auto" />
<Attribute Name="Spurious VBW Switch2" Value="Auto" />
<Attribute Name="Spurious VBW Switch3" Value="Auto" />
<Attribute Name="Spurious VBW Switch4" Value="Auto" />
<Attribute Name="Spurious Sweep Time Switch1" Value="Auto" />
<Attribute Name="Spurious Sweep Time Switch2" Value="Auto" />
<Attribute Name="Spurious Sweep Time Switch3" Value="Auto" />
<Attribute Name="Spurious Sweep Time Switch4" Value="Auto" />
<Attribute Name="Spurious Detection1" Value="Positive" />
<Attribute Name="Spurious Detection2" Value="Positive" />
<Attribute Name="Spurious Detection3" Value="Positive" />
<Attribute Name="Spurious Detection4" Value="Positive" />
<Attribute Name="Spurious Trace Point1" Value="1001" />
<Attribute Name="Spurious Trace Point2" Value="5001" />
<Attribute Name="Spurious Trace Point3" Value="10001" />
<Attribute Name="Spurious Trace Point4" Value="10001" />
<Attribute Name="Spurious Limit Start Level1" Value="-1300" />
<Attribute Name="Spurious Limit Start Level2" Value="-1300" />
<Attribute Name="Spurious Limit Start Level3" Value="-1300" />
<Attribute Name="Spurious Limit Start Level4" Value="-1300" />
```

Table 2.16-8 Parameter List Example (Spurious Emission Measurement) (Cont' d)

```
          <Attribute Name="Spurious Limit Stop Level Mode1" Value="Auto" />
          <Attribute Name="Spurious Limit Stop Level Mode2" Value="Auto" />
          <Attribute Name="Spurious Limit Stop Level Mode3" Value="Auto" />
          <Attribute Name="Spurious Limit Stop Level Mode4" Value="Auto" />
        </CommonParams>
      </SeParams>
    </Params>
</SignalAnalyzerProject>
```

Describe the setting parameters in the part enclosed between the CommonParams elements. The description method consists in describing the parameter name to be set in the Name attribute in the Attribute element, and the setting value in Value. The parts in bold characters in Table 2.16-8 are an actual setting example. Describe all other parts the same as in Table 2.16-8.

Since the settings are done in sequence from the top, be careful about the description order when setting parameters that have relationships of dependence. Also, if a value that is either out of the setting range or that cannot be set has been input, that setting is ignored.

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement)

Parameter	Attribute Name Setting	Attribute Value Setting
Reference Level	"Reference Level"	Value is described in dBm units.
Reference Level Offset	"Reference Level Offset"	"On": On "Off": Off
Reference Level Offset Value	"Reference Level Offset Value"	Value is described in 0.01 dB units.
Storage Mode	"Storage Mode A"	"Lin Average": Lin Average "Average": Average "Max Hold": Max Hold "Min Hold": Min Hold "Off": Off
Trigger Switch	"Trigger Switch"	"Off": Off "On": On
Trigger Source	"Trigger Source"	"Video": Video "External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Trigger Slope	"Trigger Slope"	"Rise": Rise "Fall": Fall
Trigger Level (Video)	"Trigger Level(Video)Log"	Value is described in dBm units.
Trigger Level (Wide IF Video)	"Trigger Level(Wide)"	Value is described in dBm units.
Gate Sweep	"Gate Sweep"	"Off": Off "On": On
Gate Source	"Gate Source"	"External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Gate Delay	"Gate Delay"	Value is described in ns units.
Gate Length	"Gate Length"	Value is described in ns units.
Gate Level (Wide IF Video)	"Gate Level(Wide)"	Value is described in dBm units.
Gate Slope	"Gate Slope"	"Rise": Rise "Fall": Fall

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Pre-amp	"Pre-amp"	"Off": Off "On": On
VBW Mode	"VBW Mode"	"Power": Power "Video": Video
OBW Method	"OBW Method"	"N%": N% "XdB": XdB
Auto Sweep Time Select	"Auto Sweep Time Select"	"Normal": Normal "Fast": Fast
Spurious Result Type	"Spurious Result Type"	"Worst": Worst "Peaks": Peaks
Spurious Time Domain Measurement	"Spurious Time Domain Measurement"	"Off": Off "On": On
Spurious Fail Stop	"Spurious Fail Stop"	"Off": Off "On": On
Spurious Couple Storage Count	"Spurious Couple Storage Count"	"Off": Off "On": On

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 On/Off	"Spurious Segment Switch1"	"Off": Off "On": On
Spurious Segment2 On/Off	"Spurious Segment Switch2"	Same as above
Spurious Segment3 On/Off	"Spurious Segment Switch3"	Same as above
Spurious Segment4 On/Off	"Spurious Segment Switch4"	Same as above
Spurious Segment5 On/Off	"Spurious Segment Switch5"	Same as above
Spurious Segment6 On/Off	"Spurious Segment Switch6"	Same as above
Spurious Segment7 On/Off	"Spurious Segment Switch7"	Same as above
Spurious Segment8 On/Off	"Spurious Segment Switch8"	Same as above
Spurious Segment9 On/Off	"Spurious Segment Switch9"	Same as above
Spurious Segment10 On/Off	"Spurious Segment Switch10"	Same as above
Spurious Segment11 On/Off	"Spurious Segment Switch11"	Same as above
Spurious Segment12 On/Off	"Spurious Segment Switch12"	Same as above
Spurious Segment13 On/Off	"Spurious Segment Switch13"	Same as above
Spurious Segment14 On/Off	"Spurious Segment Switch14"	Same as above
Spurious Segment15 On/Off	"Spurious Segment Switch15"	Same as above
Spurious Segment16 On/Off	"Spurious Segment Switch16"	Same as above
Spurious Segment17 On/Off	"Spurious Segment Switch17"	Same as above
Spurious Segment18 On/Off	"Spurious Segment Switch18"	Same as above
Spurious Segment19 On/Off	"Spurious Segment Switch19"	Same as above
Spurious Segment20 On/Off	"Spurious Segment Switch20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Start Freq	"Spurious Start Freq1"	Value is described in Hz units.
Spurious Segment2 Start Freq	"Spurious Start Freq2"	Same as above
Spurious Segment3 Start Freq	"Spurious Start Freq3"	Same as above
Spurious Segment4 Start Freq	"Spurious Start Freq4"	Same as above
Spurious Segment5 Start Freq	"Spurious Start Freq5"	Same as above
Spurious Segment6 Start Freq	"Spurious Start Freq6"	Same as above
Spurious Segment7 Start Freq	"Spurious Start Freq7"	Same as above
Spurious Segment8 Start Freq	"Spurious Start Freq8"	Same as above
Spurious Segment9 Start Freq	"Spurious Start Freq9"	Same as above
Spurious Segment10 Start Freq	"Spurious Start Freq10"	Same as above
Spurious Segment11 Start Freq	"Spurious Start Freq11"	Same as above
Spurious Segment12 Start Freq	"Spurious Start Freq12"	Same as above
Spurious Segment13 Start Freq	"Spurious Start Freq13"	Same as above
Spurious Segment14 Start Freq	"Spurious Start Freq14"	Same as above
Spurious Segment15 Start Freq	"Spurious Start Freq15"	Same as above
Spurious Segment16 Start Freq	"Spurious Start Freq16"	Same as above
Spurious Segment17 Start Freq	"Spurious Start Freq17"	Same as above
Spurious Segment18 Start Freq	"Spurious Start Freq18"	Same as above
Spurious Segment19 Start Freq	"Spurious Start Freq19"	Same as above
Spurious Segment20 Start Freq	"Spurious Start Freq20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Stop Freq1	"Spurious Stop Freq1"	Value is described in Hz units.
Spurious Segment2 Stop Freq1	"Spurious Stop Freq2"	Same as above
Spurious Segment3 Stop Freq1	"Spurious Stop Freq3"	Same as above
Spurious Segment4 Stop Freq1	"Spurious Stop Freq4"	Same as above
Spurious Segment5 Stop Freq1	"Spurious Stop Freq5"	Same as above
Spurious Segment6 Stop Freq1	"Spurious Stop Freq6"	Same as above
Spurious Segment7 Stop Freq1	"Spurious Stop Freq7"	Same as above
Spurious Segment8 Stop Freq1	"Spurious Stop Freq8"	Same as above
Spurious Segment9 Stop Freq1	"Spurious Stop Freq9"	Same as above
Spurious Segment10 Stop Freq1	"Spurious Stop Freq10"	Same as above
Spurious Segment11 Stop Freq1	"Spurious Stop Freq11"	Same as above
Spurious Segment12 Stop Freq1	"Spurious Stop Freq12"	Same as above
Spurious Segment13 Stop Freq1	"Spurious Stop Freq13"	Same as above
Spurious Segment14 Stop Freq1	"Spurious Stop Freq14"	Same as above
Spurious Segment15 Stop Freq1	"Spurious Stop Freq15"	Same as above
Spurious Segment16 Stop Freq1	"Spurious Stop Freq16"	Same as above
Spurious Segment17 Stop Freq1	"Spurious Stop Freq17"	Same as above
Spurious Segment18 Stop Freq1	"Spurious Stop Freq18"	Same as above
Spurious Segment19 Stop Freq1	"Spurious Stop Freq19"	Same as above
Spurious Segment20 Stop Freq1	"Spurious Stop Freq20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Reference Level	"Spurious Reference Level1"	Value is described in dBm units.
Spurious Segment2 Reference Level	"Spurious Reference Level2"	Same as above
Spurious Segment3 Reference Level	"Spurious Reference Level3"	Same as above
Spurious Segment4 Reference Level	"Spurious Reference Level4"	Same as above
Spurious Segment5 Reference Level	"Spurious Reference Level5"	Same as above
Spurious Segment6 Reference Level	"Spurious Reference Level6"	Same as above
Spurious Segment7 Reference Level	"Spurious Reference Level7"	Same as above
Spurious Segment8 Reference Level	"Spurious Reference Level8"	Same as above
Spurious Segment9 Reference Level	"Spurious Reference Level9"	Same as above
Spurious Segment10 Reference Level	"Spurious Reference Level10"	Same as above
Spurious Segment11 Reference Level	"Spurious Reference Level11"	Same as above
Spurious Segment12 Reference Level	"Spurious Reference Level12"	Same as above
Spurious Segment13 Reference Level	"Spurious Reference Level13"	Same as above
Spurious Segment14 Reference Level	"Spurious Reference Level14"	Same as above
Spurious Segment15 Reference Level	"Spurious Reference Level15"	Same as above
Spurious Segment16 Reference Level	"Spurious Reference Level16"	Same as above
Spurious Segment17 Reference Level	"Spurious Reference Level17"	Same as above
Spurious Segment18 Reference Level	"Spurious Reference Level18"	Same as above
Spurious Segment19 Reference Level	"Spurious Reference Level19"	Same as above
Spurious Segment20 Reference Level	"Spurious Reference Level20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Attenuator Auto/Manual	"Spurious Attenuator Switch1"	"Auto": Auto "Manual": Manual
Spurious Segment2 Attenuator Auto/Manual	"Spurious Attenuator Switch2"	Same as above
Spurious Segment3 Attenuator Auto/Manual	"Spurious Attenuator Switch3"	Same as above
Spurious Segment4 Attenuator Auto/Manual	"Spurious Attenuator Switch4"	Same as above
Spurious Segment5 Attenuator Auto/Manual	"Spurious Attenuator Switch5"	Same as above
Spurious Segment6 Attenuator Auto/Manual	"Spurious Attenuator Switch6"	Same as above
Spurious Segment7 Attenuator Auto/Manual	"Spurious Attenuator Switch7"	Same as above
Spurious Segment8 Attenuator Auto/Manual	"Spurious Attenuator Switch8"	Same as above
Spurious Segment9 Attenuator Auto/Manual	"Spurious Attenuator Switch9"	Same as above
Spurious Segment10 Attenuator Auto/Manual	"Spurious Attenuator Switch10"	Same as above
Spurious Segment11 Attenuator Auto/Manual	"Spurious Attenuator Switch11"	Same as above
Spurious Segment12 Attenuator Auto/Manual	"Spurious Attenuator Switch12"	Same as above
Spurious Segment13 Attenuator Auto/Manual	"Spurious Attenuator Switch13"	Same as above
Spurious Segment14 Attenuator Auto/Manual	"Spurious Attenuator Switch14"	Same as above
Spurious Segment15 Attenuator Auto/Manual	"Spurious Attenuator Switch15"	Same as above
Spurious Segment16 Attenuator Auto/Manual	"Spurious Attenuator Switch16"	Same as above
Spurious Segment17 Attenuator Auto/Manual	"Spurious Attenuator Switch17"	Same as above
Spurious Segment18 Attenuator Auto/Manual	"Spurious Attenuator Switch18"	Same as above
Spurious Segment19 Attenuator Auto/Manual	"Spurious Attenuator Switch19"	Same as above
Spurious Segment20 Attenuator Auto/Manual	"Spurious Attenuator Switch20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Attenuator	"Spurious Attenuator1"	Value is described in dB units.
Spurious Segment2 Attenuator	"Spurious Attenuator2"	Same as above
Spurious Segment3 Attenuator	"Spurious Attenuator3"	Same as above
Spurious Segment4 Attenuator	"Spurious Attenuator4"	Same as above
Spurious Segment5 Attenuator	"Spurious Attenuator5"	Same as above
Spurious Segment6 Attenuator	"Spurious Attenuator6"	Same as above
Spurious Segment7 Attenuator	"Spurious Attenuator7"	Same as above
Spurious Segment8 Attenuator	"Spurious Attenuator8"	Same as above
Spurious Segment9 Attenuator	"Spurious Attenuator9"	Same as above
Spurious Segment10 Attenuator	"Spurious Attenuator10"	Same as above
Spurious Segment11 Attenuator	"Spurious Attenuator11"	Same as above
Spurious Segment12 Attenuator	"Spurious Attenuator12"	Same as above
Spurious Segment13 Attenuator	"Spurious Attenuator13"	Same as above
Spurious Segment14 Attenuator	"Spurious Attenuator14"	Same as above
Spurious Segment15 Attenuator	"Spurious Attenuator15"	Same as above
Spurious Segment16 Attenuator	"Spurious Attenuator16"	Same as above
Spurious Segment17 Attenuator	"Spurious Attenuator17"	Same as above
Spurious Segment18 Attenuator	"Spurious Attenuator18"	Same as above
Spurious Segment19 Attenuator	"Spurious Attenuator19"	Same as above
Spurious Segment20 Attenuator	"Spurious Attenuator20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 RBW Auto/Manual	"Spurious RBW Switch1"	"Auto": Auto "Manual": Manual
Spurious Segment2 RBW Auto/Manual	"Spurious RBW Switch2"	Same as above
Spurious Segment3 RBW Auto/Manual	"Spurious RBW Switch3"	Same as above
Spurious Segment4 RBW Auto/Manual	"Spurious RBW Switch4"	Same as above
Spurious Segment5 RBW Auto/Manual	"Spurious RBW Switch5"	Same as above
Spurious Segment6 RBW Auto/Manual	"Spurious RBW Switch6"	Same as above
Spurious Segment7 RBW Auto/Manual	"Spurious RBW Switch7"	Same as above
Spurious Segment8 RBW Auto/Manual	"Spurious RBW Switch8"	Same as above
Spurious Segment9 RBW Auto/Manual	"Spurious RBW Switch9"	Same as above
Spurious Segment10 RBW Auto/Manual	"Spurious RBW Switch10"	Same as above
Spurious Segment11 RBW Auto/Manual	"Spurious RBW Switch11"	Same as above
Spurious Segment12 RBW Auto/Manual	"Spurious RBW Switch12"	Same as above
Spurious Segment13 RBW Auto/Manual	"Spurious RBW Switch13"	Same as above
Spurious Segment14 RBW Auto/Manual	"Spurious RBW Switch14"	Same as above
Spurious Segment15 RBW Auto/Manual	"Spurious RBW Switch15"	Same as above
Spurious Segment16 RBW Auto/Manual	"Spurious RBW Switch16"	Same as above
Spurious Segment17 RBW Auto/Manual	"Spurious RBW Switch17"	Same as above
Spurious Segment18 RBW Auto/Manual	"Spurious RBW Switch18"	Same as above
Spurious Segment19 RBW Auto/Manual	"Spurious RBW Switch19"	Same as above
Spurious Segment20 RBW Auto/Manual	"Spurious RBW Switch20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 RBW	"Spurious RBW1"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50 kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz
Spurious Segment2 RBW	"Spurious RBW2"	Same as above
Spurious Segment3 RBW	"Spurious RBW3"	Same as above
Spurious Segment4 RBW	"Spurious RBW4"	Same as above
Spurious Segment5 RBW	"Spurious RBW5"	Same as above
Spurious Segment6 RBW	"Spurious RBW6"	Same as above
Spurious Segment7 RBW	"Spurious RBW7"	Same as above
Spurious Segment8 RBW	"Spurious RBW8"	Same as above
Spurious Segment9 RBW	"Spurious RBW9"	Same as above
Spurious Segment10 RBW	"Spurious RBW10"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment11 RBW	"Spurious RBW11"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50 kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz
Spurious Segment12 RBW	"Spurious RBW12"	Same as above
Spurious Segment13 RBW	"Spurious RBW13"	Same as above
Spurious Segment14 RBW	"Spurious RBW14"	Same as above
Spurious Segment15 RBW	"Spurious RBW15"	Same as above
Spurious Segment16 RBW	"Spurious RBW16"	Same as above
Spurious Segment17 RBW	"Spurious RBW17"	Same as above
Spurious Segment18 RBW	"Spurious RBW18"	Same as above
Spurious Segment19 RBW	"Spurious RBW19"	Same as above
Spurious Segment20 RBW	"Spurious RBW20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 VBW Auto/Manual	"Spurious VBW Switch1"	"Auto": Auto "Manual": Manual
Spurious Segment2 VBW Auto/Manual	"Spurious VBW Switch2"	Same as above
Spurious Segment3 VBW Auto/Manual	"Spurious VBW Switch3"	Same as above
Spurious Segment4 VBW Auto/Manual	"Spurious VBW Switch4"	Same as above
Spurious Segment5 VBW Auto/Manual	"Spurious VBW Switch5"	Same as above
Spurious Segment6 VBW Auto/Manual	"Spurious VBW Switch6"	Same as above
Spurious Segment7 VBW Auto/Manual	"Spurious VBW Switch7"	Same as above
Spurious Segment8 VBW Auto/Manual	"Spurious VBW Switch8"	Same as above
Spurious Segment9 VBW Auto/Manual	"Spurious VBW Switch9"	Same as above
Spurious Segment10 VBW Auto/Manual	"Spurious VBW Switch10"	Same as above
Spurious Segment11 VBW Auto/Manual	"Spurious VBW Switch11"	Same as above
Spurious Segment12 VBW Auto/Manual	"Spurious VBW Switch12"	Same as above
Spurious Segment13 VBW Auto/Manual	"Spurious VBW Switch13"	Same as above
Spurious Segment14 VBW Auto/Manual	"Spurious VBW Switch14"	Same as above
Spurious Segment15 VBW Auto/Manual	"Spurious VBW Switch15"	Same as above
Spurious Segment16 VBW Auto/Manual	"Spurious VBW Switch16"	Same as above
Spurious Segment17 VBW Auto/Manual	"Spurious VBW Switch17"	Same as above
Spurious Segment18 VBW Auto/Manual	"Spurious VBW Switch18"	Same as above
Spurious Segment19 VBW Auto/Manual	"Spurious VBW Switch19"	Same as above
Spurious Segment20 VBW Auto/Manual	"Spurious VBW Switch20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 VBW	"Spurious VBW1"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5 kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
Spurious Segment2 VBW	"Spurious VBW2"	Same as above
Spurious Segment3 VBW	"Spurious VBW3"	Same as above
Spurious Segment4 VBW	"Spurious VBW4"	Same as above
Spurious Segment5 VBW	"Spurious VBW5"	Same as above
Spurious Segment6 VBW	"Spurious VBW6"	Same as above
Spurious Segment7 VBW	"Spurious VBW7"	Same as above
Spurious Segment8 VBW	"Spurious VBW8"	Same as above
Spurious Segment9 VBW	"Spurious VBW9"	Same as above
Spurious Segment10 VBW	"Spurious VBW10"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment11 VBW	"Spurious VBW11"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5 kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
Spurious Segment12 VBW	"Spurious VBW12"	Same as above
Spurious Segment13 VBW	"Spurious VBW13"	Same as above
Spurious Segment14 VBW	"Spurious VBW14"	Same as above
Spurious Segment15 VBW	"Spurious VBW15"	Same as above
Spurious Segment16 VBW	"Spurious VBW16"	Same as above
Spurious Segment17 VBW	"Spurious VBW17"	Same as above
Spurious Segment18 VBW	"Spurious VBW18"	Same as above
Spurious Segment19 VBW	"Spurious VBW19"	Same as above
Spurious Segment20 VBW	"Spurious VBW20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Sweep Time Auto/Manual	"Spurious Sweep Time Switch1"	"Auto": Auto "Manual": Manual
Spurious Segment2 Sweep Time Auto/Manual	"Spurious Sweep Time Switch2"	Same as above
Spurious Segment3 Sweep Time Auto/Manual	"Spurious Sweep Time Switch3"	Same as above
Spurious Segment4 Sweep Time Auto/Manual	"Spurious Sweep Time Switch4"	Same as above
Spurious Segment5 Sweep Time Auto/Manual	"Spurious Sweep Time Switch5"	Same as above
Spurious Segment6 Sweep Time Auto/Manual	"Spurious Sweep Time Switch6"	Same as above
Spurious Segment7 Sweep Time Auto/Manual	"Spurious Sweep Time Switch7"	Same as above
Spurious Segment8 Sweep Time Auto/Manual	"Spurious Sweep Time Switch8"	Same as above
Spurious Segment9 Sweep Time Auto/Manual	"Spurious Sweep Time Switch9"	Same as above
Spurious Segment10 Sweep Time Auto/Manual	"Spurious Sweep Time Switch10"	Same as above
Spurious Segment11 Sweep Time Auto/Manual	"Spurious Sweep Time Switch11"	Same as above
Spurious Segment12 Sweep Time Auto/Manual	"Spurious Sweep Time Switch12"	Same as above
Spurious Segment13 Sweep Time Auto/Manual	"Spurious Sweep Time Switch13"	Same as above
Spurious Segment14 Sweep Time Auto/Manual	"Spurious Sweep Time Switch14"	Same as above
Spurious Segment15 Sweep Time Auto/Manual	"Spurious Sweep Time Switch15"	Same as above
Spurious Segment16 Sweep Time Auto/Manual	"Spurious Sweep Time Switch16"	Same as above
Spurious Segment17 Sweep Time Auto/Manual	"Spurious Sweep Time Switch17"	Same as above
Spurious Segment18 Sweep Time Auto/Manual	"Spurious Sweep Time Switch18"	Same as above
Spurious Segment19 Sweep Time Auto/Manual	"Spurious Sweep Time Switch19"	Same as above
Spurious Segment20 Sweep Time Auto/Manual	"Spurious Sweep Time Switch20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Sweep Time	"Spurious Sweep Time1"	Value is described in ms units.
Spurious Segment2 Sweep Time	"Spurious Sweep Time2"	Same as above
Spurious Segment3 Sweep Time	"Spurious Sweep Time3"	Same as above
Spurious Segment4 Sweep Time	"Spurious Sweep Time4"	Same as above
Spurious Segment5 Sweep Time	"Spurious Sweep Time5"	Same as above
Spurious Segment6 Sweep Time	"Spurious Sweep Time6"	Same as above
Spurious Segment7 Sweep Time	"Spurious Sweep Time7"	Same as above
Spurious Segment8 Sweep Time	"Spurious Sweep Time8"	Same as above
Spurious Segment9 Sweep Time	"Spurious Sweep Time9"	Same as above
Spurious Segment10 Sweep Time	"Spurious Sweep Time10"	Same as above
Spurious Segment11 Sweep Time	"Spurious Sweep Time11"	Same as above
Spurious Segment12 Sweep Time	"Spurious Sweep Time12"	Same as above
Spurious Segment13 Sweep Time	"Spurious Sweep Time13"	Same as above
Spurious Segment14 Sweep Time	"Spurious Sweep Time14"	Same as above
Spurious Segment15 Sweep Time	"Spurious Sweep Time15"	Same as above
Spurious Segment16 Sweep Time	"Spurious Sweep Time16"	Same as above
Spurious Segment17 Sweep Time	"Spurious Sweep Time17"	Same as above
Spurious Segment18 Sweep Time	"Spurious Sweep Time18"	Same as above
Spurious Segment19 Sweep Time	"Spurious Sweep Time19"	Same as above
Spurious Segment20 Sweep Time	"Spurious Sweep Time20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Pause before Sweep	"Spurious Pause before Sweep1"	"Off": Off "On": On
Spurious Segment2 Pause before Sweep	"Spurious Pause before Sweep2"	Same as above
Spurious Segment3 Pause before Sweep	"Spurious Pause before Sweep3"	Same as above
Spurious Segment4 Pause before Sweep	"Spurious Pause before Sweep4"	Same as above
Spurious Segment5 Pause before Sweep	"Spurious Pause before Sweep5"	Same as above
Spurious Segment6 Pause before Sweep	"Spurious Pause before Sweep6"	Same as above
Spurious Segment7 Pause before Sweep	"Spurious Pause before Sweep7"	Same as above
Spurious Segment8 Pause before Sweep	"Spurious Pause before Sweep8"	Same as above
Spurious Segment9 Pause before Sweep	"Spurious Pause before Sweep9"	Same as above
Spurious Segment10 Pause before Sweep	"Spurious Pause before Sweep10"	Same as above
Spurious Segment11 Pause before Sweep	"Spurious Pause before Sweep11"	Same as above
Spurious Segment12 Pause before Sweep	"Spurious Pause before Sweep12"	Same as above
Spurious Segment13 Pause before Sweep	"Spurious Pause before Sweep13"	Same as above
Spurious Segment14 Pause before Sweep	"Spurious Pause before Sweep14"	Same as above
Spurious Segment15 Pause before Sweep	"Spurious Pause before Sweep15"	Same as above
Spurious Segment16 Pause before Sweep	"Spurious Pause before Sweep16"	Same as above
Spurious Segment17 Pause before Sweep	"Spurious Pause before Sweep17"	Same as above
Spurious Segment18 Pause before Sweep	"Spurious Pause before Sweep18"	Same as above
Spurious Segment19 Pause before Sweep	"Spurious Pause before Sweep19"	Same as above
Spurious Segment20 Pause before Sweep	"Spurious Pause before Sweep20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Preamp	"Spurious Preamp1"	"Off": Off "On": On
Spurious Segment2 Preamp	"Spurious Preamp2"	Same as above
Spurious Segment3 Preamp	"Spurious Preamp3"	Same as above
Spurious Segment4 Preamp	"Spurious Preamp4"	Same as above
Spurious Segment5 Preamp	"Spurious Preamp5"	Same as above
Spurious Segment6 Preamp	"Spurious Preamp6"	Same as above
Spurious Segment7 Preamp	"Spurious Preamp7"	Same as above
Spurious Segment8 Preamp	"Spurious Preamp8"	Same as above
Spurious Segment9 Preamp	"Spurious Preamp9"	Same as above
Spurious Segment10 Preamp	"Spurious Preamp10"	Same as above
Spurious Segment11 Preamp	"Spurious Preamp11"	Same as above
Spurious Segment12 Preamp	"Spurious Preamp12"	Same as above
Spurious Segment13 Preamp	"Spurious Preamp13"	Same as above
Spurious Segment14 Preamp	"Spurious Preamp14"	Same as above
Spurious Segment15 Preamp	"Spurious Preamp15"	Same as above
Spurious Segment16 Preamp	"Spurious Preamp16"	Same as above
Spurious Segment17 Preamp	"Spurious Preamp17"	Same as above
Spurious Segment18 Preamp	"Spurious Preamp18"	Same as above
Spurious Segment19 Preamp	"Spurious Preamp19"	Same as above
Spurious Segment20 Preamp	"Spurious Preamp20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Detection	"Spurious Detection1"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS
Spurious Segment2 Detection	"Spurious Detection2"	Same as above
Spurious Segment3 Detection	"Spurious Detection3"	Same as above
Spurious Segment4 Detection	"Spurious Detection4"	Same as above
Spurious Segment5 Detection	"Spurious Detection5"	Same as above
Spurious Segment6 Detection	"Spurious Detection6"	Same as above
Spurious Segment7 Detection	"Spurious Detection7"	Same as above
Spurious Segment8 Detection	"Spurious Detection8"	Same as above
Spurious Segment9 Detection	"Spurious Detection9"	Same as above
Spurious Segment10 Detection	"Spurious Detection10"	Same as above
Spurious Segment11 Detection	"Spurious Detection11"	Same as above
Spurious Segment12 Detection	"Spurious Detection12"	Same as above
Spurious Segment13 Detection	"Spurious Detection13"	Same as above
Spurious Segment14 Detection	"Spurious Detection14"	Same as above
Spurious Segment15 Detection	"Spurious Detection15"	Same as above
Spurious Segment16 Detection	"Spurious Detection16"	Same as above
Spurious Segment17 Detection	"Spurious Detection17"	Same as above
Spurious Segment18 Detection	"Spurious Detection18"	Same as above
Spurious Segment19 Detection	"Spurious Detection19"	Same as above
Spurious Segment20 Detection	"Spurious Detection20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Trace Point	"Spurious Trace Point1"	Describes the number of trace points.
Spurious Segment2 Trace Point	"Spurious Trace Point2"	Same as above
Spurious Segment3 Trace Point	"Spurious Trace Point3"	Same as above
Spurious Segment4 Trace Point	"Spurious Trace Point4"	Same as above
Spurious Segment5 Trace Point	"Spurious Trace Point5"	Same as above
Spurious Segment6 Trace Point	"Spurious Trace Point6"	Same as above
Spurious Segment7 Trace Point	"Spurious Trace Point7"	Same as above
Spurious Segment8 Trace Point	"Spurious Trace Point8"	Same as above
Spurious Segment9 Trace Point	"Spurious Trace Point9"	Same as above
Spurious Segment10 Trace Point	"Spurious Trace Point10"	Same as above
Spurious Segment11 Trace Point	"Spurious Trace Point11"	Same as above
Spurious Segment12 Trace Point	"Spurious Trace Point12"	Same as above
Spurious Segment13 Trace Point	"Spurious Trace Point13"	Same as above
Spurious Segment14 Trace Point	"Spurious Trace Point14"	Same as above
Spurious Segment15 Trace Point	"Spurious Trace Point15"	Same as above
Spurious Segment16 Trace Point	"Spurious Trace Point16"	Same as above
Spurious Segment17 Trace Point	"Spurious Trace Point17"	Same as above
Spurious Segment18 Trace Point	"Spurious Trace Point18"	Same as above
Spurious Segment19 Trace Point	"Spurious Trace Point19"	Same as above
Spurious Segment20 Trace Point	"Spurious Trace Point20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Storage Count	"Spurious Storage Count1"	Describes the storage count.
Spurious Segment2 Storage Count	"Spurious Storage Count2"	Same as above
Spurious Segment3 Storage Count	"Spurious Storage Count3"	Same as above
Spurious Segment4 Storage Count	"Spurious Storage Count4"	Same as above
Spurious Segment5 Storage Count	"Spurious Storage Count5"	Same as above
Spurious Segment6 Storage Count	"Spurious Storage Count6"	Same as above
Spurious Segment7 Storage Count	"Spurious Storage Count7"	Same as above
Spurious Segment8 Storage Count	"Spurious Storage Count8"	Same as above
Spurious Segment9 Storage Count	"Spurious Storage Count9"	Same as above
Spurious Segment10 Storage Count	"Spurious Storage Count10"	Same as above
Spurious Segment11 Storage Count	"Spurious Storage Count11"	Same as above
Spurious Segment12 Storage Count	"Spurious Storage Count12"	Same as above
Spurious Segment13 Storage Count	"Spurious Storage Count13"	Same as above
Spurious Segment14 Storage Count	"Spurious Storage Count14"	Same as above
Spurious Segment15 Storage Count	"Spurious Storage Count15"	Same as above
Spurious Segment16 Storage Count	"Spurious Storage Count16"	Same as above
Spurious Segment17 Storage Count	"Spurious Storage Count17"	Same as above
Spurious Segment18 Storage Count	"Spurious Storage Count18"	Same as above
Spurious Segment19 Storage Count	"Spurious Storage Count19"	Same as above
Spurious Segment20 Storage Count	"Spurious Storage Count20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Correction	"Spurious Correction Data Type1"	"Default": Common To use a user defined correction value, describe the file name of the correction file.
Spurious Segment2 Correction	"Spurious Correction Data Type2"	Same as above
Spurious Segment3 Correction	"Spurious Correction Data Type3"	Same as above
Spurious Segment4 Correction	"Spurious Correction Data Type4"	Same as above
Spurious Segment5 Correction	"Spurious Correction Data Type5"	Same as above
Spurious Segment6 Correction	"Spurious Correction Data Type6"	Same as above
Spurious Segment7 Correction	"Spurious Correction Data Type7"	Same as above
Spurious Segment8 Correction	"Spurious Correction Data Type8"	Same as above
Spurious Segment9 Correction	"Spurious Correction Data Type9"	Same as above
Spurious Segment10 Correction	"Spurious Correction Data Type10"	Same as above
Spurious Segment11 Correction	"Spurious Correction Data Type11"	Same as above
Spurious Segment12 Correction	"Spurious Correction Data Type12"	Same as above
Spurious Segment13 Correction	"Spurious Correction Data Type13"	Same as above
Spurious Segment14 Correction	"Spurious Correction Data Type14"	Same as above
Spurious Segment15 Correction	"Spurious Correction Data Type15"	Same as above
Spurious Segment16 Correction	"Spurious Correction Data Type16"	Same as above
Spurious Segment17 Correction	"Spurious Correction Data Type17"	Same as above
Spurious Segment18 Correction	"Spurious Correction Data Type18"	Same as above
Spurious Segment19 Correction	"Spurious Correction Data Type19"	Same as above
Spurious Segment20 Correction	"Spurious Correction Data Type20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Limit Start Level	"Spurious Limit Start Level1"	Value is described in 0.01 dBm units.
Spurious Segment2 Limit Start Level	"Spurious Limit Start Level2"	Same as above
Spurious Segment3 Limit Start Level	"Spurious Limit Start Level3"	Same as above
Spurious Segment4 Limit Start Level	"Spurious Limit Start Level4"	Same as above
Spurious Segment5 Limit Start Level	"Spurious Limit Start Level5"	Same as above
Spurious Segment6 Limit Start Level	"Spurious Limit Start Level6"	Same as above
Spurious Segment7 Limit Start Level	"Spurious Limit Start Level7"	Same as above
Spurious Segment8 Limit Start Level	"Spurious Limit Start Level8"	Same as above
Spurious Segment9 Limit Start Level	"Spurious Limit Start Level9"	Same as above
Spurious Segment10 Limit Start Level	"Spurious Limit Start Level10"	Same as above
Spurious Segment11 Limit Start Level	"Spurious Limit Start Level11"	Same as above
Spurious Segment12 Limit Start Level	"Spurious Limit Start Level12"	Same as above
Spurious Segment13 Limit Start Level	"Spurious Limit Start Level13"	Same as above
Spurious Segment14 Limit Start Level	"Spurious Limit Start Level14"	Same as above
Spurious Segment15 Limit Start Level	"Spurious Limit Start Level15"	Same as above
Spurious Segment16 Limit Start Level	"Spurious Limit Start Level16"	Same as above
Spurious Segment17 Limit Start Level	"Spurious Limit Start Level17"	Same as above
Spurious Segment18 Limit Start Level	"Spurious Limit Start Level18"	Same as above
Spurious Segment19 Limit Start Level	"Spurious Limit Start Level19"	Same as above
Spurious Segment20 Limit Start Level	"Spurious Limit Start Level20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode1"	"Auto": Auto "Manual": Manual
Spurious Segment2 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode2"	Same as above
Spurious Segment3 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode3"	Same as above
Spurious Segment4 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode4"	Same as above
Spurious Segment5 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode5"	Same as above
Spurious Segment6 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode6"	Same as above
Spurious Segment7 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode7"	Same as above
Spurious Segment8 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode8"	Same as above
Spurious Segment9 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode9"	Same as above
Spurious Segment10 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode10"	Same as above
Spurious Segment11 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode11"	Same as above
Spurious Segment12 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode12"	Same as above
Spurious Segment13 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode13"	Same as above
Spurious Segment14 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode14"	Same as above
Spurious Segment15 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode15"	Same as above
Spurious Segment16 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode16"	Same as above
Spurious Segment17 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode17"	Same as above
Spurious Segment18 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode18"	Same as above
Spurious Segment19 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode19"	Same as above
Spurious Segment20 Limit Stop Level Auto/Manual	"Spurious Limit Stop Level Mode20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Limit Stop Level	"Spurious Limit Stop Level1"	Value is described in 0.01 dBm units.
Spurious Segment2 Limit Stop Level	"Spurious Limit Stop Level2"	Same as above
Spurious Segment3 Limit Stop Level	"Spurious Limit Stop Level3"	Same as above
Spurious Segment4 Limit Stop Level	"Spurious Limit Stop Level4"	Same as above
Spurious Segment5 Limit Stop Level	"Spurious Limit Stop Level5"	Same as above
Spurious Segment6 Limit Stop Level	"Spurious Limit Stop Level6"	Same as above
Spurious Segment7 Limit Stop Level	"Spurious Limit Stop Level7"	Same as above
Spurious Segment8 Limit Stop Level	"Spurious Limit Stop Level8"	Same as above
Spurious Segment9 Limit Stop Level	"Spurious Limit Stop Level9"	Same as above
Spurious Segment10 Limit Stop Level	"Spurious Limit Stop Level10"	Same as above
Spurious Segment11 Limit Stop Level	"Spurious Limit Stop Level11"	Same as above
Spurious Segment12 Limit Stop Level	"Spurious Limit Stop Level12"	Same as above
Spurious Segment13 Limit Stop Level	"Spurious Limit Stop Level13"	Same as above
Spurious Segment14 Limit Stop Level	"Spurious Limit Stop Level14"	Same as above
Spurious Segment15 Limit Stop Level	"Spurious Limit Stop Level15"	Same as above
Spurious Segment16 Limit Stop Level	"Spurious Limit Stop Level16"	Same as above
Spurious Segment17 Limit Stop Level	"Spurious Limit Stop Level17"	Same as above
Spurious Segment18 Limit Stop Level	"Spurious Limit Stop Level18"	Same as above
Spurious Segment19 Limit Stop Level	"Spurious Limit Stop Level19"	Same as above
Spurious Segment20 Limit Stop Level	"Spurious Limit Stop Level20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Search Resolution	"Spurious Search Resolution1"	Value is described in 0.001 dB units.
Spurious Segment2 Search Resolution	"Spurious Search Resolution2"	Same as above
Spurious Segment3 Search Resolution	"Spurious Search Resolution3"	Same as above
Spurious Segment4 Search Resolution	"Spurious Search Resolution4"	Same as above
Spurious Segment5 Search Resolution	"Spurious Search Resolution5"	Same as above
Spurious Segment6 Search Resolution	"Spurious Search Resolution6"	Same as above
Spurious Segment7 Search Resolution	"Spurious Search Resolution7"	Same as above
Spurious Segment8 Search Resolution	"Spurious Search Resolution8"	Same as above
Spurious Segment9 Search Resolution	"Spurious Search Resolution9"	Same as above
Spurious Segment10 Search Resolution	"Spurious Search Resolution10"	Same as above
Spurious Segment11 Search Resolution	"Spurious Search Resolution11"	Same as above
Spurious Segment12 Search Resolution	"Spurious Search Resolution12"	Same as above
Spurious Segment13 Search Resolution	"Spurious Search Resolution13"	Same as above
Spurious Segment14 Search Resolution	"Spurious Search Resolution14"	Same as above
Spurious Segment15 Search Resolution	"Spurious Search Resolution15"	Same as above
Spurious Segment16 Search Resolution	"Spurious Search Resolution16"	Same as above
Spurious Segment17 Search Resolution	"Spurious Search Resolution17"	Same as above
Spurious Segment18 Search Resolution	"Spurious Search Resolution18"	Same as above
Spurious Segment19 Search Resolution	"Spurious Search Resolution19"	Same as above
Spurious Segment20 Search Resolution	"Spurious Search Resolution20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Search Threshold Level	"Spurious Search Threshold Level1"	Value is described in 0.01 dBm units.
Spurious Segment2 Search Threshold Level	"Spurious Search Threshold Level2"	Same as above
Spurious Segment3 Search Threshold Level	"Spurious Search Threshold Level3"	Same as above
Spurious Segment4 Search Threshold Level	"Spurious Search Threshold Level4"	Same as above
Spurious Segment5 Search Threshold Level	"Spurious Search Threshold Level5"	Same as above
Spurious Segment6 Search Threshold Level	"Spurious Search Threshold Level6"	Same as above
Spurious Segment7 Search Threshold Level	"Spurious Search Threshold Level7"	Same as above
Spurious Segment8 Search Threshold Level	"Spurious Search Threshold Level8"	Same as above
Spurious Segment9 Search Threshold Level	"Spurious Search Threshold Level9"	Same as above
Spurious Segment10 Search Threshold Level	"Spurious Search Threshold Level10"	Same as above
Spurious Segment11 Search Threshold Level	"Spurious Search Threshold Level11"	Same as above
Spurious Segment12 Search Threshold Level	"Spurious Search Threshold Level12"	Same as above
Spurious Segment13 Search Threshold Level	"Spurious Search Threshold Level13"	Same as above
Spurious Segment14 Search Threshold Level	"Spurious Search Threshold Level14"	Same as above
Spurious Segment15 Search Threshold Level	"Spurious Search Threshold Level15"	Same as above
Spurious Segment16 Search Threshold Level	"Spurious Search Threshold Level16"	Same as above
Spurious Segment17 Search Threshold Level	"Spurious Search Threshold Level17"	Same as above
Spurious Segment18 Search Threshold Level	"Spurious Search Threshold Level18"	Same as above
Spurious Segment19 Search Threshold Level	"Spurious Search Threshold Level19"	Same as above
Spurious Segment20 Search Threshold Level	"Spurious Search Threshold Level20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW1"	"On": On "Off": Off
Spurious Segment2 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW2"	Same as above
Spurious Segment3 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW3"	Same as above
Spurious Segment4 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW4"	Same as above
Spurious Segment5 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW5"	Same as above
Spurious Segment6 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW6"	Same as above
Spurious Segment7 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW7"	Same as above
Spurious Segment8 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW8"	Same as above
Spurious Segment9 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW9"	Same as above
Spurious Segment10 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW10"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment11 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW11"	"On": On "Off": Off
Spurious Segment12 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW12"	Same as above
Spurious Segment13 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW13"	Same as above
Spurious Segment14 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW14"	Same as above
Spurious Segment15 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW15"	Same as above
Spurious Segment16 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW16"	Same as above
Spurious Segment17 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW17"	Same as above
Spurious Segment18 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW18"	Same as above
Spurious Segment19 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW19"	Same as above
Spurious Segment20 Time Domain Couple Segment RBW On/Off	"Spurious Couple Segment RBW20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Time Domain RBW	"Spurious Time Domain RBW1"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50 kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz
Spurious Segment2 Time Domain RBW	"Spurious Time Domain RBW2"	Same as above
Spurious Segment3 Time Domain RBW	"Spurious Time Domain RBW3"	Same as above
Spurious Segment4 Time Domain RBW	"Spurious Time Domain RBW4"	Same as above
Spurious Segment5 Time Domain RBW	"Spurious Time Domain RBW5"	Same as above
Spurious Segment6 Time Domain RBW	"Spurious Time Domain RBW6"	Same as above
Spurious Segment7 Time Domain RBW	"Spurious Time Domain RBW7"	Same as above
Spurious Segment8 Time Domain RBW	"Spurious Time Domain RBW8"	Same as above
Spurious Segment9 Time Domain RBW	"Spurious Time Domain RBW9"	Same as above
Spurious Segment10 Time Domain RBW	"Spurious Time Domain RBW10"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment11 Time Domain RBW	"Spurious Time Domain RBW11"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50 kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz
Spurious Segment12 Time Domain RBW	"Spurious Time Domain RBW12"	Same as above
Spurious Segment13 Time Domain RBW	"Spurious Time Domain RBW13"	Same as above
Spurious Segment14 Time Domain RBW	"Spurious Time Domain RBW14"	Same as above
Spurious Segment15 Time Domain RBW	"Spurious Time Domain RBW15"	Same as above
Spurious Segment16 Time Domain RBW	"Spurious Time Domain RBW16"	Same as above
Spurious Segment17 Time Domain RBW	"Spurious Time Domain RBW17"	Same as above
Spurious Segment18 Time Domain RBW	"Spurious Time Domain RBW18"	Same as above
Spurious Segment19 Time Domain RBW	"Spurious Time Domain RBW19"	Same as above
Spurious Segment20 Time Domain RBW	"Spurious Time Domain RBW20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW1"	"On": On "Off": Off
Spurious Segment2 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW2"	Same as above
Spurious Segment3 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW3"	Same as above
Spurious Segment4 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW4"	Same as above
Spurious Segment5 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW5"	Same as above
Spurious Segment6 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW6"	Same as above
Spurious Segment7 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW7"	Same as above
Spurious Segment8 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW8"	Same as above
Spurious Segment9 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW9"	Same as above
Spurious Segment10 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW10"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment11 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW11"	"On": On "Off": Off
Spurious Segment12 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW12"	Same as above
Spurious Segment13 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW13"	Same as above
Spurious Segment14 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW14"	Same as above
Spurious Segment15 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW15"	Same as above
Spurious Segment16 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW16"	Same as above
Spurious Segment17 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW17"	Same as above
Spurious Segment18 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW18"	Same as above
Spurious Segment19 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW19"	Same as above
Spurious Segment20 Time Domain Couple Segment VBW On/Off	"Spurious Couple Segment VBW20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Time Domain VBW	"Spurious Time Domain VBW1"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5 kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
Spurious Segment2 Time Domain VBW	"Spurious Time Domain VBW2"	Same as above
Spurious Segment3 Time Domain VBW	"Spurious Time Domain VBW3"	Same as above
Spurious Segment4 Time Domain VBW	"Spurious Time Domain VBW4"	Same as above
Spurious Segment5 Time Domain VBW	"Spurious Time Domain VBW5"	Same as above
Spurious Segment6 Time Domain VBW	"Spurious Time Domain VBW6"	Same as above
Spurious Segment7 Time Domain VBW	"Spurious Time Domain VBW7"	Same as above
Spurious Segment8 Time Domain VBW	"Spurious Time Domain VBW8"	Same as above
Spurious Segment9 Time Domain VBW	"Spurious Time Domain VBW9"	Same as above
Spurious Segment10 Time Domain VBW	"Spurious Time Domain VBW10"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment11 Time Domain VBW	"Spurious Time Domain VBW11"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5 kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
Spurious Segment12 Time Domain VBW	"Spurious Time Domain VBW12"	Same as above
Spurious Segment13 Time Domain VBW	"Spurious Time Domain VBW13"	Same as above
Spurious Segment14 Time Domain VBW	"Spurious Time Domain VBW14"	Same as above
Spurious Segment15 Time Domain VBW	"Spurious Time Domain VBW15"	Same as above
Spurious Segment16 Time Domain VBW	"Spurious Time Domain VBW16"	Same as above
Spurious Segment17 Time Domain VBW	"Spurious Time Domain VBW17"	Same as above
Spurious Segment18 Time Domain VBW	"Spurious Time Domain VBW18"	Same as above
Spurious Segment19 Time Domain VBW	"Spurious Time Domain VBW19"	Same as above
Spurious Segment20 Time Domain VBW	"Spurious Time Domain VBW20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Time Domain Sweep Time	"Spurious Time Domain Sweep Time1"	Value is described in μs units.
Spurious Segment2 Time Domain Sweep Time	"Spurious Time Domain Sweep Time2"	Same as above
Spurious Segment3 Time Domain Sweep Time	"Spurious Time Domain Sweep Time3"	Same as above
Spurious Segment4 Time Domain Sweep Time	"Spurious Time Domain Sweep Time4"	Same as above
Spurious Segment5 Time Domain Sweep Time	"Spurious Time Domain Sweep Time5"	Same as above
Spurious Segment6 Time Domain Sweep Time	"Spurious Time Domain Sweep Time6"	Same as above
Spurious Segment7 Time Domain Sweep Time	"Spurious Time Domain Sweep Time7"	Same as above
Spurious Segment8 Time Domain Sweep Time	"Spurious Time Domain Sweep Time8"	Same as above
Spurious Segment9 Time Domain Sweep Time	"Spurious Time Domain Sweep Time9"	Same as above
Spurious Segment10 Time Domain Sweep Time	"Spurious Time Domain Sweep Time10"	Same as above
Spurious Segment11 Time Domain Sweep Time	"Spurious Time Domain Sweep Time11"	Same as above
Spurious Segment12 Time Domain Sweep Time	"Spurious Time Domain Sweep Time12"	Same as above
Spurious Segment13 Time Domain Sweep Time	"Spurious Time Domain Sweep Time13"	Same as above
Spurious Segment14 Time Domain Sweep Time	"Spurious Time Domain Sweep Time14"	Same as above
Spurious Segment15 Time Domain Sweep Time	"Spurious Time Domain Sweep Time15"	Same as above
Spurious Segment16 Time Domain Sweep Time	"Spurious Time Domain Sweep Time16"	Same as above
Spurious Segment17 Time Domain Sweep Time	"Spurious Time Domain Sweep Time17"	Same as above
Spurious Segment18 Time Domain Sweep Time	"Spurious Time Domain Sweep Time18"	Same as above
Spurious Segment19 Time Domain Sweep Time	"Spurious Time Domain Sweep Time19"	Same as above
Spurious Segment20 Time Domain Sweep Time	"Spurious Time Domain Sweep Time20"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment1 Time Domain Detection	"Spurious Time Domain Detection1"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS
Spurious Segment2 Time Domain Detection	"Spurious Time Domain Detection2"	Same as above
Spurious Segment3 Time Domain Detection	"Spurious Time Domain Detection3"	Same as above
Spurious Segment4 Time Domain Detection	"Spurious Time Domain Detection4"	Same as above
Spurious Segment5 Time Domain Detection	"Spurious Time Domain Detection5"	Same as above
Spurious Segment6 Time Domain Detection	"Spurious Time Domain Detection6"	Same as above
Spurious Segment7 Time Domain Detection	"Spurious Time Domain Detection7"	Same as above
Spurious Segment8 Time Domain Detection	"Spurious Time Domain Detection8"	Same as above
Spurious Segment9 Time Domain Detection	"Spurious Time Domain Detection9"	Same as above
Spurious Segment10 Time Domain Detection	"Spurious Time Domain Detection10"	Same as above

Table 2.16-9 Parameter List Settings (Spurious Emission Measurement) (Cont' d)

Parameter	Attribute Name Setting	Attribute Value Setting
Spurious Segment11 Time Domain Detection	"Spurious Time Domain Detection11"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS
Spurious Segment12 Time Domain Detection	"Spurious Time Domain Detection12"	Same as above
Spurious Segment13 Time Domain Detection	"Spurious Time Domain Detection13"	Same as above
Spurious Segment14 Time Domain Detection	"Spurious Time Domain Detection14"	Same as above
Spurious Segment15 Time Domain Detection	"Spurious Time Domain Detection15"	Same as above
Spurious Segment16 Time Domain Detection	"Spurious Time Domain Detection16"	Same as above
Spurious Segment17 Time Domain Detection	"Spurious Time Domain Detection17"	Same as above
Spurious Segment18 Time Domain Detection	"Spurious Time Domain Detection18"	Same as above
Spurious Segment19 Time Domain Detection	"Spurious Time Domain Detection19"	Same as above
Spurious Segment20 Time Domain Detection	"Spurious Time Domain Detection20"	Same as above

:MEASure:BATCh:IM? <filename>,<spa_freq>[,<sg_freq>[,<device>]]

Transmit Intermodulation Batch Measure

Function

This command executes Transmit intermodulation measurement and outputs the result based on the specified parameter list file.

Query

```
:MEASure:BATCh:IM?
<filename>,<spa_freq>[,<sg_freq>[,<device>]]
```

Response

Two values of ref_carrier_a are output when ACP Reference is BSIDes.

```
<ref_carrier_a>(,<ref_carrier_a>),<lower_offset_1_rel>,<
lower_offset_1_abs>,<upper_offset_1_rel>,<upper_offset_1
_abs>,<lower_offset_2_rel>,<lower_offset_2_abs>,<upper_o
ffset_2_rel>,<upper_offset_2_abs>,<lower_offset_3_rel>,<
lower_offset_3_abs>,<upper_offset_3_rel>,<upper_offset_3
_abs>,<spa_1_result>,<spa_2_result>
```

Parameter

`<filename>`	Parameter list file Specify with any character string enclosed by double quotes (" ") or single quotes (' ').
`<spa_freq>`	Center frequency of Spectrum Analyzer function
Range	–100 MHz to +6.05 GHz (MS2690A) –100 MHz to +13.6 GHz (MS2691A) –100 MHz to +26.6 GHz (MS2692A)
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted. MAXimum, MINimum and DEFault are not available.
`<sg_freq>`	Frequency of Signal Generator
Range	125 MHz to 6 GHz
Resolution	0.01 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted. MAXimum, MINimum and DEFault are not available.

<device> Drive name
A,B,D,E,F,...
D drive is used when omitted.

<lower_offset_n_rel> Relative power of lower Offset-n
<upper_offset_n_rel> Relative power of upper Offset-n
No suffix code, dB unit, 0.001 dB resolution
–999.0 is returned when there is an error and no measurement is performed.

<ref_carrier_a> Power of reference carrier
<lower_offset_n_abs> Absolute power of lower Offset-n
<upper_offset_n_abs> Absolute power of upper Offset-n
No suffix code, Log Scale Unit (dBm unit for V output and μW unit for W output)
–999.0 is returned when there is an error and no measurement is performed.

<spa_n_result> Peak search result (power) after measurement with zero span with SPA[n] parameter
No suffix code, Log Scale Unit unit
(mV unit for V output and μW unit for W output)
–999.0 is returned when there is an error and no measurement is performed.

Details

Transmit intermodulation measurement is executed and the result is output based on the specified parameter list file.

Place the parameter list files in the following folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be applied with the :MMEMory:RELoad:BATCh command.
(cf. :MMEMory:RELoad:BATCh)

Example of Use

To execute Transmit intermodulation measurement using the MyParam.xls parameter list file.

```
MEAS:BATC:IM? "MyParam",2GHz,2.005GHz
>
0.0,-72.130,0.0,-72.130,-1.270,-73.400,-0.570,-72.700,-0
.780,-72.910,-1.030,-73.160,-999.0,-999.0,-999.0,-999.0
```

Parameter list format

Table 2.16-10 lists the parameter list example.

Table 2.16-10 Parameter List Example (IM Measurement)

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- System Template XML Parameter -->
<SignalAnalyzerProject>
  <ProjectDefine>
    <Attribute Name="Type" Value="Application" />
    <Attribute Name="Name" Value="Batch Parameter List" />
    <Attribute Name="FileVersion" Value="1.0.0.0" />
  </ProjectDefine>
  <Params>
    <ImSgParams Name="SG1">
      <CommonParams>
        <Attribute Name="Package Name" Value="W-CDMA(BS Tx Test)" />
        <Attribute Name="Pattern Name" Value="TestModel_1_16DPCH" />
        <Attribute Name="Modulation" Value="On" />
        <Attribute Name="RF Level" Value="10.00" />
        <Attribute Name="SG Output" Value="On" />
      </CommonParams>
    </ImSgParams>
    <ImAcpParams Name="ACP1">
      <CommonParams>
        <Attribute Name="Trace Points" Value="1001" />
        <Attribute Name="Span Freq." Value="25000000" />
        <Attribute Name="RBW Value" Value="30kHz" />
        <Attribute Name="Detection" Value="RMS" />
        <Attribute Name="Sweep Time Switch" Value="Auto" />
        <Attribute Name="Auto Sweep Time Select" Value="Normal" />
        <Attribute Name="ACP Reference" Value="Carrier Select" />
        <Attribute Name="ACP Carrier Number" Value="1" />
        <Attribute Name="ACP Carrier BW" Value="4515000" />
        <Attribute Name="ACP Carrier Spacing" Value="5000000" />
        <Attribute Name="ACP In Band Center" Value="0" />
        <Attribute Name="ACP In Band FilterType" Value="Rect" />
        <Attribute Name="ACP In Band Roll-off Factor" Value="22" />
        <Attribute Name="ACP Offset1 Value" Value="5000000" />
        <Attribute Name="ACP Offset2 Value" Value="10000000" />
        <Attribute Name="ACP Offset3 Value" Value="15000000" />
        <Attribute Name="ACP Offset1 Switch" Value="On" />
        <Attribute Name="ACP Offset2 Switch" Value="On" />
```

Table 2.16-10 Parameter List Example (IM Measurement) (Cont'd)

```
        <Attribute Name="ACP Offset3 Switch" Value="Off" />
        <Attribute Name="ACP Ofset Ch Bw" Value="4515000" />
        <Attribute Name="ACP Offset FilterType" Value="Rect" />
        <Attribute Name="ACP Offset Roll-off Factor" Value="22" />
      </CommonParams>
    </ImAcpParams>
    <ImSpaParams Name="SPA1">
      <CommonParams>
        <Attribute Name="Center Freq." Value="2100000000" />
        <Attribute Name="Span Freq." Value="0" />
        <Attribute Name="Domain" Value="TimeDomain" />
        <Attribute Name="Trace Points" Value="1001" />
        <Attribute Name="RBW Value" Value="1MHz" />
        <Attribute Name="VBW Value" Value="1MHz" />
        <Attribute Name="Detection" Value="Positive" />
        <Attribute Name="Sweep Time Switch" Value="Manual" />
        <Attribute Name="Sweep Time Time Domain" Value="10000" />
      </CommonParams>
    </ImSpaParams>
    <ImSpaParams Name="SPA2">
      <CommonParams>
        <Attribute Name="Center Freq." Value="2120000000" />
        <Attribute Name="Span Freq." Value="0" />
        <Attribute Name="Domain" Value="TimeDomain" />
        <Attribute Name="Trace Points" Value="1001" />
        <Attribute Name="RBW Value" Value="1MHz" />
        <Attribute Name="VBW Value" Value="1MHz" />
        <Attribute Name="Detection" Value="Positive" />
        <Attribute Name="Sweep Time Switch" Value="Manual" />
        <Attribute Name="Sweep Time Time Domain" Value="10000" />
      </CommonParams>
    </ImSpaParams>
  </Params>
</SignalAnalyzerProject>
```

Describe the setting parameters in the part enclosed between the CommonParams elements. The description method consists in describing the parameter name to be set in the Name attribute in the Attribute element, and the setting value in Value. The parts in bold characters in Table 2.16-10 are an actual setting example. Describe all other parts the same as in Table 2.16-10.

Since the settings are done in sequence from the top, be careful about the description order when setting parameters that have relationships of dependence. Also, if a value that is either out of the setting range or that cannot be set has been input, that setting is ignored.

Table 2.16-11 Parameter List Settings (IM Measurement – SG Settings)

Parameter	Attribute Name Setting	Attribute Value Setting
Package Name	"Package Name"	Describes the Package name to use.
Pattern Name	"Pattern Name"	Describes the Pattern name to use.
Modulation	"Modulation"	"On": On "Off": Off
External Trigger On/Off	"Trigger"	"On": On "Off": Off
External Trigger Source	"Trigger Source"	"Ext Trigger": External "Application Sync Trigger": Application Sync "Baseband I/F": BBIF
External Trigger Mode	"Trigger Mode"	"Start Trigger": Start Trigger "Frame Trigger": Frame Trigger
External Trigger Edge	"Trigger Edge"	"0": Fall "1": Rise
SA Trigger Out	"SA Trigger Out"	"Marker1": Marker 1 "Marker2": Marker 2 "Marker3": Marker 3 "Pattern Sync": Pattern Sync
Marker1 Polarity	"Marker1 Polarity"	"1": Positive "0": Negative
Marker1 Edit	"Marker1 Edit"	"ON": On "OFF": Off "SYNC": Pattern Sync
Frequency	"Frequency"	Describes in 0.01 Hz units.
RF Level	"RF Level"	Describes in dBm units.
Level Offset On/Off	"Offset"	"On": On "Off": Off
Level Offset	"Offset Value"	Describes in dB units.
SG Output	"SG Output"	"On": On "Off": Off
Level Auto CAL	"Level Auto CAL"	"On": On "Off": Off

Table 2.16-12 Parameter List Settings (IM Measurement – ACP Settings)

Parameter	Attribute Name Setting	Attribute Value Setting
Center Frequency	"Center Freq."	Value is described in Hz units.
Spurious Mode	"Frequency Band Spurious Mode"	"Normal": Normal "Spurious": Spurious
Span Frequency	"Span Freq."	Value is described in Hz units.
Reference Level	"Reference Level"	Value is described in dBm units.
Reference Level Offset	"Reference Level Offset"	"On": On "Off": Off
Reference Level Offset Value	"Reference Level Offset Value"	Value is described in 0.01 dB units.
RBW Auto/Manual	"RBW Switch"	"Auto": Auto "Manual": Manual
VBW Auto/Manual	"VBW Switch"	"Auto": Auto "Manual": Manual
Sweep Time Auto/Manual	"Sweep Time Switch"	"Auto": Auto "Manual": Manual
Attenuator Auto/Manual	"ATTN Switch"	"Auto": Auto "Manual": Manual
RBW	"RBW Value"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50 kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz

Table 2.16-12 Parameter List Settings (IM Measurement – ACP Settings) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
VBW	"VBW Value"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "5 kHz": 5 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
Sweep Time	"Sweep Time Freq. Domain"	Value is described in ms units.
Attenuator	"ATTN Value"	Value is described in dB units.
Storage Mode	"Storage Mode A"	"Lin Average": Lin Average "Average": Average "Max Hold": Max Hold "Min Hold": Min Hold "Off": Off
Storage Count	"Storage Count"	Describes the storage count.
Trace Points	"Trace Points"	Describes the number of trace points.
Detection	"Detection"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS

Table 2.16-12 Parameter List Settings (IM Measurement – ACP Settings) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Trigger Switch	"Trigger Switch"	"Off": Off "On": On
Trigger Source	"Trigger Source"	"Video": Video "External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Trigger Slope	"Trigger Slope"	"Rise": Rise "Fall": Fall
Trigger Level (Video)	"Trigger Level(Video)Log"	Value is described in dBm units.
Trigger Level (Wide IF Video)	"Trigger Level(Wide)"	Value is described in dBm units.
Gate Sweep	"Gate Sweep"	"Off": Off "On": On
Gate Source	"Gate Source"	"External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Gate Delay	"Gate Delay"	Value is described in ns units.
Gate Length	"Gate Length"	Value is described in ns units.
Gate Level (Wide IF Video)	"Gate Level(Wide)"	Value is described in dBm units.
Gate Slope	"Gate Slope"	"Rise": Rise "Fall": Fall
Pre-amp	"Pre-amp"	"Off": Off "On": On
VBW Mode	"VBW Mode"	"Power": Power "Video": Video
ACP Reference	"ACP Reference"	"Both Sides of
Carriers": Both Sides of Carriers "Span Total": Span Total "Carrier Total": Carrier Total "Carrier Select": Carrier Select

Table 2.16-12 Parameter List Settings (IM Measurement – ACP Settings) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
ACP Carrier Select Number	"ACP Carrier Select Number"	Describes reference carrier number.
ACP In Band Center	"ACP In Band Center"	Value is described in Hz units.
ACP Carrier Spacing	"ACP Carrier Spacing"	Value is described in Hz units.
ACP Carrier BW	"ACP Carrier BW"	Value is described in Hz units.
ACP In Band FilterType	"ACP In Band FilterType"	"Rect": Rect "Nyquist": Nyquist "Root Nyquist": Root Nyquist
ACP In Band Roll-off Factor	"ACP In Band Roll-off Factor"	Value is described in 0.01 units.
ACP Ofset Ch Bw	"ACP Ofset Ch Bw"	Value is described in Hz units.
ACP Offset1 Switch	"ACP Offset1 Switch"	"Off": Off "On": On
ACP Offset2 Switch	"ACP Offset2 Switch"	"Off": Off "On": On
ACP Offset3 Switch	"ACP Offset3 Switch"	"Off": Off "On": On
ACP Offset1 Value	"ACP Offset1 Value"	Value is described in Hz units.
ACP Offset2 Value	"ACP Offset2 Value"	Value is described in Hz units.
ACP Offset3 Value	"ACP Offset3 Value"	Value is described in Hz units.
ACP Offset FilterType	"ACP Offset FilterType"	"Rect": Rect "Nyquist": Nyquist "Root Nyquist": Root Nyquist
ACP Offset Roll-off Factor	"ACP Offset Roll-off Factor"	Value is described in 0.01 units.
ACP Power Result Type	"ACP Power Result Type"	"Ofs.": Offset "Carrier": Carrier
Auto Sweep Time Select	"Auto Sweep Time Select"	"Normal": Normal "Fast": Fast

Table 2.16-13 Parameter List Settings (IM Measurement – SPA Settings)

Parameter	Attribute Name Setting	Attribute Value Setting
Relative Frequency	"Relative Freq."	When this parameter is used, the relative frequency can be set from command argument <spa_freq> as the center frequency. Value is described in Hz units.
Center Frequency	"Center Freq."	Value is described in Hz units.
Spurious Mode	"Frequency Band Spurious Mode"	"Normal": Normal "Spurious": Spurious
Reference Level	"Reference Level"	Value is described in dBm units.
Reference Level Offset	"Reference Level Offset"	"On": On "Off": Off
Reference Level Offset Value	"Reference Level Offset Value"	Value is described in 0.01 dB units.
RBW Auto/Manual	"RBW Switch Time Domain"	"Auto": Auto "Manual": Manual
VBW Auto/Manual	"VBW Switch Time Domain"	"Auto": Auto "Manual": Manual
Attenuator Auto/Manual	"ATTN Switch"	"Auto": Auto "Manual": Manual
RBW	"RBW Value Time Domain"	"30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "500Hz": 500 Hz "1kHz": 1 kHz "3kHz": 3 kHz "10kHz": 10 kHz "30kHz": 30 kHz "50 kHz": 50 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "2MHz": 2 MHz "3MHz": 3 MHz "5MHz": 5 MHz "10MHz": 10 MHz "20MHz": 20 MHz

Table 2.16-13 Parameter List Settings (IM Measurement – SPA Settings) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
VBW	"VBW Value Time Domain"	"1Hz": 1 Hz "3Hz": 3 Hz "10Hz": 10 Hz "30Hz": 30 Hz "100Hz": 100 Hz "300Hz": 300 Hz "1kHz": 1 kHz "3kHz": 3 kHz "5 kHz": 5 kHz "10kHz": 10 kHz "30kHz": 30 kHz "100kHz": 100 kHz "300kHz": 300 kHz "1MHz": 1 MHz "3MHz": 3 MHz "10MHz": 10 MHz "Off": Off
Sweep Time	"Sweep Time Time Domain"	Value is described in µs units.
Attenuator	"ATTN Value"	Value is described in dB units.
Storage Mode	"Storage Mode A"	"Lin Average": Lin Average "Average": Average "Max Hold": Max Hold "Min Hold": Min Hold "Off": Off
Storage Count	"Storage Count"	Describes the storage count.
Trace Points	"Trace Points Time Domain"	Describes the number of trace points.
Detection	"Detection Time Domain"	"Pos & Neg": Pos & Neg "Positive": Positive "Negative": Negative "Sample": Sample "RMS": RMS

Table 2.16-13 Parameter List Settings (IM Measurement – SPA Settings) (Cont'd)

Parameter	Attribute Name Setting	Attribute Value Setting
Trigger Switch	"Trigger Switch"	"Off": Off "On": On
Trigger Source	"Trigger Source"	"Video": Video "External": External "SG Marker": SG Marker "Wide IF Video": Wide IF Video "BBIF": BBIF
Trigger Slope	"Trigger Slope"	"Rise": Rise "Fall": Fall
Trigger Level (Video)	"Trigger Level(Video)Log"	Value is described in dBm units.
Trigger Level (Wide IF Video)	"Trigger Level(Wide)"	Value is described in dBm units.
Pre-amp	"Pre-amp"	"Off": Off "On": On
VBW Mode	"VBW Mode"	"Power": Power "Video": Video

:MEASure:POWadj?
<rbw>,<length>,<sg_start_level>,<sg_max_level>,<target>,<range>[,<frequency>[,<tracepoint>[,<count>[,<adjust_log>[,<sg_offset_switch>]]]]]

Measure Power Adjust

Function

This command executes power adjustment and reads the result.
Power adjustment combines the SG option and power measurement functions to set the output level of the DUT, such as an amplifier, to the specified level.

Query

```
:MEASure:POWadj?
<rbw>,<length>,<sg_start_level>,<sg_max_level>,<target>,
<range>[,<frequency>[,<tracepoint>[,<count>[,<adjust_log
>[,<sg_offset_switch>]]]]]
```

Response

```
<judge>,<sa_input>,<sg_output>,<count_res>,<time>,<sa_in
put_log_n>,<sg_output_log_n>,<count_log_n>
```

Parameter

`<rbw>` Analysis bandwidth

[MS269xA]

Range/Resolution: 30 Hz to 31.25 MHz
Either of the values, 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz can be used.
Set the specified waveform bandwidth or more.
Recommended to set at 31.25 MHz

[MS2830A], [MS2840A]

Range/Resolution: 30 Hz to 31.25 MHz
Either of the values, 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz can be used.
Set the specified waveform bandwidth or more.
Recommended to set at 31.25 MHz

[Common]

Suffix code: HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
Hz is used when omitted

`<length>` Analysis length

Range: 1 µs to 1000 s
Suffix code: NS,US,MS,S
S is used when omitted
µs (resolution)

<sg_start_level>	Set the SG output level set at the start. When inserting a DUT, specify the DUT input level and RF Input so the maximum input level is not exceeded.
Range	
[MS269xA]	–140 dBm to –5 dBm
[MS2830A], [MS2840A]	–40.00 dBm to +20.00 dBm (>25 MHz) –40.00 dBm to +2.00 dBm (≤25 MHz) –136.00 dBm to +15.00 dBm (>25 MHz) (Option 022/122) –136.00 dBm to –3.00 dBm (≤25 MHz) (Option 022/122)
Resolution	0.01 dBm
<sg_max_level>	Set the SG maximum output level. When inserting a DUT, specify the DUT input level and RF Input so the maximum input level is not exceeded.
Range	
[MS269xA]	–140 dBm to –5 dBm
[MS2830A], [MS2840A]	–40.00 dBm to +20.00 dBm (>25 MHz) –40.00 dBm to +2.00 dBm (≤25 MHz) –136.00 dBm to +15.00 dBm (>25 MHz) (Option 022/122) –136.00 dBm to –3.00 dBm (≤25 MHz) (Option 022/122)
Resolution	0.01 dBm
Suffix code	DBM,DM
<target>	Target level when executing power adjustment
Range	–150 dBm to 30 dBm (Pre-Amp Off) –150 dBm to 10 dBm (Pre-Amp On) When adding the reference offset, the added value is the setting range.
Resolution	0.01 dBm
Suffix code	DBM,DM
<range>	Power adjustment range Power adjusted is evaluated as PASS when adjustment is within the specified range
Range	0 to 20 dB
Resolution	0.01 dB
<frequency>	Power adjustment execution frequency
Range	
[MS269xA]	125 MHz to 6 GHz
[MS2830A]	250 kHz to 3.6 GHz (Option 020/120) 250 kHz to 6 GHz (Option 041/043, and 021/121)
[MS2840A]	250 kHz to 3.6 GHz (Option 020/120)

250 kHz to 6 GHz (Option 041, and 021/121)
Resolution 1 Hz
Suffix code HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
Hz is used when omitted.
MAXimum, MINimum, and DEFault cannot be used. The currently set frequency cannot be used when omitted.

<tracepoint> trace point
- 11 11 point
- 21 21 point
- 41 41 point
- 51 51 point
- 101 101 point
- 201 201 point
- 251 251 point
- 401 401 point
- 501 501 point
- 1001 1001 point
- 2001 2001 point
- 5001 5001 point
- 10001 10001 point
- 30001 30001 point (MS269xA Only)

Recommended to specify Trace Point to 1001.

<count> Power adjustment execution count
Range 1 to 10
Resolution 1
Suffix code None. If the value is omitted, power adjustment is executed 5 times.

<adjust_log> Specifies whether or not to output Log at each power adjustment.
- ON|1 Output log
- OFF|0 Do not output log

<sg_offset_switch> Specifies whether or not to output Log at each power adjustment.
- ON|1 Return level offset setting
- OFF|0 Do not return the level offset setting values

<judge> Evaluates power adjustment
0 is returned at PASS and 1 is returned at FAIL.
–999.0 is returned if there is no measurement.

<sa_input> DUT output level
Suffix code None, dBm (unit)
0.01 dB (resolution)
–999.0 is returned if there is no measurement.

<sg_output> Output level of SG Output of this equipment
Suffix code None, dBm (unit)
0.01 dB (resolution)
–999.0 is returned if there is no measurement.

<count_res> Power adjustment execution count

<time>	Power adjustment time
Suffix code	None, ms (unit)
	–999.0 is returned if there is no measurement.
<sa_input_log_n>	DUT output level at power adjustment
	Added to response when Log Output on
Suffix code	None, dBm (unit)
	0.01 dB (resolution)
<sg_output_log_n>	Output level from SG Output at each power adjustment
	Added to response when Log Output on
<count_log_n>	Power adjustment count
	Added to response when Log Output on
Suffix code	None, dBm (unit)
	0.01 dB (resolution)

Details

This function cannot be performed when the SG option is not installed.

SG setting and measurement are executed repeatedly until the target level specified at target, range is reached within the count specified at count. This is used for various measurements such as a spurious measurement with specified output level.
In this application, the Reference Level and Attenuator settings are calculated as follows from the Adjustment Target Level, Crest Factor, and Correction value and are set automatically at the measurement section. Using this application, the Attenuator is set so that the Mixer Input Level become 0 dBm.

Reference Level setting value

$$\text{Reference Level} = \langle \text{target} \rangle + \text{Crest Factor} - \text{Correction}$$

* Crest Factor = 12 dB

However, it is rounded to 50 dBm when Reference Level > 50 dBm (30 dBm at Pre-amp On) and to –120 dBm when Reference Level < –120 dBm

Attenuator setting values

$$\textit{Attenuator} = \text{Reference Level} - \text{Mixer Input Level} + \text{Pre} - \text{Amp Gain} - \text{Offset}$$

* Mixer Input Level = 0
* Pre-Amp Gain = 20 dB (only at Pre-Amp On)
* Offset :Reference Level Offset value

However, it is rounded to 60 dB when Attenuator > 60 and to 0 dBm when Attenuator < 0. Additionally, when the Attenuator value is an odd

number, it is rounded up to the nearest even number (Example: 35 dB →36 dB).

After executing this command, the function and the following settings specified by an argument are changed.

- Sets Detection to RMS
- Sets Sweep Mode to Single
- Sets Scale Mode to Log
- Sets Log Scale Unit to dBm

When using the SG offset function, switch to the SG application and set the offset level. Set the value with offset to this command arguments, `sg_start_level` and `sg_max_level` and set `sg_offset_switch` to On.
`sg_output` and `sg_output_log_n` returns the output level with offset.

Example of Use

To execute power adjustment under the following conditions:
Frequency: 2 GHz
Analysis width: 5 MHz
Trace point: 1001
Analysis length: 500 µs
Start SG output level: –30 dBm
Max. SG output level: –5 dBm
Adjustment target level: –10 dBm
Adjustment range: 0.4 dB
Adjustment count: 6 times
Log output: On
SG Offset:On

```
MEAS:POW?
20000000,500US,-30,-5,-10,0.4,2000000000,1001,6,ON,ON
> 0,-9.6,-12.5,3,156,-28,-30,1,-9.5,-12.0,2,-9.6,-12.5,3
```

2.17 Other Settings

Table 2.17-1 lists device messages for other settings.

Table 2.17-1 Device Messages for Other Settings

Function	Device Message
Measurement Status Query	:STATus:ERRor?
Uncal Status Query	:STATus:UNCal?
Erase Warm Up Message	:DISPlay:ANNotation:WUP:ERASe
Display Uncal Message	:DISPlay:ANNotation:UNCal[:STATe] ON|OFF|1|0
	:DISPlay:ANNotation:UNCal[:STATe]?
Display Title	:DISPlay:ANNotation:TITLe[:STATe] ON|OFF|1|0
	:DISPlay:ANNotation:TITLe[:STATe]?
Title Entry	:DISPlay:ANNotation:TITLe:DATA <string>
	:DISPlay:ANNotation:TITLe:DATA?
Pre-selector Auto Tune	:CALibration:YTF
	:CALibration:YTF?
Pre-selector Tune	[:SENSe]:POWer[:RF]:PADJust <freq>
	[:SENSe]:POWer[:RF]:PADJust?
Adjust Reference Clock	:CALibration:RCLock[:VALue] <integer>
	:CALibration:RCLock[:VALue]?
Adjust Reference Clock Preset	:CALibration:RCLock[:VALue]:PRESet
Micro Wave Preselector Bypass	[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe] ON|OFF|1|0
	[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe]?

:STATus:ERRor?

Measurement Status Query

Function

This command queries the measurement status.

Query

```
:STATus:ERRor?
```

Response

```
<status>
```

Parameter

<status>	Measurement status	
Value	= bit0 + bit1 + bit2 + bit3 + bit4 + bit5 + bit6 + bit7 + bit8 + bit9 + bit10 + bit11 + bit12 + bit13 + bit14 + bit15	
	bit0 : 2^0 = 1	Not measured
	bit1 : 2^1 = 2	Level over
	bit2 : 2^2 = 4	(Not used)
	bit3 : 2^3 = 8	(Not used)
	bit4 : 2^4 = 16	(Not used)
	bit5 : 2^5 = 32	(Not used)
	bit6 : 2^6 = 64	(Not used)
	bit7 : 2^7 = 128	(Not used)
	bit8 : 2^8 = 256	(Not used)
	bit9 : 2^9 = 512	(Not used)
	bit10 : 2^{10} = 1024	(Not used)
	bit11 : 2^{11} = 2048	(Not used)
	bit12 : 2^{12} = 4096	(Not used)
	bit13 : 2^{13} = 8192	(Not used)
	bit14 : 2^{14} = 16384	(Not used)
	bit15 : 2^{15} = 32768	(Not used)
Range	0 to 255	

Details

0 is returned when the measurement ends normally.

Example of Use

To query the measurement status.

```
STAT:ERR?
> 0
```

:STATus:UNCal?

Uncal Status Query

Function

This command queries UNCAL status.

Query

```
:STATus:UNCal?
```

Response

```
<status>
```

Parameter

<status>	UNCAL status
NORM	Normal
UNC	UNCAL

Example of Use

To query UNCAL status.

```
STAT:UNC?
> NORM
```

:DISPlay:ANNotation:WUP:ERASe

Erase Warm Up Message

Function

This command erases the warm up message displayed after startup.

Command

```
:DISPlay:ANNotation:WUP:ERASe
```

Example of Use

To erase the warm up display.

```
DISP:ANN:WUP:ERAS
```

:DISPlay:ANNotation:UNCal[:STATe] ON|OFF|1|0

Display Uncal Message

Function

This command enables/disables the UNCAL display when Uncal occurs.

Command

```
:DISPlay:ANNotation:UNCal[:STATe] <switch>
```

Parameter

<switch>	UNCAL display On/Off
ON|1	Enables the UCAL display.
OFF|0	Disables the UCAL display.

Example of Use

To disable the UNCAL display.

```
DISP:ANN:UNC OFF
```

:DISPlay:ANNotation:UNCal[:STATe]?

Display Uncal Message Query

Function

This command queries the On/Off state of the Uncal display when Uncal occurs.

Query

```
:DISPlay:ANNotation:UNCal[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	UNCAL display On/Off
1	UCAL display is enabled.
0	UCAL display is disabled.

Example of Use

To query the On/Off state of the UNCAL display.

```
DISP:ANN:UNC?
> 0
```

:DISPlay:ANNotation:TITLe[:STATe] ON|OFF|1|0

Display Title

Function

This command enables/disables the title display.

Command

```
:DISPlay:ANNotation:TITLe[:STATe] <switch>
```

Parameter

<switch>	Title display On/Off
ON|1	Enables the title display.
OFF|0	Disables the title display.

Example of Use

To enable the title display.

```
DISP:ANN:TITL ON
```

:DISPlay:ANNotation:TITLe[:STATe]?

Display Title Query

Function

This command queries the On/Off state of the title display.

Query

```
:DISPlay:ANNotation:TITLe[:STATe]?
```

Response

```
<switch>
```

Parameter

<switch>	Title display ON/OFF
1	Title display is enabled.
0	Title display is displayed.

Example of Use

To query the On/Off state of the title display.

```
DISP:ANN:TITL?
> 1
```

:DISPlay:ANNotation:TITLe:DATA <string>

Title Entry

Function

This command registers the title character string.

Command

```
:DISPlay:ANNotation:TITLe:DATA <string>
```

Parameter

<string>	Character string within 32 characters enclosed by double quotation marks (" ") or single quotation marks (' ').

Example of Use

To set the title character string.

```
DISP:ANN:TITL:DATA 'SPECTRUM ANALYZER'
```

Related Command

This command has the same function as the following command.

```
:DISPlay:ACPower:ANNotation:TITLe:DATA
```

:DISPlay:ANNotation:TITLe:DATA?

Title Entry Query

Function

This command queries the title character string.

Query

```
:DISPlay:ANNotation:TITLe:DATA?
```

Response

```
<string>
```

Parameter

<string>	Character string within 32 characters enclosed by double quotation marks (" ") or single quotation marks (' ').

Example of Use

To query the title character string.

```
DISP:ANN:TITL:DATA?
> SPECTRUM ANALYZER
```

Related Command

This command has the same function as the following command.

```
:DISPlay:ACPower:ANNotation:TITLe:DATA
```

:CALibration:YTF

Pre-selector Auto Tune

Function

This command sets the Pre-selector to Auto.

Command

```
:CALibration:YTF
```

Details

[MS269xA], [MS2830A], [MS2840A]

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

[MS2830A]

This command is not available for MS2830A-040/041/043.

[MS2840A]

This command is not available for MS2840A-040/041.

Example of Use

To set the pre-selector to auto.

```
CAL:YTF
```

:CALibration:YTF?

Pre-selector Auto Tune Query

Function

This command queries the pre-selector settings.

Query

```
:CALibration:YTF?
```

Response

```
<result>
```

Parameter

<result>	Normal/Error
0	Finished normal
1	Error

Details

[MS269xA], [MS2830A], [MS2840A]
This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.
[MS2830A]
This command is not available for MS2830A-040/041/043.
[MS2840A]
This command is not available for MS2840A-040/041.

Example of Use

To query the pre-selector settings.

```
CAL:YTF?
> 0
```

[:SENSe]:POWer[:RF]:PADJust <freq>

Pre-selector Tune

Function

This command sets the Preselector peaking bias value.

Command

```
[:SENSe]:POWer[:RF]:PADJust <freq>
```

Parameter

<freq>	Peaking bias value
Range	–128 to 127
Resolution	1
Default	0

Details

[MS269xA]

Automatic setting of the peaking bias value cannot be used under the following conditions:

- When using the MS2690A:
- When not using the preselector band:
  The frequency which switched to the preselector band can be set in Frequency Band Mode.

[MS2830A], [MS2840A]

Automatic setting of the peaking bias value cannot be used under the following conditions:

- In case of MS2830A-040/041/043, MS2840A-040/041:
- When not using the preselector band:
  The frequency which switched to the preselector band can be set in Frequency Band Mode.

Example of Use

To set the peaking bias value to 100.

```
POW:PADJ 100
```

[:SENSe]:POWer[:RF]:PADJust?

Pre-selector Tune Query

Function

This command queries the Preselector peaking bias value.

Query

```
[:SENSe]:POWer[:RF]:PADJust?
```

Response

```
<freq>
```

Parameter

<freq>		Peaking bias value
	Range	–128 to 127
	Resolution	1

Details

[MS269xA]

Automatic setting of the peaking bias value cannot be used under the following conditions:

- When using the MS2690A:
- When not using the preselector band:
  The frequency which switched to the preselector band can be set in Frequency Band Mode.

[MS2830A], [MS2840A]

Automatic setting of the peaking bias value cannot be used under the following conditions:

- MS2830A-040/041/043, MS2840A-040/041:
- When not using the preselector band:
  The frequency which switched to the preselector band can be set in Frequency Band Mode.

Example of Use

To query the peaking bias value.

```
POW:PADJ?
> 100
```

:CALibration:RCLock[:VALue] <integer>

Adjust Reference Clock

Function

This command sets the adjustment value for the internal reference signal oscillator (Reference Clock).

Command

```
:CALibration:RCLock[:VALue] <integer>
```

Parameter

<integer>		Adjustment value
	Range	0 to 1023 (MS2830A)
		0 to 4095 (MS2840A)
	Resolution	1

Example of Use

To set the adjustment value of the internal reference signal oscillator to 511

```
CAL:RCL 511
```

:CALibration:RCLock[:VALue]?

Adjust Reference Clock Query

Function

This command queries the adjustment value of the internal reference signal oscillator (Reference Clock).

Query

```
:CALibration:RCLock[:VALue]?
```

Response

```
<integer>
```

Parameter

<integer>		Adjustment value
	Range	0 to 1023 (MS2830A)
		0 to 4095 (MS2840A)
	Resolution	1

Example of Use

To query adjustment value 511 of the internal reference signal oscillator.

```
CAL:RCL?
> 511
```

:CALibration:RCLock[:VALue]:PRESet

Adjust Reference Clock Preset

Function

This command resets the adjustment value of the internal reference signal oscillator (Reference Clock).

Command

```
:CALibration:RCLock[:VALue]:PRESet
```

Example of Use

To reset the adjustment value of the internal reference signal oscillator.

```
CAL:RCL:PRES
```

[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe] ON|OFF|1|0

Micro Wave Preselector Bypass

Function

This command sets the Micro Wave Preselector Bypass.

Command

```
[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe] <switch>
```

Parameter

<switch>	Microwave Preselector Bypass
ON|1	Enables bypassing
OFF|0	Disables bypassing
Default	OFF

Details

This function is available when Option 067/167 is installed for MS269xA.
This function is available when Option 007/067/167 is installed for MS2830A.
This function is available when Option 067/167 is installed for MS2840A.

Example of Use

To set the Micro Wave Preselector Bypass.

```
POW:MW:PRES ON
```

[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe]?

Micro Wave Preselector Bypass Query

Function

This command queries the Micro Wave Preselector Bypass.

Query

```
[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe]?
```

Response

```
<status>
```

Parameter

`<status>`	Microwave Preselector Bypass
1	Enables bypassing
0	Disables bypassing

Details

This function is available when Option 067/167 is installed for MS269xA.
This function is available when Option 007/067/167 is installed for MS2830A.
This function is available when Option 067/167 is installed for MS2840A.

Example of Use

To query the Micro Wave Preselector Bypass status.

```
POW:MW:PRES?
> 1
```

2.18 QUEStionable Status Register

The figure below shows the layer structure of the QUEStionable status register.

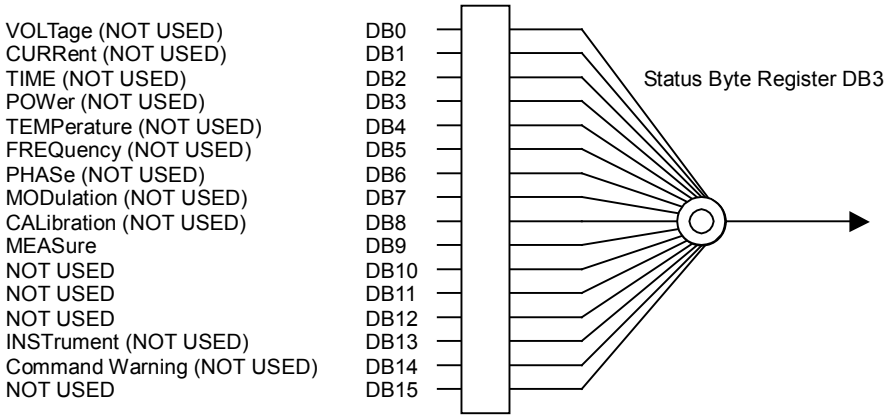

Figure 2.18-1 QUEStionable Status Register

Table 2.18-1 QUEStionable Status Register

Byte definition of QUEStionable Status Register	
DB9	QUEStionable Measure Register overview

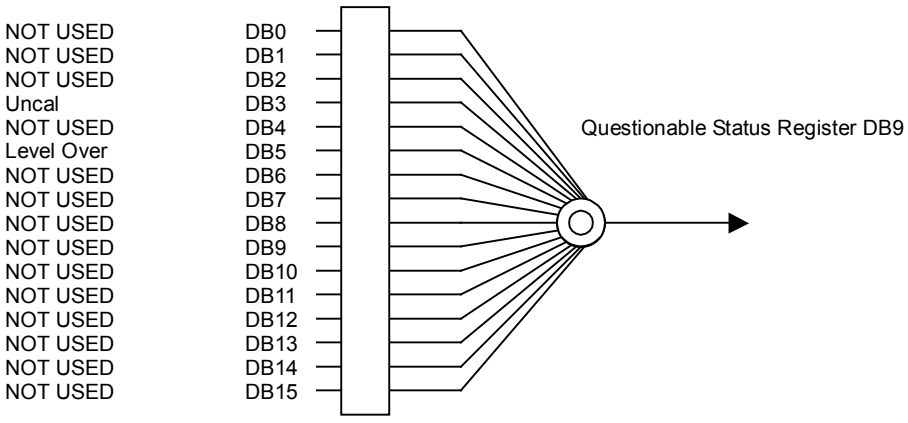

Figure 2.18-2 QUEStionable Measure Register

Table 2.18-2 QUEStionable Measure Register

Byte definition of QUEStionable Measure Register	
DB3	Displays the generation of Uncal status.
DB5	Displays the generation of level over.

Table 2.18-3 lists device messages for the QUEStionable status register.

Table 2.18-3 Device messages for QUEStionable Status Register

Function	Device message
Questionable Status Register Event	:STATus:QUEStionable[:EVENt]?
Questionable Status Register Condition	:STATus:QUEStionable:CONDition?
Questionable Status Register Enable	:STATus:QUEStionable:ENABle <integer>
	:STATus:QUEStionable:ENABle?
Questionable Status Register Negative Transition	:STATus:QUEStionable:NTRansition <integer>
	:STATus:QUEStionable:NTRansition?
Questionable Status Register Positive Transition	:STATus:QUEStionable:PTRansition <integer>
	:STATus:QUEStionable:PTRansition?
Questionable Measure Register Event	:STATus:QUEStionable:MEASure[:EVENt]?
Questionable Measure Register Condition	:STATus:QUEStionable:MEASure:CONDition?
Questionable Measure Register Enable	:STATus:QUEStionable:MEASure:ENABle <integer>
	:STATus:QUEStionable:MEASure:ENABle?
Questionable Measure Register Negative Transition	:STATus:QUEStionable:MEASure:NTRansition <integer>
	:STATus:QUEStionable:MEASure:NTRansition?
Questionable Measure Register Positive Transition	:STATus:QUEStionable:MEASure:PTRansition <integer>
	:STATus:QUEStionable:MEASure:PTRansition?

:STATus:QUEStionable[:EVENt]?

Questionable Status Register Event

Function

This command queries the event register of the QUEStionable status register.

Query

```
:STATus:QUEStionable[:EVENt]?
```

Response

```
<integer>
```

Parameter

<integer>		Total bytes of event register
	Resolution	1
	Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To query the contents of the event register of the QUEStionable status register.

```
STAT:QUES?
> 0
```

:STATus:QUEStionable:CONDition?

Questionable Status Register Condition

Function

This command queries the condition register of the QUEStionable status register.

Query

```
:STATus:QUEStionable:CONDition?
```

Response

```
<integer>
```

Parameter

`<integer>`		Total byte of condition register
	Resolution	1
	Range	0 to 65535

Example of Use

To query the contents of the condition register of the QUEStionable status register.

```
STAT:QUES:COND?
> 0
```

:STATus:QUEStionable:ENABle <integer>

Questionable Status Register Enable

Function

This command sets the event enable register of the QUEStionable status register.

Command

```
:STATus:QUEStionable:ENABle <integer>
```

Parameter

<integer>		Total byte of event enable register
	Resolution	1
	Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the event enable register of the QUEStionable status register to 16.

```
STAT:QUES:ENAB 16
```

:STATus:QUEStionable:ENABle?

Questionable Status Register Enable Query

Function

This command queries the event enable register of the QUEStionable status register.

Query

```
:STATus:QUEStionable:ENABle?
```

Response

```
<integer>
```

Parameter

`<integer>`		Total byte of the event enable register
	Resolution	1
	Range	0 to 65535

Example of Use

To query the event enable register of the QUEStionable status register.

```
STAT:QUES:ENAB?
> 16
```

:STATus:QUEStionable:NTRansition <integer>

Questionable Status Register Negative Transition

Function

This command sets the transition filter (negative direction change) of the QUEStionable status register.

Command

```
:STATus:QUEStionable:NTRansition <integer>
```

Parameter

<integer>	Total byte of transition filter (negative direction change)
Resolution	1
Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the transition filter (negative direction change) of the QUEStionable status register to 16.

```
STAT:QUES:NTR 16
```

:STATus:QUEStionable:NTRansition?

Questionable Status Register Negative Transition Query

Function

This command queries the transition filter (negative direction change) of the QUEStionable status register.

Query

```
:STATus:QUEStionable:NTRansition?
```

Response

```
<integer>
```

Parameter

<integer>	Total byte of transition filter (negative direction change)
Resolution	1
Range	0 to 65535

Example of Use

To query the transition filter (negative direction change) of the QUEStionable status register.

```
STAT:QUES:NTR?
> 16
```

:STATus:QUEStionable:PTRansition <integer>

Questionable Status Register Positive Transition

Function

This command sets the transition filter (positive direction change) of the QUEStionable status register.

Command

```
:STATus:QUEStionable:PTRansition <integer>
```

Parameter

<integer>	Total byte of transition filter (positive direction change)
Resolution	1
Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the transition filter (positive direction change) of the QUEStionable status register to 16.

```
STAT:QUES:PTR 16
```

:STATus:QUEStionable:PTRansition?

Questionable Status Register Positive Transition Query

Function

This command queries the transition filter (positive direction change) of the QUEStionable status register.

Query

```
:STATus:QUEStionable:PTRansition?
```

Response

```
<integer>
```

Parameter

<integer>		Total byte of transition filter (positive direction change)
	Resolution	1
	Range	0 to 65535

Example of Use

To query the transition filter (positive direction change) of the QUEStionable status register.

```
STAT:QUES:PTR?
> 16
```

:STATus:QUEStionable:MEASure[:EVENt]?

Questionable Measure Register Event

Function

This command queries the event register of the QUEStionable Measure register.

Query

```
:STATus:QUEStionable:MEASure[:EVENt]?
```

Response

```
<integer>
```

Parameter

<integer>	Total byte of event register
Resolution	1
Range	0 to 65535

Example of Use

To query the contents of the event register of the QUEStionable Measure register.

```
STAT:QUES:MEAS?
> 0
```

:STATus:QUEStionable:MEASure:CONDition?

Questionable Measure Register Condition

Function

This command queries the condition register of the QUEStionable Measure register.

Query

```
:STATus:QUEStionable:MEASure:CONDition?
```

Response

```
<integer>
```

Parameter

<integer>	Total byte of condition register
Resolution	1
Range	0 to 65535

Example of Use

To query the contents of the condition register of the QUEStionable Measure register.

```
STAT:QUES:MEAS:COND?
> 0
```


:STATus:QUEStionable:MEASure:ENABle <integer>

Questionable Measure Register Enable

Function

This command sets the event enable register of the QUEStionable Measure register.

Command

```
:STATus:QUEStionable:MEASure:ENABle <integer>
```

Parameter

<integer>	Total byte of event enable register
Resolution	1
Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the event enable register of the QUEStionable Measure register to 16.

```
STAT:QUES:MEAS:ENAB 16
```

:STATus:QUEStionable:MEASure:ENABle?

Questionable Measure Register Enable Query

Function

This command queries the event enable register of the QUEStionable Measure register.

Query

```
:STATus:QUEStionable:MEASure:ENABle?
```

Response

```
<integer>
```

Parameter

`<integer>`	Total byte of event enable register
Resolution	1
Range	0 to 65535

Example of Use

To query the event enable register of the QUEStionable Measure register.

```
STAT:QUES:MEAS:ENAB?
> 16
```

:STATus:QUEStionable:MEASure:NTRansition <integer>

Questionable Measure Register Negative Transition

Function

This command sets the transition filter (negative direction change) of the QUEStionable Measure register.

Command

```
:STATus:QUEStionable:MEASure:NTRansition <integer>
```

Parameter

<integer>	Total byte of transition filter (negative direction change)
Resolution	1
Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the transition filter (negative direction change) of the QUEStionable Measure register to 16.

```
STAT:QUES:MEAS:NTR 16
```

:STATus:QUEStionable:MEASure:NTRansition?

Questionable Measure Register Negative Transition Query

Function

This command queries the transition filter (negative direction change) of the QUEStionable Measure register.

Query

```
:STATus:QUEStionable:MEASure:NTRansition?
```

Response

```
<integer>
```

Parameter

<integer>	Total byte of transition filter (negative direction change)
Resolution	1
Range	0 to 65535

Example of Use

To query the transition filter (negative direction change) of the QUEStionable Measure register.

```
STAT:QUES:MEAS:NTR?
> 16
```

:STATus:QUEStionable:MEASure:PTRansition <integer>

Questionable Measure Register Positive Transition

Function

This command sets the transition filter (positive direction change) of the QUEStionable Measure register.

Command

```
:STATus:QUEStionable:MEASure:PTRansition <integer>
```

Parameter

<integer>	Total byte of transition filter (positive direction change)
Resolution	1
Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the transition filter (positive direction change) of the QUEStionable Measure register to 16.

```
STAT:QUES:MEAS:PTR 16
```

:STATus:QUEStionable:MEASure:PTRansition?

Questionable Measure Register Positive Transition Query

Function

This command queries the transition filter (positive direction change) of the QUEStionable Measure register.

Query

```
:STATus:QUEStionable:MEASure:PTRansition?
```

Response

```
<integer>
```

Parameter

`<integer>`		Total byte of transition filter (positive direction change)
	Resolution	1
	Range	0 to 65535

Example of Use

To query the transition filter (positive direction change) of the QUEStionable Measure register.

```
STAT:QUES:MEAS:PTR?
> 16
```

2.19 OPERation Status Register

The figure below shows the layer structure of the OPERation Status Register.

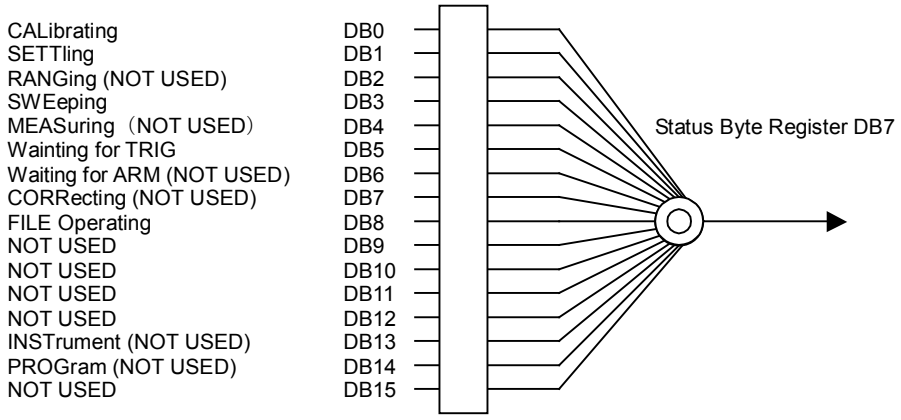

Figure 2.19-1 OPERation Status Register

Table 2.19-1 OPERation Status Register

Byte definition of OPERation Status Register	
DB0	CAL is being executed.
DB1	Warm Up Message is being displayed.
DB3	Sweeping
DB5	Waiting for trigger.

The table below shows device messages for the OPERation status register.

Table 2.19-2 Device messages for OPERation status register

Function	Device message
Operation Status Register Event	:STATus:OPERation[:EVENt]?
Operation Status Register Condition	:STATus:OPERation:CONDition?
Operation Status Register Enable	:STATus:OPERation:ENABle <integer>
	:STATus:OPERation:ENABle?
Operation StatusRegister Negative Transition	:STATus:OPERation:NTRansition <integer>
	:STATus:OPERation:NTRansition?
Operation Status Register Positive Transition	:STATus:OPERation:PTRansition <integer>
	:STATus:OPERation:PTRansition?

:STATus:OPERation[:EVENt]?

Operation Status Register Event

Function

This command queries the event register of the OPERation Status Register.

Query

```
:STATus:OPERation[:EVENt]?
```

Response

```
<integer>
```

Parameter

`<integer>`		Total byte of event register
	Resolution	1
	Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To query the event register of the OPERation Status Register.

```
STAT:OPER?
> 0
```

:STATus:OPERation:CONDition?

Operation Status Register Condition

Function

This command queries the condition register of the OPERation Status Register.

Query

```
:STATus:OPERation:CONDition?
```

Response

```
<integer>
```

Parameter

<integer>		Total byte of condition register
	Resolution	1
	Range	0 to 65535

Example of Use

To query the contents of the condition register of the OPERation Status Register.

```
STAT:OPER:COND?
> 0
```

:STATus:OPERation:ENABle <integer>

Operation Status Register Enable

Function

This command sets the event enable register of the OPERation status register.

Command

```
:STATus:OPERation:ENABle <integer>
```

Parameter

<integer>	Total byte of event enable register
Resolution	1
Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the event enable register of the OPERation status register to 16.

```
STAT:OPER:ENAB 16
```

:STATus:OPERation:ENABle?

Operation Status Register Enable Query

Function

This command queries the event enable register of the OPERation status register.

Query

```
:STATus:OPERation:ENABle?
```

Response

```
<integer>
```

Parameter

<integer>	Total byte of event enable register
Resolution	1
Range	0 to 65535

Example of Use

To query the event enable register of the OPERation status register.

```
STAT:OPER:ENAB?
> 16
```


:STATus:OPERation:NTRansition <integer>

Operation Status Register Negative Transition

Function

This command sets the transition filter (negative direction change) of the OPERation status register.

Command

```
:STATus:OPERation:NTRansition <integer>
```

Parameter

<integer>		Total bytes of transition filter (negative direction change)
	Resolution	1
	Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the transition filter (negative direction change) of the OPERation status register to 16.

```
STAT:OPER:NTR 16
```

:STATus:OPERation:NTRansition?

Operation Status Register Negative Transition Query

Function

This command queries the transition filter (negative direction change) of the OPERation status register.

Query

```
:STATus:OPERation:NTRansition?
```

Response

```
<integer>
```

Parameter

`<integer>`		Total byte of transition filter (negative direction change)
	Resolution	1
	Range	0 to 65535

Example of Use

To query the transition filter (negative direction change) of the OPERation status register.

```
STAT:OPER:NTR?
> 16
```

:STATus:OPERation:PTRansition <integer>

Operation Status Register Positive Transition

Function

This command sets the transition filter (positive direction change) of the OPERation status register.

Command

```
:STATus:OPERation:PTRansition <integer>
```

Parameter

<integer>	Total byte of transition filter (positive direction change)
Resolution	1
Range	0 to 65535

Details

This command is available only in the SCPI mode.

Example of Use

To set the transition filter (positive direction change) of the OPERation status register to 16.

```
STAT:OPER:PTR 16
```

:STATus:OPERation:PTRansition?

Operation Status Register Positive Transition Query

Function

This command queries the transition filter (positive direction change) of the OPERation status register.

Query

```
:STATus:OPERation:PTRansition?
```

Response

```
<integer>
```

Parameter

`<integer>`		Total byte of transition filter (positive direction change)
	Resolution	1
	Range	0 to 65535

Example of Use

To query the transition filter (positive direction change) of the OPERation status register.

```
STAT:OPER:PTR?
> 16
```

2.20 Setting External Mixer

Table 2.20-1 lists the device messages related to External Mixer settings.

Table 2.20-1 Device messages for setting External Mixer

Function	Device message
External Mixer Mode	[:SENSe]:MIXer[:STATe] ON|OFF|1|0
	[:SENSe]:MIXer[:STATe]?
External Mixer Band	[:SENSe]:MIXer[:HARMonic]:BAND VHP|EHP|A|Q|U|V|E|W|F|D|G|Y|J
	[:SENSe]:MIXer[:HARMonic]:BAND?
External Mixer Bias	[:SENSe]:MIXer:BIAS <bias>
	[:SENSe]:MIXer:BIAS?
External Mixer Cable Loss Value	[:SENSe]:MIXer:CABLe:LOSS <power>
	[:SENSe]:MIXer:CABLe:LOSS?
External Mixer Conversion Loss Mode	[:SENSe]:MIXer:LOSS:MODE FIXed|TABLe
	[:SENSe]:MIXer:LOSS:MODE?
External Mixer Conversion Loss Fixed Value	[:SENSe]:MIXer:LOSS[:FIXed] <power>
	[:SENSe]:MIXer:LOSS[:FIXed]?
External Mixer Conversion Loss Table	[:SENSe]:MIXer:LOSS:TABLe
External Mixer Conversion Loss Table Serial Number Query	[:SENSe]:MIXer:LOSS:TABLe:SERial?
PS function (Center Frequency)	[:SENSe]:MIXer:PS[:CENTer] ON|OFF|1|0
	[:SENSe]:MIXer:PS[:CENTer]?
Signal Identifier	[:SENSe]:MIXer:SIGNal ON|OFF|1|0
	[:SENSe]:MIXer:SIGNal?
Signal Identifier Mode	[:SENSe]:MIXer:SIGNal:MODE ISHift|ISUPpress
	[:SENSe]:MIXer:SIGNal:MODE?
External Mixer Calibration	[:SENSe]:MIXer:CALibration

[:SENSe]:MIXer[:STATe] ON|OFF|1|0

External Mixer Mode

Function

This command switches between Internal and External Mixer.

Command

```
[:SENSe]:MIXer[:STATe] <switch>
```

Parameter

<switch>	External mixer switch
ON|1	Selects External Mixer
OFF|0	Selects Internal Mixer

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To use external mixer.

```
MIX ON
```

[:SENSe]:MIXer[:STATe]?

External Mixer Mode Query

Function

This command queries the current mixer mode.

Query

```
[:SENSe]:MIXer[:STATe]?
```

Response

```
<status>
```

Parameter

<status>	External mixer switch
1	Selects External Mixer
0	Selects Internal Mixer

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To query the current mixer mode.

```
MIX?
> 1
```

[:SENSe]:MIXer[:HARMonic]:BAND VHP|EHP|A|Q|U|V|E|W|F|D|G|Y|J

External Mixer Band

Function

This command selects external mixer band.

Command

```
[:SENSe]:MIXer[:HARMonic]:BAND <band>
```

Parameter

<band>	External mixer band
VHP	High Performance Waveguide Mixer Band VHP (50.0 to 75.0 GHz, 8+)
EHP	High Performance Waveguide Mixer Band EHP (60.0 to 90.0 GHz, 12–)
A	Band A (26.5 to 40.0 GHz, 4+)
Q	Band Q (33.0 to 50.0 GHz, 5+)
U	Band U (40.0 to 60.0 GHz, 6+)
V	Band V (50.0 to 75.0 GHz, 8+)
E	Band E (60.0 to 90.0 GHz, 9+)
W	Band W (75.0 to 110.0 GHz, 11+)
F	Band F(90.0 to 140.0 GHz, 14+)
D	Band D (110.0 to 170.0 GHz, 17+)
G	Band G (140.0 to 220.0 GHz, 22+)
Y	Band Y (170.0 to 260.0 GHz, 26+)
J	Band J (220.0 to 325.0 GHz, 33+)

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To set the external mixer band to Band U.

```
MIX:BAND U
```

[:SENSe]:MIXer[:HARMonic]:BAND?

External Mixer Band Query

Function

This command queries the current external mixer band.

Query

```
[:SENSe]:MIXer[:HARMonic]:BAND?
```

Response

```
<band>
```

Parameter

`<band>`	External mixer band
`VHP`	High Performance Waveguide Mixer Band VHP (50.0 to 75.0 GHz, 8+)
`EHP`	High Performance Waveguide Mixer Band EHP (60.0 to 90.0 GHz, 12–)
`A`	Band A (26.5 to 40.0 GHz, 4+)
`Q`	Band Q (33.0 to 50.0 GHz, 5+)
`U`	Band U (40.0 to 60.0 GHz, 6+)
`V`	Band V (50.0 to 75.0 GHz, 8+)
`E`	Band E (60.0 to 90.0 GHz, 9+)
`W`	Band W (75.0 to 110.0 GHz, 11+)
`F`	Band F (90.0 to 140.0 GHz, 14+)
`D`	Band D (110.0 to 170.0 GHz, 17+)
`G`	Band G (140.0 to 220.0 GHz, 22+)
`Y`	Band Y (170.0 to 260.0 GHz, 26+)
`J`	Band J (220.0 to 325.0 GHz, 33+)

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To query the current external mixer band.

```
MIX:BAND?
> U
```

[:SENSe]:MIXer:BIAS <bias>

External Mixer Bias

Function

This command sets the external mixer's bias current.

Command

```
[:SENSe]:MIXer:BIAS <bias>
```

Parameter

<bias>		External mixer's bias current
	Range	0.0 to 20.0 mA
	Resolution	0.1 mA
	Suffix Code	NA,UA,MA,A mA is used when omitted.
	Default	0.0 mA

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
A value can be set per external mixer band.
When using High Performance Waveguide Mixer, the external mixer's bias current is fixed to 0.0 mA.

Example of Use

To set the external mixer's bias current to 10 mA.

```
MIX:BIAS 10MA
```

[:SENSe]:MIXer:BIAS?

External Mixer Bias Query

Function

This command queries the current external mixer's bias current.

Query

```
[:SENSe]:MIXer:BIAS?
```

Response

```
<bias>
```

Parameter

`<bias>`		External mixer's bias current
	Range	0.1 to 20.0 mA
	Resolution	0.1 mA
	Suffix code	None, value is returned in mA units.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
One value is held per external mixer band.
When using High Performance Waveguide Mixer, the external mixer's bias current is fixed to 0.0 mA.

Example of Use

To query the current external mixer's bias current.

```
MIX:BIAS?
> 20.0
```

[:SENSe]:MIXer:CABLe:LOSS <power>

External Mixer Cable Loss Value

Function

This command sets the external mixer cable loss value.

Command

```
[:SENSe]:MIXer:CABLe:LOSS <power>
```

Parameter

<power>		External Mixer Cable Loss
	Range	0.00 to 99.99 dB
	Resolution	0.01 dB
	Suffix Code	DB dB is used when omitted.
	Default	0.00 dB

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To set the external mixer cable loss value to 10 dB.

```
MIX:CABL:LOSS 10DB
```

[:SENSe]:MIXer:CABLe:LOSS?

External Mixer Cable Loss Value Query

Function

This command queries the external mixer cable loss value.

Query

```
[:SENSe]:MIXer:CABLe:LOSS?
```

Response

```
<power>
```

Parameter

`<power>`		External Mixer Cable Loss
	Range	0.00 to 99.99 dB
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dB units.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To query the external mixer cable loss value.

```
MIX:CABL:LOSS?
> 10.00
```

[:SENSe]:MIXer:LOSS:MODE FIXed|TABLe

External Mixer Conversion Loss Mode

Function

This command sets the conversion loss mode of the external mixer in the current band.

Command

```
[:SENSe]:MIXer:LOSS:MODE <type>
```

Parameter

<type>	Conversion Loss Mode of External Mixer
FIXed	A fixed value is used.
TABLe	A loaded table value is used.
Default	FIXed

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To set the conversion loss mode of the external mixer to a fixed value.

```
MIX:LOSS:MODE FIX
```

[:SENSe]:MIXer:LOSS:MODE?

External Mixer Conversion Loss Mode Query

Function

This command queries the conversion loss mode of the external mixer in the current band.

Query

```
[:SENSe]:MIXer:LOSS:MODE?
```

Response

```
<type>
```

Parameter

`<type>`	Conversion Loss Mode of External Mixer
`FIX`	A fixed value is used.
`TABL`	A loaded table value is used.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To query the conversion loss mode of the external mixer.

```
MIX:LOSS:MODE?
> FIX
```

[:SENSe]:MIXer:LOSS[:FIXed] <power>

External Mixer Conversion Loss Fixed Value

Function

This command sets the external mixer's fixed conversion loss.

Command

```
[:SENSe]:MIXer:LOSS[:FIXed] <power>
```

Parameter

<power>	Conversion Loss of External Mixer
Range	0.00 to 99.99 dB
Resolution	0.01 dB
Suffix Code	DB dB is used when omitted.
Default	15.00 dB

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
A value can be set per external mixer band.

Example of Use

To set the external mixer's fixed conversion loss to 10 dB.

```
MIX:LOSS 10DB
```

[:SENSe]:MIXer:LOSS[:FIXed]?

External Mixer Conversion Loss Fixed Value Query

Function

This command queries the external mixer's fixed conversion loss.

Query

```
[:SENSe]:MIXer:LOSS[:FIXed]?
```

Response

```
<power>
```

Parameter

<power>		Conversion Loss of External Mixer
	Range	0.00 to 99.99 dB
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dB units.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
One value is held per external mixer band.

Example of Use

To query the current external mixer's fixed conversion loss.

```
MIX:LOSS?
> 10.00
```

[:SENSe]:MIXer:LOSS:TABLe

External Mixer Conversion Loss Table

Function

This command loads the conversion loss table of the external mixer from the USB memory stick.

Command

```
[:SENSe]:MIXer:LOSS:TABLe
```

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
It is only available for High Performance Waveguide Mixer.
One table can be loaded per external mixer band.

Example of Use

To load the conversion loss table of the external mixer from the USB memory stick.

```
MIX:LOSS:TABL
```

[:SENSe]:MIXer:LOSS:TABLe:SERial?

External Mixer Conversion Loss Table Serial Number Query

Function

This command queries the serial number of the external mixer conversion loss table.

Query

```
[:SENSe]:MIXer:LOSS:TABLe:SERial?
```

Response

```
<number>
```

Parameter

`<number>` External Mixer Conversion Loss Table Serial Number

Suffix code None.

"***" is returned when the conversion loss table of the external mixer is not loaded.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
One value is held per external mixer band.

Example of Use

To query the serial number of the current external mixer conversion loss table.

```
MIX:LOSS:TABL:SER?
> 123456-1
```

[:SENSe]:MIXer:PS[:Center] ON|OFF|1|0

PS Function

Function

This command enables/disables PS function, which reverses the frequency polarity at the center frequency when using High Performance Waveguide Mixer.

Command

```
[:SENSe]:MIXer:PS[:Center] <switch>
```

Parameter

<switch>	PS function
ON|1	Enables PS function.
OFF|0	Disables PS function.
Default	Off

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
It is only available for High Performance Waveguide Mixer.
This function cannot be set to On when Signal ID is On.

Example of Use

To sweep while reversing the frequency polarity at the center frequency.

```
MIX:PS ON
```

[:SENSe]:MIXer:PS[:Center]?

PS Function Query

Function

This command queries the state of PS function, which reverses the frequency polarity at the center frequency when using High Performance Waveguide Mixer.

Query

```
[:SENSe]:MIXer:PS[:Center]?
```

Response

```
<status>
```

Parameter

<status>	PS function
1	PS function is enabled.
0	PS function is disabled.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To query the state of PS function, which reverses the frequency polarity at the center frequency.

```
MIX:PS?
> 1
```

[:SENSe]:MIXer:SIGNal ON|OFF|1|0

Signal Identifier

Function

This command enables/disables signal identifier operation, which identifies measured signal and image signal when external mixer is used.

Command

```
[:SENSe]:MIXer:SIGNal <switch>
```

Parameter

<switch>	Signal ID
ON|1	Selects signal ID.
OFF|0	Does not select signal ID.
Default	OFF

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
Signal ID cannot be set to On when PS function is On.
Signal ID cannot be set to On when Measure function is On.

Example of Use

To sweep while identifying measured signal and image signal.

```
MIX:SIGN ON
```

[:SENSe]:MIXer:SIGNal?

Signal Identifier Query

Function

This command queries the state of signal identifier operation, which identifies measured signal and image signal when external mixer is used.

Query

```
[:SENSe]:MIXer:SIGNal?
```

Response

```
<status>
```

Parameter

`<status>`	Signal ID
`1`	Selects signal ID.
`0`	Does not select signal ID.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To query the state of signal identifier operation, which identifies measured signal and image signal.

```
MIX:SIGN?
> 1
```

[:SENSe]:MIXer:SIGNal:MODE ISHift|ISUPpress

Signal Identifier Mode

Function

This command sets the type of signal identifier operation, which identifies measured signal and image signal when external mixer is used.

Command

```
[:SENSe]:MIXer:SIGNal:MODE <type>
```

Parameter

<type>	Signal Identifier Mode
ISHift	Displays the sweep results of different polarities alternately.
ISUPpress	Displays the sweep results of different polarities after Minimum processing.
Default	ISHift

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To set the type of signal identifier operation, which identifies measured signal and image signal.

```
MIX:SIGN:MODE ISH
```

[:SENSe]:MIXer:SIGNal:MODE?

Signal Identifier Mode Query

Function

This command queries the type of signal identifier operation, which identifies measured signal and image signal when external mixer is used.

Query

```
[:SENSe]:MIXer:SIGNal:MODE?
```

Response

```
<type>
```

Parameter

`<type>`	Signal Identifier Mode
`ISH`	Displays the sweep results of different polarities alternately.
`ISUP`	Displays the sweep results of different polarities after Minimum processing.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To query the type of signal identifier operation, which identifies measured signal and image signal.

```
MIX:SIGN:MODE?
> ISH
```

[:SENSe]:MIXer:CALibration

External Mixer Calibration

Function

This command executes the External Mixer Calibration function

Command

```
[:SENSe]:MIXer:CALibration
```

Details

This function is available only when MS2830A is installed with Option 044/045 and combined with High Performance Waveguide Mixer.
This function is available only when MS2840A is installed with Option 044/046 and combined with High Performance Waveguide Mixer.

This function cannot be performed when Measure function is On.
This function cannot be performed when Trigger is On.
This function cannot be performed when Gate is On.

Example of Use

To execute the External Mixer Calibration function

```
MIX:CAL
```

2.21 Setting Save on Event

Table 2.21-1 lists the device messages related to Save on Event settings.

Table 2.21-1 Device messages for setting Save on Event

Function	Device message
Event Mode	:MMEMory:STORe:EVENt ON|OFF|1|0
	:MMEMory:STORe:EVENt?
Event Type	:MMEMory:STORe:EVENt:TYPE LFAil|LPASs|MFAil|MPASs|SWEep
	:MMEMory:STORe:EVENt:TYPE?
Save then Stop	:MMEMory:STORe:EVENt:STOP ON|OFF|1|0
	:MMEMory:STORe:EVENt:STOP?

:MMEMory:STORe:EVENt ON|OFF|1|0

Event Mode

Function

This command sets whether to turn on or off the Save on Event function.

Command

```
:MMEMory:STORe:EVENt <Switch>
```

Parameter

<switch>	Save on Event function
ON|1	Sets the Save on Event function to ON.
OFF|0	Sets the Save on Event function to OFF. (Default)

Details

All traces are subject to the save operation by the Save on Event function.

Example of Use

To set the Save on Event function to On.

```
:MMEM:STOR:EVEN ON
```

:MMEMory:STORe:EVENt?

Event Mode Query

Function

This command queries the setting of the Save on Event function.

Query

```
:MMEMory:STORe:EVENt?
```

Response

```
<Mode>
```

Parameter

<Mode>	Save on Event function
1	The Save on Event function is set to ON.
0	The Save on Event function is set to OFF.

Example of Use

To query the setting of the Save on Event function.

```
:MMEM:STOR:EVEN?
> 1
```

:MMEMory:STORe:EVENt:TYPE LFAil|LPASs|MFAil|MPASs|SWEep

Event Type

Function

This command sets the event type that triggers the Save on Event function.

Command

```
:MMEMory:STORe:EVENt:TYPE <Type>
```

Parameter

<Type>	Event type
LFAil	Saves a waveform if a Limit evaluation result is Fail. (Default)
LPASs	Saves a waveform if a Limit evaluation result is Pass.
MFAil	Saves a waveform if a Margin evaluation result is Fail.
MPASs	Saves a waveform if a Margin evaluation result is Pass.
SWEep	Saves a waveform whenever measurement is performed, regardless of the Limit evaluation result.

Example of Use

To set the event type that triggers the Save on Event function to Limit Pass.

```
:MMEM:STOR:EVEN:TYPE LPAS
```

:MMEMory:STORe:EVENt:TYPE?

Event Type Query

Function

This command queries the setting of the event type that triggers the Save on Event function.

Query

```
:MMEMory:STORe:EVENt:TYPE?
```

Response

```
<Type>
```

Parameter

`<Type>`	Event type
`LFA`	Saves a waveform if a Limit evaluation result is Fail. (Default)
`LPAS`	Saves a waveform if a Limit evaluation result is Pass.
`MFA`	Saves a waveform if a Margin evaluation result is Fail.
`MPAS`	Saves a waveform if a Margin evaluation result is Pass.
`SWE`	Saves a waveform whenever measurement is performed, regardless of the Limit evaluation result.

Example of Use

To query the setting of the event type that triggers the Save on Event function.

```
:MMEMory:STORe:EVENt:TYPE?
> LPAS
```

:MMEMory:STORe:EVENt:STOP ON|OFF|1|0

Save then Stop

Function

This command sets whether to turn on or off the Save then Stop function that stops the file save operation once a file is saved by the Save on Event function.

Command

```
:MMEMory:STORe:EVENt:STOP <Switch>
```

Parameter

<Switch>	Save then Stop
ON|1	Performs the Save on Event function only once.
OFF|0	Continuously performs the Save on Event function. (Default)

Example of Use

To turn on the Save then Stop function that stops the file save operation once a file is saved by the Save on Event function.

```
:MMEM:STOR:EVEN:STOP ON
```

:MMEMory:STORe:EVENt:STOP?

Save then Stop Query

Function

This command queries the On/Off setting of the Save then Stop function that stops the file save operation once a file is saved by the Save on Event function.

Query

```
:MMEMory:STORe:EVENt:STOP?
```

Response

```
<Switch>
```

Parameter

<Switch>	Save then Stop
1	Performs the Save on Event function only once.
0	Continuously performs the Save on Event function.

Example of Use

To query the On/Off setting of the Save then Stop function that stops the file save operation once a file is saved by the Save on Event function.

```
:MMEM:STOR:EVEN:STOP?
> 1
```

Chapter 3 Native Device Message List

This chapter describes remote control commands for executing the spectrum analyzer function (hereinafter referred to as "this application") using a list organized by functions. Refer to Chapter 4 "Native Device Message Details" for detailed specifications for each command. Refer to the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control)* for detailed specifications on IEEE488.2 common device messages and application common device messages.

Some functions of this instrument only correspond to SCPI commands. You can perform a remote control of the function in Native mode by replacing the corresponding SCPI commands with Native ones.

Refer to Section 1.6.2 "How to use SCPI commands in Native mode" in *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Main unit Remote Control)* for the replacement. Also, refer to Chapter 2 "SCPI Device Messages" for detailed specifications on SCPI commands.

3.1 IEEE488.2 Common Device Messages

IEEE488.2 common device messages available in this application are shown in Table 3.1-1.

Table 3.1-1 IEEE488.2 common device messages

Function	Command	Query	Response	Remarks
Identification	---	*IDN?	ANRITSU,model,serial,version	model: Main unit model name serial: Main unit serial number version: Software package version
Operation Complete	*OPC	*OPC?	1	
Preset (All Application)	*RST	---	---	
Self Test	---	*TST?	result	result: Self test results = 0 | 1
Wait to Continue	*WAI	---	---	
Clear Status	*CLS	---	---	
Service Request Enable Register	*SRE byte	*SRE?	byte	byte = bit7: EESB7 bit6: Not used bit5: ESB bit4: MAV bit3: EESB3 (ERROR Event) bit2: EESB2 (END Event) bit1: EESB1 bit0: EESB0
Status Byte Register	---	*STB?	byte	byte = bit7: EESB7 bit6: MSS/RQS bit5: ESB bit4: MAV bit3: EESB3 (ERROR Event) bit2: EESB2 (END Event) bit1: EESB1 bit0: EESB0

Table 3.1-1 IEEE488.2 common device messages (Cont'd)

Function	Command	Query	Response	Remarks
Standard Event Status Enable Register	*ESE byte	*ESE?	byte	byte = bit7: Power on bit6: User request bit5: Command error bit4: Execution error bit3: Device error bit2: Query error bit1: Not used bit0: Operation complete
Standard Event Status Register	---	*ESR?	byte	

3.2 Application Common Device Messages

Application common device messages available in this application are shown in Table 3.2-1.

Table 3.2-1 Application common device messages

Function	Command	Query	Response	Remarks
Application Switch	SYS apl,window	SYS? apl	status,window	apl: Application name = SPECT window: Window status = ACT | INACT | MIN | NON status: Application execution status = CURRENT | IDLE | RUN | UNLOAD
Preset (All Applications)	*RST	---	---	
Preset (Active Application Only)	PRE	---	---	
	INI	---	---	
System Restart	REBOOT	---	---	
LCD Power	DISPLAY on_off	DISPLAY?	on_off	
Error Display Mode	REMDISP mode	REMDISP?	mode	mode: Display mode = NORMAL | REMAIN | REMAIN_LAST
Save Parameter	SVPRM	---	---	fname: Filename dev: Drive name = A | B | D | E | ...
	SVPRM fname,dev	---	---	
Recall Parameter	RCPRM fname,dev,apl	---	---	fname: Filename dev: Drive name = A | B | D | E | ... apl: Target application = ALL | CURR
	RCPRM fname,dev	---	---	
Hard Copy	PRINT	---	---	fname: Filename dev: Drive name = A | B | D | E | ...
	PRINT fname,dev	---	---	

Table 3.2-1 Application common device messages (Cont'd)

Function	Command	Query	Response	Remarks
Hard Copy Mode	PMOD format	PMOD?	format	format: Specifies file format = BMP | PNG
	PMOD	PMOD?	BMP	
END Event Status Enable Register	ESE2 n	ESE2?	byte	byte = Status bit bit7: Not used bit6: End Max/Min Hold bit5: End Measure bit4: End Average bit3: Not used bit2: Not used bit1: Not used bit0: End Sweep
END Event Status Register	---	ESR2?	byte	
Calibration	CAL mode	---	---	mode: Calibration mode = ALL | LEVEL | LOLEAK_SUPPRESS | BAND Asynchronous command
Pre-selector Auto Tune	PRESEL AUTO	---	---	
Pre-selector Bias Reset	PRESEL PRESET	---	---	
Pre-selector Bias	PRESEL bias	PRESEL?	bias	bias = Bias value of pre-selector = –128 to 127
Micro Wave Preselector Bypass	POW:MW:PRES switch	POW:MW:PRES?	status	switch = ON|OFF|1|0 status = 1|0

3.3 Frequency/Span Settings

Device messages for setting frequency and span are shown in Table 3.3-1.

Table 3.3-1 Frequency setting messages

Function	Command	Query	Response	Remarks
Center Frequency	CNF freq	CNF?	freq	
Start Frequency	STF freq	STF?	freq	
Stop Frequency	SOF freq	SOF?	freq	
Frequency Offset Mode	FOFMD on_off	FOFMD?	on_off	
Frequency Offset Value	FOFFSET freq	FOFFSET?	freq	
Span Frequency	SPF freq	SPF?	freq	
Full Span	FULLSPAN	---	---	
	FS	---	---	
Zero Span	ZEROSPAN	---	---	
Frequency Band Mode	BNDSP mode	BNDSP?	mode	mode: Frequency = NORMAL|OFF|SPURIOUS|ON
Band Select	BNDC mode	BNDC?	mode	mode : Frequency band = AUTO
Couple Time/Frequency Domain	FREQ:DOM:COUP switch_com	FREQ:DOM:COUP?	switch_res	switch_com : = ON|OFF|1|0
Switching Speed	FREQ:SYNT mode	FREQ:SYNT?	mode	mode : Frequency switching speed = BPH | NORM | FAST
Frequency Step Size	FREQ:CENT:STEP freq	FREQ:CENT:STEP?	freq	

3.4 Level Settings

Device messages for setting the level are shown in Table 3.4-1.

Table 3.4-1 Level setting messages

Function	Command	Query	Response	Remarks
Reference Level	RLV Level	RLV?	Level	
Reference Level	RL level	RL?	level	
Attenuator	AT att	AT?	att	att: Attenuator value
	AT AUTO			
Set RF Attenuator steps	RFAT att	RFAT?	att	att : 0|1 = 10 dB step|2 dB step
Attenuator Step Up/Down	AT action	---	---	action: Operation = UP | DN
Reference Level Offset Mode	ROFFSET on_off	ROFFSET?	OFF	* When set to ON, response is level.
	ROFFSETMD on_off	ROFFSETMD?	on_off	
Reference Level Offset Value	ROFFSET level	ROFFSET?	Level	
Pre Amp	PREAMP on,off	PREAMP?	on,off	
Scale Mode	SCALEMODE mode	SCALEMODE?	Mode	mode: Scale mode = LOG | LIN
Log Scale Unit	AUNITS unit	AUNITS?	unit	unit: Units = DBM | DBUV | DBMV | DBUVE | V | W | DBUVM
Log Scale Range	LOGSCALEDIV scale	LOGSCALEDIV?	scale	scale: dB/div = 0.1 | 0.2 | 0.5 | 1 | 2 | 5 | 10 | 20
Linear Scale Range	LINSCALEDIV scale	LINSCALEDIV?	scale	scale: %/div = 1 | 2 | 5 | 10
Log Scale Line	SCALELINES line	SCALELINES?	line	line: Number of scale lines = 10 | 12

3.5 RBW/VBW Settings

Device messages for setting RBW/VBW are shown in Table 3.5-1.

Table 3.5-1 RBW/VBW setting messages

Function	Command	Query	Response	Remarks
Resolution Bandwidth (RBW)	RB bandwidth RB AUTO	RB?	bandwidth	bandwidth: Resolution bandwidth
Resolution Bandwidth (RBW MODE)	BAND:MODE mode	BAND:MODE?	mode	mode : Normal/CISPR = NORM | CISP
Video Bandwidth (VBW)	VB bandwidth VB AUTO	VB?	bandwidth	bandwidth: Video bandwidth
Video Bandwidth (VBW) Mode	VBWMODE mode	VBWMODE?	mode	mode: Mode = VIDEO | POWER

3.6 Marker Settings

Device messages for setting the marker are shown in Table 3.6-1.

Table 3.6-1 Marker setting messages

Function	Command	Query	Response	Remarks
Marker Mode	MKR mode_com,marker	MKR? marker	mode_res	mode_com: Marker mode marker: Marker type
Zone Marker Position	MKZ point,marker	MKZ? marker	point	point: Number of displayed points from left edge marker: Marker type
Zone Marker Frequency (Time)	MKZF freq,marker	MKZF? marker	freq	marker: Marker type
Zone Marker Frequency (Time)	CALC:MARK:X:DELT freq,marker	CALC:MARK:X:DELT? marker	freq	marker: Marker type
	CALC:MARK:X:DELT time,marker	CALC:MARK:X:DELT? marker	time	
Zone Marker Width	MKW width,marker	MKW? marker	width	width: Specifies width = 0 | 1 | 2 | 5 | 6 | 7 marker: Marker type
Zone Marker Width (by Point)	MZW point,marker	MZW? marker	point	point: Number of displayed points marker: Marker type
Zone Marker Width (by Frequency)	MZWF freq,marker	MZWF? marker	freq	freq: Frequency width marker: Marker type
Marker Trace	MKTRACE trace,marker	MKTRACE? marker_query	trace	trace: Trace type marker: Marker type marker_query: Marker type

Table 3.6-1 Marker setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Power Marker	POWERMARKER on_off_com	POWERMARKER?	on_off_res	
Marker to Center Frequency	MKCF	---	---	
Marker to Reference Level	MKRL	---	---	
Marker Position Query	---	CMK? marker	point	point: Number of displayed points from the left edge marker: Marker type
Marker Frequency (Time) Query	---	MKF? marker	freq time	marker: Marker type
Marker Level Query	---	MKL? marker	level	marker: Marker type
Marker Relative Level Query	---	CALC:MARK:Y:DELT? marker	level	marker: Marker type
Reference Marker Position Query	---	RMK?	point	point: Number of displayed points from the left edge
Reference Marker Frequency (Time) Query	---	RMKF?	freq time	
Reference Marker Level Query	---	RMKL?	level	
Power Marker Result Query	---	RESPOWER? MKR	pow1,den1	pow1: Total zone power den1: Zone power density pow2: Total reference zone power den2: Reference zone power density pow_rel: Total power ratio between zones den_rel: Power density ratio between zones
Reference Power Marker Result Query	---	RESPOWER? REFMKR	pow2,den2	
Power Marker Delta Result Query	---	RESPOWER? DELTA	pow_rel,den_rel	
Power Marker All Result Query	---	RESPOWER? ALL	pow1,den1,pow2,den2, pow_rel,den_rel	

Table 3.6-1 Marker setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Active Marker	MKACT marker	MKACT?	marker	
Relative To	CALC:MARK:REF marker,integer	CALC:MARK:REF? marker	integer	
Marker List	CALC:MARK:TABL switch_com	CALC:MARK:TABL?	switch_res	switch_com : = ON|OFF|1|0
Spot Line	CALC:MARK:SLIN switch_com	CALC:MARK:SLIN?	switch_res	switch_com : = ON|OFF|1|0
Couple Zone	CALC:MARK:COUP:ZONE switch_com	CALC:MARK:COUP:ZONE?	switch_res	switch_com : = ON|OFF|1|0
Marker Result	MKLTYPE type_com	MKLTYPE?	type_res	type_com : = INT|TOTAL|DENS|AVG|PEAK
Zone Width Type	CALC:MARK:WIDT:TYPE n,type	CALC:MARK:WIDT:TYPE? n	Type	n = Marker number type : Zone waveform = ZONE|SPOT
Frequency Counter Gate Time	CALC:MARK:FCO:GAT n, time	CALC:MARK:FCO:GAT? n	time	n = Marker number
Frequency Counter State	CALC:MARK:FCO n, switch	CALC:MARK:FCO? n	switch	n = Marker number switch : = ON|OFF|1|0
Frequency Counter Query	---	CALC:MARK:FCO:X? n	freq	n = Marker number
Marker Tracking	CALC:MARK:TRCK switch	CALC:MARK:TRCK?	switch	switch : = ON|OFF|1|0

3.7 Signal Search Settings

Device messages for setting signal search are shown in Table 3.7-1.

Table 3.7-1 Signal search setting messages

Function	Command	Query	Response	Remarks
Peak Search	MKPK	---	---	
	MKPK HI	---	---	
Next Peak	MKPK NH	---	---	
Power Peak Search	CALC:MARK:MAX:POW n	---	---	n: Marker No.
Next Power Peak Search	CALC:MARK:MAX:POW:NEXT n	---	---	n: Marker No.
Peak Search Resolution	MKPX level	MKPX?	level	
Peak Search Mode	SRCHTH mode	SRCHTH?	mode	mode: Detection mode = OFF | ABOVE | BELOW
Peak Search Threshold Level	SRCHTHLVL level	SRCHTHLVL?	level	
Peak to Center Frequency	PCF	---	---	
Peak to Reference Level	PRL	---	---	
All Peak Search and Query	---	ALLMKPK?	freq1,level1,freq2,level2,...	freq: Peak point frequency (time) data level: Peak point level data
Search Peaks Sort Y	CALC:MARK:PEAK:SORT:Y	---	---	
Search Peaks Sort X	CALC:MARK:PEAK:SORT:X	---	---	
Search Peaks Number	CALC:MARK:PEAK:SORT:COUN integer	CALC:MARK:PEAK:SORT:COUN?	integer	

Table 3.7-1 Signal search setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Marker Readout Query	---	CALC:MARK:READ?	freq_1,power_1,...,freq_10,power_10 (Frequency Domain) time_1,power_1,...,time_10,power_10 (Time Domain)	

3.8 Trace Settings

Table 3.8-1 lists device messages for setting trace.

Table 3.8-1 Trace setting messages

Function	Command	Query	Response	Remarks
Active Trace	MKTRACE trace	MKTRACE?	trace	trace: Trace = TRA | TRB | TRC| TRD | TRE | TRF
	ACTIVETRACE trace	ACTIVETRACE?		
Trace Write Mode	WRITEMODE mode	WRITEMODE?	mode	mode: Write mode
Storage Mode (Active Trace)	STORAGEMODE mode	STORAGEMODE?	mode	mode: Storage mode = OFF | MAX | AVG | MIN | LINAVG
Average Mode (Active Trace)	VAVG on_off	---	---	
Storage Mode (Trace A)	AMD mode	AMD?	mode	mode: Storage mode
Storage Mode (Trace B)	BMD mode	BMD?	mode	mode: Storage mode
Storage Mode (Trace C)	CMD mode	CMD?	mode	mode: Storage mode
Storage Mode (Trace D)	DMD mode	DMD?	mode	mode: Storage mode
Storage Mode (Trace E)	EMD mode	EMD?	mode	mode: Storage mode
Storage Mode (Trace F)	FMD mode	FMD?	mode	mode: Storage mode
Storage Count	STORAGECOUNT count	STORAGECOUNT?	count	count: Count
	VAVG count	VAVG?		
	HOLDPAUSE count	HOLDPAUSE?		
Sweep Count	---	SWEEPCOUNT?	count	count: Sweep count

Table 3.8-1 Trace setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Write and Query Trace Data (Trace A)	XMA wpoint,data	XMA? start,number	data1,data2,...	wpoint: Data writing position start: Readout starting position number: Data count to be read data: Level data * When the detection mode is Normal, only Positive detection data is targeted.
Write and Query Trace Data (Trace B)	XMB wpoint,data	XMB? start,number		
Write and Query Trace Data (Trace C)	XMC wpoint,data	XMC? start,number		
Write and Query Trace Data (Trace D)	XMD wpoint,data	XMD? start,number		
Write and Query Trace Data (Trace E)	XME wpoint,data	XME? start,number		
Write and Query Trace Data (Trace F)	XMF wpoint,data	XMF? start,number		
Write and Query Trace Data (Gate View)	XMZ wpoint,data	XMZ? start,number		
Write and Query Trace Data (Trace A)	SMA wpoint,data	SMA? start,number	data1,data2,...	wpoint: Data writing position start: Readout starting position number: Data count to be read data: Level data * When the detection mode is Normal, only negative detection data is targeted.
Write and Query Trace Data (Trace B)	SMB wpoint,data	SMB? start,number		
Write and Query Trace Data (Trace C)	SMC wpoint,data	SMC? start,number		
Write and Query Trace Data (Trace D)	SMD wpoint,data	SMD? start,number		
Write and Query Trace Data (Trace E)	SME wpoint,data	SME? start,number		
Write and Query Trace Data (Trace F)	SMF wpoint,data	SMF? start,number		
Write and Query Trace Data (Gate View)	SMZ wpoint,data	SMZ? start,number		

Table 3.8-1 Trace setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Query Trace Data Spectrum Emission Mask	---	TRAC:SEM? trace	data1,data2,...	trace : Target trace = REF | LOW1 | LOW2 | LOW3 | LOW4 | LOW5 | LOW6 | UPP1 | UPP2 | UPP3 | UPP4 | UPP5 | UPP6 data : Level data
Query Negative Trace Data Spectrum Emission Mask	---	TRAC:SEM:NEG? trace		
Save Wave Data	SVCSVWAVE file,device	---	---	file: File name device: Drive name
	SVCSVWAVE	---	---	
Binary Data Byte Order	FORM:BORD border	FORM:BORD?	border	border : Byte order = NORM | SWAP
Numeric Data Format	FORM format length	FORM?	format length	format : Data format = ASC | REAL | INT length : Supplementary setting = 0 | 32

3.9 Sweep/Trigger/Gate Settings

Device messages for setting sweep/trigger/gate are shown in Table 3.9-1.

Table 3.9-1 Sweep/trigger/gate setting messages

Function	Command	Query	Response	Remarks
Single Sweep	SNGLS	---	---	(Asynchronous sweep)
	SWP	SWP?	status	status: Sweep status
	TS	---	---	
Continuous Sweep	CONTS	---	---	(Asynchronous sweep)
Average Sweep	TSAVG	---	---	
Average Sweep (Linear Average)	TSLINAVG	---	---	
Max Hold Sweep	TSMAXHOLD	---	---	
Min Hold Sweep	TSMINHOLD	---	---	
Sweep Restart	SWSTART	---	---	
Sweep Stop	SWSTOP	---	---	
Sweep Time	ST time	ST?	time	time: Time
	ST AUTO			
Auto Sweep Time Mode	STMODE mode	STMODE?	mode	mode: = NORMAL | FAST
Auto Sweep Type Select Rules	SWE:RUL rules	SWE:RUL?	rules	rules: Switching rules = DRAN | SPE | OSW | PSW | PFFT
Sweep Type Select Rules FFT Width	SWE:RUL:FFT:WIDT freq	SWE:RUL:FFT:WIDT?	freq	
Sweep Type Select Rules Real FFT Width Query	---	SWE:RUL:FFT:RWID?	freq	
Sweep Type Select Rules Real Type Query	---	SWE:RUL:RTYP?	type	type: Sweep mode = SWE | FFT

Table 3.9-1 Sweep/trigger/gate setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Trace Point	DPOINT point	DPOINT?	point	point: Number of points displayed =11 | 21 | 41 | 51 | 101 | 201 | 251 | 401 | 501 | 1001 | 2001 | 5001 | 10001 | 30001 (MS269xA Only)
Detection Mode	DET mode	DET?	mode	mode: Detection mode = NRM | POS | NEG | SMP | RMS | QPE | CAV | CRMS

Table 3.9-1 Sweep/trigger/gate setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Trigger Switch	TRGS switch	TRGS?	switch	switch: = FREE | TRGD
Trigger Source	TRGSOURCE source	TRGSOURCE?	source	source: = VID | WIDEVID | EXT | SG |BBIF | FRAM
Trigger Level (Video/Wide IF Video)	TRGLVL level	TRGLVL?	level	
Trigger Slope	TRGSLP edge	TRGSLP?	edge	edge: = RISE | FALL
Trigger Delay	TDLY time	TDLY?	time	
Gate Sweep	GATE on_off	GATE?	on_off	
Gate Source	GATESOURCE source	GATESOURCE?	source	source: = WIDEVID | EXT | SG |BBIF
Gate Level	GATELVL level	GATELVL?	level	level: Gate signal detection level
Gate Slope	GATESLOP edge	GATESLOP?	edge	edge: = RISE | FALL
Gate Delay	GDL time	GDL?	time	
Gate Length	GLN time	GLN?	time	

Table 3.9-1 Sweep/trigger/gate setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Gate Slope	GATESLOP edge	GATESLOP?	edge	edge : = RISE | FALL
Gate Delay	GDL time	GDL?	time	
Gate Length	GLN time	GLN?	time	
Gate View	SWE:EGAT:VIEW switch_com	SWE:EGAT:VIEW?	switch_res	switch_com : = ON | OFF | 1 | 0 switch_res : = 1 | 0
Gate View Sweep Time	SWE:EGAT:TIME time	SWE:EGAT:TIME?	time	
Gate View Resolution Bandwidth Auto/Manual	SWE:EGAT:VIEW:BAND:AUTO switch_com	SWE:EGAT:VIEW:BAND:AUTO?	switch_res	switch_com : = ON | OFF | 1 | 0 switch_res : = 1 | 0
Gate View Resolution Bandwidth	SWE:EGAT:VIEW:BAND freq	SWE:EGAT:VIEW:BAND?	freq	
Gate View Video Bandwidth Auto/Manual	SWE:EGAT:VIEW:BAND:VID:AUTO switch_com	SWE:EGAT:VIEW:BAND:VID:AUTO?	switch_res	switch_com : = ON | OFF | 1 | 0 switch_res : = 1 | 0
Gate View Video Bandwidth	SWE:EGAT:VIEW:BAND:VID freq	SWE:EGAT:VIEW:BAND:VID?	freq	

Table 3.9-1 Sweep/trigger/gate setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Gate View Detection Mode	SWE:EGAT:VIEW:DET det	SWE:EGAT:VIEW:DET?	det	det: = NORM | POS | NEG | SAMP | RMS
Gate View Trace Point	SWE:EGAT:VIEW:POIN integer	SWE:EGAT:VIEW:POIN?	integer	
Gate View Frequency Mode	SWE:EGAT:VIEW:FREQ:AUTO switch_com	SWE:EGAT:VIEW:FREQ:AUTO?	switch_res	switch_com: = ON | OFF | 1 | 0 switch_res: = 1 | 0
Gate View Frequency	SWE:EGAT:VIEW:FREQ freq	SWE:EGAT:VIEW:FREQ?	freq	
Gate Hold	SWE:EGAT:HOLD time	SWE:EGAT:HOLD?	time	
Gate Hold On/Off	SWE:EGAT:HOLD:STAT switch	SWE:EGAT:HOLDSTAT?	switch	switch: Gate Hold On/Off = ON | OFF | 1 | 0
Trigger Hold	TRIG:HOLD time	TRIG:HOLD?	time	
Trigger Hold On/Off	TRIG:HOLD:STAT switch	TRIG:HOLD:STAT?	switch	switch: Trigger Hold On/Off = ON | OFF | 1 | 0
Frame Trigger Period	TRIG:FRAM:PER time	TRIG:FRAM:PER?	time	
Frame Sync Source	TRIG:FRAM:SYNC sync	TRIG:FRAM:SYNC?	sync	sync: Synchronized signal source = EXT | IMM | WIF
Frame Sync Offset	TRIG:FRAM:OFFS time	TRIG:FRAM:OFFS?	time	

3.10 Measure Function Settings

3.10.1 Common Measure function settings

Device messages common for Measure functions are shown in Table 3.10.1-1.

Table 3.10.1-1 Common Measure function setting messages

Function	Command	Query	Response	Remarks
Select Standard	SELECTSTD standard	SELECTSTD?	standard	standard: Communication standard
Load Standard Parameter	LOADSTD function,pattern	LOADSTD? function	pattern	function: Measurement function pattern: Parameter type
Measurement Off	CONF:SAN	---	---	

3.10.2 Adjacent channel power measurement function settings

Device messages for adjacent channel power measurement settings are shown in Table 3.10.2-1.

Table 3.10.2-1 Adjacent channel power measurement function setting messages

Function	Command	Query	Response	Remarks
Measure Adjacent Channel Power	MEAS ADJ	MEAS?	ADJ	mode: Measurement mode = MOD | TOTAL | INBAND | BOTHSIDE num: Reference carrier number
	MEAS ADJ,EXE			
	MEAS ADJ,mode			
	MEAS ADJ,num			
Measure Adjacent Channel Power	MEAS OFF	MEAS?	OFF	
ACP Reference	MADJMOD mode	MADJMOD?	mode	mode: Measurement mode = MOD | TOTAL | INBAND | BOTHSIDE
	MADJMOD num		num	num: Reference carrier number
Noise Cancel	NOISECANCEL on_off	NOISECANCEL?	on_off	on_off: = ON | OFF
ACP Channel Bandwidth	ADJCHBW freq	ADJCHBW?	freq	
ACP Carrier BW	ADJINBW freq	ADJINBW?	freq	
ACP In Band Center	ADJCARRIERCNT freq	ADJCARRIERCNT?	freq	
ACP Carrier Number	ADJCARRIERNUM num	ADJCARRIERNUM?	num	num: Carrier number
ACP Carrier Spacing	ADJCARRIERSPAC freq	ADJCARRIERSPAC?	freq	freq: Carrier spacing
ACP Offset-1	ADJOFFSET1 on_off	ADJOFFSET1?	on_off	
ACP Offset-2	ADJOFFSET2 on_off	ADJOFFSET2?	on_off	
ACP Offset-3	ADJOFFSET3 on_off	ADJOFFSET3?	on_off	

Table 3.10.2-1 Adjacent channel power measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
ACP Offset Frequency 1	ADJCHSP freq	ADJCHSP?	freq	freq: Offset frequency offset: Measurement channel = 1 | 2 | 3
	ADJCHSP offset,freq			
ACP Offset Frequency 2	ADJCHSPF freq	ADJCHSPF?	freq	
ACP Offset Frequency 3	ADJCHSPFF freq	ADJCHSPFF?	freq	
ACP Filter Type	ADJFILTERTYPE filter	ADJFILTERTYPE?	filter,filter	filter: Filter type = RECT | NYQUIST | ROOTNYQUIST target: Target filter = INBAND | OFFSET
	ADJFILTERTYPE filter,target	ADJFILTERTYPE? target	filter	
ACP Power Result Type	ADJPWRTYPE mode	ADJPWRTYPE?	mode	mode: Power result type = CARRIER | OFFSET
ACP Rolloff Ratio	ADJROF ratio	ADJROF?	ratio,ratio	ratio: Filter rolloff ratio target: Target filter = INBAND | OFFSET
	ADJROF ratio,target	ADJROF? target	ratio	

Table 3.10.2-1 Adjacent channel power measurement setting messages (Cont'd)

Function	Command	Query	Response	Remarks
ACP Measurement Result Query	---	RES?	lc,lr1,la1,ur1,ua1,lr2,la2,ur2,ua2,lr3,la3,ur3,ua3	lc: Reference power absolute value lr1: Measurement frequency 1 (Bottom side) power relative value la1: Measurement frequency 1 (Bottom side) power absolute value ur1: Measurement frequency 1 (Top side) power relative value ua1: Measurement frequency 1 (Top side) power absolute value lr2: Measurement frequency 2 (Bottom side) power relative value la2: Measurement frequency 2 (Bottom side) power absolute value ur2: Measurement frequency 2 (Top side) power relative value ua2: Measurement frequency 2 (Top side) power absolute value lr3: Measurement frequency 3 (Bottom side) power relative value la3: Measurement frequency 3 (Bottom side) power absolute value ur3: Measurement frequency 3 (Top side) power relative value ua3: Measurement frequency 3 (Top side) power absolute value
		RES? OFFSET		

Table 3.10.2-1 Adjacent channel power measurement setting messages (Cont'd)

Function	Command	Query	Response	Remarks
ACP Measurement Result Query (Cont'd)	---	RES? CARRIER	ls,lca,lc1,lc2,lc3,lc4,lc5,lc6,lc7,lc8,lc9,lc10,lc11,lc12	ls: Total power absolute value over Span lca: Total carrier power absolute value lc1: Carrier-1 power absolute value lc2: Carrier-2 power absolute value lc3: Carrier-3 power absolute value lc4: Carrier-4 power absolute value lc5: Carrier-5 power absolute value lc6: Carrier-6 power absolute value lc7: Carrier-7 power absolute value lc8: Carrier-8 power absolute value lc9: Carrier-9 power absolute value lc10: Carrier-10 power absolute value lc11: Carrier-11 power absolute value lc12: Carrier-12 power absolute value

3.10.3 Burst average power measurement function settings

Device messages for burst average power measurement settings are shown in Table 3.10.3-1.

Table 3.10.3-1 Burst average power measurement function setting messages

Function	Command	Query	Response	Remarks
Measure Burst Average Power	MEAS BRSTAVGPWR MEAS BRSTAVGPWR,EXE	MEAS?	ADJ	
Disable Burst Average Power	MEAS OFF	MEAS?	OFF	
Noise Cancel	NOISECANCEL on_off	NOISECANCEL?	on_off	on_off: = ON | OFF
Burst Average Power Start Time	BAPWRSTART time	BAPWRSTART?	time	
Burst Average Power Stop Time	BAPWRSTOP time	BAPWRSTOP?	time	
Burst Average Power Measurement Result Query	---	RES?	level	

3.10.4 Channel power measurement function settings

Device messages for channel power measurement settings are shown in Table 3.10.4-1.

Table 3.10.4-1 Channel power measurement function setting messages

Function	Command	Query	Response	Remarks
Measure Channel Power	MEAS CHPWR	MEAS?	CHPWR	
	MEAS OFF	MEAS?	OFF	
Channel Power Channel Center Frequency	CHPWRCENTER freq	CHPWRCENTER?	freq	
Channel Power Channel Bandwidth	CHPWRWIDTH freq	CHPWRWIDTH?	freq	
Channel Power Filter Type	CHPWRFLTRTYP filter	CHPWRFLTRTYP?	filter	filter: Filter type = RECT | NYQUIST | ROOTNYQUIST
Channel Power Rolloff Factor	CHPWRROF ratio	CHPWRROF?	ratio	ratio: Filter rolloff factor
Channel Power Measurement Result Query	---	RES?	power,density	power: Total power of the channel density: Mean power spectral density of the channel

3.10.5 Occupied Bandwidth measurement function settings

Device messages for occupied bandwidth measurement settings are shown in Table 3.10.5-1.

Table 3.10.5-1 Occupied bandwidth measurement function setting messages

Function	Command	Query	Response	Remarks
Measure Occupied Bandwidth	MEAS OBW	MEAS?	OBW	
	MEAS OFF	MEAS?	OFF	
OBW Measurement Method	MOBW method	MOBW?	method	
OBW N% Ratio	OBWN ratio	OBWN?	ratio	
OBW XdB Value	OBWXDB level	OBWXDB?	level	
OBW Measurement Result Query	---	RES?	obw,center,start,stop	obw: Occupied bandwidth center: Center frequency of occupied bandwidth start: Start frequency of occupied bandwidth stop: Stop frequency of occupied bandwidth

3.10.6 Spectrum Emission Mask Measurement function settings

Device messages for spectrum emission mask measurement settings are shown in Table 3.10.6-1.

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages

Function	Command	Query	Response	Remarks
Measure Spectrum Emission Mask	SEM switch_com	SEM?	switch_res	switch_com: ON|OFF|1|0
	MEAS SEM	MEAS?	SEM	
	MEAS OFF		OFF	
Spectrum Emission Mask Attenuator	SEM:ATT rel_ampl	SEM:ATT?	rel_ampl	
	SEM:ATT AUTO			
Spectrum Emission Mask Resolution Bandwidth	SEM:BAND	SEM:BAND?	bandwidth	
Spectrum Emission Mask Resolution Bandwidth Auto/Manual	SEM:BAND:AUTO switch_com	SEM:BAND:AUTO?	switch_res	switch_com: ON|OFF|1|0
Spectrum Emission Mask Integrate Bandwidth	SEM:BAND:CHAN bandwidth	SEM:BAND:CHAN?	bandwidth	
Spectrum Emission Mask Video Bandwidth	SEM:BAND:VID bandwidth	SEM:BAND:VID?	bandwidth	
	SEM:BAND:VID OFF			
Spectrum Emission Mask Video Bandwidth Auto/Manual	SEM:BAND:VID:AUTO switch_com	SEM:BAND:VID:AUTO?	switch_res	
Spectrum Emission Mask Video Bandwidth Mode	SEM:BAND:VID:MODE method	SEM:BAND:VID:MODE?	method	method : Bandwidth mode = VID|POW
Spectrum Emission Mask Reference Power	SEM:CARR ampl	SEM:CARR?	ampl	

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Sweep Type Select Rules Real FFT Width Query	---	SEM:SWE:RUL:FFT:RWID ?	freq	
Spectrum Emission Mask Sweep Type Select Rules Real Type Query	---	SEM:SWE:RUL:RTYP?	type	type: Sweep mode = SWE|FFT
Spectrum Emission Mask Detection Mode	SEM:DET mode	SEM:DET?	mode	mode : Detection mode = NORM|POS|NEG|SAMP|RMS|AVER
Spectrum Emission Mask Reference Roll-off Factor	SEM:FILT:ALPH real	SEM:FILT:ALPH?	real	
Spectrum Emission Mask Reference Filter Type	SEM:FILT:TYPE type	SEM:FILT:TYPE?	type	filter : Filter type = RECT|NYQ|RNYQ
Spectrum Emission Mask Fail Logic	SEM:LOG:OFFS:LIST:TES T logic_1[,logic_2[,log ic_3[,logic_4[,logic_ 5[,logic_6[,logic_7[, logic_8[,logic_9[,log ic_10[,logic_11[,logi c_12]]]]]]]]]]	SEM:LOG:OFFS:LIST:TE ST?	logic_1,logic_2,logi c_3,logic_4,logic_5, logic_6,logic_7,logi c_8,logic_9,logic_10 ,logic_11,logic_12	
Spectrum Emission Mask Attenuator	SEM:OFFS:LIST:ATT rel_ampl_1[,rel_ampl_ 2[,rel_ampl_3[,rel_am pl_4[,rel_ampl_5[,rel _ampl_6[,rel_ampl_7[, rel_ampl_8[,rel_ampl_ 9[,rel_ampl_10[,rel_a mpl_11[,rel_ampl_12]]]]]]]]]]]	SEM:OFFS:LIST:ATT?	rel_ampl_1,rel_ampl_ 2,rel_ampl_3,rel_amp l_4,rel_ampl_5,rel_a mpl_6,rel_ampl_7,rel _ampl_8,rel_ampl_9,r el_ampl_10,rel_ampl_ 11,rel_ampl_12	

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Offset Resolution Bandwidth	SEM:OFFS:LIST:BAND bandwidth_1[,bandwidth_2[,bandwidth_3[,bandwidth_4[,bandwidth_5[,bandwidth_6[,bandwidth_7[,bandwidth_8[,bandwidth_9[,bandwidth_10[,bandwidth_11[,bandwidth_12]]]]]]]]]]]	SEM:OFFS:LIST:BAND?	bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidth_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,bandwidth_10,bandwidth_11,bandwidth_12	
Spectrum Emission Mask Resolution Bandwidth Auto/Manual	SEM:OFFS:LIST:BAND:AUTO switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,switch_9_com[,switch_10_com[,switch_11_com[,switch_12_com]]]]]]]]]]]	SEM:OFFS:LIST:BAND:AUTO?	switch_1_res,switch_2_res,switch_3_res,switch_4_res,switch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9_res,switch_10_res,switch_11_res,switch_12_res	switch_com: ON|OFF|1|0

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Offset Integrate Bandwidth	SEM:OFFS:LIST:BAND:INT bandwidth_1[,bandwidth_2[,bandwidth_3[,bandwidth_4[,bandwidth_5[,bandwidth_6[,bandwidth_7[,bandwidth_8[,bandwidth_9[,bandwidth_10[,bandwidth_11[,bandwidth_12]]]]]]]]]]]	SEM:OFFS:LIST:BAND:INT?	bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidth_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,bandwidth_10,bandwidth_11,bandwidth_12	
Spectrum Emission Mask Offset Integrate Bandwidth Auto/Manual	SEM:OFFS:LIST:BAND:INT:AUTO switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,switch_9_com[,switch_10_com[,switch_11_com[,switch_12_com]]]]]]]]]]]	SEM:OFFS:LIST:BAND:INT:AUTO?	switch_1_res,switch_2_res,switch_3_res,switch_4_res,switch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9_res,switch_10_res,switch_11_res,switch_12_res	switch_com: = ON|OFF|1|0
Spectrum Emission Mask Video Bandwidth	SEM:OFFS:LIST:BAND:VID bandwidth_1[,bandwidth_2[,bandwidth_3[,bandwidth_4[,bandwidth_5[,bandwidth_6[,bandwidth_7[,bandwidth_8[,bandwidth_9[,bandwidth_10[,bandwidth_11[,bandwidth_12]]]]]]]]]]]	SEM:OFFS:LIST:BAND:VID?	bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidth_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,bandwidth_10,bandwidth_11,bandwidth_12	

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Offset Video Bandwidth	SEM:OFFS:LIST:BAND:VID:AUTO switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,switch_9_com[,switch_10_com[,switch_11_com[,switch_12_com]]]]]]]]]]]	SEM:OFFS:LIST:BAND:VID:AUTO?	switch_1_res,switch_2_res,switch_3_res,switch_4_res,switch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9_res,switch_10_res,switch_11_res,switch_12_res	switch_com: = ON|OFF|1|0
Spectrum Emission Mask Offset Video Bandwidth Mode	SEM:OFFS:LIST:BAND:VID:MODE method_1[,method_2[,method_3[,method_4[,method_5[,method_6[,method_7[,method_8[,method_9[,method_10[,method_11[,method_12]]]]]]]]]]]	SEM:OFFS:LIST:BAND:VID:MODE?	method_1,method_2,method_3,method_4,method_5,method_6,method_7,method_8,method_9,method_10,method_11,method_12	method_n : Bandwidth mode = VID|POW
Spectrum Emission Mask Offset Detection Mode	SEM:OFFS:LIST:DET mode_1[,mode_2[,mode_3[,mode_4[,mode_5[,mode_6[,mode_7[,mode_8[,mode_9[,mode_10[,mode_11[,mode_12]]]]]]]]]]]	SEM:OFFS:LIST:DET?	mode_1,mode_2,mode_3,mode_4,mode_5,mode_6,mode_7,mode_8,mode_9,mode_10,mode_11,mode_12	mode_n : Detection mode = NORM|POS|NEG|SAMP|RMS|AVER

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Offset Start Frequency	SEM:OFFS:LIST:FREQ:STAR freq_1[,freq_2[,freq_3[,freq_4[,freq_5[,freq_6[,freq_7[,freq_8[,freq_9[,freq_10[,freq_11[,freq_12]]]]]]]]]]]	SEM:OFFS:LIST:FREQ:STAR?	freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,freq_9,freq_10,freq_11,freq_12	
Spectrum Emission Mask Offset Stop Frequency	SEM:OFFS:LIST:FREQ:STOP freq_1[,freq_2[,freq_3[,freq_4[,freq_5[,freq_6[,freq_7[,freq_8[,freq_9[,freq_10[,freq_11[,freq_12]]]]]]]]]]]	SEM:OFFS:LIST:FREQ:STOP?	freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,freq_9,freq_10,freq_11,freq_12	
Spectrum Emission Mask Offset Reference Level	SEM:OFFS:LIST:RLEV ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,ampl_7[,ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]]]]	SEM:OFFS:LIST:RLEV?	ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,ampl_9,ampl_10,ampl_11,ampl_12	
Spectrum Emission Mask Offset Reference Level Auto/Manual	SEM:OFFS:LIST:RLEV:AUTO switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,switch_9_com[,switch_10_com[,switch_11_com[,switch_12_com]]]]]]]]]]]]	SEM:OFFS:LIST:RLEV:AUTO?	switch_1_res,switch_2_res,switch_3_res,switch_4_res,switch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9_res,switch_10_res,switch_11_res,switch_12_res	switch_com: = ON|OFF|1|0

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Offset Start Frequency Absolute Limit Level	SEM:OFFS:LIST:STAR:ABS integer,ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,ampl_7[,ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]]]]	SEM:OFFS:LIST:STAR:ABS? integer	ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,ampl_9,ampl_10,ampl_11,ampl_12	
Spectrum Emission Mask Offset Start Frequency Limit Level	SEM:OFFS:LIST:STAR:RCAR ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,ampl_7[,ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]]]	SEM:OFFS:LIST:STAR:RCAR?	ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,ampl_9,ampl_10,ampl_11,ampl_12	
Spectrum Emission Mask Offset On/Off	SEM:OFFS:LIST:STAT switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,switch_9_com[,switch_10_com[,switch_11_com[,switch_12_com]]]]]]]]]]]	SEM:OFFS:LIST:STAT?	switch_1_res,switch_2_res,switch_3_res,switch_4_res,switch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9_res,switch_10_res,switch_11_res,switch_12_res	switch_com: = ON|OFF|1|0

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Offset Stop Frequency Absolute Limit Level	SEM:OFFS:LIST:STOP:ABS integer,ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,ampl_7[,ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]]]]	SEM:OFFS:LIST:STOP:ABS? integer	ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,ampl_9,ampl_10,ampl_11,ampl_12	
Spectrum Emission Mask Offset Stop Frequency Limit Level	SEM:OFFS:LIST:STOP:RCAR ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,ampl_7[,ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]]]]	SEM:OFFS:LIST:STOP:RCAR?	ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,ampl_9,ampl_10,ampl_11,ampl_12	
Spectrum Emission Mask Offset Trace Point	SEM:OFFS:LIST:SWE:POIN integer_1[,integer_2[,integer_3[,integer_4[,integer_5[,integer_6[,integer_7[,integer_8[,integer_9[,integer_10[,integer_11[,integer_12]]]]]]]]]]]	SEM:OFFS:LIST:SWE:POIN?	integer_1,integer_2,integer_3,integer_4,integer_5,integer_6,integer_7,integer_8,integer_9,integer_10,integer_11,integer_12	
Spectrum Emission Mask Offset Sweep Time	SEM:OFFS:LIST:SWE:TIME time_1[,time_2[,time_3[,time_4[,time_5[,time_6[,time_7[,time_8[,time_9[,time_10[,time_11[,time_12]]]]]]]]]]]	SEM:OFFS:LIST:SWE:TIME?	time_1,time_2,time_3,time_4,time_5,time_6,time_7,time_8,time_9,time_10,time_11,time_12	

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Offset Sweep Time Auto/Manual	SEM:OFFS:LIST:SWE:TIME:AUTO switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,switch_9_com[,switch_10_com[,switch_11_com[,switch_12_com]]]]]]]]]]]	SEM:OFFS:LIST:SWE:TIME:AUTO?	switch_1_res,switch_2_res,switch_3_res,switch_4_res,switch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9_res,switch_10_res,switch_11_res,switch_12_res	switch_com: = ON|OFF|1|0
Spectrum Emission Mask Offset Auto Sweep Time Select	SEM:OFFS:LIST:SWE:TIME:AUTO:MODE mode_1[,mode_2[,mode_3[,mode_4[,mode_5[,mode_6[,mode_7[,mode_8[,mode_9[,mode_10[,mode_11[,mode_12]]]]]]]]]]]	SEM:OFFS:LIST:SWE:TIME:AUTO:MODE?	mode_1,mode_2,mode_3,mode_4,mode_5,mode_6,mode_7,mode_8,mode_9,mode_10,mode_11,mode_12	mode : Sweep mode = NORM|FAST
Spectrum Emission Mask Offset Sweep Type Select Rules Real FFT Width Query	---	SEM:OFFS:LIST:SWE:RUL:FFT:RWID?	freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,freq_9,freq_10,freq_11,freq_12	
Spectrum Emission Mask Offset Sweep Type Select Rules Real Type Query	---	SEM:OFFS:LIST:SWE:RUL:RTYP?	type_1,type_2,type_3,type_4,type_5,type_6,type_7,type_8,type_9,type_10,type_11,type_12	type : Sweep mode = SWE|FFT

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Limit Side	SEM:OFFS:SIDE side	SEM:OFFS:SIDE?	side	
Spectrum Emission Mask Trace Point	SEM:SWE:POIN integer	SEM:SWE:POIN?	integer	
Spectrum Emission Mask Sweep Time	SEM:SWE:TIME time	SEM:SWE:TIME?	time	
Spectrum Emission Mask Sweep Time Auto/Manual	SEM:SWE:TIME:AUTO switch_com	SEM:SWE:TIME:AUTO?	switch_res	switch_com: = ON|OFF|1|0
Spectrum Emission Mask Auto Sweep Time Select	SEM:SWE:TIME:AUTO:MODE mode	SEM:SWE:TIME:AUTO:MODE?	mode	mode : Sweep mode = NORM|FAST
Spectrum Emission Mask Reference Type	SEM:TYPE type	SEM:TYPE?	type	type : Reference type = TPR|PKR|FIX
Spectrum Emission Mask Result Type	DISP:SEM:RES:TYPE type	DISP:SEM:RES:TYPE?	type	type : Result type = PEAK|MARG
Spectrum Emission Mask Configure	CONF:SEM	---	---	
Spectrum Emission Mask Initiate	INIT:SEM	---	---	
Couple Ref & ATT	SEM:RAC switch_com	SEM:RAC?	switch_res	switch_com : = ON|OFF|1|0

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Fetch	---	FETC:SEM? n	total_judge,ref_power,abs_lower_offset_1,margin_lower_offset_1,freq_lower_offset_1,lower_offset_1,abs_upper_offset_1,margin_upper_offset_1,freq_upper_offset_1,upper_offset_1,.....,abs_lower_offset_12,margin_lower_offset_12,freq_lower_offset_12,lower_offset_12,abs_upper_offset_12,margin_upper_offset_12,freq_upper_offset_12,upper_offset_12 (n=1 or when omitted)	When the result mode is "A". total_judge : Total judgement result ref_power : Reference absolute power abs_lower_offset_m : Peak value of absolute power of lower Offset-m abs_upper_offset_m : Peak value of absolute power of upper Offset-m lower_offset_m : Judgment result of lower Offset-m upper_offset_m : Judgment result of upper Offset-m margin_lower_offset_m : Minimum value of margin of lower Offset-m margin_upper_offset_m : Minimum value of margin of upper Offset-m freq_lower_offset_m : Frequency of peak level of lower Offset-m freq_upper_offset_m : Frequency of peak level of upper Offset-m
		RES?		
Spectrum Emission Mask Read	---	READ:SEM? n		
Spectrum Emission Mask Measure	---	MEAS:SEM? n		

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Fetch	---	FETC:SEM? n	-999.0,ref_power,-999.0,-999.0,0, -999.0,-999.0,-999.0,-999.0,-999.0, -999.0,-999.0, rel_lower_offset_1,abs_lower_offset_1, freq_lower_offset_1 -999.0,-999.0, rel_upper_offset_1,abs_upper_offset_1, freq_upper_offset_1.... -999.0,-999.0, rel_lower_offset_12,abs_lower_offset_12, freq_lower_offset_12 -999.0,-999.0, rel_upper_offset_12,abs_upper_offset_12, freq_upper_offset_12 margin_lower_offset_1,margin_upper_offset_1,.... margin_lower_offset_12,margin_upper_offset_12 (n=1 or when omitted)	When the result mode is "B". ref_power :Reference absolute power abs_lower_offset_m : Peak value of absolute power of lower Offset-m abs_upper_offset_m : Peak value of absolute power of upper Offset-m rel_lower_offset_m : Peak value of relative power of lower Offset-m rel_upper_offset_m : Peak value of relative power of upper Offset-m margin_lower_offset_m : Minimum value of margin of lower Offset-m margin_upper_offset_m : Minimum value of margin of upper Offset-m freq_lower_offset_m : Frequency of peak level of lower Offset-m freq_upper_offset_m : Frequency of peak level of upper Offset-m
Spectrum Emission Mask Read	---	READ:SEM? n		
Spectrum Emission Mask Measure	---	MEAS:SEM? n		

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Fetch	---	FETC:SEM? n	-999.0,-999.0, lower_offset_1,upper_offset_1, ... lower_offset_12,upper_offset_12 (n=7 or 8) -999.0,-999.0, abs_lower_offset_1,abs_upper_offset_1, ... abs_lower_offset_12,abs_upper_offset_12 (n=10) -999.0,-999.0, rel_lower_offset_1,rel_upper_offset_1, ... rel_lower_offset_12,rel_upper_offset_12 (n=11)	When the result mode is "B". ref_power :Reference absolute power abs_lower_offset_m : Peak value of absolute power of lower Offset-m abs_upper_offset_m : Peak value of absolute power of upper Offset-m rel_lower_offset_m : Peak value of relative power of lower Offset-m rel_upper_offset_m : Peak value of relative power of upper Offset-m margin_lower_offset_m : Minimum value of margin of lower Offset-m margin_upper_offset_m : Minimum value of margin of upper Offset-m freq_lower_offset_m : Frequency of peak level of lower Offset-m freq_upper_offset_m : Frequency of peak level of upper Offset-n lower_offset_m : Judgment result of lower Offset-m upper_offset_m : Judgment result of upper Offset-m
Spectrum Emission Mask Read	---	READ:SEM? n		
Spectrum Emission Mask Measure	---	MEAS:SEM? n		

Table 3.10.6-1 Spectrum Emission Mask measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spectrum Emission Mask Fetch	---	FETC:SEM? n	total_judge,ref_power, abs_lower_offset_1,abs_upper_offset_1, margin_lower_offset_1,margin_upper_offset_1, freq_lower_offset_1,freq_upper_offset_1, lower_offset_1,upper_offset_1, ... abs_lower_offset_12,abs_upper_offset_12, margin_lower_offset_12,margin_upper_offset_12,freq_lower_offset_12,freq_upper_offset_12,lower_offset_12,upper_offset_12 (n=13)	When the result mode is "B". ref_power :Reference absolute power abs_lower_offset_m : Peak value of absolute power of lower Offset-m abs_upper_offset_m : Peak value of absolute power of upper Offset-m rel_lower_offset_m : Peak value of relative power of lower Offset-m rel_upper_offset_m : Peak value of relative power of upper Offset-m margin_lower_offset_m : Minimum value of margin of lower Offset-m margin_upper_offset_m : Minimum value of margin of upper Offset-m freq_lower_offset_m : Frequency of peak level of lower Offset-m freq_upper_offset_m : Frequency of peak level of upper Offset-m lower_offset_m : Judgment result of lower Offset-m upper_offset_m : Judgment result of upper Offset-m
Spectrum Emission Mask Read	---	READ:SEM? n		
Spectrum Emission Mask Measure	---	MEAS:SEM? n		

3.10.7 Spurious Emission Measurement function settings

Table 3.10.7-1 lists device messages for setting the Spurious Emission measurement functions.

Table 3.10.7-1 Spurious Emission Measurement function setting messages

Function	Command	Query	Response	Remarks
Measure Spurious Emission	SPUR switch_com	SPUR?	switch_res	switch_com : = ON|OFF|1|0
Spurious Emission Result Type	SPUR:TYPE type_com	SPUR:TYPE?	type_res	type_com : Measurement result type = WORS|EXAM|PEAK|FULL
Displayed Segment Mode	DISP:SPUR:SEGM:MODE switch_com	DISP:SPUR:SEGM:MODE?	switch_res	switch_com : = ON|OFF|1|0
Displayed Segment	DISP:SPUR:SEGM integer	DISP:SPUR:SEGM?	integer	
Page of Summary Auto/Manual	DISP:SPUR:SEGM:AUTO switch_com	DISP:SPUR:SEGM:AUTO?	switch_res	switch_com : = ON|OFF|1|0
Displayed Summary Table Range/Result	DISP:SPUR:STAB mode_com	DISP:SPUR:STAB?	mode_res	mode_com : = RANG|RES
Next Page	DISP:SPUR:SEGM:NEXT	---	---	
Previous Page	DISP:SPUR:SEGM:PREV	---	---	

Table 3.10.7-1 Spurious Emission Measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Displayed Restart Query	---	DISP:SPUR:SEGM:REST?	switch	switch : = 1|0
Time Domain Measurement	SPUR:TDOM:SPAN:ZERO switch_com	SPUR:TDOM:SPAN:ZERO?	switch_res	switch_com : = ON|OFF|1|0
Fail Stop	SPUR:FST switch_com	SPUR:FST?	switch_res	switch_com : = ON|OFF|1|0
Edit Segment Number	SPUR:SEGM:NUMB integer	SPUR:SEGM:NUMB?	integer	
Segment On/Off	SPUR:SEGM:STAT switch_n_com	SPUR:SEGM:STAT?	switch_n_res	n :1 to 20 switch_n_com : = ON|OFF|1|0
Spurious Emission Start Frequency	SPUR:FREQ:STAR freq_n	SPUR:FREQ:STAR?	freq_n	n :1 to 20
Spurious Emission Stop Frequency	SPUR:FREQ:STOP freq_n	SPUR:FREQ:STOP?	freq_n	n :1 to 20
Reference Level Settings	DISP:SPUR:VIEW:WIND :TRAC:Y:RLEV real_n	DISP:SPUR:VIEW:WIND: TRAC:Y:RLEV?	real_n	n :1 to 20
Spurious Emission Attenuator	SPUR:ATT rel_ampl_n|AUTO	SPUR:ATT?	rel_ampl_n	n :1 to 20

Table 3.10.7-1 Spurious Emission Measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spurious Emission Resolution Bandwidth Auto/Manual	SPUR:BAND:AUTO switch_n_com	SPUR:BAND:AUTO?	switch_n_res	n :1 to 20
Spurious Emission Resolution Bandwidth	SPUR:BAND bandwidth_n	SPUR:BAND?	bandwidth_n	n :1 to 20
Spurious Emission Video Bandwidth Auto/Manual	SPUR:BAND:VID:AUTO switch_n_com	SPUR:BAND:VID:AUTO?	switch_n_res	n :1 to 20 switch_n_com : = ON|OFF|1|0
Spurious Emission Video Bandwidth	SPUR:BAND:VID bandwidth_n|OFF	SPUR:BAND:VID?	bandwidth_n|OFF	
Spurious Emission Sweep Time Auto/Manual	SPUR:SWE:TIME:AUTO switch_n_com	SPUR:SWE:TIME:AUTO?	switch_n_res	n :1 to 20 switch_n_com : = ON|OFF|1|0
Spurious Emission Sweep Time	SPUR:SWE:TIME seconds_n	SPUR:SWE:TIME?	seconds_n	n :1 to 20
Pause before Sweep	SPUR:SWE:PAUS switch_n_com	SPUR:SWE:PAUS?	switch_n_res	n :1 to 20
Spurious Emission Preamp On/Off	SPUR:POW:GAIN switch_n_com	SPUR:POW:GAIN?	switch_n_res	n :1 to 20

Table 3.10.7-1 Spurious Emission Measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spurious Emission Detection Mode	SPUR:DET mode_n	SPUR:DET?	mode_n	n :1 to 20
Spurious Emission Trace Point	SPUR:SWE:POIN integer_n	SPUR:SWE:POIN?	integer_n	n :1 to 20
Couple Storage Count	SPUR:AVER:COUN:COUP switch_com	SPUR:AVER:COUN:COUP?	switch_res	switch_com : = ON|OFF|1|0
Spurious Emission Storage Count	SPUR:AVER:COUN integer_n	SPUR:AVER:COUN?	integer_n	n :1 to 20
Use Common Correction Table	CALC:CORR:COMM	---	---	
Recall Correction Table	CALC:CORR:REC filename,device	---	---	
Spurious Emission Limit Start Level	CALC:SPUR:LIM:ABS:DATA ampl_n	CALC:SPUR:LIM:ABS:DATA?	ampl_n	n :1 to 20
Spurious Emission Limit Stop Level Auto/Manual	CALC:SPUR:LIM:ABS:DATA:STOP:AUTO switch_n_com	CALC:SPUR:LIM:ABS:DATA:STOP:AUTO?	switch_n_res	n :1 to 20 switch_n_com : = ON|OFF|1|0

Table 3.10.7-1 Spurious Emission Measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spurious Emission Limit Stop Level	CALC:SPUR:LIM:ABS:DATA:STOP ampl_n	CALC:SPUR:LIM:ABS:DATA:STOP?	ampl_n	n :1 to 20
Spurious Emission Search Resolution	SPUR:PEAK:RES rel_ampl_n	SPUR:PEAK:RES?	rel_ampl_n	n :1 to 20
Spurious Emission Search Threshold Level	SPUR:PEAK:THR real_n	SPUR:PEAK:THR?	real_n	n :1 to 20
Spurious Emission Couple Segment RBW	SPUR:TDOM:BAND:COUP switch_n_com	SPUR:TDOM:BAND:COUP?	switch_n_res	n :1 to 20 switch_n_com : = ON|OFF|1|0
Spurious Emission Time Domain RBW	SPUR:TDOM:BAND bandwidth_n	SPUR:TDOM:BAND?	bandwidth_n	n : 30 to 31.25
Spurious Emission Couple Segment VBW	SPUR:TDOM:BAND:VID:COUP switch_n_com	SPUR:TDOM:BAND:VID:COUP?	switch_n_res	n :1 to 20 switch_n_com : = ON|OFF|1|0
Spurious Emission Time Domain VBW	SPUR:TDOM:BAND:VID bandwidth_n|OFF	SPUR:TDOM:BAND:VID?	bandwidth_n|OFF	n :1 to 20

Table 3.10.7-1 Spurious Emission Measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spurious Emission Time Domain Sweep Time	SPUR:TDOM:SWE:TIME seconds_n	SPUR:TDOM:SWE:TIME?	seconds_n	n :1 to 20
Spurious Emission Time Domain Detection	SPUR:TDOM:DET mode_n	SPUR:TDOM:DET?	mode_n	n :1 to 20
Save Spurious Emission Parameter	MMEM:STOR:SPUR:TABL integer	---	---	
Recall Spurious Emission Parameter	MMEM:LOAD:SPUR:TABL integer	---	---	
Spurious Emission Continue	INIT:SPUR:PAUS:CONT	---	---	
Spurious Emission Pause Status Query	---	INIT:SPUR:PAUS:STAT?	switch	switch : = 1|0
Spurious Emission Configure	CONF:SPUR	---	---	
Spurious Emission Initiate	INIT:SPUR	---	---	
Low Phase Noise for Spurious Emission Measurement	SPUR:SYNT:LPH switch	SPUR:SYNT:LPH?	switch	switch : ON|OFF|1|0
Low Phase Noise Status Query	---	FREQ:SYNT:LPH:STAT?	status	status : 1|0

Table 3.10.7-1 Spurious Emission Measurement function setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Spurious Emission Fetch	---	FETC:SPUR? n	When Result Mode is set to A: (When Spurious Emission Result Type is Worst) judge,spur_1,range_1,peak_1,margin_1,limit_1,judge_1,spur_2,range_2freq_2,peak_2,margin_2,limit_2,judge_2 ..... spur_20,range_20,freq_20,peak_20,margin_20,limit_20,judge_20 (n=1 or when omitted.) (When Spurious Emission Result Type is set to Peak:) judge,spur_1,range_1,freq_1,peak_1,margin_1,limit_1,judge_1,spur_2,range_2,freq_2,peak_2,margin_2,limit_2,judge_2 ..... spur_n,freq_n,peak_n,margin_n,limit_n,judge_n (n=1 or when omitted.) When Result Mode is set to B: spur_1,range_1,freq_1,peak_1,limit_1,judge_1,spur_2,range_2,freq_2,peak_2,limit_2,judge_2..... spur_n,range_n,freq_n,peak_n,limit_n,judge_n (n=1 or when omitted.) tracedata_1,tracedata_2.....tracedata_m (n=2 to 21) number (n=22) tracedata_1,tracedata_2.....tracedata_m (n=23 to 42)	range_n: Segment number of the detected spurious spur_n: Spurious number number:Number of the detected spurious freq_n:Frequency of Spurious peak_n:Absolute power of spurious margin_n:Relative power from the limit line of Spurious limit_n:Power value of the limit line of Spurious judge_n : Limit line judges the detected spurious as Pass or Fail. tracedata_m:Trace data of the m point. judge: Pass/Fail judgment for the whole segment
Spurious Emission Read	---	READ:SPUR? n		
Spurious Emission Measure	---	MEAS:SPUR? n		

3.11 Batch Measure Function Settings

Table 3.11-1 lists device messages for setting the Batch Measurement function.

Table 3.11-1 Batch Measure Function Settings

Function	Command	Query	Response	Remarks
Reloading Parameter List Files	`MMEM:REL:BATC device`	`---`	`---`	`device` : drive name = D | E | F ...
Adjacent Channel Power Batch Measure	`---`	`MEAS:BATC:ACP? n,filename[,device]`	Refer to Chapter 4, "Native Device Message Details".	`n`: 1 | 2 `filename`: parameter list file name `device` : drive name = D | E | F ...
Occupied Bandwidth Batch Measure	`---`	`MEAS:BATC:OBW? n,filename[,device]`	Refer to Chapter 4, "Native Device Message Details".	`n`: 1 | 2 `filename`: parameter list file name `device` : drive name = D | E | F ...
Spectrum Emission Mask Batch Measure	`---`	`MEAS:BATC:SEM? n,filename[,device]`	Refer to Chapter 4, "Native Device Message Details".	`n`: 1 | 7 | 8 | 10 | 11 | 13 `filename`: parameter list file name `device` : drive name = D | E | F ...
Spurious Emission Batch Measure	`---`	`MEAS:BATC:SPUR? n,filename[,device]`	Refer to Chapter 4, "Native Device Message Details".	`n`: 1 to 42 `filename`: parameter list file name `device` : drive name = D | E | F ...

Table 3.11-1 Batch Measure Function Settings (Cont'd)

Function	Command	Query	Response	Remarks
Transmit Intermodulation Batch Measure	---	MEAS:BATC:IM? filename,spa_freq,[sg_freq[,device]]	Refer to Chapter 4, "Native Device Message Details".	spa_freq : Center frequency of Spectrum Analyzer sg_freq : Signal Generator frequency filename: parameter list file name device : drive name = D | E | F ...
Measure Power Adjust	---	:MEAS:POW? rbw,length,sg_start_level,sg_max_level,target,range[,frequency[,tracepoint[,count[,adjust_log[,sg_offset_switch]]]]]	Refer to Chapter 4, "Native Device Message Details"	---

3.12 Reference Signal Settings

Device messages for setting reference signal are shown in Table 3.12-1.

Table 3.12-1 Reference signal setting messages

Function	Command	Query	Response	Remarks
Adjust Reference Clock	CAL:RCL integer	CAL:RCL?	integer	integer : Adjustment value
	CAL:RCL:PRES	---	---	

3.13 Other Settings

Table 3.13-1 lists device messages for other settings.

Table 3.13-1 Other Settings

Function	Command	Query	Response	Remarks
Measurement Status	---	MSTAT?	status	status = 0 | 2 | 9
Uncal Status Query	---	UCL?	status	status:UNCAL
Erase Warm Up Message	ERASEWUP	---	---	
Display Uncal Message	UNC on_off	UNC?	on_off	
Display Title	TTL on_off	TTL?	on_off	
Entry Title Character	TITLE string	TITLE?	string	string:Character string

3.14 Setting External Mixer

Table 3.14-1 lists the device messages related to External Mixer settings.

Table 3.14-1 External Mixer settings

Function	Command	Query	Response	Remarks
Mixer Mode	MXRMODE mode	MXRMODE?	mode	mode : Mixer mode =EXT | INT
External Mixer Band Select	FULBAND band	FULBAND?	band	band : External mixer band
External Mixer Bias	MBIAS bias	MBIAS?	bias	bias : External mixer's bias current Range : 0.1 to 20.0 mA
External Mixer Conversion Loss	CNVLOSS power	CNVLOSS?	power	power : Conversion Loss of External Mixer Range : 0.00 to 99.99 dB
Signal Identifier	SIGID switch	SIGID?	switch	switch : Signal Identifier =1(ON)|0(OFF)
Signal Identifier Mode	SIGIDMODE mode	SIGIDMODE?	mode	mode :Signal ID mode =ISUPPRESS|ISHIFT

Chapter 4 Native Device Message Details

This chapter describes detailed specifications on remote control commands for executing functions of this application in alphabetical order. Refer to the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Mainframe Remote Control)* for detailed specifications on IEEE488.2 common device messages and application common device messages.

Some functions of this instrument only correspond to SCPI commands. You can perform a remote control of the function in Native mode by replacing the corresponding SCPI commands with Native commands. Refer to section 1.6.2 “How to use SCPI commands in Native mode” in the *MS2690A/MS2691A/MS2692A and MS2830A/MS2840A Signal Analyzer Operation Manual (Main unit Remote Control)* for replacement. Also refer to Chapter 2 “SCPI Device Messages” for detailed specifications on SCPI commands.

ACTIVETRACE/ACTIVETRACE?

Active Trace

Function

This command selects the trace (active trace) that operates the marker.

Command

```
ACTIVETRACE trace
```

Query

```
ACTIVETRACE?
```

Response

```
trace
```

Parameter

`trace`	Trace type to be activated
`TRA`	Trace A
`TRB`	Trace B
`TRC`	Trace C
`TRD`	Trace D
`TRE`	Trace E
`TRF`	Trace F

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set Trace B to be activated.

```
ACTIVETRACE TRB
ACTIVETRACE?
> TRB
```

ADJCARRIERCNT/ADJCARRIERCNT?

ACP In Band Center

Function

This command sets the In Band center frequency for ACP measurement.

Command

```
ADJCARRIERCNT freq
```

Query

```
ADJCARRIERCNT?
```

Response

`freq`

Suffix code	None. Value is returned in Hz units.

Parameter

`freq`	In Band center frequency
Range	(Start Frequency) to (Stop Frequency)
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Example of Use

To set In Band center frequency to 3 GHz.

```
ADJCARRIERCNT 3GHZ
ADJCARRIERCNT?
> 3000000000
```

ADJCARRIERNUM/ADJCARRIERNUM?

ACP Carrier Number

Function

This command sets the carrier number for ACP measurement.

Command

```
ADJCARRIERNUM n
```

Query

```
ADJCARRIERNUM?
```

Response

n

Suffix Code	None

Parameter

n		Carrier Number
	Range	1 to 12
	Resolution	1
	Suffix Code	None

Details

This command is not available when ACP Reference is set to Span Total.

Example of Use

To set the carrier number to 12.

```
ADJCARRIERNUM 12
ADJCARRIERNUM?
> 12
```

ADJCARRIERSPAC/ADJCARRIERSPAC?

ACP Carrier Spacing

Function

This command sets the frequency interval among carriers for ACP measurement.

Command

```
ADJCARRIERSPAC freq
```

Query

```
ADJCARRIERSPAC?
```

Response

`freq`

Suffix code	None. Value is returned in Hz units.

Parameter

`freq`	Frequency interval among carriers
Range	0 to 1 GHz
Resolution	1 Hz
Suffix Code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Details

This command is not available when ACP Reference is set to Span Total.

Example of Use

To set the frequency interval among carriers to 12.3 MHz.

```
ADJCARRIERSPAC 12300000
ADJCARRIERSPAC?
> 12300000
```

ADJCHBW/ADJCHBW?

ACP Offset CH BW

Function

This command sets the offset channel bandwidth for ACP measurement.

Command

```
ADJCHBW freq
```

Query

```
ADJCHBW?
```

Response

`freq`

Suffix code	None. Value is returned in Hz units.

Parameter

`freq`	Offset Channel bandwidth
Range	1 to 1000000000 Hz
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Example of Use

To set the offset channel bandwidth to 3.84 MHz.

```
ADJCHBW 3.84MHZ
ADJCHBW?
> 3840000
```

ADJCHSP/ADJCHSP?

ACP Offset Frequency
ACP Offset-1 Frequency

Function

This command sets the offset frequency for Offset Channel 1 or the specified offset channel for ACP measurement.

Command

```
ADJCHSP freq
ADJCHSP offset,freq
```

Query

```
ADJCHSP?
```

Response

`freq`

Suffix code	None. Value is returned in Hz units.

Parameter

`freq`	Offset channel
Range	–1000000000 to 1000000000 Hz
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
`offset`	Measurement channel
1	Offset-1
2	Offset-2
3	Offset-3

Example of Use

To set the offset frequency of Offset Channel 1 to 5 MHz.

```
ADJCHSP 5MHZ
ADJCHSP?
> 5000000
```

ADJCHSPF/ADJCHSPF?

ACP Offset-2 Frequency

Function

This command sets the offset frequency of Offset Channel 2 for ACP measurement.

Command

```
ADJCHSPF freq
```

Query

```
ADJCHSPF?
```

Response

```
freq
```

Suffix code	None. Value is returned in Hz units.

Parameter

`freq`	Offset frequency
Range	–1000000000 to 1000000000 Hz
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Example of Use

To set offset frequency of Offset Channel 2 to 5 MHz.

```
ADJCHSPF 5MHZ
ADJCHSPF?
> 5000000
```

ADJCHSPFF/ADJCHSPFF?

ACP Offset-3 Frequency

Function

This command sets the offset frequency of Offset Channel 3 for ACP measurement.

Command

```
ADJCHSPFF freq
```

Query

```
ADJCHSPFF?
```

Response

`freq`

Suffix code	None. Value is returned in Hz units.

Parameter

`freq`	Offset frequency
Range	–1000000000 to 1000000000 Hz
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Example of Use

To set offset frequency of Offset Channel 3 to 5 MHz.

```
ADJCHSPFF 5MHZ
ADJCHSPFF?
> 5000000
```

ADJFILTERTYPE/ADJFILTERTYPE?

ACP Filter Type

Function

This command selects filter type for ACP measurement.

Command

```
ADJFILTERTYPE type,target
```

Query

```
ADJFILTERTYPE? target
```

Response

```
type
type, type
```

(When `target` is omitted: The former indicates the offset channel filter, and the latter indicates the In Band filter.)

Parameter

`type`	Filter type
`RECT`	Rectangle Filter
`NYQUIST`	Nyquist Filter
`ROOTNYQUIST`	Root Nyquist Filter
`target`	Setting target
`INBAND`	Sets the In Band filter
`OFFSET`	Sets the offset channel filter
When omitted:	Applies the same filter type to both the In Band and offset channel filters.

Details

This command is not available when ACP Reference is set to Span Total.

Example of Use

To set the filter type to root nyquist filter.

```
ADJFILTERTYPE ROOTNYQUIST
ADJFILTERTYPE?
> ROOTNYQUIST,ROOTNYQUIST
```

ADJINBW/ADJINBW?

ACP Carrier BW

Function

This command sets the carrier measurement bandwidth for ACP measurement.

Command

```
ADJINBW freq
```

Query

```
ADJINBW?
```

Response

```
freq
```

Suffix code	None. Value is returned in Hz units.

Parameter

`freq`	Inband channel bandwidth
Range	1 to 1000000000 Hz
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Example of Use

To set the inband channel bandwidth to 3.84 MHz.

```
ADJINBW 3.84MHZ
ADJINBW?
> 3840000
```

ADJOFFSET1/ADJOFFSET1?

ACP Offset-1

Function

This command sets measurement channel 1 ON/OFF for ACP measurement.

Command

```
ADJOFFSET1 on_off
```

Query

```
ADJOFFSET1?
```

Response

```
on_off
```

Parameter

on_off	Measurement channel 1 ON/OFF
ON	Measures measurement channel 1.
OFF	Does not measure measurement channel 1.

Example of Use

To measure measurement channel 1.

```
ADJOFFSET1 ON
ADJOFFSET1?
> ON
```

ADJOFFSET2/ADJOFFSET2?

ACP Offset-2

Function

This command sets measurement channel 2 ON/OFF for ACP measurement.

Command

```
ADJOFFSET2 on_off
```

Query

```
ADJOFFSET2?
```

Response

```
on_off
```

Parameter

on_off	Measurement channel 2 ON/OFF
ON	Measures measurement channel 2.
OFF	Does not measure measurement channel 2.

Example of Use

To measure measurement channel 2.

```
ADJOFFSET2 ON
ADJOFFSET2?
> ON
```

ADJOFFSET3/ADJOFFSET3?

ACP Offset-3

Function

This command sets measurement channel 3 ON/OFF for ACP measurement.

Command

```
ADJOFFSET3 on_off
```

Query

```
ADJOFFSET3?
```

Response

```
on_off
```

Parameter

on_off	Measurement channel 3 ON/OFF
ON	Measures measurement channel 3.
OFF	Does not measure measurement channel 3.

Example of Use

To measure measurement channel 3.

```
ADJOFFSET3 ON
ADJOFFSET3?
> ON
```

ADJPWRTYPE/ADJPWRTYPE?

ACP Power Result Type

Function

This command switches the result display type for ACP measurement.

Command

```
ADJPWRTYPE mode
```

Query

```
ADJPWRTYPE?
```

Response

```
mode
```

Parameter

mode	Result display type
CARRIER	Sets the result display for ACP measurement to Carrier Power.
OFFSET	Sets the result display for ACP measurement to Offset Channel Power.

Example of Use

To set the result display for ACP measurement to Carrier Power.

```
ADJPWRTYPE CARRIER
ADJPWRTYPE?
> CARRIER
```

ADJROF/ADJROF?

ACP Rolloff Ratio

Function

This command sets the rolloff ratio of the In Band filter and/or offset channel filter for ACP measurement.

Command

```
ADJROF ratio,target
```

Query

```
ADJROF? target
```

Response

```
ratio
ratio,ratio
```

(When `target` is omitted: The former indicates the offset channel filter rolloff ratio, and the latter indicates the In Band filter rolloff ratio.)

Parameter

`ratio`	Filter rolloff ratio
Range	0.01 to 1.00
Resolution	0.01
Suffix code	None
`target`	Setting target
`INBAND`	Sets the rolloff ratio of In Band filter.
`OFFSET`	Sets the rolloff ratio of offset channel filter.
When omitted:	Applies the same rolloff ratio to both the In Band and offset channel filters.

Details

This command is not available when the target ACP filter type is set to either of the following:

- Nyquist
- Root Nyquist

This command is not available when ACP Reference is set to Span Total.

Example of Use

To set the filter rolloff ratio to 0.22.

```
ADJROF 0.22
ADJROF?
> 0.22,0.22
```

ALLMKPK?

All Peak Search and Query

Function

This command queries all peak point frequencies (time) and levels contained in the trace data displayed in batch.

Query

```
ALLMKPK?
```

Response

```
freq1,level1,freq2,level2,...
```
(When frequency domain displayed)
```
time1,level1,time2,level2,...
```
(When time domain displayed)

`freq` Peak point frequency

No suffix code, in Hz units, resolution: 0.01 Hz

`time` Peak point time

No suffix code, in μs units, resolution: 0.001 μs

`level` Peak point level

No suffix code, in dB units, 0.001 dB
(When marker level display units are dB-system units)

No suffix code, in μV units, 0.01 pV
(When marker level display units are V-system units)

No suffix code, in μW units, 0.01 yW
(When marker level display units are W-system units)

Details

Response data is returned based on the frequency (or time) to level ratio for all peak points contained in trace data displayed. Data is returned in level data size order.

Example of Use

To query all peak points in batch:
(1: 100 Hz, 5.678 dBm),(2: 200 Hz, 1.234 dBm), ...

```
ALLMKPK?
> 100.00, 5.678, 200.00, 1.234, ...
```

AMD/AMD?

Storage Mode (Trace A)

Function

This command selects Trace A storage mode.

Command

```
AMD mode
```

Query

```
AMD?
```

Response

```
mode
```

Parameter

`mode`	Storage mode
`0`	Off
`1`	Max Hold
`2`	Average
`3`	Min Hold
`6`	Linear Average

Example of Use

To set Trace A storage mode to Average.

```
AMD 2
AMD?
> 2
```

AT/AT?

RF Attenuator

Function

This command sets the RF attenuator.

Command

```
AT att
AT action
```

Query

```
AT?
```

Response

```
att
```

Parameter

att	Attenuator value
Range	0 to 60 dB
Resolution	2 dB steps
Suffix code	DB dB is used even when omitted.
action	RF attenuator setting method
AUTO	Automatically sets based on reference level and other settings.
UP	Increases 1 step.
DN	Decreases 1 step.

Details

This command is not available when Spurious Emission is set to On and when Gate View is set to Off.

Example of Use

To set the attenuator to 10 dB.

```
AT 10
AT 10DB
AT?
> 10
```

AUNITS/AUNITS?

Log Scale Unit

Function

This command sets the level display unit system at log scale.

Command

```
AUNITS unit
```

Query

```
AUNITS?
```

Response

```
unit
```

Parameter

`unit`	Level display unit system at log scale
`DBM`	dBm
`DBUV`	dBμV
`DBMV`	dBmV
`DBUVE`	dBmV (emf)
`V`	V
`W`	W
`DBUVM`	dBμV/m

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.
If V (W) is selected and a measurement result is 99.999 GV (GW) or more, 99.999 GV (GW) or more is displayed.

Example of Use

To set the level display unit system at log scale to V.

```
AUNITS V
AUNITS?
> V
```

BAND:MODE/BAND:MODE?

Resolution Bandwidth Normal/CISPR

Function

This command switches the Resolution Bandwidth mode. When Couple Time/Freq. Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
BAND:MODE mode
```

Query

```
BAND:MODE?
```

Response

```
mode
```

Parameter

mode

NORM	RBW (in normal cases). This is the default value.
CISP	CISPR RBW

Details

This function is available only when Option 016/116 is installed for MS2830A, MS2840A.
Not available when Measure function is set to On.
Not available when Gate View function is set to On.

Example of Use

To switch the mode to CISPR RBW.

```
BAND:MODE CISP
BAND:MODE?
> CISP
```

BAPWRSTART/BAPWRSTART?

Burst Average Power Start Time

Function

This command sets the start position (time) of burst average power measurement.

Command

```
BAPWRSTART time
```

Query

```
BAPWRSTART?
```

Response

```
time
```

Suffix code	None. Value is returned in μs units.

Parameter

`time`	Start position (time)
Range	Within trace display range
Resolution	Formula for calculating the resolution is: Sweep Time / (Trace Point – 1) (Minimum value: 1 ns)
Suffix code	NS, US, MS, S MS is used when omitted.

Example of Use

To set the start position (time) of burst average power measurement to 20 ms.

```
BAPWRSTART 20MS
BAPWRSTART?
> 20000.000
```

BAPWRSTOP/BAPWRSTOP?

Burst Average Power Stop Time

Function

This command sets the stop position (time) of burst average power measurement.

Command

```
BAPWRSTOP time
```

Query

```
BAPWRSTOP?
```

Response

`time`

Suffix code	None. Value is returned in μs units.

Parameter

`time` Stop position (time)

Range	Within trace display range
Resolution	Formula for calculating the resolution is: Sweep Time / (Trace Point – 1) (Minimum value: 1 ns)
Suffix code	NS, US, MS, S MS is used when omitted.

Example of Use

To set the stop position (time) of burst average power measurement to 100 ms.

```
BAPWRSTOP 100MS
BAPWRSTART?
> 100000.000
```

BMD/BMD?

Storage Mode (Trace B)

Function

This command selects Trace B storage mode.

Command

```
BMD mode
```

Query

```
BMD?
```

Response

```
mode
```

Parameter

mode	Storage mode
0	Off
1	Max Hold
2	Average
3	Min Hold
6	Linear Average

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set Trace B storage mode to Average.

```
BMD 2
BMD?
> 2
```

BNDC/BNDC?

Band Select

Function

This command selects frequency band.

Note

This command is provided for backward compatibility.
Setting except AUTO is not available.

Command

```
BNDC mode
```

Query

```
BNDC?
```

Response

```
mode
```

Parameter

`mode`	Frequency band
`AUTO`	Sets frequency band setting to Auto.

Example of Use

To set frequency band setting to Auto

```
BNDC AUTO
BNDC?
> AUTO
```

BNDSP/BNDSP?

Frequency Band Mode

Function

This command sets the frequency band path. The frequency at which the path is switched to the preselector band or a path that does not pass through the preselector can be set with this function.

Command

```
BNDSP mode
```

Query

```
BNDSP?
```

Response

```
mode
```

Parameter

`mode`	Frequency band mode
[MS269xA]	
`NORMAL`	Sets the frequency to be switched to the preselector band to 6.0 GHz.
`OFF`	Same as `NORMAL`
`SPURIOUS`	Sets the frequency to be switched to the preselector band to 3.0 GHz.
`ON`	Same as `SPURIOUS`
[MS2830A-041/043/044/045], [MS2840A-041/044/046]	
`NORMAL`	Sets the frequency to be switched to the preselector band to 4.0 GHz.
`OFF`	Same as `NORMAL`
`SPURIOUS`	Sets the frequency to be switched to the preselector band to 3.5 GHz.
`ON`	Same as `SPURIOUS`

Details

[MS269xA]

This command is not available when the Option 003/103 Preselector lower limit frequency extension option is not installed.

[MS2830A], [MS2840A]

This command is not available for Option 040 3.6 GHz Signal Analyzer.

Example of Use

To set the frequency to be switched to the preselector band to 6.0 GHz.

```
BNDSP NORMAL
BNDSP?
> NORMAL
```

CAL

Calibration

Function

This command executes calibration.

Command

```
CAL mode
```

Parameter

mode	Calibration mode
ALL	Executes all calibrations.
LEVEL	Executes Level CAL.
LOLEAK_SUPPRESS	Executes local leak suppression.
BAND	Executes inband calibration.

Example of Use

To perform all calibrations.

```
CAL ALL
```

CAL:RCL/CAL:RCL?

Adjust Reference Clock

Function

This command sets the adjustment value for the internal reference signal oscillator (Reference Clock).

Command

```
CAL:RCL integer
```

Query

```
CAL:RCL?
```

Response

```
integer
```

Parameter

`integer`		Adjustment value
	Range	0 to 1023 (MS2830A) 0 to 4095 (MS2840A)
	Resolution	1

Example of Use

To set the adjustment value of the internal reference signal oscillator to 511

```
CAL:RCL 511
CAL:RCL?
> 511
```

CAL:RCL:PRES

Adjust Reference Clock Preset

Function

This command resets the adjustment value of the internal reference signal oscillator (Reference Clock).

Command

```
CAL:RCL:PRES
```

Example of Use

To reset the adjustment value of the internal reference signal oscillator.

```
CAL:RCL:PRES
```

CALC:MARK:AOFF

All Marker Off

Function

This command sets all the markers to Off.

Command

```
CALC:MARK:AOFF
```

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spectrum Emission measurement.

Example of Use

To set all the markers to Off.

```
CALC:MARK:AOFF
```

CALC:MARK:COUP:ZONE/ CALC:MARK:COUP:ZONE?

Couple Zone

Function

This command sets the Zone Width shared setting to On/Off.

Command

```
CALC:MARK:COUP:ZONE switch_com
```

Query

```
CALC:MARK:COUP:ZONE?
```

Response

```
switch_res
```

Parameter

`switch_com`	Zone Width shared setting On/Off
`ON|1`	Sets the shared setting to On.
`OFF|0`	Sets the shared setting to Off.
`switch_res`	Zone Width shared setting On/Off
`1`	Shared setting is set to On.
`0`	Shared setting is set to Off.

Details

This command allows the markers to share the Zone Width setting when set to On.

This command is not available in the following cases:

- In Time Domain mode.
- During the Spurious Emission measurement and when the Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the Zone Width shared setting to On.

```
CALC:MARK:COUP:ZONE ON
CALC:MARK:COUP:ZONE?
> 1
```

CALC:MARK:FCO/CALC:MARK:FCO?

Frequency Counter State

Function

This command turns On/Off the frequency counter.

Command

```
CALC:MARK:FCO n,switch
```

Query

```
CALC:MARK:FCO? n
```

Parameter

n	Marker Number
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10
switch	Frequency counter On/Off
ON|1	Sets marker n as the active marker and switches on the frequency counter function.
OFF|0	Switches off the frequency counter function of marker n.

Details

The frequency counter is available only for the active markers. Following execution of this command, the marker with the specified marker number becomes active.
The setting value is shared by all the markers.
This command is not available when gate sweep is On.
This command is not available when Marker Result is Integration or Density.
This command is not available when RBW is equal to or lower than 30 Hz.
This command is disabled during the Spurious Emission measurement.
This command is disabled during the Spectrum Emission Mask measurement.
This command is disabled when Noise Cancel is set to On.

Example of Use

To set marker 1 as the active marker and switch on the frequency counter function.

```
CALC:MARK:FCO 1,ON
CALC:MARK:FCO? 1
> 1
```

CALC:MARK:FCO:GAT/CALC:MARK:FCO:GAT?

Frequency Counter Gate Time

Function

This command sets the counter gate time for frequency counter.

Command

```
CALC:MARK:FCO:GAT n,time
```

Query

```
CALC:MARK:FCO:GAT? n
```

Response

```
time
```

Parameter

n		Marker Number
	1	Specifies marker 1
	2	Specifies marker 2
	3	Specifies marker 3
	4	Specifies marker 4
	5	Specifies marker 5
	6	Specifies marker 6
	7	Specifies marker 7
	8	Specifies marker 8
	9	Specifies marker 9
	10	Specifies marker 10
time		Center time of zone marker
	Range	100 µs to 1 s
	Resolution	50 µs
	Suffix code	NS,US,MS,S
		S is used when the suffix code is omitted.

Details

This command is not available when frequency counter is set to Off.
The setting value is shared by all the markers.

Example of Use

To set the counter gate time for frequency counter to 100 ms.

```
CALC:MARK:FCO:GAT 1,100MS
CALC:MARK:FCO:GAT? 1
> 0.10000
```

CALC:MARK:FCO:X?

Frequency Counter Query

Function

This command queries the measured value of the frequency counter.

Query

```
CALC:MARK:FCO:X? n
```

Response

```
freq
```

Parameter

n		Marker Number
	1	Specifies marker 1
	2	Specifies marker 2
	3	Specifies marker 3
	4	Specifies marker 4
	5	Specifies marker 5
	6	Specifies marker 6
	7	Specifies marker 7
	8	Specifies marker 8
	9	Specifies marker 9
	10	Specifies marker 10
freq		Center frequency of zone maker
	Range	–99.999999999999 GHz to 99.999999999999 GHz
	Resolution	0.001 Hz
	Suffix code	None
		–999999999999 is returned when no measurement is executed or when there is an error.

Details

A non-measurement value is returned when a marker number other than that of the active marker has been specified.
A non-measurement value is returned when the Marker Mode is either Fixed or Off.

Example of Use

To query the frequency counter value of marker 1.

```
CALC:MARK:FCO:X? 1
> 100000000.00
```

CALC:MARK:MAX:POW

Power Peak Search

Function

This command moves the active marker to the position where the peak power of the zone width of the active marker becomes maximum in the measurement band.

Command

```
CALC:MARK:MAX:POW n
```

Parameter

n	Marker No
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10

Details

This cannot be executed under the following conditions:

- In Time Domain
- When Scale Mode is Linear
- When active trace is Blank
- When Spurious Emission measurement is On and Displayed Segment Mode is Auto
- When Spectrum Emission Mask measurement is On

Example of Use

To move marker 1 to position where peak power of zone width is maximum value.

```
CALC:MARK:MAX:POW 1
```

CALC:MARK:MAX:POW:NEXT

Next Power Peak Search

Function

This command searches for the next largest peak power in the zone width compared to the total power of the zone width of the active marker in the measurement band and moves the active marker.

Command

```
CALC:MARK:MAX:POW:NEXT n
```

Parameter

n	Marker Number
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10

Details

This cannot be executed under the following conditions:

- In Time Domain
- When Scale Mode is Linear
- When active trace is Blank
- When Spurious Emission measurement is On and Displayed Segment Mode is Auto
- When Spectrum Emission Mask measurement is On

Example of Use

To move marker 1 to position of zone width with next largest peak power.

```
CALC:MARK:MAX:POW:NEXT 1
```

CALC:MARK:PEAK:SORT:COUN/CALC:MARK:PEAK:SORT:COUN?

Search Peaks Number

Function

This command sets the search number when Search Peaks Sort Y/X is executed.

Command

```
CALC:MARK:PEAK:SORT:COUN integer
```

Query

```
CALC:MARK:PEAK:SORT:COUN?
```

Response

```
integer
```

Parameter

`integer`	Search number
Range	1 to 10
Resolution	1
Default	10

Details

This command is not available in the following cases:

- During the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the search number to 6.

```
CALC:MARK:PEAK:SORT:COUN 6
CALC:MARK:PEAK:SORT:COUN?
> 6
```

CALC:MARK:PEAK:SORT:X

Search Peaks Sort X

Function

This command sorts as many markers as the number set in Search Peaks Number by frequency (time) on the trace.

Command

```
CALC:MARK:PEAK:SORT:X
```

Details

This command is not available in the following cases:

- During the Spurious Emission measurement.
- When Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.
- When the active trace is set to Blank.

Example of Use

To sort the markers by frequency.

```
CALC:MARK:PEAK:SORT:X
```

CALC:MARK:PEAK:SORT:Y

Search Peaks Sort Y

Function

This command sorts as many markers as the number set in Search Peaks Number by level on the trace.

Command

```
CALC:MARK:PEAK:SORT:Y
```

Details

This command is not available in the following cases:

- During the Spurious Emission measurement.
- When Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.
- When the active trace is set to Blank.

Example of Use

To sort the markers by level.

```
CALC:MARK:PEAK:SORT:Y
```

CALC:MARK:READ?

Marker Readout Query

Function

This command queries all marker values.

Query

```
CALC:MARK:READ?
```

Response

```
freq_1,power_1,freq_2,power_2,...,
freq_10,power_10
```
(in frequency domain)

```
time_1,power_1,time_2,power_2,...,
time_10,power_10
```
(in time domain)

Parameter

`freq_n` Frequency of marker n

No suffix code, in Hz units, resolution: 0.01 Hz

Returns "–999999999999" when no measurement is performed, an error occurs, or the marker is off.

`power_n` Level of Marker n

(When marker level display units are dB-system units.)

No suffix code, in the unit specified in Scale Unit, resolution: 0.001 dB

Returns –999.0 when no measurement is performed, an error occurs, or the marker is Off.

(When marker level display units are V-system units.)

No suffix code, in V-system units, resolution: 0.01 pV

Returns –999.0 when no measurement is performed, an error occurs, or the marker is Off.

(When marker level display units are W-system units.)

No suffix code, in W-system units, resolution: 0.01 yW

Returns –999.0 when no measurement is performed, an error occurs, or the marker is Off.

(When marker level display units are X multiplying-system units.)

No suffix code, resolution: 0.0001, returns 1 at the same magnification.

Returns –999.0 when no measurement is performed, an error occurs, or the marker is Off.

`time_n` Time of marker n

No suffix code, in s units, resolution: 0.1 ns

Returns –999999999999 when no measurement is performed, an error occurs, or the marker is off.

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Example of Use

To query all marker values (frequency domain)

```
CALC:MARK:READ?
>
1000000.00,-15.321,1100000.00,-23.000,1200000.00,-15.321
,1300000.00,-12.680,1400000.00,-5.622,1500000.00,-65.056
,1600000.00,-26.534,1700000.00,-34.264,1800000.00,-35.64
4,-999999999999,-999.0
```

CALC:MARK:REF/CALC:MARK:REF?

Relative To

Function

This command sets the reference marker when Marker Mode is set to Delta.

Command

```
CALC:MARK:REF marker,integer
```

Query

```
CALC:MARK:REF? marker
```

Response

```
integer
```

Parameter

marker	Marker Number to set
1	Marker1
2	Marker2
3	Marker3
4	Marker4
5	Marker5
6	Marker6
7	Marker7
8	Marker8
9	Marker9
10	Marker10
integer	Marker Number for reference
1	Marker1
2	Marker2
3	Marker3
4	Marker4
5	Marker5
6	Marker6
7	Marker7
8	Marker8
9	Marker9
10	Marker10
When omitted	Active marker

Details

The selected marker cannot be set as the reference marker.
This command is not available in the following cases:

- During the Spurious Emission measurement.
- During the Spectrum Emission Mask measurement.
- During the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Example of Use

To set the reference marker of 2 to 4.

```
CALC:MARK:REF 2,4
CALC:MARK:REF? 2
> 4
```

CALC:MARK:SLIN/CALC:MARK:SLIN?

Spot Line

Function

This command displays/hides the marker line in the spot marker.

Command

```
CALC:MARK:SLIN switch_com
```

Query

```
CALC:MARK:SLIN?
```

Response

```
switch_res
```

Parameter

switch_com	Marker line display On/Off
ON|1	Displays marker line.
OFF|0	Hides marker line.
switch_res	Marker line display On/Off
1	Marker line is displayed.
0	Marker line is hidden.

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto. This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To display the marker line.

```
CALC:MARK:SLIN ON
CALC:MARK:SLIN?
> 1
```

CALC:MARK:TABL/CALC:MARK:TABL?

Marker List

Function

This command sets the marker list to On/Off.

Command

```
CALC:MARK:TABL switch_com
```

Query

```
CALC:MARK:TABL?
```

Response

```
switch_res
```

Parameter

`switch_com`	Marker list On/Off
`ON|1`	Sets the marker list to On.
`OFF|0`	Sets the marker list to Off.
`switch_res`	Marker list display On/Off
`1`	Marker list is On.
`0`	Marker list is Off.

Details

This command is not available during the Spectrum Emission Mask.

Example of Use

To set the marker list display to On.

```
CALC:MARK:TABL ON
CALC:MARK:TABL?
> 1
```

CALC:MARK:TRCK/CALC:MARK:TRCK?

Marker Tracking

Function

This command sets the Marker tracking function to On/Off.

Command

```
CALC:MARK:TRCK switch_com
```

Query

```
CALC:MARK:TRCK?
```

Response

```
switch_res
```

Parameter

`switch_com`	Marker tracking function On/Off
`ON|1`	Marker tracking On
`OFF|0`	Marker tracking Off
`switch_res`	Marker tracking function On/Off
`1`	Marker tracking function On
`0`	Marker tracking function Off

Details

Conducts sweep after adjusting the center frequency of trace to that of the active marker frequency.

Example of Use

To enable Marker tracking

```
CALC:MARK:TRCK ON
CALC:MARK:TRCK?
> 1
```

CALC:MARK:WIDT:TYPE/CALC:MARK:WIDT:TYPE?

Zone Width Type

Function

This command sets the zone width type of the marker.

Command

```
CALC:MARK:WIDT:TYPE n,zone_type
```

Query

```
CALC:MARK:WIDT:TYPE? n
```

Parameter

n	Marker number
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Marker 1
zone_type	Zone width type
ZONE	Zone marker
SPOT	Spot marker

Details

This command is available when Marker Result is set to Peak.
When Marker Result is set to Integration or Density, Zone width type is fixed to Zone, Spot cannot be selected.
This command is not available in the following cases:

- In Time Domain mode
- During the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the zone width type of Marker 1 to the zone marker.

```
CALC:MARK:WIDT:TYPE 1,ZONE
CALC:MARK:WIDT:TYPE? 1
> ZONE
```

CALC:MARK:X:DELT/CALC:MARK:X:DELT?

Zone Marker Relative Frequency (Time)

Function

This command moves the center of the zone marker to the frequency (time), specified by relative value. This queries the center frequency in relative value.

Command

```
CALC:MARK:X:DELT marker,freq
CALC:MARK:X:DELT marker,time
```

Query

```
CALC:MARK:X:DELT? marker
```

Response

```
freq
time
```

Parameter

`marker`	Marker Number
`1`	Specifies marker 1
`2`	Specifies marker 2
`3`	Specifies marker 3
`4`	Specifies marker 4
`5`	Specifies marker 5
`6`	Specifies marker 6
`7`	Specifies marker 7
`8`	Specifies marker 8
`9`	Specifies marker 9
`10`	Specifies marker 10
`freq`	Relative center frequency of zone maker
Range	Absolute frequency range – Reference marker center frequency
Resolution	0.01 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Default	0 Hz
`time`	Relative center time of zone marker
Range	Absolute time range – Reference marker center time
Resolution	1 ns

Suffix code	NS, US, MS, S S is used when the suffix code is omitted.
Default	0 s

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.
Not available when Marker Mode is set other than Delta.

Example of Use

When Frequency Span is 0 Hz, and Active Marker is Maker 2.
To move the center of Marker 1 zone marker to +100 MHz of Marker 2 (reference marker).

```
CALC:MARK1:REF 2
CALC:MARK:X:DELT 1,100MHZ
CALC:MARK:X:DELT? 1
> 100000000.00
```

When Frequency Span is 0 Hz, and Active Marker is Maker 2.
To move the center of Marker 1 zone marker to 15 ms of Marker 2 (reference marker).

```
CALC:MARK1:REF 2
CALC:MARK:X:DELT 1,15MS
CALC:MARK:X:DELT? 1
> 0.015000000
```

CALC:MARK:Y:DELT?

Marker Relative Level Query

Function

This command queries the marker level in relative value.

Query

```
CALC:MARK:Y:DELT? marker
```

Response

```
level
```

Parameter

`marker`	Marker Number
1	Specifies marker 1
2	Specifies marker 2
3	Specifies marker 3
4	Specifies marker 4
5	Specifies marker 5
6	Specifies marker 6
7	Specifies marker 7
8	Specifies marker 8
9	Specifies marker 9
10	Specifies marker 10
`level`	Relative level of zone marker

(When Scale Mode is Log)

No suffix code, in dB units, resolution: 0.001 dB

–999.0 is returned at no measurement or error

(When Scale Mode is Lin)

No suffix code, no units, range 0.0000 to 10000, 0.0001 resolution

–999.0 is returned at no measurement or error

Details

This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.
Not available when Marker Mode is set other than Delta.

Example of Use

To query the relative value result of marker 1.

```
CALC:MARK:Y:DELT? 1
>10.00
```

CALC:SPUR:CORR:COMM

Use Common Correction Table

Function

This command uses the common correction data set in Cal as Correction Data.

Command

```
CALC:SPUR:CORR:COMM integer
```

Parameter

`integer`	Segment number
Range	1 to 20
Resolution	1

Example of Use

To use the common correction data set in Cal as Correction Data.

```
CALC:SPUR:CORR:COMM 1
```

CALC:SPUR:CORR:REC

Recall Correction Table

Function

This command selects the correction table to use in Segment.

Command

```
CALC:SPUR:CORR:REC integer,filename,device
```

Parameter

`integer`	Segment number
Range	1 to 20
Resolution	1
`filename`	Name of File Character string within 32 characters enclosed by double quotation marks (" ") or single quotation marks (' ') (Not including an extension). The following characters are not available: \ / : * ? " < > |
`device`	Name of Drive A,B,D,E,F,... D drive is used when omitted.

Example of Use

To select the correction table of a file named TEST in the internal HDD or SSD.

```
CALC:SPUR:CORR:REC 1,"TEST",D
```

CALC:SPUR:LIM:ABS:DATA/CALC:SPUR:LIM:ABS:DATA?

Spurious Emission Limit Start Level

Function

This command sets the absolute level limit of the start frequency in each segment for the Spurious Emission measurement.

Command

```
CALC:SPUR:LIM:ABS:DATA
ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,
ampl_9,ampl_10,ampl_11,ampl_12,ampl_13,ampl_14,ampl_15,a
mpl_16,ampl_17,ampl_18,ampl_19,ampl_20
```

Query

```
CALC:SPUR:LIM:ABS:DATA?
```

Response

```
ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,
ampl_9,ampl_10,ampl_11,ampl_12,ampl_13,ampl_14,ampl_15,a
mpl_16,ampl_17,ampl_18,ampl_19,ampl_20
```

Value is returned in dBm units, without suffix code.

Parameter

`ampl_n`	Absolute level limit of start frequency of Segment n
Range	–200 dBm to 50 dBm
Resolution	0.01 dB
Suffix code	DBM,DM

Example of Use

To set the absolute level limit of the start frequency of each segment.

```
CALC:SPUR:LIM:ABS:DATA
-13DBM,-13DBM,-13DBM,-13DBM,-13DBM,-13DBM,-10DBM,-10DBM,
-13DBM,-13DBM,-13DBM,-13DBM,-13DBM,-13DBM,-10DBM,-10DBM,
-13DBM,-13DBM,-13DBM,-13DBM
CALC:SPUR:LIM:ABS:DATA?
>
-13.00,-13.00,-13.00,-13.00,-13.00,-13.00,-10.00,-10.00,
-13.00,-13.00,-13.00,-13.00,-13.00,-13.00,-10.00,-10.00,
-13.00,-13.00,-13.00,-13.00
```

CALC:SPUR:LIM:ABS:DATA:STOP/CALC:SPUR:LIM:ABS:DATA:STOP?

Spurious Emission Limit Stop Level

Function

This command sets the absolute level limit of the stop frequency of each segment for the Spurious Emission measurement.

Command

```
CALC:SPUR:LIM:ABS:DATA:STOP
ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,
ampl_9,ampl_10,ampl_11,ampl_12,ampl_13,ampl_14,ampl_15,a
mpl_16,ampl_17,ampl_18,ampl_19,ampl_20
```

Query

```
CALC:SPUR:LIM:ABS:DATA:STOP?
```

Response

```
ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,
ampl_9,ampl_10,ampl_11,ampl_12,ampl_13,ampl_14,ampl_15,a
mpl_16,ampl_17,ampl_18,ampl_19,ampl_20
```

Value is returned in dBm units, without suffix code.

Parameter

`ampl_n`		Absolute level limit of stop frequency in Segment n
	Range	–200 dBm to 50 dBm
	Resolution	0.01 dB
	Suffix code	DBM,DM

Example of Use

To set the absolute level limit of the stop frequency in each segment.

```
CALC:SPUR:LIM:ABS:DATA:STOP
-13,-13,-13,-13,-13,-13,-10,-10,-13,-13,-13,-13,-13,-13,
-10,-10,-13,-13,-13,-13
CALC:SPUR:LIM:ABS:DATA:STOP?
>
-13.00,-13.00,-13.00,-13.00,-13.00,-13.00,-10.00,-10.00,
-13.00,-13.00,-13.00,-13.00,-13.00,-13.00,-10.00,-10.00,
-13.00,-13.00,-13.00,-13.00
```

CALC:SPUR:LIM:ABS:DATA:STOP:AUTO/CALC:SPUR:LIM:ABS:DATA:STOP:AUTO?

Spurious Emission Limit Stop Level Auto/Manual

Function

This command sets the absolute level limit of the stop frequency in each segment for the Spurious Emission measurement to Auto/Manual.

Command

```
CALC:SPUR:LIM:ABS:DATA:STOP:AUTO
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
CALC:SPUR:LIM:ABS:DATA:STOP:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

`switch_n_com`	Stop frequency of Segment n Auto//Manual
`ON|1`	Stop frequency is set to Auto.
`OFF|0`	Stop frequency is set to Manual.
`switch_n_res`	Stop frequency of Segment n Auto//Manual
`1`	Stop frequency is set to Auto.
`0`	Stop frequency is set to Manual.

Details

When set to On, the same as the value set in Limit Start Level is set to Limit Stop Level.

Example of Use

To set the absolute level limit of the stop frequency in each segment to Auto/Manual.

```
CALC:SPUR:LIM:ABS:DATA:STOP:AUTO
ON,ON,ON,ON,OFF,OFF,OFF,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON
,ON,ON
CALC:SPUR:LIM:ABS:DATA:STOP:AUTO?
> 1,1,1,1,0,0,0,1,1,1,1,1,1,1,1,1,1,1,1,1
```

CHPWRCENTER/CHPWRCENTER?

Channel Power Channel Center Frequency

Function

This command sets the center frequency for Channel Power measurement.

Command

```
CHPWRCENTER freq
```

Query

```
CHPWRCENTER?
```

Response

`freq`

Returns a value in Hz units, without a suffix code.

Parameter

`freq`		Channel center frequency
	Range	(Start Frequency) to (Stop Frequency)
	Resolution	1 Hz
	Suffix Code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Example of Use

To set the channel power center frequency to 6.01 GHz.

```
CHPWRCENTER 6.01GHZ
```

CHPWRFLTRTYP/CHPWRFLTRTYP?

Channel Power Filter Type

Function

This command sets filter type for Channel Power measurement.

Command

```
CHPWRFLTRTYP filter
```

Query

```
CHPWRFLTRTYP?
```

Response

```
filter
```

Parameter

`filter`	Filter type
`RECT`	Rect. filter
`NYQUIST`	Nyquist filter
`ROOTNYQUIST`	Root Nyquist filter

Example of Use

To set the filter type to Nyquist.

```
CHPWRFLTRTYP NYQUIST
```

CHPWRROF/CHPWRROF?

Channel Power Rolloff Factor

Function

This command sets filter rolloff ratio for Channel Power measurement.

Command

```
CHPWRROF factor
```

Query

```
CHPWRROF?
```

Response

```
factor
```

Parameter

`factor`	Rolloff ratio
Range	0.01 to 1
Resolution	0.01

Details

This command is not available when the channel power filter type for channel power measurement is set to either of the following:

- Nyquist
- Root Nyquist

Example of Use

To set the rolloff ratio to 0.62.

```
CHPWRROF 0.62
```

CHPWRWIDTH/CHPWRWIDTH?

Channel Power Channel Bandwidth

Function

This command sets the channel bandwidth for Channel Power measurement.

Command

```
CHPWRWIDTH freq
```

Query

```
CHPWRWIDTH?
```

Response

`freq`

Returns a value in Hz units, without a suffix code.

Parameter

`freq`		Channel bandwidth
	Range	1 Hz to 1 GHz
	Resolution	1 Hz
	Suffix Code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Example of Use

To set the channel bandwidth to 1 MHz.

```
CHPWRWIDTH 1MHZ
```

CMD/CMD?

Storage Mode (Trace C)

Function

This command selects the storage mode of Trace C.

Command

```
CMD mode
```

Query

```
CMD?
```

Response

```
mode
```

Parameter

mode	Storage mode
0	Off
1	Max Hold
2	Average
3	Min Hold
6	Linear Average

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set Trace C storage mode to Average.

```
CMD 2
CMD?
> 2
```

CMK?

Marker Position Query

Function

This command queries the marker position using the displayed point from the screen left edge.

Query

```
CMK? marker
```

Response

```
point
```

Parameter

`point`		Marker position (Number of displayed points from the screen left edge)
	Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (The upper limit value varies according to the number of trace displayed points.)
	Resolution	1
`marker`		Marker type
	`1`	Marker1
	`2`	Marker2
	`3`	Marker3
	`4`	Marker4
	`5`	Marker5
	`6`	Marker6
	`7`	Marker7
	`8`	Marker8
	`9`	Marker9
	`10`	Marker10
	When omitted	Active marker

Details

*** is returned when the Marker Mode is Off.
This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Example of Use

To query the active marker position.

```
CMK?
> 123
```

CNF/CNF?

Center Frequency

Function

This command sets the center frequency.

Command

```
CNF freq
```

Query

```
CNF?
```

Response

```
freq
```

No suffix code. Value is returned in Hz units.

Parameter

`freq`		Center frequency
Range		
[MS269xA]		–100 MHz to 6.05 GHz (MS2690A)
		–100 MHz to 13.6 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
[MS2830A]		–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 13.6 GHz (Option 043)
		–100 MHz to 26.6 GHz (Option 044)
		–100 MHz to 43.1 GHz (Option 045)
[MS2840A]		–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)
		–100 MHz to 27 GHz (Option 044)
		–100 MHz to 45 GHz (Option 046)
Resolution		1 Hz
Suffix code		HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.

Details

This command is not available during the Spurious Emission measurement.

Example of Use

To set the center frequency to 123.456 kHz.

```
CNF 123456
CNF 123456HZ
CNF 123.456KHZ
CNF 0.123456MHZ
CNF 0.000123456GHZ
CNF?
> 123456
```

CNVLOSS/CNVLOSS?

External Mixer Conversion Loss

Function

This command sets the external mixer's conversion loss.

Command

```
CNVLOSS power
```

Query

```
CNVLOSS?
```

Response

```
power
```

Parameter

`power`		External mixer's conversion loss
	Range	0.00 to 99.99 dB
	Resolution	0.01 dB
	Suffix code	None. Value is returned in dB units.
	Default	15.00 dB

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
A value is held per one external mixer's band.

Example of Use

To set the external mixer's conversion loss to 10.00 dB.

```
CNVLOSS 10.00
CNVLOSS?
> 10.00
```

CONF:SAN

Measurement Off

Function

This command disables currently running Measurement function. No operation is made if no Measurement function is running.

Command

```
CONF:SAN
```

Example of Use

To disable the currently running Measure function.

```
CONF:SAN
```

CONF:SEM

Spectrum Emission Mask Configure

Function

This command sets Spectrum Emission Mask measurement to On.

Command

```
CONF:SEM
```

Details

No measurement is performed.

Example of Use

To set SEM measurement to On.

```
CONF:SEM
```

CONF:SPUR

Spurious Emission Configure

Function

This command sets the Spurious Emission measurement to On.

Command

```
CONF:SPUR
```

Details

No measurement is performed.
When Spurious Emission measurement is set to On, the active trace is set to A.

Example of Use

To set the Spurious Emission measurement to On.

```
CONF:SPUR
```

CONTS

Continuous Sweep

Function

This command sets the sweep mode to Continuous and starts continuous sweep.

Command

```
CONTS
```

Example of Use

To start continuous sweep.

```
CONTS
```

DET/DET?

Detection Mode

Function

This command selects the waveform pattern detection mode. When Couple Time/Frequency Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
DET mode
```

Query

```
DET?
```

Response

```
mode
```

Parameter

mode		Detection mode selection
	NRM	Simultaneous positive and negative peak detection
	POS	Positive peak detection
	NEG	Negative peak detection
	SMP	Sample detection
	RMS	RMS detection
	This following functions are available when MS2830A-016/116 or MS2840A-016/116 is installed.	
	QPE	QP detection
	CAV	CISPR Average detection
	CRMS	RMS Average detection

Details

The set detection mode is applied to all traces.
This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.
QPE, CAV, or CRMS cannot be set when the Measure function is set to On.
QPE, CAV, or CRMS cannot be set when the Gate View function is set to On.
When QPEak, CAVerage, and CRMS are set, RBW MODE changes from Normal to CISPR.

Example of Use

To set the detection mode to positive peak.

```
DET POS
DET?
> POS
```

DISP:SEM:RES:TYPE/DISP:SEM:RES:TYPE?

Spectrum Emission Mask Result Type

Function

This command switches the type of the result display for Spectrum Emission Mask measurement.

Command

```
DISP:SEM:RES:TYPE type
```

Query

```
DISP:SEM:RES:TYPE?
```

Response

```
type
```

Parameter

`type`	Type of result display
`PEAK`	Displays the peak
`MARG`	Displays the margin to the specification line

Example of Use

To set the type of the result display to the peak.

```
DISP:SEM:RES:TYPE PEAK
DISP:SEM:RES:TYPE?
> PEAK
```

DISP:SPUR:SEGM/DISP:SPUR:SEGM?

Displayed Segment

Function

This command specifies the segment to display the trace data in.

Command

```
DISP:SPUR:SEGM integer
```

Query

```
DISP:SPUR:SEGM?
```

Response

```
integer
```

Parameter

`integer`	Segment number
Range	1 to 20
Resolution	1

Details

A segment which is set to Off cannot be specified.
This command is not available during measurement and when Displayed Segment Mode is Auto.

Example of Use

To specify 2 to the segment to display the trace data in.

```
DISP:SPUR:SEG 2
DISP:SPUR:SEG?
> 2
```

DISP:SPUR:SEGM:AUTO/DISP:SPUR:SEGM:AUTO?

Page of Summary Auto/Manual

Function

This command turns on the summary page auto numbering.

Command

```
DISP:SPUR:SEGM:AUTO switch_com
```

Query

```
DISP:SPUR:SEGM:AUTO?
```

Response

```
switch_res
```

Parameter

`switch_com`	Auto mode On/Off
`ON|1`	Auto mode is set to On.
`OFF|0`	Auto mode is set to Off.
`Switch_res`	Auto mode On/Off
`1`	On
`0`	Off

Details

Auto mode makes it possible to display the page on which the segment set in Displayed Segment is.

Example of Use

To turn on the summary page auto numbering.

```
DISP:SPUR:SEG:AUTO ON
DISP:SPUR:SEG:AUTO?
> 1
```

DISP:SPUR:SEGM:MODE/DISP:SPUR:SEGM:MODE?

Displayed Segment Mode

Function

This command switches the display mode of a segment.

Command

```
DISP:SPUR:SEGM:MODE switch_com
```

Query

```
DISP:SPUR:SEGM:MODE?
```

Response

```
switch_res
```

Parameter

switch_com	Display mode
ON|1	Auto
OFF|0	Manual
switch_res	Display mode
1	Auto
0	Manual

Example of Use

To set the display mode of a segment to Auto.

```
DISP:SPUR:SEGM:MODE ON
DISP:SPUR:SEGM:MODE?
> 1
```

DISP:SPUR:SEGM:NEXT

Next Page

Function

This command displays the summary on the next page.

Command

```
DISP:SPUR:SEGM:NEXT
```

Details

The summary set in Result Type is displayed.

Example of Use

To display the summary on the next page.

```
DISP:SPUR:SEG:NEXT
```

DISP:SPUR:SEGM:PREV

Previous Page

Function

This command displays the summary on the previous page.

Command

```
DISP:SPUR:SEGM:PREV
```

Details

The summary set in Result Type is displayed.

Example of Use

To display the summary on the previous page.

```
DISP:SPUR:SEG:PREV
```

DISP:SPUR:SEGM:REST?

Displayed Restart Query

Function

This command queries whether the remeasurement message is displayed on the trace.

Query

```
DISP:SPUR:SEGM:REST?
```

Response

```
switch
```

Parameter

switch	Message displayed/not displayed
1	Message is displayed.
0	Message is not displayed.

Details

When the sweep has paused and Spurious Emission is set to On, switch Time Domain Measurement into On. Then the remeasurement message, “Please sweep again.”, is displayed.

Example of Use

To query whether the remeasurement message is displayed on the trace.

```
DISP:SPUR:SEGM:REST?
> 1
```

DISPI:SPUR:STAB/DISP:SPUR:STAB?

Displayed Summary Table

Function

This command sets the content to be displayed in the Summary Table.

Command

```
DISP:SPUR:STAB mode_com
```

Query

```
DISP:SPUR:STAB?
```

Response

```
mode_res
```

Parameter

`mode_com`	The contents displayed for Summary Table.
`RANG`	Frequency range for each segment
`RES`	Measurement result for each segment (Default)
`mode_res`	The contents displayed for Summary Table.
`RANG`	Frequency range for each segment
`RES`	Measurement result for each segment

Example of Use

To display the measurement result in the Summary Table

```
DISP:SPUR:STAB RES
DISP:SPUR:STAB?
> RES
```

DISP:SPUR:VIEW:WIND:TRAC:Y:RLEV/DISP:SPUR:VIEW:WIND:TRAC:Y:RLEV?

Spurious Emission Reference Level

Function

This command sets the reference level of each segment.

Command

```
DISP:SPUR:VIEW:WIND:TRAC:Y:RLEV
real_1,real_2,real_3,real_4,real_5,real_6,real_7,real_8,
real_9,real_10,real_11,real_12,real_13,real_14,real_15,r
eal_16,real_17,real_18,real_19,real_20
```

Query

```
DISP:SPUR:VIEW:WIND:TRAC:Y:RLEV?
```

Response

```
real_1,real_2,real_3,real_4,real_5,real_6,real_7,real_8,
real_9,real_10,real_11,real_12,real_13,real_14,real_15,r
eal_16,real_17,real_18,real_19,real_20
```

Value is returned in dBm units, without suffix code.

Parameter

real_n		Reference level of Segment n
	Range	Value equivalent to –120 to +50 dBm
	Resolution	0.01 dB
	Suffix code	DBM,DM dBm is used when omitted.
	Default	0 dBm

Example of Use

To set the reference level of each segment.

```
DISP:SPUR:VIEW:WIND:TRAC:Y:RLEV
0DBM,0,0,3,0,0,0,8,0,0,0,0,0,0,0,0,0,0,0,0
DISP:SPUR:VIEW:WIND:TRAC:Y:RLEV?
>
0.00,0.00,0.00,3.00,0.00,00.0,0.00,8.00,0.00,0.00,0.00,0
.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00
```

DMD/DMD?

Storage Mode (Trace D)

Function

This command sets the storage mode of Trace D.

Command

```
DMD mode
```

Query

```
DMD?
```

Response

```
mode
```

Parameter

`mode`	Storage mode
`0`	Off
`1`	Max Hold
`2`	Average
`3`	Min Hold
`6`	Linear Average

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spurious Emission measurement.

Example of Use

To set the storage mode to Average.

```
DMD 2
DMD?
> 2
```

DPOINT/DPOINT?

Trace Point

Function

This command sets the number of trace display points. When Couple Time/Frequency Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
DPOINT point
```

Query

```
DPOINT?
```

Response

```
point
```

Parameter

point	Number of trace display points
11	11 points
21	21 points
41	41 points
51	51 points
101	101 points
201	201 points
251	251 points
401	401 points
501	501 points
1001	1001 points
2001	2001 points
5001	5001 points
10001	10001 points
30001	30001 points (MS269xA Only)

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set the number of trace display points to 5001 points.

```
DPOINT 5001
DPOINT?
> 5001
```

EMD/EMD?

Storage Mode (Trace E)

Function

This command sets the storage mode of Trace E.

Command

```
EMD mode
```

Query

```
EMD?
```

Response

```
mode
```

Parameter

`mode`	Storage mode
`0`	Off
`1`	Max Hold
`2`	Average
`3`	Min Hold
`6`	Linear Average

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spurious Emission Mask measurement.

Example of Use

To set the storage mode to Average.

```
EMD 2
EMD?
> 2
```

ERASEWUP

Erase Warm Up Message

Function

This command erases the warm up message displayed after startup.

Command

```
ERASEWUP
```

Example of Use

To erase the warm up message.

```
ERASEWUP
```

ESE2/ESE2?

End Event Status Enable Command/Query

Function

This command sets the END event status enable register. When the query command is issued, the value of the END event status enable register is returned.

Command

```
ESE2 n
```

Query

```
ESE2?
```

Response

```
n
```

Parameter

n		END event status enable register
Value		= bit0 + bit1 + bit2 + bit3 + bit4 + bit5 + bit6 + bit7
	bit0: $2^0 = 1$	End of sweep
	bit1: $2^1 = 2$	(Not used)
	bit2: $2^2 = 4$	(Not used)
	bit3: $2^3 = 8$	(Not used)
	bit4: $2^4 = 16$	End of Average
	bit5: $2^5 = 32$	End of Measure
	bit6: $2^6 = 64$	End of Max/Min Hold
	bit7: $2^7 = 128$	(Not used)

Range 0 to 255

Example of Use

To enable the measurement end (End of Measure) status.

```
ESE2 32
ESE2?
> 1
```

ESR2?

END Event Status Register Query

Function

This command queries the END event status register value. Clears the END event status register after readout.

Query

```
ESR2?
```

Response

```
n
```

Parameter

`n` END event status register

Value = bit0 + bit1 + bit2 + bit3 + bit4 + bit5 + bit6 + bit7

bit0: $2^0 = 1$	End of sweep
bit1: $2^1 = 2$	(Not used)
bit2: $2^2 = 4$	(Not used)
bit3: $2^3 = 8$	(Not used)
bit4: $2^4 = 16$	End of Average
bit5: $2^5 = 32$	End of Measure
bit6: $2^6 = 64$	End of Max/Min Hold
bit7: $2^7 = 128$	(Not used)

Range 0 to 255

Example of Use

To query the END event status register value. (End of sweep)

```
ESR2?
> 1
```

FETC:SEM?

Spectrum Emission Mask Fetch

Function

This command outputs the result of Spectrum Emission Mask measurement.

Query

```
FETC:SEM? n
```

Response

When the result mode is “A”.

```
total_judge,ref_power,abs_lower_offset_1,
margin_lower_offset_1,freq_lower_offset_1,
lower_offset_1,abs_upper_offset_1,
margin_upper_offset_1,freq_upper_offset_1,
upper_offset_1,abs_lower_offset_2,
margin_lower_offset_2,freq_lower_offset_2,
lower_offset_2,abs_upper_offset_2,
margin_upper_offset_2,freq_upper_offset_2,
upper_offset_2,abs_lower_offset_3,
margin_lower_offset_3,freq_lower_offset_3,
lower_offset_3,abs_upper_offset_3,
margin_upper_offset_3,freq_upper_offset_3,
upper_offset_3,abs_lower_offset_4,
margin_lower_offset_4,freq_lower_offset_4,
lower_offset_4,abs_upper_offset_4,
margin_upper_offset_4,freq_upper_offset_4,
upper_offset_4,abs_lower_offset_5,
margin_lower_offset_5,freq_lower_offset_5,
lower_offset_5,abs_upper_offset_5,
margin_upper_offset_5,freq_upper_offset_5,
upper_offset_5,abs_lower_offset_6,
margin_lower_offset_6,freq_lower_offset_6,
lower_offset_6,abs_upper_offset_6,
margin_upper_offset_6,freq_upper_offset_6,
upper_offset_6
```

(n=1)

When the result mode is “B”.

```
-999.0,ref_power,-999.0,-999.0,0,
-999.0,-999.0,-999.0,-999.0,-999.0,
-999.0,-999.0,
rel_lower_offset_1,abs_lower_offset_1,
```

freq_lower_offset_1
-999.0,-999.0,
rel_upper_offset_1,abs_upper_offset_1,
freq_upper_offset_1
-999.0,-999.0,
rel_lower_offset_2,abs_lower_offset_2,
freq_lower_offset_2
-999.0,-999.0,
rel_upper_offset_2,abs_upper_offset_2,
freq_upper_offset_2
-999.0,-999.0,
rel_lower_offset_3,abs_lower_offset_3,
freq_lower_offset_3
-999.0,-999.0,
rel_upper_offset_3,abs_upper_offset_3,
freq_upper_offset_3
-999.0,-999.0,
rel_lower_offset_4,abs_lower_offset_4,
freq_lower_offset_4
-999.0,-999.0,
rel_upper_offset_4,abs_upper_offset_4,
freq_upper_offset_4
-999.0,-999.0,
rel_lower_offset_5,abs_lower_offset_5,
freq_lower_offset_5
-999.0,-999.0,
rel_upper_offset_5,abs_upper_offset_5,
freq_upper_offset_5
-999.0,-999.0,
rel_lower_offset_6,abs_lower_offset_6,
freq_lower_offset_6
-999.0,-999.0,
rel_upper_offset_6,abs_upper_offset_6,
freq_upper_offset_6
margin_lower_offset_1,margin_upper_offset_1,
margin_lower_offset_2,margin_upper_offset_2,
margin_lower_offset_3,margin_upper_offset_3,
margin_lower_offset_4,margin_upper_offset_4,
margin_lower_offset_5,margin_upper_offset_5,
margin_lower_offset_6,margin_upper_offset_6
(n=1)
-999.0,-999.0,
lower_offset_1,upper_offset_1,
lower_offset_2,upper_offset_2,

```
lower_offset_3,upper_offset_3,
lower_offset_4,upper_offset_4,
lower_offset_5,upper_offset_5,
lower_offset_6,upper_offset_6
```
(n=7 or 8)
```
-999.0,-999.0,
abs_lower_offset_1,abs_upper_offset_1,
abs_lower_offset_2,abs_upper_offset_2,
abs_lower_offset_3,abs_upper_offset_3,
abs_lower_offset_4,abs_upper_offset_4,
abs_lower_offset_5,abs_upper_offset_5,
abs_lower_offset_6,abs_upper_offset_6
```
(n=10)
```
-999.0,-999.0,
rel_lower_offset_1,rel_upper_offset_1,
rel_lower_offset_2,rel_upper_offset_2,
rel_lower_offset_3,rel_upper_offset_3,
rel_lower_offset_4,rel_upper_offset_4,
rel_lower_offset_5,rel_upper_offset_5,
rel_lower_offset_6,rel_upper_offset_6
```
(n=11)
```
total_judge,ref_power,
abs_lower_offset_1,abs_upper_offset_1,
margin_lower_offset_1,margin_upper_offset_1,
freq_lower_offset_1,freq_upper_offset_1,
lower_offset_1,upper_offset_1,
......
abs_lower_offset_6,abs_upper_offset_6,
margin_lower_offset_6,margin_upper_offset_6,
freq_lower_offset_6,freq_upper_offset_6,
lower_offset_6,upper_offset_6
```
(n=13)

Parameter

`ref_power` Reference absolute power

`abs_lower_offset_n`

Peak value of absolute power of lower Offset-n

`abs_upper_offset_n`

Peak value of absolute power of upper Offset-n
No suffix code, dBm unit, 0.001 dB resolution
Returns –999.0 when no measurement is performed.

`rel_lower_offset_n`

Peak value of relative power of lower Offset-n

`rel_upper_offset_n`
Peak value of relative power of upper Offset-n

`margin_lower_offset_n`
Minimum value of margin of lower Offset-n

`margin_upper_offset_n`
Minimum value of margin of upper Offset-n
No suffix code, dB unit, 0.001 dB resolution
Returns –999.0 when no measurement is performed.

`freq_lower_offset_n`
Frequency of peak level of lower Offset-n

`freq_upper_offset_n`
Frequency of peak level of upper Offset-n
No suffix code, Hz unit, 1 Hz resolution
Returns –999999999999 when no measurement is performed.

`total_judge` Total judgment result

`lower_offset_n` Judgment result of lower Offset-n

`upper_offset_n` Judgment result of upper Offset-n
Returns 0 when it is PASS, and returns 1 when it is FAIL.
Returns –999.0 when no measurement is performed.

Details

This function outputs the measurement result at Spectrum Emission Mask measurement performed lastly. It is possible to output the measurement result in a state that the measurement has already been done, and in a different style.
You can use READ command if you perform a measurement along with starting a sweep again.
Return values of this function vary according to the result mode (cf. `:SYST:RES:MODE`).

Example of Use

To obtain the peak value of the absolute power for SEM measurement (n=10).

```
FETC:SEM? 10
>
-999.0,-999.0,-100.000,-100.000,-60.000,-60.000,45.000,-
45.000,-30.000,-30.000,-10.000,-10.000,0.000,0.000
```

FETC:SPUR?

Spurious Emission Fetch

Function

This command outputs the result of the Spurious Emission measurement.

Query

```
FETC:SPUR? n
```

Response

When Result Mode is A:
(When Spurious Emission Result Type is Worst)

```
judge,spur_1,range_1,freq_1,peak_1,margin_1,limit_1,judge_1,spur_2,range_2,freq_2,peak_2,margin_2,limit_2,judge_2
•••••
spur_20,range_20,freq_20,peak_20,margin_20,limit_20,judge_20
```

(n=1)

(When Spurious Emission Result Type is Peak)

```
judge,spur_1,range_1,freq_1,peak_1,margin_1,limit_1,judge_1,spur_2,range_2,freq_2,peak_2,margin_2,limit_2,judge_2
•••••
spur_n,freq_n,peak_n,margin_n,limit_n,judge_n
```

(n=1)

When Result Mode is B:

```
spur_1,range_1,freq_1,peak_1,limit_1,judge_1,spur_2,range_2,freq_2,peak_2,limit_2,judge_2
•••••
spur_n,range_n,freq_n,peak_n,limit_n,judge_n
```

(n=1)

```
tracedata_1,tracedata_2•••••tracedata_m
```

(n=2 to 21)

```
number
```

(n=22)

```
tracedata_1,tracedata_2•••••tracedata_m
```
(n=23 to 42)

Parameter

`range_n`	Segment number of the detected spurious
`spur_n`	Spurious number
`number`	Number of the detected spurious –999.0 is returned when an error occurs/no measurement is performed.
`freq_n`	Frequency of Spurious Only one value is returned when Marker Result Type is Worst. Values have no suffix code, are in Hz units, and have 0.01 Hz Resolution. –999999999999 is returned when an error occurs/no measurement is performed.
`peak_n`	Absolute power of Spurious Only one value is returned when Marker Result Type is Worst. Values have no suffix code, are in Hz units, and have 0.01 Hz Resolution. –999.0 is returned when an error occurs/no measurement is performed.
`margin_n`	Relative power from the limit line of Spurious Only one value is returned when Marker Result Type is Worst. Values have no suffix code, are in Hz units, and have 0.01 Hz Resolution. –999.0 is returned when an error occurs/no measurement is performed.
`limit_n`	Power value of the limit line of Spurious Only one value is returned when Marker Result Type is Worst. Values have no suffix code, are in Hz units, and have 0.01 Hz Resolution. –999.0 is returned when an error occurs/no measurement is performed.
`judge_n`	Limit line judges the detected spurious as Pass or Fail. 0 is returned when judged as Pass, and 1 is returned when judged as Fail.

`tracedata_m`	n=2 to 21 Returns a comma separated list of the trace data for the selected segment (where segment number = n-1). n=23 to 42 Returns a comma separated list of the trace data for the selected segment (where segment number = n-22). Values have no suffix code, are in dBm units, and have 0.001 dB resolution. –999.0 is returned when no measurement is performed.
`judge`	Pass/Fail judgment to the whole segment 0 is returned when judged as Pass, and 1 is returned when Fail. –999.0 is returned when no measurement is performed.

Details

This function outputs the result of the Spurious Emission measurement performed lastly. This function does not accompany any sweep, thus this function is used to output the measurement result in a different type, when the measurement has already completed.
Use READ command to perform re-measurement with redoing sweep.
A return value of this command depends on the compatible mode.
(cf. `:SYST:RES:MODE`)

Example of Use

To obtain the result of the Spurious Emission measurement (when Result Mode is A, and when Spurious Emission Result Type is Worst).

```
FETC:SPUR? 1
>
0,1,1,135618.00,-64.25,51.25,-13.00,0,2,2,155970.00,-63.
91,50.91,-13.00,0••••
```

FMD/FMD?

Storage Mode (Trace F)

Function

This command sets the storage mode of Trace F.

Command

```
FMD mode
```

Query

```
FMD?
```

Response

```
mode
```

Parameter

mode	Storage mode
0	Off
1	Max Hold
2	Average
3	Min Hold
6	Linear Average

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spurious Emission measurement.

Example of Use

To set the storage mode of Trace F to Average.

```
FMD 2
FMD?
> 2
```

FOFFSET/FOFFSET?

Frequency Offset

Function

This command sets the offset value of the frequency display.

Command

```
FOFFSET freq
```

Query

```
FOFFSET?
```

Response

`freq`

No suffix code. Value is returned in Hz units.

Parameter

`freq`		Offset frequency
	Range	–100 to 100 GHz
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Example of Use

To set the offset value of the frequency display to 500 MHz.

```
FOFFSET 500MHZ
FOFFSET?
> 500000000
```

FOFMD/FOFMD?

Frequency Offset Mode

Function

This command sets the frequency display offset ON/OFF.

Command

```
FOFMD on_off
```

Query

```
FOFMD?
```

Response

```
on_off
```

Parameter

`on_off`	Frequency display offset ON/OFF
`ON`	Uses frequency display offset.
`OFF`	Does not use frequency display offset.

Example of Use

To set frequency offset display to ON:

```
FOFMD ON
FOFMD?
> ON
```

FORM/FORM?

Numeric Data Format

Function

This command sets the format of the data that is read out with [:SENSe]:DATA?.

Command

```
FORM format
```

Query

```
FORM?
```

Response

```
format
length
```

Parameter

format		Data format
	ASC	ASCII format (Default)
	REAL	32-bit binary floating point format
	INT	32-bit binary fixed point format.
length		Supplementary setting for selected format
	0	This can be set only when ASC is specified for format.
	32	If REAL is specified for format, the results are returned in the 32-bit floating point format. If INT is specified for format, the results are returned in the 32-bit fixed point format. This can be set only when REAL or INT is specified for format.
	When omitted	This will be 0 when ASC is specified for format. This will be 32 when REAL or INT is specified for format.

Details

When REAL is specified for format, the trace data is output in the 32-bit single-precision floating point format specified in IEEE754.

Example of Use

To set the trace data format to the ASCii format.

```
FORM ASC
FORM?
> ASC,0
```

FORM:BORD/FORM:BORD?

Binary Data Byte Order

Function

This command sets the byte order of the data that is read out, when REAL,32 or INTeger,32 has been set for FORM.

Command

```
FORM:BORD border
```

Query

```
FORM:BORD?
```

Parameter

`border`	Byte order
`NORM`	Sets the byte order to big endian (Default).
`SWAP`	Sets the byte order to little endian.

Details

This function sets the data arrangement format when data is output in the binary format. In the case of big endian, the data is arranged from the highest byte, and in the case of little endian, from the lowest byte. For example, in the case of the 4-byte data of 0x01234567, the data is arranged as 01 23 45 67 in the case of big endian, and as 67 45 23 01 in the case of little endian.

Example of Use

To set the byte order to little endian.

```
FORM:BORD SWAP
FORM:BORD?
> SWAP
```

FREQ:CENT:STEP/FREQ:CENT:STEP?

Frequency Step Size

Function

This command sets the step size of the center, start and stop frequency.

Command

```
FREQ:CENT:STEP freq
```

Query

```
FREQ:CENT:STEP?
```

Parameter

`freq`		Step size
	Range	
	[MS269xA]	1 Hz to 6.00 GHz (MS2690A)
		1 Hz to 13.5 GHz (MS2691A)
		1 Hz to 26.5 GHz (MS2692A)
	[MS2830A]	1 Hz to 3.6 GHz (Option 040)
		1 Hz to 6.0 GHz (Option 041)
		1 Hz to 13.5 GHz (Option 043)
		1 Hz to 26.5 GHz (Option 044)
		1 Hz to 43 GHz (Option 045)
	[MS2840A]	1 Hz to 3.6 GHz (Option 040)
		1 Hz to 6.0 GHz (Option 041)
		1 Hz to 26.5 GHz (Option 044)
		1 Hz to 44.5 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
		Hz is used when omitted.
	Default	1 GHz

Example of Use

To set the step size to 100.0 kHz.

```
FREQ:CENT:STEP 100000
FREQ:CENT:STEP?
> 100000
```

FREQ:DOM:COUP/FREQ:DOM:COUP?

Couple Time/Frequency Domain

Function

Sets whether to couple the time domain parameters and frequency domain parameters.

Command

```
FREQ:DOM:COUP switch_com
```

Query

```
FREQ:DOM:COUP?
```

Response

```
switch_res
```

Parameter

`switch_com`	Enables/disables coupling
`ON|1`	Couples (shares) the RBW, VBW, detection mode, and trace point between the time domain and the frequency domain.
`OFF|0`	Separates the RBW, VBW, detection mode, and trace point for the time domain from those for the frequency domain.
`switch_res`	Coupling enabled/disabled state
`1`	The RBW, VBW, detection mode, and trace point are coupled (shared) between the time domain and the frequency domain.
`0`	The RBW, VBW, detection mode, and trace point for the time domain are separate from those for the frequency domain.

Example of Use

To disable coupling.

```
FREQ:DOM:COUP OFF
FREQ:DOM:COUP?
> 0
```

FREQ:SYNT/FREQ:SYNT?

Switching Speed

Function

This command selects the switching speed of frequency.

Command

```
FREQ:SYNT mode
```

Query

```
FREQ:SYNT?
```

Response

mode	Frequency switching mode

Parameter

mode	Frequency switching speed
BPH	The operation is done so as to improve the phase noise characteristic rather than the frequency switching speed.
NORM	Becomes same setting as BPH (response is BPH).
FAST	The operation is done so as to increase the frequency switching speed at the cost of the phase noise characteristic.

Details

This command is available for MS2830A and MS2840A.
Note that because the FAST setting gives priority to the switching speed of the local frequency, the phase noise characteristic worsens.

Example of Use

To set the frequency switching mode to the speed priority mode.

```
FREQ:SYNT FAST
FREQ:SYNT?
> FAST
```

FREQ:SYNT:LPH:STAT?

Low Phase Noise Status Query

Function

This command queries the state of Low Phase Noise function with the current measurement conditions.

Query

```
FREQ:SYNT:LPH:STAT?
```

Response

```
status
```

Parameter

`status`	Low Phase Noise function On/Off status
`1`	Uses Low Phase Noise function.
`0`	Do not use Low Phase Noise function.

Detail

This function is available when MS2830A-062/066 or MS2840A-066/166 is installed.
The phase noise characteristics can be improved using the Low Phase Noise Function when the Low Phase Noise switch is On, the frequency range is –20 MHz≤f≤3.7 GHz (–20 MHz≤f<3.5 GHz when Frequency Band Mode is Spurious) and the Span Frequency is less than 1 MHz. However, if a signal outside the DUT frequency range is input while using the Low Phase Noise Function, it may be possible to measure spurious noise generated within the unit.
Refer to the *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details about spurious noise generation and appropriate conditions for using the Low Phase Noise Function.

Example of Use

To query the state of Low Phase Noise function with the current measurement conditions.

```
FREQ:SYNT:LPH:STAT?
> 1
```

FS

Full Span

Function

This command sets the frequency span to the maximum.

Command

```
FS
```

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set the frequency span to the maximum:

```
FS
```

FULBAND/FULBAND?

External Mixer Band Select

Function

This command selects external mixer band.

Command

```
FULBAND band
```

Query

```
FULBAND?
```

Response

```
band
```

Parameter

band	External mixer band
A	Band A (26.5 to 40.0 GHz, 4+)
Q	Band Q (33.0 to 50.0 GHz, 5+)
U	Band U (40.0 to 60.0 GHz, 6+)
V	Band V (50.0 to 75.0 GHz, 8+)
E	Band E (60.0 to 90.0 GHz, 9+)
W	Band W (75.0 to 110.0 GHz, 11+)
F	Band F (90.0 to 140.0 GHz, 14+)
D	Band D (110.0 to 170.0 GHz, 17+)

G	Band G (140.0 to 220.0 GHz, 22+)
Y	Band Y (170.0 to 260.0 GHz, 26+)
J	Band J (220.0 to 325.0 GHz, 33+)

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To set the external mixer band to Band U.

```
FULBAND U
FULBAND?
> U
```

FULLSPAN

Full Span

Function

This command sets the frequency span to the maximum.

Command

```
FULLSPAN
```

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spurious Emission measurement.

Example of Use

To set the frequency span to the maximum.

```
FULLSPAN
```

GATE/GATE?

Gate Sweep

Function

This command sets the gate sweep ON/OFF.

Command

```
GATE on_off
```

Query

```
GATE?
```

Response

```
on_off
```

Parameter

on_off	Gate sweep ON/OFF
ON	Uses gate sweep.
OFF	Does not use gate sweep.

Example of Use

To use gate sweep.

```
GATE ON
GATE?
> ON
```

GATELVL/GATELVL?

Gate Level

Function

This command sets the threshold value of the level where gate sweep is started.

Command

```
GATELVL level
```

Query

```
GATELVL?
```

Response

`level`

Returns a value in dBm units, without a suffix code.

Parameter

`level`		Threshold value of level where gate sweep is started
	Range	–60 to 50 dBm
	Resolution	1 dB
	Suffix code	DBM, DM dBm is used when omitted.

Details

This setting is applied when the gate signal source is wideband IF detection (Wide IF video).

Example of Use

To set the gate sweep start level to –10 dBm.

```
GATELVL -10
GATELVL?
> -10
```

GATESLP/GATESLP?

Gate Slope

Function

This command sets the gate signal detection mode.

Command

```
GATESLP edge
```

Query

```
GATESLP?
```

Response

```
edge
```

Parameter

edge	Gate signal detection mode
RISE	Detects using the rising edge.
FALL	Detects using the falling edge.

Details

This setting is applied when the gate signal source is wideband IF detection (Wide IF video), external input, SG marker, or Baseband Interface (BBIF).

Example of Use

To detect using rising edge:

```
GATESLP RISE
GATESLP?
> RISE
```

GATESOURCE/GATESOURCE?

Gate Source

Function

This command sets the gate signal source.

Command

```
GATESOURCE source
```

Query

```
GATESOURCE?
```

Response

```
source
```

Parameter

`source`	Gate signal source
[MS269xA]	
`WIDEVID`	Wideband IF detection (Wide IF Video)
`EXT`	External input (External)
`SG`	SG marker
`BBIF`	Baseband Interface (BBIF)
[MS2830A], [MS2840A]	
`WIDEVID`	Wideband IF detection (Wide IF Video)
`EXT`	External input (External)
`SG`	SG marker
`FRAME`	Frame period trigger

Details

[MS269xA]

SG marker trigger can be selected only when the Option 020/120 Vector Signal Generator is installed.

BBIF trigger cannot be selected only when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.

[MS2830A], [MS2840A]

SG marker trigger can be selected only when the Option 020/120/021/121 Vector Signal Generator is installed.

Example of Use

To set the gate signal source to wideband IF detection.

```
GATESOURCE WIDEVID
GATESOURCE?
> WIDEVID
```

GDL/GDL?

Gate Delay

Function

This command sets the delay time until starting gate sweep.

Command

```
GDL time
```

Query

```
GDL?
```

Response

```
time
```

Returns a value in μs units, without a suffix code.

Parameter

`time`	Delay time to gate start
Range	0 to 1 s
Resolution	20 ns
Suffix code	NS, US, MS, S MS is used when omitted.

Example of Use

To set the gate delay time to 20 ms.

```
GDL 20
GDL 20000US
GDL 20MS
GDL 0.02S
GDL?
> 20000
```

GLN/GLN?

Gate Length

Function

This command sets the gate time length.

Command

```
GLN time
```

Query

```
GLN?
```

Response

```
time
```

No suffix code. Value is returned in μs units.

Parameter

`time`	Delay time until starting gate
Range	50 μs to 1 s
Resolution	20 ns
Suffix code	NS, US, MS, S MS is used when omitted.

Example of Use

To set the gate time length to 20 ms.

```
GLN 20
GLN 20000US
GLN 20MS
GLN 0.02S
GLN?
> 20000
```

HOLDPAUSE/HOLDPAUSE?

Storage Count

Function

This command sets the storage mode count.

Command

```
HOLDPAUSE count
```

Query

```
HOLDPAUSE?
```

Response

```
count
```

Parameter

`count`	Storage mode count
Range	2 to 9999

Details

This command is not available during the Spurious Emission measurement.

Example of Use

To set the storage mode count to 10 times.

```
HOLDPAUSE 10
HOLDPAUSE?
> 10
```

INIT:SEM

Spectrum Emission Mask Initiate

Function

This command performs single Spectrum Emission Mask measurement.

Command

```
INIT:SEM
```

Details

When this function is executed, Spectrum Emission Mask measurement is set to On and the measurement is performed once.

Example of Use

To perform SEM measurement once.

```
INIT:SEM
```

INIT:SPUR

Spurious Emission Initiate

Function

This command starts the Spurious Emission measurement.

Command

```
INIT:SPUR
```

Details

When this function is executed, the Spurious measurement is set to On and the measurement starts.

Example of Use

To start the Spurious measurement.

```
INIT:SPUR
```

INIT:SPUR:PAUS:CONT

Spurious Emission Continue

Function

Pause is cancelled and measurement will continue when this command is sent while it is in remote control state and paused.

Command

```
INIT:SPUR:PAUS:CONT
```

Details

It pauses before the pertinent segment is swept when Pause before Sweep is set to On. This command is used to cancel the pause and continue the measurement.
This command can only be used while it is in remote control state and paused.
Pause is cancelled and measurement stops when this command is sent while it is in local status. Press the F1 [Continue] key to continue the measurement while it is in local status.
To query the measurement results after executing this command, perform the synchronization control using the "*WAI" command.

Example of Use

Measurement method when pausing twice

`INIT:SPUR`	Measure until paused
`*WAI`	Wait until paused
`INIT:SPUR:PAUS:CONT`	Cancel the pause, and continue the measurement
`*WAI`	Wait until paused
`INIT:SPUR:PAUS:CONT`	Cancel the pause, and continue the measurement
`*WAI`	Wait until the measurement is completed
`FETC:SPUR? 1`	Read the measurement results

```
> 1,1,1,9282.00,-84.38,71.38,...
```

INIT:SPUR:PAUS:STAT?

Spurious Emission Pause Status Query

Function

This command queries whether the Spurious Emission measurement is in remote control state and is being paused.

Query

```
INIT:SPUR:PAUS:STAT?
```

Response

```
switch
```

Parameter

`switch`	Status of the Spurious Emission measurement
`1`	Remote control state and paused
`0`	All other status

Details

It pauses before the pertinent segment is swept when Pause before Sweep is set to On. This command is used to query if it is paused or not. This command can only be used while it is in remote control state. Pause is cancelled and measurement will stop when this command is sent while it is in local status.

Example of Use

To query whether it is in remote control state and is being paused.

```
INIT:SPUR:PAUS:STAT?
> 0
```

LINSCALEDIV/LINSCALEDIV?

Linear Scale Range

Function

This command sets the Y-axis scale magnification for the linear scale display.

Command

```
LINSCALEDIV scale
```

Query

```
LINSCALEDIV?
```

Response

```
scale
```

No suffix code. Value is returned in % units.

Parameter

`scale`	Y-axis scale magnification
`1`	1%/div
`2`	2%/div
`5`	5%/div
`10`	10%/div

Example of Use

To set the scale magnification to 5%/div.

```
LINSCALEDIV 5
LINSCALEDIV?
> 5
```

LOADSTD/LOADSTD?

Load Standard Parameter

Function

This command selects Measure function parameter. Selectable parameters vary depending on the setting for Standard.

Command

```
LOADSTD function,pattern
```

Query

```
LOADSTD? function
```

Parameter

`function`	Measure function
`ADJ`	ACP measurement
`BRSTAVGPWR`	Burst Average Power measurement
`OBW`	OBW measurement
`CHPWR`	Channel power measurement
`SEM`	Spectrum Emission Mask measurement
`SPUR`	Spurious Emission measurement

When Standard is set to W-CDMA Uplink (ACP measurement)

`pattern`	Parameter to be set
`UPLINK`	3GPP W-CDMA Uplink, ACP measurement
When omitted	3GPP W-CDMA Uplink, ACP measurement

When Standard is set to W-CDMA Uplink (Burst Average Power measurement)

`pattern`	Parameter to be set
`MEAN`	3GPP W-CDMA Uplink, Mean Power measurement

When Standard is set to W-CDMA Uplink (OBW measurement)

`pattern`	Parameter to be set
`UPLINK`	3GPP W-CDMA Uplink
When omitted	3GPP W-CDMA Uplink

When Standard is set to W-CDMA Uplink (Channel Power measurement)

`pattern`	Parameter to be set
`UPLINK`	3GPP W-CDMA Uplink, Mean Power measurement

MEAN	3GPP W-CDMA Uplink, Mean Power measurement
RRCFILTER	3GPP W-CDMA Uplink, RRC Filtered Power measurement
When omitted	3GPP W-CDMA Uplink, Mean Power measurement

When Standard is set to W-CDMA Uplink (Spectrum Emission Mask measurement)

pattern	Parameter to be set
UPLINK	3GPP W-CDMA Uplink, Spectrum Emission Mask measurement (Uplink)
ADD	3GPP W-CDMA Uplink, Spectrum Emission Mask measurement (Uplink(Additional))
When omitted	3GPP W-CDMA Uplink, Spectrum Emission Mask measurement(Uplink)

When Standard is set to W-CDMA Downlink (ACP measurement)

pattern	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink, ACP measurement(Single Carrier)
SINGLECARR	3GPP W-CDMA Downlink, ACP measurement(Single Carrier)
2CARR	3GPP W-CDMA Downlink (2 Carriers)
3CARR	3GPP W-CDMA Downlink (3 Carriers)
4CARR	3GPP W-CDMA Downlink (4 Carriers)
When omitted	3GPP W-CDMA Downlink, ACP measurement(Single Carrier)

When Standard is set to W-CDMA Downlink (Burst Average Power measurement)

pattern	Parameter to be set
MEAN	3GPP W-CDMA Downlink, Mean Power measurement

When Standard is set to W-CDMA Downlink (OBW measurement)

pattern	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink
When omitted	3GPP W-CDMA Downlink

When Standard is set to W-CDMA Downlink (Channel Power measurement)

pattern	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink, Mean Power measurement
MEAN	3GPP W-CDMA Downlink, Mean Power measurement
RRCFILTER	3GPP W-CDMA Downlink, RRC Filtered Power measurement
When omitted	3GPP W-CDMA Downlink, Mean Power measurement

When Standard is set to W-CDMA Downlink (Spectrum Emission Mask measurement)

pattern	Parameter to be set
43	3GPP W-CDMA Downlink (P ≥ 43 dBm)
39	3GPP W-CDMA Downlink (39 dBm ≤ P < 43 dBm)
31	3GPP W-CDMA Downlink (31 dBm ≤ P < 39 dBm)
31U	3GPP W-CDMA Downlink (P < 31 dBm)
A43	3GPP W-CDMA Downlink (P ≥ 43 dBm (Additional))
A39	3GPP W-CDMA Downlink (39 dBm ≤ P < 43 dBm (Additional))
A31	3GPP W-CDMA Downlink (31 dBm ≤ P < 39 dBm (Additional))
When omitted	3GPP W-CDMA Downlink (P ≥ 43 dBm)

When Standard is set to Mobile WiMAX(ACP・OBW・Channel Power measurement)

pattern	Parameter to be set
10M	10 MHz BW (Channel Bandwidth 10 MHz)
5M	5 MHz BW (Channel Bandwidth 5 MHz)
When omitted	10 MHz BW

When Standard is set to Mobile WiMAX (Spectrum Emission Mask measurement)

pattern	Parameter to be set
10M	10 MHz BW (Channel Bandwidth 10 MHz)
5M	5 MHz BW (Channel Bandwidth 5 MHz)
When omitted	10 MHz BW

When Standard is set to Mobile WiMAX (Burst Average Power measurement)

pattern	Parameter to be set
5MS_FRAME	5 ms Frame (Power measurement of 1 frame)
When omitted	5 ms Frame

When Standard is set to LTE Uplink/Downlink (ACP measurement)

pattern	Parameter to be set
1M4BW_UTRA5MHZ	1.4 MHz BW (UTRA 5 MHz)
1M4BW_EUTRA1M4HZ	1.4 MHz BW (E-UTRA 1.4 MHz)
3MBW_UTRA5MHZ	3 MHz BW (UTRA 5 MHz)
3MBW_EUTRA3MHZ	3 MHz BW (E-UTRA 3 MHz)
5MBW_UTRA5MHZ	5 MHz BW (UTRA 5 MHz)
5MBW_EUTRA5MHZ	5 MHz BW (E-UTRA 5 MHz)
10MBW_UTRA5MHZ	10 MHz BW (UTRA 5 MHz)
10MBW_EUTRA10MHZ	10 MHz BW (E-UTRA 10 MHz)
15MBW_UTRA5MHZ	15 MHz BW (UTRA 5 MHz)
15MBW_EUTRA15MHZ	15 MHz BW (E-UTRA 15 MHz)
20MBW_UTRA5MHZ	20 MHz BW (UTRA 5 MHz)
20MBW_EUTRA20MHZ	20 MHz BW (E-UTRA 20 MHz)
When omitted	5 MHz BW (UTRA 5 MHz)

When Standard set to LTE TDD Downlink (ACP measurement)

pattern	Parameter to set
1M4BW_UTRA1M6HZ	1.4 MHz BW (UTRA 1.6 MHz)
1M4BW_EUTRA1M4HZ	1.4 MHz BW (E-UTRA 1.4 MHz)
3MBW_UTRA1M6HZ	3 MHz BW (UTRA 1.6 MHz)
3MBW_EUTRA3MHZ	3 MHz BW (E-UTRA 3 MHz)
5MBW_UTRA1M6HZ	5 MHz BW (UTRA 1.6 MHz)
5MBW_UTRA5MHZ	5 MHz BW (UTRA 5 MHz)
5MBW_UTRA10MHZ	5 MHz BW (UTRA 10 MHz)
5MBW_EUTRA5MHZ	5 MHz BW (E-UTRA 5 MHz)
10MBW_UTRA1M6HZ	10 MHz BW (UTRA 1.6 MHz)
10MBW_UTRA5MHZ	10 MHz BW (UTRA 5 MHz)
10MBW_UTRA10MHZ	10 MHz BW (UTRA 10 MHz)
10MBW_EUTRA10MHZ	10 MHz BW (E-UTRA 10 MHz)
15MBW_UTRA1M6HZ	15 MHz BW (UTRA 1.6 MHz)
15MBW_UTRA5MHZ	15 MHz BW (UTRA 5 MHz)
15MBW_UTRA10MHZ	15 MHz BW (UTRA 10 MHz)
15MBW_EUTRA15MHZ	15 MHz BW (E-UTRA 15 MHz)
20MBW_UTRA1M6HZ	20 MHz BW (UTRA 1.6 MHz)
20MBW_UTRA5MHZ	20 MHz BW (UTRA 5 MHz)
20MBW_UTRA10MHZ	20 MHz BW (UTRA 10 MHz)

20MBW_EUTRA20MHZ	20 MHz BW (E-UTRA 20 MHz)
When omitted	5 MHz BW (E-UTRA 5 MHz)

When Standard set to LTE TDD Uplink (ACP measurement)

pattern	Parameter to set
1M4BW_UTRA1M6HZ	1.4 MHz BW (UTRA 1.6 MHz)
1M4BW_EUTRA1M4HZ	1.4 MHz BW (E-UTRA 1.4 MHz)
3MBW_UTRA1M6HZ	3 MHz BW (UTRA 1.6 MHz)
3MBW_EUTRA3MHZ	3 MHz BW (E-UTRA 3 MHz)
5MBW_UTRA1M6HZ	5 MHz BW (UTRA 1.6 MHz)
5MBW_EUTRA5MHZ	5 MHz BW (E-UTRA 5 MHz)
10MBW_UTRA1M6HZ	10 MHz BW (UTRA 1.6 MHz)
10MBW_EUTRA10MHZ	10 MHz BW (E-UTRA 10 MHz)
15MBW_UTRA1M6HZ	15 MHz BW (UTRA 1.6 MHz)
15MBW_EUTRA15MHZ	15 MHz BW (E-UTRA 15 MHz)
20MBW_UTRA1M6HZ	20 MHz BW (UTRA 1.6 MHz)
20MBW_EUTRA20MHZ	20 MHz BW (E-UTRA 20 MHz)
When omitted	1.4 MHz BW (UTRA 1.6 MHz)

When Standard set to LTE Uplink/Downlink, LTE TDD Uplink/Downlink (OBW measurement)

pattern	Parameter to set
1M4BW	1.4 MHz Bandwidth
3MBW	3 MHz Bandwidth
5MBW	5 MHz Bandwidth
10MBW	10 MHz Bandwidth
15MBW	15 MHz Bandwidth
20MBW	20 MHz Bandwidth
When omitted	5 MHz Bandwidth

When Standard set to LTE Uplink/Downlink, LTE TDD Uplink/Downlink (Channel Power measurement)

pattern	Parameter to set
MEAN_1M4BW	Mean Power 1.4 MHz BW
MEAN_3MBW	Mean Power 3 MHz BW
MEAN_5MBW	Mean Power 5 MHz BW
MEAN_10MBW	Mean Power 10 MHz BW
MEAN_15MBW	Mean Power 15 MHz BW
MEAN_20MBW	Mean Power 20 MHz BW
FILTERED_1M4BW	Filtered Power 1.4 MHz BW
FILTERED_3MBW	Filtered Power 3 MHz BW
FILTERED_5MBW	Filtered Power 5 MHz BW
FILTERED_10MBW	Filtered Power 10 MHz BW
FILTERED_15MBW	Filtered Power 15 MHz BW

FILTERED_20MBW	Filtered Power 20 MHz BW
When omitted:	Mean Power 5 MHz BW

When Standard set to LTE Uplink/Downlink, LTE TDD Uplink/Downlink (Burst Average Power measurement)

pattern	Parameter to set
MEAN_1M4BW	Mean Power 1.4 MHz BW
MEAN_3MBW	Mean Power 3 MHz BW
MEAN_5MBW	Mean Power 5 MHz BW
MEAN_10MBW	Mean Power 10 MHz BW
When omitted	Mean Power 5 MHz BW

When Standard set to LTE Downlink (Spectrum Emission Mask measurement)

pattern	Parameter to set
A_UNDER1G_1M4BW	CategoryA < 1 GHz 1.4 MHz BW
A_UNDER1G_3MBW	CategoryA < 1 GHz 3 MHz BW
A _UNDER1G_5MBW	CategoryA < 1 GHz 5 MHz BW
A_UNDER1G_10MBW	CategoryA < 1 GHz 10 MHz BW
A_UNDER1G_15MBW	CategoryA < 1 GHz 15 MHz BW
A_UNDER1G_20MBW	CategoryA < 1 GHz 20 MHz BW
A_OVER1G_1M4BW	CategoryA > 1 GHz 1.4 MHz BW
A_OVER1G_3MBW	CategoryA > 1 GHz 3 MHz BW
A_OVER1G_5MBW	CategoryA > 1 GHz 5 MHz BW
A_OVER1G_10MBW	CategoryA > 1 GHz 10 MHz BW
A_OVER1G_15MBW	CategoryA > 1 GHz 15 MHz BW
A_OVER1G_20MBW	CategoryA > 1 GHz 20 MHz BW
B_UNDER1G_1M4BW	CategoryB < 1 GHz 1.4 MHz BW
B_UNDER1G_3MBW	CategoryB < 1 GHz 3 MHz BW
B_UNDER1G_5MBW	CategoryB < 1 GHz 5 MHz BW
B_UNDER1G_10MBW	CategoryB < 1 GHz 10 MHz BW
B_UNDER1G_15MBW	CategoryB < 1 GHz 15 MHz BW
B_UNDER1G_20MBW	CategoryB < 1 GHz 20 MHz BW
B_OVER1G_1M4BW	CategoryB > 1 GHz 1.4 MHz BW
B_OVER1G_3MBW	CategoryB > 1 GHz 3 MHz BW
B_OVER1G_5MBW	CategoryB > 1 GHz 5 MHz BW
B_OVER1G_10MBW	CategoryB > 1 GHz 10 MHz BW
B_OVER1G_15MBW	CategoryB > 1 GHz 15 MHz BW
B_OVER1G_20MBW	CategoryB > 1 GHz 20 MHz BW
When omitted	CategoryA > 1 GHz 5 MHz BW

Note:

<1GHz: BandClass when frequency smaller than 1 GHz. Band Class 5, 6, 8, 12, 13, 14, 17

>1GHz: BandClass when frequency larger than 1 GHz. 1, 2, 3, 4, 7, 9, 10, 11

When Standard is set to LTE Uplink (Spectrum Emission Mask measurement)

pattern	Parameter to set
G_1_4M	General 1.4 MHz
G_3M	General 3 MHz
G_5M	General 5 MHz
G_10M	General 10 MHz
G_15M	General 15 MHz
G_20M	General 20 MHz
NS3_1_4M	NS-03 1.4 MHz
NS3_3M	NS-03 3 MHz
NS3_5M	NS-03 5 MHz
NS3_10M	NS-03 10 MHz
NS3_15M	NS-03 15 MHz
NS3_20M	NS-03 20 MHz
NS4_1_4M	NS-04 1.4 MHz
NS4_3M	NS-04 3 MHz
NS4_5M	NS-04 5 MHz
NS4_10M	NS-04 10 MHz
NS4_15M	NS-04 15 MHz
NS4_20M	NS-04 20 MHz
NS6_1_4M	NS-06/07 1.4 MHz
NS6_3M	NS-06/07 3 MHz
NS6_5M	NS-06/07 5 MHz
NS6_10M	NS-06/07 10 MHz
JAPAN_5M	JAPAN 5 MHz
JAPAN_10M	JAPAN 10 MHz
JAPAN_15M	JAPAN 15 MHz
JAPAN_20M	JAPAN 20 MHz
When omitted	General 5 MHz

When Standard is set to LTE TDD Uplink (Spectrum Emission Mask measurement)

pattern	Parameter to be set
G_1_4M	General 1.4 MHz
G_3M	General 3 MHz
G_5M	General 5 MHz
G_10M	General 10 MHz
G_15M	General 15 MHz
G_20M	General 20 MHz
NS3_1_4M	NS-03 1.4 MHz
NS3_3M	NS-03 3 MHz
NS3_5M	NS-03 5 MHz
NS3_10M	NS-03 10 MHz
NS3_15M	NS-03 15 MHz
NS3_20M	NS-03 20 MHz
NS4_1_4M	NS-04 1.4 MHz
NS4_3M	NS-04 3 MHz
NS4_5M	NS-04 5 MHz
NS4_10M	NS-04 10 MHz
NS4_15M	NS-04 15 MHz
NS4_20M	NS-04 20 MHz
NS6_1_4M	NS-06/07 1.4 MHz
NS6_3M	NS-06/07 3 MHz
NS6_5M	NS-06/07 5 MHz
NS6_10M	NS-06/07 10 MHz
When omitted	General 5 MHz

When Standard is set to ETC_DSRC (Applies to all but Burst Average Power, Spectrum Emission Mask measurement)

pattern	Parameter to be set
PI4DQPSK	π/4DQPSK
ASK	ASK
When omitted	π/4DQPSK

When Standard is set to ETC_DSRC (Burst Average Power measurement)

pattern	Parameter to be set
MEAN	Mean Power
When omitted	Mean Power

When Standard is set to TD-SCDMA (ACP Measurement)

pattern	Parameter to be set
TDD128M1C	Single Carrier
TDD128M2C	2 Carriers
TDD128M3C	3 Carriers
TDD128M4C	4 Carriers
TDD128M5C	5 Carriers
TDD128M6C	6 Carriers
When omitted	Single Carrier

When Standard is set to TD-SCDMA (CHP,OBW Measurement)

pattern	Parameter to be set
TDD128M	3GPP TDD 1.28 Mcps Option
When omitted	3GPP TDD 1.28 Mcps Option

When Standard is set to TD-SCDMA (Burst Average Power Measurement)

pattern	Parameter to be set
MEAN	5 ms Subframe (Power measurement of 1 subframe)
When omitted	5 ms Subframe

When Standard is set to TD-SCDMA (Spectrum Emission Mask Measurement)

pattern	Parameter to be set
DLT34	DL Trace Point Tune 34 dBm≤P
DLT26	DL Trace Point Tune 26 dBm≤P<34 dBm
DLT26U	DL Trace Point Tune P<26 dBm
ULT53	UL Trace Point Tune -53.5 dBm≤P
ULT55	UL Trace Point Tune -55 dBm≤P
DL34	Downlink Actual 34 dBm≤P
DL26	Downlink Actual 26 dBm≤P<34 dBm
DL26U	Downlink Actual P<26 dBm
UL53	Uplink Actual -53.5 dBm≤P
UL55	Uplink Actual -55 dBm≤P
DLF34	Downlink Fast 34 dBm≤P
DLF26	Downlink Fast 26 dBm≤P<34 dBm
DLF26U	Downlink Fast P<26 dBm
ULF53	Uplink Fast -53.5 dBm≤P
ULF55	Uplink Fast -55 dBm≤P
When omitted	DL Trace Point Tune 34 dBm≤P

When Standard is set to XG-PHS (OBW Measurement)

pattern	Parameter to be set
10MBW	10 MHz BW
20MBW	20 MHz BW
When omitted	10 MHz BW

When Standard is set to XG-PHS (CHP Measurement)

pattern	Parameter to be set
MEAN_10MBW	Mean Power 10 MHz BW
MEAN_20MBW	Mean Power 20 MHz BW
When omitted	Mean Power 10 MHz BW

When Standard is set to XG-PHS (Spectrum Emission Mask Measurement)

pattern	Parameter to be set
BS_10MBW	Base station channel interval: 10 MHz
UE_10MBW	Mobile station channel interval: 10 MHz
When omitted	Base station channel interval: 10 MHz

When Standard set to CDMA2000 Forward Link (ACP, Burst Average, Channel Power, OBW measurement)

pattern	Parameter to set
CDMA2KFWD	CDMA2000 Forward Link
When omitted	CDMA2000 Forward Link

When Standard set to CDMA2000 Forward Link (Spectrum Emission Mask setting)

pattern	Parameter to set
BC0_PLT28	Band Class 0,2,5,7,9,10 (Pout<28 dBm)
BC0_PLT33	Band Class 0,2,5,7,9,10 (28 dBm≤Pout<33 dBm)
BC0_PGT33	Band Class 0,2,5,7,9,10 (Pout≥33 dBm)
BC1_PLT28	Band Class 1,4,8,14,15 (Pout<28 dBm)
BC1_PLT33	Band Class 1,4,8,14,15 (28 dBm≤Pout<33 dBm)
BC1_PGT33	Band Class 1,4,8,14,15 (Pout≥33 dBm)
BC6	Band Class 6 (Pout<28 dBm)
BC6_PLT33	Band Class 6 (28 dBm≤Pout<33 dBm)
BC6_PGT33	Band Class 6 (Pout≥33 dBm)
BC11	Band Class 11,12
When omitted	Band Class 0,2,5,7,9,10 (Pout<28 dBm)

When Standard set to EV-DO Forward Link (ACP, Burst Average, Channel Power, OBW measurement)

pattern	Parameter to set
EVDOFWD	EV-DO Forward Link
When omitted	EV-DO Forward Link

When Standard set to EV-DO Forward Link (Spectrum Emission Mask measurement)

pattern	Parameter to set
BC0	Band Class 0,2,5,7,9,10
BC1	Band Class 1,4,14,15
BC6	Band Class 6,8,13
BC11	Band Class 11,12
When omitted	Band Class 0,2,5,7,9,10

When Standard is set to ISDB-Tmm (Channel Power measurement)

pattern	Parameter to set
MEAN_14M2BW	14.2 MHz BW
MEAN_5M6BW	5.6 MHz BW
When omitted	14.2 MHz BW

When Standard is set to ISDB-Tmm (OBW measurement)

pattern	Parameter to set
14M2BW	14.2 MHz BW
5M6BW	5.6 MHz BW
When omitted	14.2 MHz BW

When Standard is set to ISDB-Tmm (Spectrum Emission Mask measurement)

pattern	Parameter to set
14M2BW	14.2 MHz BW
14M2BW_ABS	14.2 MHz BW (ABS)
5M6BW	5.6 MHz BW
When omitted	14.2 MHz BW

When Standard is set to ISDB-T_{SB} (Channel Power measurement)

pattern	Parameter to set
MEAN_3M9BW	3.9 MHz BW
When omitted	3.9 MHz BW

When Standard is set to ISDB-T_{SB} (OBW measurement)

pattern	Parameter to set
3M9BW	3.9 MHz BW
When omitted	3.9 MHz BW

When Standard is set to ISDB-T_{SB} (Spectrum Emission Mask measurement)

pattern	Parameter to set
3M9BW	3.9 MHz BW
When omitted	3.9 MHz BW

When Standard is set to ISDB-T (Channel Power measurement)

pattern	Parameter to set
MEAN_5M6BW	5.6 MHz BW
When omitted	5.6 MHz BW

When Standard is set to ISDB-T (OBW measurement)

pattern	Parameter to set
5M6BW	5.6 MHz BW
When omitted	5.6 MHz BW

When Standard is set to ISDB-T (Spectrum Emission Mask measurement)

pattern	Parameter to set
5M6BW	5.6 MHz BW
When omitted	5.6 MHz BW

When Standard is set to WLAN (ACP measurement)

pattern	Parameter to set
T403_18MSPAN	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 18 MHz
T403_19MSPAN	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 19 MHz
T403_38MSPAN	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 38 MHz
T403_78MSPAN	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 78 MHz
T405_20MBW	TELEC T-405 5 GHz Wireless Access System 20 MHz System
T405_40MBW	TELEC T-405 5 GHz Wireless Access System 40 MHz System
When omitted	TELEC T-403 5 GHz Low Power Data Communication System Sweep Band 18 MHz

When Standard is set to WLAN (OBW measurement)

pattern	Parameter to set
T401_DCCK	TELEC T-401 2.4 GHz Enhanced Low Power Data Communication System, Direct Sequence Spread Spectrum System

T401_OFDM	TELEC T-401 2.4 GHz Enhanced Low Power Data Communication System, Orthogonal Frequency Division Multiplexing System
T403_20MBW	TELEC T-403 5 GHz Low Power Data Communication System 20 MHz System
T403_40MBW	TELEC T-403 5 GHz Low Power Data Communication System 40 MHz System
T403_80MBW	TELEC T-403 5 GHz Low Power Data Communication System 80 MHz System
T403_160MBW	TELEC T-403 5 GHz Low Power Data Communication System 160 MHz System
T405_20MBW	TELEC T-405 5 GHz Wireless Access System 20 MHz System
T405_40MBW	TELEC T-405 5 GHz Wireless Access System 40 MHz System
ETSI_OFDM_5MHZ	EN 301 893 4.3 Nominal Channel Bandwidth and Occupied Channel Bandwidth 5 MHz
ETSI_OFDM_10MHZ	EN 301 893 4.3 Nominal Channel Bandwidth and Occupied Channel Bandwidth 10 MHz
ETSI_OFDM_20MHZ	EN 301 893 4.3 Nominal Channel Bandwidth and Occupied Channel Bandwidth 20 MHz
ETSI_OFDM_40MHZ	EN 301 893 4.3 Nominal Channel Bandwidth and Occupied Channel Bandwidth 40 MHz
When omitted	TELEC T-401 2.4 GHz Enhanced Low Power Data Communication System, Direct Sequence Spread Spectrum System

When Standard is set to WLAN (Spectrum Emission Mask measurement)

pattern	Parameter to set
W11A	IEEE802.11a
W11B	IEEE802.11b
W11GOFDM	IEEE802.11g OFDM
W11GDCCK	IEEE802.11g DSSS/CCK
W11GDOFDM	IEEE802.11g DSSS-OFDM
W11J20MHZ	IEEE802.11j 20 MHz
W11P20MHZ	IEEE802.11p 20 MHz
W11N20MHZ	IEEE802.11n 20 MHz(2.4 GHz)
W11N20MHZ5GHZ	IEEE802.11n 20 MHz(5 GHz)
W11N40MHZ	IEEE802.11n 40 MHz(2.4 GHz)
W11N40MHZ5GHZ	IEEE802.11n 40 MHz(5 GHz)
W11AC20MHZ	IEEE802.11ac 20 MHz
W11AC40MHZ	IEEE802.11ac 40 MHz
W11AC80MHZ	IEEE802.11ac 80 MHz

W11AC160MHZ IEEE802.11ac 160 MHz

ETSI_OFDM_5MHZ
EN 301 893 4.5.2 Transmitter unwanted emissions within the 5 GHz RLAN bands 5 MHz

ETSI_OFDM_10MHZ
EN 301 893 4.5.2 Transmitter unwanted emissions within the 5 GHz RLAN bands 10 MHz

ETSI_OFDM_20MHZ
EN 301 893 4.5.2 Transmitter unwanted emissions within the 5 GHz RLAN bands 20 MHz

ETSI_OFDM_40MHZ
EN 301 893 4.5.2 Transmitter unwanted emissions within the 5 GHz RLAN bands 40 MHz

T403_18MHZ_5180_5240MHZ_LOWER
TELEC T-403 5 GHz Low Power Data Communication System 5180 to 5240 MHz Lower sideband,
OBW less than 18 MHz

T403_18MHZ_5180_5240MHZ_UPPER
TELEC T-403 5 GHz Low Power Data Communication System
5180 to 5240 MHz Upper sideband,
OBW less than 18 MHz

T403_18MHZ_5260_5320MHZ_LOWER
TELEC T-403 5 GHz Low Power Data Communication System
5180 to 5240 MHz Lower sideband,
OBW less than 18 MHz

T403_18MHZ_5260_5320MHZ_UPPER
TELEC T-403 5 GHz Low Power Data Communication System
5260 to 5320 MHz Upper sideband,
OBW more than 18 MHz, less than 19 MHz

T403_18_19MHZ_5180_5240MHZ_LOWER
TELEC T-403 5 GHz Low Power Data Communication System
5180 to 5240 MHz Lower sideband,
OBW more than 18 MHz, less than 19 MHz

T403_18_19MHZ_5180_5240MHZ_UPPER
TELEC T-403 5 GHz Low Power Data Communication System

5180 to 5240 MHz Upper sideband,
OBW more than 18 MHz, less than 19 MHz

`T403_18_19MHZ_5260_5320MHZ_LOWER`

TELEC T-403 5 GHz Low Power Data Communication System
5260 to 5320 MHz Lower sideband,
OBW more than 18 MHz, less than 19 MHz

`T403_18_19MHZ_5260_5320MHZ_UPPER`

TELEC T-403 5 GHz Low Power Data Communication System
5260 to 5320 MHz Upper sideband,
OBW more than 18 MHz, less than 19 MHz

`T403_5190_5230MHZ_LOWER`

TELEC T-403 5 GHz Low Power Data Communication System
5190 to 5230 MHz Lower sideband

`T403_5190_5230MHZ_UPPER`

TELEC T-403 5 GHz Low Power Data Communication System
5190 to 5230 MHz Upper sideband

`T403_5270_5310MHZ_LOWER`

TELEC T-403 5 GHz Low Power Data Communication System
5270 to 5310 MHz Lower sideband

`T403_5270_5310MHZ_UPPER`

TELEC T-403 5 GHz Low Power Data Communication System
5270 to 5310 MHz Upper sideband

`T403_5210MHZ_LOWER`

TELEC T-403 5 GHz Low Power Data Communication System
5210 MHz Lower sideband

`T403_5210MHZ_UPPER`

TELEC T-403 5 GHz Low Power Data Communication System
5210 MHz Upper sideband

`T403_5290MHZ_LOWER`

TELEC T-403 5 GHz Low Power Data Communication System
5290 MHz Lower sideband

`T403_5290MHZ_UPPER`

TELEC T-403 5 GHz Low Power Data Communication System
5290 MHz Upper sideband

`T403_5250MHZ_LOWER`
TELEC T-403 5 GHz Low Power Data Communication System
5250 MHz Lower sideband

`T403_5250MHZ_UPPER`
TELEC T-403 5 GHz Low Power Data Communication System
5250 MHz Lower sideband

`T403_5210MHZ_80-80_LOWER`
TELEC T-403 5 GHz Low Power Data Communication System
5210 MHz 80+80 MHz Lower sideband

`T403_5210MHZ_80-80_UPPER`
TELEC T-403 5 GHz Low Power Data Communication System
5210 MHz 80+80 MHz Upper sideband

`T403_5210_5530MHZ_LOWER`
TELEC T-403 5 GHz Low Power Data Communication System
5210 to 5530 MHz Lower sideband

`T403_5210_5610MHZ_UPPER`
TELEC T-403 5 GHz Low Power Data Communication System
5210 to 5610 MHz Upper sideband

`T403_5290MHZ_80-80_LOWER`
TELEC T-403 5 GHz Low Power Data Communication System
5290 MHz 80+80 MHz Lower sideband

`T403_5290MHZ_80-80_UPPER`
TELEC T-403 5 GHz Low Power Data Communication System
5290 MHz 80+80 MHz Upper sideband

`T403_5290_5530MHZ_LOWER`
TELEC T-403 5 GHz Low Power Data Communication System
5290 to 5530 MHz Lower sideband

`T403_5290_5610MHZ_UPPER`
TELEC T-403 5 GHz Low Power Data Communication System
5290 to 5610 MHz Upper sideband

When omitted W11A

When Standard is set to WLAN (Spurious Emission measurement)

`pattern` Parameter to set

`T401` TELEC T-401 2.4 GHz Enhanced Low Power Data Communication System

`T402` TELEC T-402 2.4 GHz Low Power Data Communication System

`T403_18MHz_5_2GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz OBW less than 18 MHz

`T403_18MHz_5_3GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.3 GHz OBW less than 18 MHz

`T403_18MHz_5_6GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW less than 18 MHz

`T403_18_19MHz_5_2GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz OBW more than 18 MHz, less than 19 MHz

`T403_18_19MHz_5_3GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.3 GHz OBW more than 18 MHz, less than 19 MHz

`T403_18_19MHz_5_6GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW more than 18 MHz, less than 19 MHz

`T403_19MHz_5_2GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz OBW more than 19 MHz

`T403_19MHz_5_3GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.3 GHz OBW more than 19 MHz

`T403_19MHz_5_6GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW more than 19 MHz

`T403_38_78MHz_5_2GHz` TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz OBW more than 38 MHz, less than 78 MHz

T403_38_78MHz_5_3GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.3 GHz OBW more than 38 MHz, less than 78 MHz

T403_38_78MHz_5_6GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW more than 38 MHz, less than 78 MHz

T403_78MHz_5_2GHZ_5_3GHZ

TELEC T-403 5 GHz Low Power Data Communication System 5.2 GHz, 5.3 GHz OBW more than 78 MHz

T403_78MHz_5_6GHz

TELEC T-403 5 GHz Low Power Data Communication System 5.6 GHz OBW more than 38 MHz

T403_5500_5700M

TELEC T-403 5 GHz Low Power Data Communication System, 5500 to 5700 MHz

T403_5510_5670M

TELEC T-403 5 GHz Low Power Data Communication System, 5510 to 5670 MHz

T403_5530_5610M

TELEC T-403 5 GHz Low Power Data Communication System, 5530 to 5610 MHz

T403_5570M

TELEC T-403 5 GHz Low Power Data Communication System, 5570 MHz

T405_5MHz_4_9GHz

TELEC T-405 5 GHz Wireless Access System 5 MHz System 4,900 MHz to 4,950 MHz

T405_5MHz_5_0GHz

TELEC T-405 5 GHz Wireless Access System 5 MHz System 5,030 MHz to 5,060 MHz

T405_10MHz_4_9GHz

TELEC T-405 5 GHz Wireless Access System 10 MHz System 4,900 MHz to 4,950 MHz

T405_10MHz_5_0GHz

TELEC T-405 5 GHz Wireless Access System 10 MHz System 5,030 MHz to 5,060 MHz

T405_20MHz_4_9GHz_OFDM

TELEC T-405 5 GHz Wireless Access System 20 MHz System Orthogonal Frequency Division Multiplexing System 4,900 MHz to 5,000 MHz

`T405_20MHz_4_9GHz_DCCK`	TELEC T-405 5 GHz Wireless Access System 20 MHz System Direct Sequence Spread Spectrum System 4,900 MHz to 5,000 MHz
`T405_20MHz_5_0GHz_OFDM`	TELEC T-405 5 GHz Wireless Access System 20 MHz System Orthogonal Frequency Division Multiplexing System 5,030 MHz to 5,091 MHz
`T405_20MHz_5_0GHz_DCCK`	TELEC T-405 5 GHz Wireless Access System 20 MHz System Direct Sequence Spread Spectrum System 5,030 MHz to 5,091 MHz
`T405_40MHz`	TELEC T-405 5 GHz Wireless Access System 40 MHz System
`FCC_15_407_5_15GHZ`	FCC PART 15.407 5.15-5.25 GHz Band
`FCC_15_407_5_25GHZ_TX`	FCC PART 15.407 5.25-5.35 GHz Band Transmitters
`FCC_15_407_5_25GHZ_DEVICES`	FCC PART 15.407 5.25-5.35 GHz Band Devices
`FCC_15_407_5_47GHZ`	FCC PART 15.407 5.47-5.725 GHz Band
`FCC_15_407_5_725GHZ`	FCC PART 15.407 5.725-5.825 GHz Band
`ETSI_301_893`	EN 301 893 4.5.1 Transmitter unwanted emissions outside the 5 GHz RLAN bands
`ETSI_300_328`	EN 300 328 4.3.6 Transmitter spurious emissions
When omitted	TELEC T-401 2.4GHz Direct Sequence Spread Spectrum System

When Standard is set to LR-WPANs (IEEE802.15.4)
(ACP Measurement)

`pattern`	Parameter to set
`BPSK_950M`	BPSK 950MHz (ARIB STD-T96)
`GFSK_950M_50K`	GFSK 950MHz 50ksps (ARIB STD-T96)
`GFSK_950M_100K`	GFSK 950MHz 100ksps (ARIB STD-T96)
`GFSK_950M_200K`	GFSK 950MHz 200ksps (ARIB STD-T96)
`GFSK_920M_50K`	GFSK 920MHz 50ksps (ARIB STD-T108)
`GFSK_920M_100K`	GFSK 920MHz 100ksps (ARIB STD-T108)

GFSK_920M_200K	GFSK 920MHz 200ksps (ARIB STD-T108)
GFSK_50K_G	GFSK 50ksps (IEEE802.15.4g_d7)
GFSK_100K_G	GFSK 100ksps (IEEE802.15.4g_d7)
GFSK_200K_G	GFSK 200ksps (IEEE802.15.4g_d7)
When omitted	BPSK 950MHz (ARIB STD-T96)

When Standard is set to LR-WPANs (IEEE802.15.4)
(Spectrum Emission Mask Measurement)

pattern	Parameter to set
OQPSK_2450M	O-QPSK 2450MHz (IEEE802.15.4-2011)
BPSK_950M	BPSK 950MHz (ARIB STD-T96)
GFSK_950M_50K	GFSK 950MHz 50ksps (ARIB STD-T96)
GFSK_950M_100K	GFSK 950MHz 100ksps (ARIB STD-T96)
GFSK_950M_200K	GFSK 950MHz 200ksps (ARIB STD-T96)
GFSK_920M_50K	GFSK 920MHz 50ksps (ARIB STD-T108)
GFSK_920M_100K	GFSK 920MHz 100ksps (ARIB STD-T108)
GFSK_920M_200K	GFSK 920MHz 200ksps (ARIB STD-T108)
When omitted	O-QPSK 2450MHz (IEEE802.15.4-2011)

When Standard is set to APCO P25
(ACP Measurement)

pattern	Parameter to set
EXCEPT_700MHZ-BAND	Except 700MHz-band
700MHz-BW-6_25KHZ	700MHz-BW-6.25kHz
700MHz-BW-25KHZ	700MHz-BW-25kHz
700MHz-BW-100KHZ	700MHz-BW-100kHz
When omitted	Except 700MHz Band

When Standard is set to APCO P25
(Spectrum Emission Mask Measurement)

pattern	Parameter to set
FCC_12_5KHZ	FCC 12.5kHz
NTIA_12_5KHZ	NTIA 12.5kHz
When omitted	FCC 12.5kHz

When Standard is set to Microlink ETSI
(Spectrum Emission Mask Measurement)

pattern	Parameter to set
7M2	CS:7MHz Class:2
7M4L3-17G	CS:7MHz Class:4L Frequency Band:3G-17GHz
7M4L17-30G	CS:7MHz Class:4L Frequency Band:17G-30GHz
7M4LABV30G	CS:7MHz Class:4L

	Frequency Band:above30GHz
7M5B3-17G	CS:7MHz Class:5B
	Frequency Band:3G-17GHz
7M5B17-30G	CS:7MHz Class:5B
	Frequency Band:17G-30GHz
7M5BABV30G	CS:7MHz Class:5B
	Frequency Band:above30GHz
14M2	CS:14MHz Class:2
14M4L3-17G	CS:14MHz Class:4L
	Frequency Band:3G-17GHz
14M4L17-30G	CS:14MHz Class:4L
	Frequency Band:17G-30GHz
14M4LABV30G	CS:14MHz Class:4L
	Frequency Band:above30GHz
14M5B3-17G	CS:14MHz Class:5B
	Frequency Band:3G-17GHz
14M5B17-30G	CS:14MHz Class:5B
	Frequency Band:17G-30GHz
14M5BABV30G	CS:14MHz Class:5B
	Frequency Band:above30GHz
28M2	CS:7MHz Class:2
28M4L3-17G	CS:7MHz Class:4L
	Frequency Band:3G-17GHz
28M4L17-30G	CS:7MHz Class:4L
	Frequency Band:17G-30GHz
28M4LABV30G	CS:7MHz Class:4L
	Frequency Band:above30GHz
28M4H3-17G	CS:7MHz Class:4H
	Frequency Band:3G-17GHz
28M4H17-30G	CS:7MHz Class:4H
	Frequency Band:17G-30GHz
28M4HABV30G	CS:7MHz Class:4H
	Frequency Band:above30GHz
28M5A6A3-17G	CS:7MHz Class:5A6A
	Frequency Band:3G-17GHz
28M5A6A17-30G	CS:7MHz Class:5A6A
	Frequency Band:17G-30GHz
28M5A6AABV30G	CS:7MHz Class:5A6A
	Frequency Band:above30GHz
28M5B6B3-17G	CS:7MHz Class:5B6B
	Frequency Band:3G-17GHz
28M5B6B17-30G	CS:7MHz Class:5B6B
	Frequency Band:17G-30GHz
28M5B6BABV30G	CS:7MHz Class:5B6B

	Frequency Band:above30GHz
56M4L3-17G	CS:56MHz Class:4L Frequency Band:3G-17GHz
56M4L17-30G	CS:56MHz Class:4L Frequency Band:17G-30GHz
56M4LABV30G	CS:56MHz Class:4L Frequency Band:above30GHz
56M5A6A3-17G	CS:56MHz Class:5A6A Frequency Band:3G-17GHz
56M5A6A17-30G	CS:56MHz Class:5A6A Frequency Band:17G-30GHz
56M5A6AABV30G	CS:56MHz Class:5A6A Frequency Band:above30GHz
56M5B6B3-17G	CS:56MHz Class:5B6B Frequency Band:3G-17GHz
56M5B6B17-30G	CS:56MHz Class:5B6B Frequency Band:17G-30GHz
56M5B6BABV30G	CS:56MHz Class:5B6B Frequency Band:above30GHz
When omitted	CS:7MHz Class:2

When Standard is set to NXDN
(ACP Measurement)

pattern	Parameter to set
BW-6_25KHZ	BW-6.25kHz
BW-12_5KHZ	BW-12.5kHz
When omitted	BW-12.5kHz

When Standard is set to NXDN
(Spectrum Emission Mask Measurement)

pattern	Parameter to set
47CFR-E_6_25KHZ	47CFR-E_6.25kHz
47CFR-D_12_5KHZ	47CFR-D_12.5kHz
When omitted	47CFR-D_12.5kHz

Details

This command is not available when Standard is set to Off.

Example of Use

To set the ACP measurement parameter type to 3GPP W-CDMA Uplink.

```
LOADSTD ADJ,UPLINK
```

LOGSCALEDIV/LOGSCALEDIV?

Log Scale Range

Function

This command sets the Y-axis scale magnification for the log scale display.

Command

```
LOGSCALEDIV scale
```

Query

```
LOGSCALEDIV?
```

Response

`scale`

No suffix code. Value is returned in dB units.

Parameter

`scale`	Y-axis scale magnification
`0.1`	0.1 dB/div
`0.2`	0.2 dB/div
`0.5`	0.5 dB/div
`1`	1 dB/div
`2`	2 dB/div
`5`	5 dB/div
`10`	10 dB/div
`20`	20 dB/div

Example of Use

To set the scale magnification to 0.5 dB/div.

```
LOGSCALEDIV 0.5
LOGSCALEDIV?
> 0.5
```

MADJMOD/MADJMOD?

ACP Reference

Function

This command sets the reference of the relative level display for ACP measurement

Command

```
MADJMOD method
MADJMOD num
```

Query

```
MADJMOD?
```

Response

```
method
num
```

Parameter

`method`		Reference method for the relative level display for ACP measurement
	`MOD`	Uses the integral power on the entire screen as a reference (Span Total method).
	`TOTAL`	Same as MOD.
	`INBAND`	Uses the total value of all carrier power as a reference (Carrier Total method).
	`BOTHSIDE`	The carrier power of the largest carrier number is used as a reference for the upper offset, while the carrier power of the smallest carrier number is used as reference (Both Sides of Carriers method).
`num`		Carrier number used as a reference when the reference of the relative level display for Adjacent Channel Power measurement is set to Carrier.
	Range	1 to Carrier Number (cf. `ADJCARRIERNUM`)
	Resolution	1
	Suffix Code	None

Example of Use

To set the ACP measurement method to Inband.

```
MADJMOD INBAND
MADJMOD?
> INBAND
```

MBIAS/MBIAS?

External Mixer Bias

Function

This command sets the external mixer's bias current.

Command

```
MBIAS bias
```

Query

```
MBIAS?
```

Response

```
bias
```

Parameter

`bias`		External mixer's bias current
	Range	0.0 to 20.0 mA
	Resolution	0.1 mA
	Suffix code	None, value is returned in mA units.
	Default	0.0 mA

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.
A value is held per one external mixer's band.

Example of Use

To set the external mixer's bias current to 10.0 mA.

```
MBIAS 10.0
MBIAS?
> 10.0
```

MEAS/MEAS?

Measure Function

Function

This command selects and executes the measurement item and method for Measure Function.

Command

```
MEAS func,method
MEAS func,num
MEAS OFF
```

Query

```
MEAS?
```

Response

```
func
```

Parameter

func	Types of Measure functions
ADJ	ACP measurement
BRSTAVGPWR	Burst Average Power measurement
CHPWR	Channel Power measurement
OBW	Occupied Bandwidth measurement
SEM	Spectrum Emission Mask measurement
SPUR	Spurious Emission measurement
OFF	Measure function Off
method	Selects the measurement execution or method.
EXE	Executes the selected measurement function.
MOD	Executes Span Total method (ACP measurement)
TOTAL	Executes Span Total method (ACP measurement)
INBAND	Executes Carrier Total method (ACP measurement)
BOTHSIDE	Executes Both Side Carrier method (ACP measurement)
	The executable measurement functions are in parentheses.
When omitted	Executes the selected measurement function.

num		Carrier Number used for ACP measurement
	Range	1 to Carrier Number (cf. ADJCARRIERNUM)
	Resolution	1
	Suffix Code	None

Details

When measuring as the SEM function (func), this becomes the overlap command. When querying the measurement result after executing Spectrum Emission Mask measurement using this command, perform synchronous control using the *WAI command.

Example of Use

To perform the ACP measurement using the Inband method.

```
MEAS ADJ,INBAND
MEAS?
> ADJ
```

MEAS:BATC:ACP?

Adjacent Channel Power Batch Measure

Function

This command executes ACP measurement and outputs the result after the parameters described in the specified parameter list file have been set.

Query

```
MEAS:BATC:ACP? n,filename[,device]
```

Response

The same response as :MEASure:ACP[n]? returns.
Refer to :MEASure:ACP[n]? in "Chapter 2 SCPI Device Message Details".

Parameter

n	Measurement Option Refer to :MEASure:ACP[n]? in "Chapter 2 SCPI Device Message Details".
filename	Parameter List File Specify with any character string enclosed by double quotes (" ") or single quotes (' ')
device	Drive name A,B,D,E,F,... D drive is used when omitted.

Details

This command executes ACP measurement and outputs the result after the parameters described in the specified parameter list have been set.
The value returned by this command differs depending on Result Mode.
(cf. SYST:RES:MODE)

Place parameter list files in a folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be applied with the MMEM:REL:BATC command.
(cf. MMEM:REL:BATC)

Example of Use

To option the results of ACP measurement performed using the parameter list file MyParam.xml.

```
MEAS:BATC:ACP? 1,"MyParam.xml"
>
0.0,-72.130,0.0,-72.130,-1.270,-73.400,-0.570,-72.700,-0
.780,-72.910,-1.030,-73.160,-999.0,-999.0,-999.0,-999.0
```

Format of Parameter list file

Refer to `:MEASure:ACP[n]?` in "Chapter 2 SCPI Device Message Details".

MEAS:BATC:IM?

Transmit Intermodulation Batch Measure

Function

This command executes Transmit intermodulation measurement and outputs the result based on the specified parameter list file.

Query

```
:MEAS:BATC:IM? filename,spa_freq[,sg_freq[,device]]
```

Response

Two values of ref_carrier_a are output when ACP Reference is BSIDes.

```
ref_carrier_a(,ref_carrier_a),
lower_offset_1_rel,lower_offset_1_abs,
upper_offset_1_rel,upper_offset_1_abs,
lower_offset_2_rel,lower_offset_2_abs,
upper_offset_2_rel,upper_offset_2_abs,
lower_offset_3_rel,lower_offset_3_abs,
upper_offset_3_rel,upper_offset_3_abs,
spa_1_result,spa_2_result
```

Parameter

`filename`	Parameter List File Specify with any character string enclosed by double quotes (" ") or single quotes (' ')
`spa_freq`	Center frequency of the Spectrum Analyzer function.
Range	–100 MHz to 6.05 GHz (MS2690A) –100 MHz to 13.6 GHz (MS2691A) –100 MHz to 26.6 GHz (MS2692A)
Resolution	1 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted. MAX, MIN, DEF are not available.
`sg_freq`	Signal Generator frequency
Range	125 MHz to 6 GHz
Resolution	0.01 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted. MAX, MIN, DEF are not available.
`device`	Drive name `A,B,D,E,F,...` `D` drive is used when omitted.
`lower_offset_n_rel`	Relative power of lower Offset-n
`upper_offset_n_rel`	Relative power of upper Offset-n No suffix code, dB unit, 0.001 dB resolution (–999.0 is returned when there is an error and no measurement is performed.
`ref_carrier_a`	Power of reference carrier
`lower_offset_n_abs`	Absolute power of lower Offset-n
`upper_offset_n_abs`	Absolute power of upper Offset-n No suffix code, Log Scale Unit (dBm unit for V output and µW unit for W output) (–999.0 is returned when there is an error and no measurement is performed.
`spa_n_result`	Result of searching for the peak power after measurement using Zero Span with SPA[n] parameters. No suffix code, Log Scale Unit (mV unit for V output and µW unit for W output) (–999.0 is returned when there is an error and no measurement is performed.

Details

This command executes Transmit intermodulation measurement and outputs the result based on the specified parameter list file.

Place parameter list files in a folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be applied with the `MMEM:REL:BATC` command.
(cf. `MMEM:REL:BATC`)

Example of Use

To execute Transmit intermodulation measurement using the MyParam.xls parameter list file.

```
MEAS:BATC:IM? "MyParam.xml",2GHz,2.005GHz
>
0.0,-72.130,0.0,-72.130,-1.270,-73.400,-0.570,-72.700,-0
.780,-72.910,-1.030,-73.160,-999.0,-999.0,-999.0,-999.0
```

Format of Parameter list file

Refer to `:MEASure:BATCh:IM?` in “Chapter 2 SCPI Device Message Details”.

MEAS:BATC:OBW?

Occupied Bandwidth Batch Measure

Function

This command executes OBW measurement and outputs the measurement result after the parameters described in the specified parameter list file have been set.

Query

```
MEAS:BATC:OBW? n,filename[,device]
```

Response

The same response as `:MEASure:OBWidth[n]?` returns.
Refer to `:MEASure:OBWidth[n]?` in "Chapter 2 SCPI Device Message Details".

Parameter

`n`	Measurement Option Refer to `:MEASure:OBWidth[n]?` in "Chapter 2 SCPI Device Message Details".
`filename`	Parameter List File Specify with any character string enclosed by double quotes (" ") or single quotes (' ').
`device`	Drive name `A,B,D,E,F,...` `D` drive is used when omitted.

Details

OBW measurement is executed and the result is output after the parameters described in the specified parameter list have been set.
The value returned by this command differs depending on Result Mode.
(cf. `SYST:RES:MODE`)

Place parameter list files in a folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be applied with the `MMEM:REL:BATC` command.
(cf. `MMEM:REL:BATC`)

Example of Use

To acquire the measurement result of OBW measurement using the MyParam.xls parameter list file (A mode, n = 1).

```
READ:BATC:OBW? 1,"MyParam.xml"
> 30000,1000000000,900050000,1000050000
```

Format of Parameter list file

Refer to `:MEASure:BATCh:OBWidth[n]?` in "Chapter 2 SCPI Device Message Details".

MEAS:BATC:SEM?

Spectrum Emission Mask Batch Measure

Function

This command executes Spectrum Emission Mask measurement and outputs the measurement result after the parameters described in the specified parameter list file have been set.

Query

```
MEAS:BATC:SEM? n,filename[,device]
```

Response

The same response as `:MEASure:SEMask[n]?` returns.
Refer to `:MEASure:SEMask[n]?` in "Chapter 2 SCPI Device Message Details".

Parameter

`n`	Measurement Option Refer to `:MEASure:SEMask[n]?` in "Chapter 2 SCPI Device Message Details".
`filename`	Parameter List File Specify with any character string enclosed by double quotes (" ") or single quotes (' ')
`device`	Drive name `A,B,D,E,F,...` `D` drive is used when omitted.

Details

Spectrum Emission Mask measurement is executed and the result is output after the parameters described in the specified parameter list have been set.

The value returned by this command differs depending on Result Mode.
(cf. `SYST:RES:MODE`)

Place parameter list files in a folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be applied with the `MMEM:REL:BATC` command.
(cf. `MMEM:REL:BATC`)

Example of Use

To acquire the peak value of absolute power of SEM measurement using the MyParam.xls parameter list file (n = 10).

```
MEAS:BATC:SEM? 10,"MyParam.xml"
>
999.0,-999.0,-100.000,-100.000,-60.000,-60.000,45.000,-4
5.000,-30.000,-30.000,-10.000,-10.000,0.000,0.000
```

Format of Parameter list file

Refer to `:MEASure:BATCh:SEM[n]?` in "Chapter 2 SCPI Device Message Details".

MEAS:BATC:SPUR?

Spurious Emission Batch Measure

Function

This command executes Spurious Emission measurement and outputs the measurement result after the parameters described in the specified parameter list file have been set.

Query

```
MEAS:BATC:SPUR? n,filename[,device]
```

Response

The same response as `:MEASure:SPURious[n]?` returns.
Refer to `:MEASure:SPURious[n]?` in "Chapter 2 SCPI Device Message Details".

Parameter

`n`	Measurement Option Refer to `:MEASure:SPURious[n]?` in "Chapter 2 SCPI Device Message Details".
`filename`	Parameter List File Specify with any character string enclosed by 3 sequence (" ") or single quotes (' ')
`device`	Drive name `A,B,D,E,F,...` `D` drive is used when omitted.

Details

SPURious Emission measurement is executed and the result is output after the parameters described in the specified parameter list have been set.

The value returned by this command differs depending on Result Mode.
(cf. `SYST:RES:MODE`)

Place parameter list files in a folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

If the parameter list file has been changed, the changes must be applied with the `MMEM:REL:BATC` command.
(cf. `MMEM:REL:BATC`)

Example of Use

To acquire the measurement result of Spurious Emission measurement (when Result Mode = A, Spurious Emission Result Type = Worst)

```
FETC:SPUR? 1,"MyParam.xml"
>
0,1,1,135618.00,-64.25,51.25,-13.00,0,2,2,155970.00,-63.
91,50.91,-13.00,0••••
```

Format of Parameter list file

Refer to `:MEASure:BATCh:SUPRious [n]?` in "Chapter 2 SCPI Device Message Details".

MEAS:POW?

Measure Power Adjust

Function

This command executes power adjustment and reads the result.
Power adjustment combines the SG option and power measurement functions to set the output level of the DUT, such as an amplifier, to the specified level.

Query

```
MEAS:POW?
rbw,length,sg_start_level,sg_max_level,target,range[,frequency[,tracepoint[,count[,adjust_log[,sg_offset_switch]]]]]
```

Response

```
judge,sa_input,sg_output,count_res,time,sa_input_log_n,sg_output_log_n,count_log_n
```

Parameter

`rbw` Analysis bandwidth

[MS269xA]

Range/Resolution 30 Hz to 31.25 MHz
Either of the values, 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz can be used.
Set the specified waveform bandwidth or more.
Recommended to set at 31.25 MHz

[MS2830A], [MS2840A]

Range/Resolution 30 Hz to 31.25 MHz
Either of the values, 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, and 31.25 MHz can be used.
Set the specified waveform bandwidth or more.
Recommended to set at 31.25 MHz

[Common]

Suffix code HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
Hz is used when omitted.

`length` Analysis length

Range 1 µs to 1000 s
Suffix code NS,US,MS,S
S is used when omitted
µs (resolution)

`sg_start_level` Set the SG output level set at the start.
When inserting a DUT, specify the DUT input level and RF Input so the maximum input level

is not exceeded.

Range

[MS269xA] –140 to –5 dBm

[MS2830A], [MS2840A]

–40.00 to +20.00 dBm (>25 MHz)
–40.00 to +2.00 dBm (≤25 MHz)
–136.00 to +15.00 dBm (>25 MHz) (Option 022/122)
–136.00 to –3.00 dBm (≤25 MHz) (Option 022/122)

Resolution 0.01 dBm

`sg_max_level` Set the SG maximum output level.
When inserting a DUT, specify the DUT input level and RF Input so the maximum input level is not exceeded.

Range

[MS269xA] –140 to –5 dBm

[MS2830A], [MS2840A]

–40.00 to +20.00 dBm (> 25 MHz)
–40.00 to +2.00 dBm (≤ 25 MHz)
–136.00 to +15.00 dBm (> 25 MHz) (Option 022/122)
–136.00 to –3.00 dBm (≤ 25 MHz) (Option 022/122)

Resolution 0.01 dBm

Suffix code DBM,DM

`target` Target level when executing power adjustment.

Range –150 to 30 dBm (Pre-Amp Off)
–150 to 10 dBm (Pre-Amp On)
When adding the reference offset, the added value is the setting range.

Resolution 0.01 dBm

Suffix code DBM,DM

`range` Power adjustment range
Power adjusted is evaluated as PASS when adjustment is within the specified range

Range 0 to 20 dB

Resolution 0.01 dB

Suffix code DB

`frequency` Power adjustment execution frequency

Range

[MS269xA] 125 MHz to 6 GHz

[MS2830A] 250 kHz to 3.6 GHz (Option 020/120)
250 kHz to 6 GHz (Option 041/043, and 021/121)

[MS2840A]	250 kHz to 3.6 GHz (Option 020/122) 250 kHz to 6 GHz (Option 041, and 021/121)
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted. MAXimum, MINimum, and DEFault cannot be used. The currently set frequency cannot be used when omitted.
`tracepoint`	trace point
`11`	11 point
`21`	21 point
`41`	41 point
`51`	51 point
`101`	101 point
`201`	201 point
`251`	251 point
`401`	401 point
`501`	501 point
`1001`	1001 point
`2001`	2001 point
`5001`	5001 point
`10001`	10001 point
`30001`	30001 point (MS269xA Only) Recommended to specify Trace Point to 1001.
`count`	Power adjustment execution count
Range	1 to 10
Resolution	1 No suffix code If the value is omitted, power adjustment is executed 5 times.
`adjust_log`	Specifies whether or not to output Log at each power adjustment.
`ON|1`	Output log
`OFF|0`	Do not output log
`sg_offset_switch`	Specifies whether or not to return level offset setting in SG output level setting range.
`ON|1`	Return level offset setting
`OFF|0`	Do not return the level offset setting values
`judge`	Evaluates power adjustment 0 is returned at PASS and 1 is returned at FAIL. –999.0 is returned if there is no measurement.
`sa_input`	DUT output level
Suffix code	None, dBm (unit) 0.01 dB (resolution)

sg_output	Output level of SG Output of this equipment No suffix code, dBm (unit), 0.01 dB (resolution) –999.0 is returned if there is no measurement.
count_res	Power adjustment execution count
time	Power adjustment time 1 ms (resolution) No suffix code, ms (unit) –999.0 is returned if there is no measurement.
sa_input_log_n	DUT output level at power adjustment Added to response when Log Output on No suffix code, dBm (unit), 0.01 dB Resolution
sg_output_log_n	Output level from SG Output at each power adjustment Added to response when Log Output on No suffix code, dBm (unit), 0.01 dB Resolution
count_log_n	Power adjustment count Added to response when Log Output on

Details

This function cannot be performed when the SG option is not installed.

SG setting and measurement are executed repeatedly until the target level specified at target, range is reached within the count specified at count. This is used for various measurements such as a spurious measurement with specified output level.
In this application, the Reference Level and Attenuator settings are calculated as follows from the Adjustment Target Level, Crest Factor, and Correction value and are set automatically at the measurement section. Using this application, the Attenuator is set so that the Mixer Input Level become 0 dBm.

Reference Level setting value

$$\text{Reference Level} = \langle \text{target} \rangle + \text{Crest Factor} - \text{Correction}$$

* Crest Factor = 12 dB

However, it is rounded to 50 dBm when Reference Level > 50 dBm (30 dBm at Pre-amp On) and to –120 dBm when Reference Level < –120 dBm

Attenuator setting values

$$\textit{Attenuator} = \text{Reference Level} - \text{Mixer Input Level} + \text{Pre} - \text{Amp Gain} - \text{Offset}$$

* Mixer Input Level = 0
* Pre-Amp Gain = 20 dB (only at Pre-Amp On)

* Offset :Reference Level Offset value

However, it is rounded to 60 dB when Attenuator > 60 and to 0 dBm when Attenuator < 0. Additionally, when the Attenuator value is an odd number, it is rounded up to the nearest even number (Example: 35 dB →36 dB).

After executing this command, the function and the following settings specified by an argument are changed.

- Sets Detection to RMS
- Sets Sweep Mode to Single
- Sets Scale Mode to Log
- Sets Log Scale Unit to dBm

When using the SG offset function, switch to the SG application and set the offset level. Set the value with offset to this command arguments, `sg_start_level` and `sg_max_level and set sg_offset_switch` to `On`.
sg_output and sg_output_log_n returns the output level with offset.

Example of Use

To execute power adjustment under the following conditions:
Frequency: 2 GHz
Analysis width: 5 MHz
Trace point: 1001
Analysis length: 500 µs
Start SG output level: –30 dBm
Max. SG output level: –5 dBm
Adjustment target level:–10 dBm
Adjustment range: 0.4 dB
Adjustment count: 6 times
Log output: On
SG Offset:On

```
MEAS:POW?
20000000,500US,-30,-5,-10,0.4,2000000000,1001,6,ON,ON
0,-9.6,-12.5,3,156,-28,-30,1,-9.5,-12.0,2,-9.6,-12.5,3
```

MEAS:SEM?

Spectrum Emission Mask Measure

Function

This command performs the measurement for Spectrum Emission Mask measurement and outputs the measurement result.
It works in the same way as the three commands are transmitted in the following order:

```
CONF:SEM
INIT:SEM
FETC:SEM
```

Query

```
MEAS:SEM? N
```

MEAS:SPUR?

Spurious Emission Measure

Function

This command performs the Spurious Emission measurement and queries the result.
It works in the same way as the three commands are transmitted in the following order:

```
CONF:SPUR
INIT:SPUR
FETC:SPUR? n
```

Query

```
MEAS:SPUR? n
```

MKACT/MKACT?

Active Marker

Function

This command sets the active marker.

Command

```
MKACT marker
```

Query

```
MKACT?
```

Response

```
marker
```

Parameter

marker	Active Marker
MKR1	Marker 1
MKR2	Marker 2
MKR3	Marker 3
MKR4	Marker 4
MKR5	Marker 5
MKR6	Marker 6
MKR7	Marker 7
MKR8	Marker 8
MKR9	Marker 9
MKR10	Marker 10

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto. This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To set Marker1 to be activated.

```
MKACT MKR1
```

MKCF

Marker to Center Frequency

Function

This command sets the marker frequency to the center frequency.

Command

```
MKCF
```

Details

This command is not available in the following cases:

- When the marker mode is set to Off.
- During the Spurious Emission measurement.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the marker frequency to center frequency.

```
MKCF
```

MKF?

Marker Frequency (Time) Query

Function

This command queries the frequency or time at the marker point level. Regarding the delta marker, queries the frequency gap or time gap between the delta marker and the marker set by Relative To.

Query

```
MKF? marker
```

Response

`freq`
: Returns a value without a suffix code, in Hz units, and with a resolution of 0.01 Hz.

`time`
: Returns a value without a suffix code, in ns units, and with a resolution of 0.1 ns.

Details

*** is returned when the Marker Mode is set to Off.
This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Parameter

`marker`	Marker type
1	Marker1
2	Marker2
3	Marker3
4	Marker4
5	Marker5
6	Marker6
7	Marker7
8	Marker8
9	Marker9
10	Marker10
When omitted:	Active marker

Example of Use

To query the marker point time (1 s).

```
MKF?
> 1000000000.0
```

MKL?

Marker Level Query

Function

This command queries the marker point level. In case of delta marker, it queries the level ratio.

Query

```
MKL? marker
```

Response

`level` Marker point level

No suffix code, in dB units, 0.001 dB
(When marker level display units are dB-system units)
No suffix code, in μV units, 0.01 pV
(When marker level display units are V-system units)
No suffix code, in μW units, 0.01 yW
(When marker level display units are W-system units)
No suffix code, in dB units, resolution 0.001 dB
(When Marker Mode is Delta and Scale Mode is Log)
No suffix code, No unit, range: 0.0000 to 10000, 0.0001 resolution
(When Marker Mode is Delta and when Scale Mode is Lin.)

Parameter

`marker` Marker type

`1`	Marker1
`2`	Marker2
`3`	Marker3
`4`	Marker4
`5`	Marker5
`6`	Marker6
`7`	Marker7
`8`	Marker8
`9`	Marker9
`10`	Marker10
When omitted	Active marker

Details

*** is returned when Marker Mode is Off.
This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Example of Use

To query the marker point level (1.234 dBm).

```
MKL?
> 1.234
```

MKLTYPE/MKLTYPE?

Marker Result

Function

This command sets the type of the marker value.

Command

```
MKLTYPE type_com
```

Query

```
MKLTYPE?
```

Response

```
type_res
```

Parameter

type_com	Type of Marker value
INT	Integral power in the zone
TOTAL	Same as above
DENS	Power density in the zone
AVG	Same as above
PEAK	Peak level in the zone
type_res	Type of Marker value
TOTAL	Integral power in the zone
AVG	Power density in the zone
PEAK	Peak level in the zone

Details

When Scale Mode is Lin, Integration and Density cannot be set.
Integration cannot be set in the time domain mode.
This command is not available during Spurious Emission measurement and when Displayed Segment Mode is Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the marker value to the power density within the zone band.

```
MKLTYPE AVG
MKLTYPE?
> AVG
```

MKN/MKN?

Zone Marker Frequency (Time)

Function

This command moves the center of the zone marker to the specified frequency (time).

Command

```
MKN freq,marker
MKN time,marker
```

Query

```
MKN? marker
```

Response

`freq`

A value without a suffix code that has a resolution of 0.01 Hz is returned.

`time`

A value without a suffix code that has a resolution of 0.01 μs is returned.

Parameter

`freq` Center frequency of zone maker

Range	
[MS269xA]	–100 MHz to 6.0 GHz (MS2690A)
	–100 MHz to 13.5 GHz (MS2691A)
	–100 MHz to 26.6 GHz (MS2692A)
[MS2830A]	–100 MHz to 3.7 GHz (Option 040)
	–100 MHz to 6.1 GHz (Option 041)
	–100 MHz to 13.6 GHz (Option 043)
	–100 MHz to 26.6 GHz (Option 044)
	–100 MHz to 43.1 GHz (Option 045)
[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
	–100 MHz to 6.1 GHz (Option 041)
	–100 MHz to 26.6 GHz (Option 044)
	–100 MHz to 44.6 GHz (Option 046)
Resolution	0.01 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

`time`

Range	–1000 to 1000 s
Resolution	1 ns

Suffix code	NS,US,MS,S ms is used when omitted.
marker	Marker types
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted	Active Marker

Details

This command cannot be set during measurement and when the displayed segment mode is set to Auto.
This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To move the center of the zone marker to 100 MHz.

```
MKN 100MHZ
MKN?
> 100000000.00
```

MKPK

Peak Search

Function

This command searches for the peak point of the active trace and moves the marker point to it.

Command

```
MKPK
MKPK move
```

Parameter

`move`		Peak point type
	`HI`	Moves to the highest peak point.
		`NH` Moves to the peak point below the level of the active marker.
	When omitted:	Moves to the highest level point.

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.
This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To move the marker to the next peak point.

```
MKPK
```

MKPX/MKPX?

Peak Search Resolution

Function

This command sets the resolution for detecting the peak point.

Command

```
MKPX level
```

Query

```
MKPX?
```

Response

```
level
```

No suffix code, in dB units, 0.001 dB

Parameter

`level`		Peak point detection resolution
	Range	0.001 to 100.000 dB (Log Scale) 0.01 to 100.00% (Lin Scale)
	Suffix code	DB dB is used even when omitted.

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto. This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To set the peak point detection resolution to 12.345 dB.

```
MKPX 12.345DB
MKPX 12.345
MKPX?
> 12.345
```

MKR/MKR?

Marker Mode

Function

This command sets the marker mode.

Command

```
MKR mode_com,marker
```

Query

```
MKR? marker
```

Response

```
mode_res
```

Parameter

mode_com	Marker mode
0	Normal marker
1	Delta marker
2	Off
3	Fixed
ON	Normal marker
OFF	No marker displayed
marker	Marker type
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted	Active marker
mode_res	Marker Mode
0	Normal marker
1	Delta marker
2	Off
3	Fixed

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto. This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To set the active marker mode to delta.

```
MKR 1
MKR?
> 1
```

MKRL

Marker to Reference Level

Function

This command sets the marker level to the reference level.

Command

```
MKRL
```

Details

This command is not available in the following cases:

- When the marker mode is set to Off.
- During the Spurious Emission measurement and when the Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the marker level to the reference level.

```
MKRL
```

MKTRACE/MKTRACE?

Marker Trace

Function

This command selects the trace (active trace) to operate the marker.

Command

```
MKTRACE trace,marker
```

Query

```
MKTRACE? marker_query
```

Response

```
trace
```

Parameter

`marker`	Marker type
`MKR1`	Marker 1
`MKR2`	Marker 2
`MKR3`	Marker 3
`MKR4`	Marker 4
`MKR5`	Marker 5
`MKR6`	Marker 6
`MKR7`	Marker 7
`MKR8`	Marker 8
`MKR9`	Marker 9
`MKR10`	Marker 10
When omitted:	All markers are moved onto the specified trace.
`marker_query`	Marker type
`MKR1`	Marker 1
`MKR2`	Marker 2
`MKR3`	Marker 3
`MKR4`	Marker 4
`MKR5`	Marker 5
`MKR6`	Marker 6
`MKR7`	Marker 7
`MKR8`	Marker 8
`MKR9`	Marker 9
`MKR10`	Marker 10
When omitted:	Active marker

`trace`	Trace type
`TRA`	Trace A
`TRB`	Trace B
`TRC`	Trace C
`TRD`	Trace D
`TRE`	Trace E
`TRF`	Trace F

Details

This command is not available during the Spectrum Emission Mask measurement or the Spurious Emission measurement.

Example of Use

To set the trace of Marker 2 to Trace B.

```
MKTRACE TRB,MKR2
MKTRACE? MKR2
> TRB
```

MKW/MKW?

Zone Marker Width

Function

This command sets the zone marker width.

Command

```
MKW width,marker
```

Query

```
MKW? marker
```

Response

`width`

Returns *** when the zone marker width is not within the parameter range.

Parameter

`width`	Zone marker width
`0`	0.5 div
`1`	Spot
`2`	10 div
`5`	1 div
`6`	2 div
`7`	5 div
`marker`	Marker type
`1`	Marker1
`2`	Marker2
`3`	Marker3
`4`	Marker4
`5`	Marker5
`6`	Marker6
`7`	Marker7
`8`	Marker8
`9`	Marker9
`10`	Marker10
When omitted:	Active marker

Details

This command is not available during the Spurious Emission measurement and when the Displayed Segment Mode is set to Auto. This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To set the zone marker width to Spot.

```
MKW 1
MKW?
> 1
```

MKZ/MKZ?

Zone Marker Position

Function

This command moves the zone marker center to the specified position.

Command

```
MKZ point,marker
```

Query

```
MKZ? marker
```

Response

```
point
```

Parameter

point	Number of displayed points from the screen left edge
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
marker	Marker type
1	Marker1
2	Marker2
3	Marker3
4	Marker4
5	Marker5
6	Marker6
7	Marker7
8	Marker8
9	Marker9
10	Marker10
When omitted	Active marker

Details

This command is not available in the following cases:

- During the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.

Example of Use

To move the zone marker center to 500 points from the screen left edge.

```
MKZ 500
MKZ?
> 500
```

MKZF/MKZF?

Zone Marker Frequency (Time)

Function

This command moves the zone marker center to the specified frequency (time).

Command

```
MKZF freq,marker
MKZF time,marker
```

Query

```
MKZF? marker
```

Response

`freq`

Returns a value without a suffix code, in Hz units, and with a resolution of 0.01 Hz.

`time`

Returns a value without a suffix code, in μs units, and with a resolution of 0.01 μs.

Parameter

`freq`		Zone marker center frequency
Range		
[MS269xA]		–100 MHz to 6.0 GHz (MS2690A)
		–100 MHz to 13.5 GHz (MS2691A)
		–100 MHz to 26.6 GHz (MS2692A)
[MS2830A]		–100 MHz to 3.7 GHz (Option 040)
		–100 MHz to 6.1 GHz (Option 041)

	–100 MHz to 13.6 GHz (Option 043)
	–100 MHz to 26.6 GHz (Option 044)
	–100 MHz to 43.1 GHz (Option 045)
[MS2840A]	–100 MHz to 3.7 GHz (Option 040)
	–100 MHz to 6.1 GHz (Option 041)
	–100 MHz to 26.6 GHz (Option 044)
	–100 MHz to 44.6 GHz (Option 046)
Resolution	0.01 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
time	
Range	–1000 to 1000 s
Resolution	1 ns
Suffix code	NS, US, MS, S MS is used when omitted.
marker	Marker type
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted	Active marker

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto. This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To move the zone marker center to 100 MHz:

```
MKZF 100MHZ
MKZF?
> 100000000.00
```

MMEM:LOAD:SPUR:TABL

Recall Spurious Emission Parameter

Function

This command queries the saved parameter for the Spurious Emission measurement.

Command

```
MMEM:LOAD:SPUR:TABL integer
```

Parameter

`integer`	Register to read parameter
Range	1 to 8

Example of Use

To query the parameter of Register 3.

```
MMEM:LOAD:SPUR:TABL 3
```

MMEM:REL:BATC

Reloading Parameter List Files

Function

This command applies the changes made to the parameter list files of the specified drive.

Command

```
MMEM:REL:BATC device
```

Parameter

device	Drive name A,B,D,E,F,... D drive is used when omitted.

Details

The parameter list files used for batch measurement are read in batch when the main unit is started up and during application loading. Therefore, even if the files are changed following startup (or following loading), the changes are not applied to the measurement. (Measurement is executed with the parameters before changes were made.)

This command has the effect of applying the changes made to the parameter list files. The parameter list files as they exist at the moment this command is sent are used for subsequent batch measurements.

Place the parameter list files in the following folder on the specified drive.

<device>:\Anritsu Corporation\Signal Analyzer\User Data\Batch

This command supports updates of the parameter list files used for the following commands. To update the parameter list file of another application, first execute system change to that application, and then send the update command.

```
MEAS:BATC:ACP?
MEAS:BATC:OBW?
MEAS:BATC:SEM?
MEAS:BATC:SPUR?
MEAS:BATC:IM?
```

MMEM:STOR:SPUR:TABL

Save Spurious Emission Parameter

Function

This command saves a parameter for the Spurious Emission measurement.

Command

```
MMEM:STOR:SPUR:TABL integer
```

Parameter

`integer`	Register
Range	1 to 8

Example of Use

To save a parameter in Register 3.

```
MMEM:STOR:SPUR:TABL 3
```

MOBW/MOBW?

OBW Method

Function

This command sets the Occupied Bandwidth measurement method.

Command

```
MOBW method
```

Query

```
MOBW?
```

Response

```
method
```

Parameter

`method`	Measurement method
`N`	N% method
`XDB`	X dB method

Example of Use

To set the Occupied Bandwidth measurement method to X dB Down:

```
MOBW XDB
MOBW?
> XDB
```

MSTAT?

Measurement Status Query

Function

This command queries the measurement status.

Query

```
MSTAT?
```

Response

`state`	Measurement status
0	Normal end
2	Level over
9	Not measured

Example of Use

To query the measurement status.

```
MSTAT?
> 0
```

MXRMODE/MXRMODE?

Mixer Mode

Function

This command switches between Internal and External Mixer.

Command

```
MXRMODE mode
```

Query

```
MXRMODE?
```

Response

```
mode
```

Parameter

`mode`	Mixer mode
`EXT`	Selects External Mixer
`INT`	Selects Internal Mixer

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To use external mixer.

```
MXRMODE EXT
MXRMODE?
> EXT
```

MZW/MZW?

Zone Marker Width (Specified by Point)

Function

This command sets the zone marker width using the displayed points.

Command

```
MZW point,marker
```

Query

```
MZW? marker
```

Response

```
point
```

Parameter

point	Zone marker width
Range	1 to 1001, 2001, 5001, 10001, 30001 (MS269xA Only) points
marker	Marker type
1	Marker 1
2	Marker 2
3	Marker 3
4	Marker 4
5	Marker 5
6	Marker 6
7	Marker 7
8	Marker 8
9	Marker 9
10	Marker 10
When omitted:	Active marker

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto. This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To set the zone marker width to 501 points.

```
MZW 501
MZW?
> 501
```

MZWF/MZWF?

Zone Marker Width (by Frequency)

Function

This command sets the zone marker width using frequency.

Command

```
MZWF freq,marker
```

Query

```
MZWF? marker
```

Response

`freq`

Returns a value in Hz units, without a suffix code.

Parameter

`freq`	Zone marker frequency
Range	0.01 Hz to set span width
Resolution	0.01 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
`marker`	Marker type
`1`	Marker 1
`2`	Marker 2
`3`	Marker 3
`4`	Marker 4
`5`	Marker 5
`6`	Marker 6
`7`	Marker 7
`8`	Marker 8
`9`	Marker 9
`10`	Marker 10
When omitted:	Active marker

Details

This command is not available in the following case:

- During the Spurious Emission measurement AND when Displayed Segment Mode is set to Auto.
- During the Spectrum Emission Mask measurement.

Example of Use

To set the zone marker width to 1 MHz.

```
MZWF 1MHZ
MZWF?
> 1000000.00
```

NOISECANCEL/NOISECANCEL?

Noise Cancel

Function

This command sets whether to enable the noise canceling function.

Command

```
NOISECANCEL on_off
```

Query

```
NOISECANCEL?
```

Response

```
on_off
```

Parameter

on_off	Noise canceling function On/Off
ON	Enables the noise canceling function.
OFF	Disables the noise canceling function.

Details

This command is not available in the following cases:

- ACP and Burst Average Power are Off.
- Standard is Off.
- Standard Parameter which can execute the noise canceling function is not set in Load Standard Parameter.
- Any of Span, RBW, Detection, Sweep Time, VBW (when Detection is not set to RMS), and VBW Mode (when VBW is not set to Off and when Detection is not set to RMS) has been changed from Standard Parameter.
- Scale Mode is Linear.

Example of Use

To disable the noise canceling function.

```
NOISECANCEL OFF
NOISECANCEL?
> OFF
```

OBWN/OBWN?

OBW N% Ratio

Function

This command sets the Occupied Frequency Bandwidth (N% method) condition.

Command

```
OBWN ratio
```

Query

```
OBWN?
```

Response

```
ratio
```

No suffix code. Value is returned in % units.

Parameter

`ratio`	N%
Range	0.01 to 99.99%
Resolution	0.01
Suffix Code	None

Example of Use

To set to 12.34%.

```
OBWN 12.34
OBWN?
> 12.34
```

OBWXDB/OBWXDB?

OBW X dB Value

Function

This command sets the Occupied Frequency Bandwidth (X dB) condition.

Command

```
OBWXDB level
```

Query

```
OBWXDB?
```

Response

```
level
```

No suffix code. Value is returned in dB units.

Parameter

`level`	X dB
Range	0.01 to 100.00 dB
Resolution	0.01 dB
Suffix Code	DB dB is used when omitted.

Example of Use

To set X dB condition to 12.34 dB.

```
OBWXDB 12.34
OBWXDB?
> 12.34
```

PCF

Peak to Center Frequency

Function

This command sets the maximum peak point to the center frequency.

Command

```
PCF
```

Example of Use

To set the maximum peak point to the center frequency:

```
PCF
```

POWERMARKER/POWERMARKER?

Power Marker

Function

This command changes the display mode of the marker value.

Command

```
POWERMARKER on_off_com
```

Query

```
POWERMARKER?
```

Response

```
on_off_res
```

Parameter

on_off_com	Marker Result
ON	Integration
OFF	Peak
on_off_res	Marker Result
ON	Integration or Density
OFF	Peak

Details

This command is disabled during the Spectrum Emission Mask measurement.

Example of Use

To set the marker result to Integration.

```
POWERMARKER ON
POWERMARKER?
> ON
```

POW:MW:PRES/POW:MW:PRES?

Micro Wave Preselector Bypass

Function

This command sets the micro wave preselector bypass.

Command

```
POW:MW:PRES switch
```

Query

```
POW:MW:PRES?
```

Response

```
status
```

Parameter

switch	Microwave Preselector Bypass
ON|1	Enables bypassing
OFF|0	Disables bypassing
Default	OFF
status	Microwave Preselector Bypass
1	Enables bypassing
0	Disables bypassing

Details

This query is available when Option 067/167 is installed for MS269xA.
This query is available when Option 007/067/167 is installed for MS2830A.
This query is available when Option 067/167 is installed for MS2840A.

Example of Use

To set micro wave preselector bypass

```
POW:MW:PRES ON
POW:MW:PRES?
> 1
```

PREAMP/PREAMP?

Pre Amp

Function

This command sets Pre Amp On/Off.

Command

```
PREAMP on_off
```

Query

```
PREAMP?
```

Response

```
on_off
```

Parameter

`on_off`	Pre Amp On/Off
`ON`	On
`OFF`	Off

Details

[MS269xA] This command is turned off and thus invalid when Option 008/108 6 GHz Preamplifer is NOT installed.

[MS2830A] This command is turned off and thus invalid when Option 008/108/068/168 Preamplifer is NOT installed.

[MS2840A] This command is turned off and thus invalid when Option 008/108/068/168/069/169 Preamplifer is NOT installed.

This command is not available when Spurious Emission is set to On and when Gate View is set to Off.

Example of Use

To set Pre Amp to On.

```
PREAMP ON
PREAMP?
> ON
```

PRESEL/PRESEL?

Pre-selector Tune

Function

This command sets the pre-selector peaking bias value.

Command

```
PRESEL action
PRESEL bias
```

Query

```
PRESEL?
```

Response

```
bias
```

Parameter

`action`	Action
`AUTO`	Sets peaking bias value automatically.
`PRESET`	Sets peaking bias value to 0.
`bias`	Peaking bias value
Range	–128 to 127
Resolution	1

Details

[MS269xA]

Automatic setting of the peaking bias value cannot be used under the following conditions:

- When using the MS2690A
- When not using the preselector band

[MS2830A], [MS2840A]

Automatic setting of the peaking bias value cannot be used under the following conditions:

- MS2830A-040/041/043:
- MS2840A-040/041:
- When YTF is not used:
- When Frequency Band Mode is Normal and signal frequency is ≤ 6.0 GHz.
- When Frequency Band Mode is Spurious and signal frequency is ≤ 4.0 GHz.

[Common]

The frequency to be switched to the preselector band can be set by using Frequency Band Mode.
Automatic setting of the peaking bias value cannot be used during Spurious measurement and when Displayed Segment Mode is Auto.

Example of Use

To set the peaking bias value automatically.

```
PRESEL PRESET
PRESEL?
> 0
```

PRL

Peak to Reference Level

Function

This command sets the maximum peak point to the reference level.

Command

```
PRL
```

Example of Use

To set the maximum peak point to the reference level.

```
PRL
```

RB/RB?

Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW). When Couple Time/Frequency Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
RB bandwidth
RB AUTO
```

Query

```
RB?
```

Response

```
bandwidth
```

Parameter

[MS269xA]

`bandwidth`	Resolution bandwidth (RBW)
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz, 31.25 MHz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
`AUTO`	Sets the resolution bandwidth automatically, according to the frequency span settings.

[MS2830A], [MS2840A]

RBW Mode Normal

`bandwidth`	Resolution bandwidth (RBW)
Range/Resolution	1 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, 31.25 MHz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
`AUTO`	Sets the resolution bandwidth automatically, according to the frequency span settings.

RBW Mode CISPR

`bandwidth`	Resolution bandwidth (RBW)
Range/Resolution	The settable value is 200 Hz, 9 kHz, 120 kHz, or 1 MHz.
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ

Hz is used when omitted.

AUTO — Sets the resolution bandwidth automatically, according to the frequency span settings.

Details

In MS269xA, MS2830A, MS2840A RBW Mode: Normal

For the MS2830A, MS2840A, RBW of 20 MHz and higher can be used only when MS2830A-005/105/007/009/109, MS2840A-005/105/009/109 is installed.

For RBW 31.25 MHz, it is not a Gauss filter but a flat-top characteristic filter. This command can be used only during 0 span.

RBW 1 Hz, 3 Hz, and 10 Hz cannot be set when Auto Sweep Type Rules is Swept Only. This command cannot be used during 0 span because Auto Sweep Type Rules is fixed to Swept Only.

Not available during Spectrum Emission Mask measurement.

This command is not available during the Spurious Emission measurement.

In MS2830A, MS2840A RBW Mode: CISPR

RBW 1 MHz cannot be set when Detector is Quasi-Peak.

Not available when Measure function is set to On.

Not available when Gate View function is set to On.

Example of Use

To set the RBW to 3 kHz.

```
RB 3KHZ
RB?
> 3000
```

READ:SEM?

Spectrum Emission Mask Read

Function

This command performs the Spectrum Emission Mask measurement and queries the result.

It works in the same way as the two commands are transmitted in the following order:

```
INIT:SEM
FETC:SEM
```

Query

```
READ:SEM? n
```

READ:SPUR?

Spurious Emission Read

Function

This command performs the Spurious Emission measurement and queries the result.
It works in the same way as the two commands are transmitted in the following order:

```
INIT:SPUR
FETC:SPUR?
```

Query

```
READ:SPUR? n
```

RES?

Measure Result Query

Function

This command queries the measurement results of the Measure function.

Query

```
RES?
RES? Mode
```

(in ACP measurement)

Response and Parameter

Both of them vary according to the measurement item. For details, refer to the following pages.

Details

*** is returned when measurement is not performed normally.

Example of Use

To query ACP measurement results.

```
RES?
>1.234,1.234,1.234,1.234,1.234,1.234,1.234,1.234,1.234,1
.234,1.234,1.234,1.234
```

ACP Measurement Query and Response

Query	`RES?`
	`RES? OFFSET`
Response	`lc(,1c),lr1,la1,ur1,ua1,lr2,la2,ur2,ua2,lr3,la3,ur3,ua3`
`lc`	Reference power absolute value for ACP Reference
`lr1`	Offset Channel 1 (Bottom side) power relative value
`la1`	Offset Channel 1 (Bottom side) power absolute value
`ur1`	Offset Channel 1 (Top side) power relative value
`ua1`	Offset Channel 1 (Top side) power absolute value
`lr2`	Offset Channel 2 (Bottom side) power relative value
`la2`	Offset Channel 2 (Bottom side) power absolute value
`ur2`	Offset Channel 2 (Top side) power relative value
`ua2`	Offset Channel 2 (Top side) power absolute value
`lr3`	Offset Channel 3 (Bottom side) power relative value
`la3`	Offset Channel 3 (Bottom side) power absolute value
`ur3`	Offset Channel 3 (Top side) power relative value
`ua3`	Offset Channel 3 (Top side) power absolute value

Two lc values are output when ACP Reference is set to Both Sides of Carriers.

Query	`RES? CARRIER`
Response	`ls,lca,lc1,lc2,lc3,lc4,lc5,lc6,lc7,lc8,lc9,lc10,lc11,lc12`
`ls`	Absolute value of the integral powers on the entire screen
`lca`	Absolute value of the total of all carrier powers
`lc1`	Absolute value of the power of carrier-1
`lc2`	Absolute value of the power of carrier-2
`lc3`	Absolute value of the power of carrier-3
`lc4`	Absolute value of the power of carrier-4
`lc5`	Absolute value of the power of carrier-5
`lc6`	Absolute value of the power of carrier–6
`lc7`	Absolute value of the power of carrier-7
`lc8`	Absolute value of the power of carrier-8
`lc9`	Absolute value of the power of carrier-9
`lc10`	Absolute value of the power of carrier-10
`lc11`	Absolute value of the power of carrier-11

`lc12` Absolute value of the power of carrier-12

The result of the carrier position greater than the carrier number set in ACP Carrier Number is output as ***.

Burst Average Power Measurement Query and Response

Query `RES?`

Response `level`

`level` Average power in burst (absolute value)

Channel Power Measurement Query and Response

Query `RES?`

Response `power,density`

`power` Total power of the band specified using Channel bandwidth (absolute value)

`density` Power density of the band specified using Channel bandwidth (absolute value)

Occupied Bandwidth Measurement Query and Response

Query `RES?`

Response `obw,center,start,stop`

`obw` Occupied bandwidth (in Hz units)

`center` Center Frequency of the occupied bandwidth (in Hz units)

`start` Frequency on the bottom side of the occupied bandwidth (in Hz units)

`stop` Frequency on the top side of the occupied bandwidth (in Hz units)

Spectrum Emission Mask Measurement Query and Response

Query `RES?`

Response

```
total_judge,ref_power,abs_lower_offset_1,
margin_lower_offset_1,freq_lower_offset_1,
lower_offset_1,abs_upper_offset_1,
margin_upper_offset_1,freq_upper_offset_1,
upper_offset_1,abs_lower_offset_2,
margin_lower_offset_2,freq_lower_offset_2,
lower_offset_2,abs_upper_offset_2,
margin_upper_offset_2,freq_upper_offset_2,
upper_offset_2,abs_lower_offset_3,
margin_lower_offset_3,freq_lower_offset_3,
lower_offset_3,abs_upper_offset_3,
margin_upper_offset_3,freq_upper_offset_3,
upper_offset_3,abs_lower_offset_4,
```

```
margin_lower_offset_4,freq_lower_offset_4,
lower_offset_4,abs_upper_offset_4,
margin_upper_offset_4,freq_upper_offset_4,
upper_offset_4,abs_lower_offset_5,
margin_lower_offset_5,freq_lower_offset_5,
lower_offset_5,abs_upper_offset_5,
margin_upper_offset_5,freq_upper_offset_5,
upper_offset_5,abs_lower_offset_6,
margin_lower_offset_6,freq_lower_offset_6,
lower_offset_6,abs_upper_offset_6,
margin_upper_offset_6,freq_upper_offset_6,
upper_offset_6
```

Parameter

`ref_power` Reference absolute power

`abs_lower_offset_n`
Peak value of absolute power of lower Offset-n

`abs_upper_offset_n`
Peak value of absolute power of upper Offset-n

Suffix code None, dBm unit, 0.001 dB resolution
Returns *** when no measurement is performed.

`margin_lower_offset_n`
Minimum value of margin of lower Offset-n

`margin_upper_offset_n`
Minimum value of margin of upper Offset-n

Suffix code None, dB unit, 0.001 dB resolution
Returns *** when no measurement is performed.

`freq_lower_offset_n`
Frequency of peak level of lower Offset-n

`freq_upper_offset_n`
Frequency of peak level of upper Offset-n

Suffix code None, Hz unit, 1 Hz resolution
Returns *** when no measurement is performed.

`total_judge` Total judgment result

`lower_offset_n` Judgment result of lower Offset-n

`upper_offset_n` Judgment result of upper Offset-n
Returns 0 when it is PASS, and returns 1 when it is FAIL.
Returns *** when no measurement is performed.

Spurious Emission measurement Query and Response

Query RES?

Response

(When Spurious Emission Result Type is Worst)

```
judge,spur_1,range_1,freq_1,peak_1,margin_1,limit_1,j
udge_1,spur_2,range,freq_2,peak_2,margin_2,limit_2,ju
dge_2
•••••
spur_20,range_20,freq_20,peak_20,margin_20,limit_20,j
udge_20
```

(When Spurious Emission Result Type is Peaks)

```
judge,spur_1,range_1,freq_1,peak_1,margin_1,limit_1,j
udge_1,spur_2,range_2,freq_2,peak_2,margin_2,limit_2,
judge_2
•••••
spur_n,freq_n,peak_n,margin_n,limit_n,judge_n
```

Parameter

spur_n	Spurious number
range_n	Segment number of the detected spurious
freq_n	Frequency of Spurious Only one value is returned when Marker Result Type is Worst. Values have no suffix code, are in Hz units, and have 0.01 Hz Resolution. *** is returned when an error occurs/no measurement is performed.
peak_n	Absolute power of Spurious Only one value is returned when Marker Result Type is Worst. Values have no suffix code, are in dBm units, and have 0.01 dB Resolution. *** is returned when an error occurs/no measurement is performed.
margin_n	Relative power from the limit line of Spurious Only one value is returned when Marker Result Type is Worst. Values have no suffix code, are in dB units, and have 0.01 dB Resolution. *** is returned when an error occurs/no measurement is performed.

`limit_n`	Power value of the limit line of Spurious Only one value is returned when Marker Result Type is Worst. Values have no suffix code, are in dBm units, and have 0.01 dB Resolution. *** is returned when an error occurs/no measurement is performed.
`judge_n`	Limit line judges the detected spurious as Pass or Fail. 0 is returned when judged as Pass, and 1 is returned when judged as Fail.
`judge`	Pass/Fail judgment to the whole segment 0 is returned when judged as Pass, and 1 is returned when Fail. *** is returned when no measurement is performed.

RESPOWER?

Power Marker Result Query

Function

This command queries the measurement results of the power marker function.

Query

```
RESPOWER? type
```

Response

`pow1,den1` When type is MKR

`pow1` Total power (/Zone) in zone marker range
Returns *** when Marker Mode is set to Fixed or Off. Returns *** when Zone Width Type is Spot.

`den1` Power density (/Hz) in zone marker range
Returns *** when Marker Mode is set to Fixed or Off.
Returns *** when Zone Width Type is Spot.

`pow2,den2` When type is REFMKR

`pow2` Total power(/Zone) in the range of the zone marker of the marker set by Relative to.
Returns *** when the marker set by Relative To is set to Fixed or Off.
Returns *** when Zone Width Type of the marker set by Relative To.
Returns *** when Marker Mode is set to other than Delta.
Returns *** when Zone Width Type is set to Spot.

`den2` Power density(/Hz) in the range of the zone marker of the marker set by Relative To.
Returns *** when Marker Mode of the marker set by Relative To is set to Fixed or Off.
Returns *** when Zone Width Type of the marker set by Relative To is set to Spot.
Returns *** when Marker Mode is set to other than Delta
Returns *** when Zone Width Type is set to Spot.

`pow_rel,den_rel`	When type is DELTA
`pow_rel`	Ratio of the total power of Delta Marker (/Zone) Returns *** when Marker Mode of the marker set by Relative To is set to Fixed or Off. Returns *** when Zone Width Type of the marker set by Relative To is set to Spot. Returns *** when Marker Mode is set to other than Delta Returns *** when Zone Width Type is set to Spot.
`den_rel`	Ratio of the power density of Delta Marker(/Hz) Returns *** when Marker Mode of the marker set by Relative To is set to Fixed or Off. Returns *** when Zone Width Type of the marker set by Relative To is set to Spot. Returns *** when Marker Mode is set to other than Delta Returns *** when Zone Width Type is set to Spot.
`pow1,den1,pow2,den2,pow_rel,den_rel`	When type is ALL

Parameter

`type`	Measurement result type
`MKR`	Power value of marker (absolute value)
`REFMKR`	Power value of the marker set by Relative To (absolute value)
`DELTA`	Power value of Delta Marker (relative value)
`ALL`	Queries all measurement results.

Example of Use

To query all power marker measurement values.

```
RESPOWER? ALL
> 1.234,1.234,2.234,2.234,1.000,1.000
```

RFAT/RFAT?

Set RF Attenuator steps

Function

This command sets the Attenuator steps to 2 dB or 10 dB.

Remarks

This command is provided for backward compatibility. Setting will be ignored.

Command

```
RFAT att
```

Query

```
RFAT?
```

Response

```
att
```

Parameter

`att`	Attenuator step value
`0`	10 dB step
`1`	2 dB Step (Default)

Details

This command is provided for backward compatibility.
A specified value is used for query response.
The actual attenuator step is determined by the main frame's step value and is not variable.

Example of Use

To set the Attenuator step to 2 dB.

```
RFAT 1
RFAT?
> 1
```

RL/RL?

Reference Level

Function

This command sets the reference level.

Command

```
RL level
```

Query

```
RL?
```

Response

`level`

No suffix code; a value is returned that conforms to Scale Unit setting.
When the unit is V, μV is returned. When the unit is W, μW is returned.

Parameter

`level` Reference Level

Range –120 to +50 dBm or equivalent

Resolution 0.01 dB (When unit system in dB is selected for the Scale Unit)
0.01 pV (When unit system in V is selected for the Scale Unit)
0.01 yW (When unit system in W is selected for the Scale Unit)

Suffix code

`DB, DBM, DM`	dBm
`DBMV`	dBmV
`DBUV`	dBμV
`DBUVE`	dBμV (emf)
`DBUVM`	dBμV/m
`V`	V
`MV`	mV
`UV`	μV
`W`	W
`MW`	mW
`UW`	μW
`NW`	nW
`PW`	pW
`FW`	fW

Conforms to Scale Unit setting if omitted.
V is used for Linear Scale.

Details

This is not available when Spurious Emission is On, and Gate View is Off.

Example of Use

To set the reference level to 0 dBm

```
RL 0
RL 0DBM
RL?
> 0.00
```

RLV/RLV?

Reference Level

Function

This command sets the reference level.

Command

```
RLV level
```

Query

```
RLV?
```

Response

`level`

No suffix code. Value is returned according to the scale unit settings.
Units are μV when V, and μW when W.

Parameter

`level` Reference level

Range: Value equivalent to –120 to +50 dBm

Resolution: 0.01 dB (When scale unit settings are dB-system units)
0.01 pV (When scale unit settings are V-system units)
0.01 yW (When scale unit settings are W-system units)

Suffix code:

`DBM, DM`	dBm
`DBMV`	dBmV
`DBUV`	dBμV
`DBUVE`	dBμV (emf)
`DBUVM`	dBμV/m
`V`	V
`MV`	mV
`UV`	μV
`W`	W
`MW`	mW
`UW`	μW
`NW`	nW
`PW`	pW
`FW`	fW

The scale unit settings apply when omitted.
V is used for linear scale.

Details

This command is not available when Spurious Emission is set to On and when Gate View is set to Off.

Example of Use

To set the reference level to 0 dBm.

```
RLV 0
RLV 0DBM
RLV?
> 0.00
```

RMK?

Reference Marker Position Query

Function

This command queries the marker position set by Relative To of the active marker using displayed points from the screen left edge.

Query

```
RMK?
```

Response

```
position
```

Parameter

position		Marker position of the marker set by Relative To (Number of displayed points from the screen left edge)
	Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only) (The upper limit value varies according to the number of trace display points.)
	Resolution	1

Details

Returns *** when Marker Mode is set to other than Delta.
Returns the result in an absolute value even when Marker Mode of the marker set by Relative To is set to Delta.
This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Example of Use

To query the marker position set by Relative To of the active marker.

```
RMK?
> 123
```

RMKF?

Reference Marker Frequency (Time) Query

Function

This command queries the frequency or time of the marker point set by Relative To of the active marker.

Query

```
RMKF?
```

Response

`freq`

Returns a value without a suffix code in Hz units, and with a resolution of 0.01 Hz.

`time`

Returns a value without a suffix code in ns units, and with a resolution of 0.1 ns.

Details

Returns *** when Marker Mode is set to other than Delta.
This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Example of Use

To query the time of the marker point set by Relative To of the active marker (1 s).

```
RMKF?
> 1000000000.0
```

RMKL?

Reference Marker Level Query

Function

This command queries the level data of the marker point set by Relative To of the active marker.

Query

```
RMKL?
```

Response

`level` Level of the marker point set by Relative To
No suffix code, in dB units, resolution: 0.001 dB
(When marker level display units are dB-system units)
No suffix code, in μV units, resolution: 0.01 pV
(When marker level display units are V-system units)
No suffix code, in μW units, resolution: 0.01 yW
(When marker level display units are W-system units)

Details

Returns *** when Marker Mode is set to other than Delta.
This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.

Example of Use

To query the level of the marker point set by Relative To of the active marker.(1.234 dBm).

```
RMKL?
> 1.234
```

ROFFSET/ROFFSET?

Ref. Level Offset Value

Function

This command sets the reference level offset function On/Off and sets the offset value.

Command

```
ROFFSET level
ROFFSET on_off
```

Query

```
ROFFSET?
```

Response

`level`	When the reference level offset function is ON
`OFF`	When the reference level offset function is OFF

Parameter

`level`	Reference level offset value
Range	–100.00 to +100.00 dB
Resolution	0.01 dB
Suffix code	DB
	dB is used even when omitted.
`on_off`	Reference level offset function ON/OFF
`ON`	Sets the reference level offset function to ON.
`OFF`	Sets the reference level offset function to OFF.

Example of Use

To set the reference level offset function to On at +10 dB.

```
ROFFSET 10
ROFFSET 10DB
ROFFSET ON
ROFFSET?
> 10.00
```

ROFFSETMD/ROFFSETMD?

Reference Level Offset Mode

Function

This command sets the reference level offset function On/Off.

Command

```
ROFFSETMD on_off
```

Query

```
ROFFSETMD?
```

Response

```
on_off
```

Parameter

on_off	Reference level offset function On/Off
ON	Sets the reference level offset function to On.
OFF	Sets the reference level offset function to Off.

Example of Use

To set the reference level offset function to On.

```
ROFFSETMD ON
ROFFSETMD?
> ON
```

SCALELINES/SCALELINES?

Log Scale Line

Function

This command sets the number of Y-axis scale segments for log scale.

Command

```
SCALELINES line
```

Query

```
SCALELINES?
```

Response

```
line
```

Parameter

`line`	Number of Y-axis scale segments
`10`	10 segments
`12`	12 segments

Details

This command is available only in log scale mode.

Example of Use

To set the number of Y-axis scale segments at log scale to 12.

```
SCALELINES 12
SCALELINES?
> 12
```

SCALEMODE/SCALEMODE?

Scale Mode

Function

This command switches the scale mode.

Command

```
SCALEMODE mode
```

Query

```
SCALEMODE?
```

Response

```
scale
```

Parameter

`scale`	Scale mode
`LOG`	Log scale
`LIN`	Linear scale

Details

When the scale mode is set to Linear, the Measure function is Off.

Example of Use

To set the scale mode to linear scale.

```
SCALEMODE LIN
SCALEMODE?
> LIN
```

SELECTSTD/SELECTSTD?

Select Standard

Function

This command selects parameter setting type for the Measure function, using a communication standard.

Command

```
SELECTSTD standard
```

Query

```
SELECTSTD?
```

Response

```
standard
```

Parameter

`standard`	Communication standard
`OFF`	Off
`WCDMADN`	3GPP W-CDMA Downlink
`WCDMAUP`	3GPP W-CDMA Uplink
`MWIMAXDL`	Mobile WiMAX (IEEE802.16e) Downlink
`MWIMAXUL`	Mobile WiMAX (IEEE802.16e) Uplink
`3GLTE_DL`	3GPP LTE Downlink
`3GLTE_UL`	3GPP LTE Uplink
`ETC_DSRC`	ARIB STD-T75
`TDSCDMA`	3GPP TDD 1.28Mcps Option
`XGPHS`	XG-PHS
`CDMA2KFWD`	3GPP2 CDMA2000 Forward Link
`EVDOFWD`	3GPP2 EV-DO Forward Link
`3GLTE_TDD_DL`	3GPP LTE TDD Downlink
`3GLTE_TDD_UL`	3GPP LTE TDD Uplink
`ISDBTMM`	ISDB-Tmm
`WLAN`	WLAN (IEEE802.11)
`ISDBT`	ISDB-T
`LRWPANS`	LR-WPANs (IEEE802.15.4)
`APCO_P25`	APCO P25
`MICROLINKETSI`	Microlink ETSI
`NXDN`	NXDN
`ISDBTSB`	ISDB-T_{SB}

Example of Use

To select parameters conforming to the 3GPP W-CDMA Uplink.

```
SELECTSTD WCDMAUP
SELECTSTD?
> WCDMAUP
```

SEM/SEM?

Measure Spectrum Emission Mask

Function

This command executes Spectrum Emission Mask measurement.

Command

```
SEM switch_com
```

Query

```
SEM?
```

Response

```
switch_res
```

Parameter

switch_com	SEM measurement On/Off
ON|1	Sets SEM measurement to On.
OFF|0	Sets SEM measurement to Off.
switch_res	SEM measurement On/Off
1	SEM measurement is On.
0	SEM measurement is Off.

Example of Use

To set SEM measurement to On.

```
SEM ON
SEM?
> 1
```

SEM:ATT/SEM:ATT?

Spectrum Emission Mask Attenuator

Function

This command sets Attenuator in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:ATT rel_ampl
SEM:ATT AUTO
```

Query

```
SEM:ATT?
```

Response

`rel_ampl`

No suffix code. Value is returned in dB units.

Parameter

`rel_ampl`	Attenuator value in measuring the reference power
Range	0 to 60 dB
Resolution	2 dB step
Suffix code	DB dB is used when omitted.
`AUTO`	Sets attenuator value automatically.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the attenuator in measuring the reference power to 10 dB.

```
SEM:ATT 10DB
SEM:ATT?
> 10.00
```

SEM:BAND/SEM:BAND?

Spectrum Emission Mask Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW) of the reference channel for Spectrum Emission Mask measurement.

Command

```
SEM:BAND bandwidth
```

Query

```
SEM:BAND?
```

Response

```
bandwidth
```

Returns a value of Hz units, without a suffix code.

Parameter

`bandwidth`	Resolution bandwidth (RBW)
[MS269xA]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz
[MS2830A], [MS2840A]	
Range/Resolution	30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz
[Common]	
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Details

For the MS2830A, MS2840A, RBW of 20 MHz and higher can be used only when MS2830A-005/105/007/009/109, MS2840A-005/105/009/109 is installed.

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the resolution bandwidth of the reference channel to 3 kHz.

```
SEM:BAND 3KHZ
SEM:BAND?
> 3000
```

SEM:BAND:AUTO/SEM:BAND:AUTO?

Spectrum Emission Mask Resolution Bandwidth Auto/Manual

Function

This command sets the resolution bandwidth (RBW) of the reference channel for Spectrum Emission Mask measurement.

Command

```
SEM:BAND:AUTO switch_com
```

Query

```
SEM:BAND:AUTO?
```

Response

```
switch_res
```

Parameter

`switch_com`	Automatic setting function of resolution bandwidth (RBW)
`ON|1`	Sets the automatic setting function to On.
`OFF|0`	Sets the automatic setting function to Off.
`switch_res`	Automatic setting function of resolution bandwidth (RBW)
`1`	Automatic setting function is On.
`0`	Automatic setting function is Off.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the resolution bandwidth of the reference channel automatically.

```
SEM:BAND:AUTO ON
SEM:BAND:AUTO?
> 1
```

SEM:BAND:CHAN/SEM:BAND:CHAN?

Spectrum Emission Mask Integrate Bandwidth

Function

This command sets the measurement bandwidth of the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:BAND:CHAN bandwidth
```

Query

```
SEM:BAND:CHAN?
```

Response

`bandwidth`

No suffix code. Value is returned in Hz units.

Parameter

`bandwidth`	Measurement bandwidth of reference power
Range	1000 to 200000000 Hz
Resolution	1 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Example of Use

To set the measurement bandwidth of the reference power to 5 MHz.

```
SEM:BAND:CHAN 5MHZ
SEM:BAND:CHAN?
> 5000000
```

SEM:BAND:VID/SEM:BAND:VID?

Spectrum Emission Mask Video Bandwidth

Function

This command sets the video bandwidth (VBW) in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:BAND:VID bandwidth
SEM:BAND:VID OFF
```

Query

```
SEM:BAND:VID?
```

Response

`bandwidth`

Returns a value of Hz units, without a suffix code.
When set to Off, returns OFF.

Parameter

`bandwidth`		Video bandwidth (VBW)
	Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
	`OFF`	Sets VBW to Off.

Details

This command is fixed to Auto and cannot be set if the detection mode of the measurement target is set to the following.

- RMS

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the video bandwidth of the reference power to 3 kHz.

```
SEM:BAND:VID 3KHZ
SEM:BAND:VID?
> 3000
```

SEM:BAND:VID:AUTO/SEM:BAND:VID:AUTO?

Spectrum Emission Mask Video Bandwidth Auto/Manual

Function

This command sets the video bandwidth (VBW) in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:BAND:VID:AUTO switch_com
```

Query

```
SEM:BAND:VID:AUTO?
```

Response

```
switch_res
```

Parameter

switch_com	Automatic setting
ON|1	Enables the automatic setting function.
OFF|0	Disables the automatic setting function.
switch_res	Automatic
1	Enables the automatic setting function.
0	Disables the automatic setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the video bandwidth in measuring the reference power automatically.

```
SEM:BAND:VID:AUTO ON
SEM:BAND:VID:AUTO?
> 1
```

SEM:BAND:VID:MODE/SEM:BAND:VID:MODE?

Spectrum Emission Mask Video Bandwidth Mode

Function

This command sets the processing method for the video bandwidth(VBW) in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:BAND:VID:MODE method
```

Query

```
SEM:BAND:VID:MODE?
```

Response

```
method
```

Parameter

`method`	Processing method for VBW
`VIDeo`	Normal VBW
`POWer`	Power VBW

Example of Use

To set the processing method for the video bandwidth in measuring the reference power to Power VBW.

```
SEM:BAND:VID:MODE POW
SEM:BAND:VID:MODE?
> POW
```

SEM:CARR/SEM:CARR?

Spectrum Emission Mask Reference Power

Function

This command sets the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:CARR ampl
```

Query

```
SEM:CARR?
```

Response

`ampl`

Returns a value of dBm units, without a suffix code.

Parameter

`ampl`		Reference power
	Range	–200 to 200 dBm
	Resolution	0.01 dB
	Suffix code	DBM,DM dBm is used when omitted.

Details

This command is not available when Reference Mode is set to the following:

- Channel
- Peak

Example of Use

To set the reference power to –10 dBm.

```
SEM:CARR -10
SEM:CARR?
> -10.00
```

SEM:DET/SEM:DET?

Spectrum Emission Mask Detection Mode

Function

This command selects the detection type of the waveform pattern in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:DET mode
```

Query

```
SEM:DET?
```

Response

```
mode
```

Parameter

`mode`	Detection type
`NORM`	Detects positive and negative peaks simultaneously.
`POS`	Positive peak detection
`NEG`	Negative peak detection
`SAMP`	Sampling detection
`RMS|AVER`	RMS detection

Example of Use

To set the detection type in measuring the reference power to positive peak detection.

```
SEM:DET POS
SEM:DET?
> POS
```

SEM:FILT:ALPH/SEM:FILT:ALPH?

Spectrum Emission Mask Reference Roll-off Factor

Function

This command sets the rolloff ratio of the filter in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:FILT:ALPH real
```

Query

```
SEM:FILT:ALPH?
```

Response

```
real
```

Parameter

`real`		Rolloff ratio of the filter
	Range	0.01 to 1.00
	Resolution	0.01
	Suffix code	None

Details

This command is not available when Reference Mode is set to the following:

- Peak
- Fix

This command is not available when Filter Type is set to the following:

- Rect

Example of Use

To set the rolloff ratio of the filter in measuring the reference power to 0.22.

```
SEM:FILT:ALPH 0.22
SEM:FILT:ALPH?
> 0.22
```

SEM:FILT:TYPE/SEM:FILT:TYPE?

Spectrum Emission Mask Reference Filter Type

Function

This command selects the filter type in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:FILT:TYPE type
```

Query

```
SEM:FILT:TYPE?
```

Response

```
type
```

Parameter

`type`	Filter type
`RECT`	Rectangle Filter
`NYQ`	Nyquist Filter
`RNYQ`	Root Nyquist Filter

Details

This command is not available when Reference Mode is set to the following:

- Peak
- Fix

Example of Use

To set the filter type in measuring the reference power to Root Nyquist Filter.

```
SEM:FILT:TYPE RNYQ
SEM:FILT:TYPE?
> RNYQ
```

SEM:LOG:OFFS:LIST:TEST/SEM:LOG:OFFS:LIST:TEST?

Spectrum Emission Mask Fail Logic

Function

This command selects the judgment method of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:LOG:OFFS:LIST:TEST
logic_1[,logic_2[,logic_3[,logic_4[,logic_5[,logic_6[,lo
gic_7[,logic_8[,logic_9[,logic_10[,logic_11[,logic_12]]]
]]]]]]]]
```

Query

```
SEM:LOG:OFFS:LIST:TEST?
```

Response

```
logic_1,logic_2,logic_3,logic_4,logic_5,logic_6,logic_7,
logic_8,logic_9,logic_10,logic_11,logic_12
```

Parameter

`logic_n`	Judgment method for offset n
`OFF`	Not judge.
`ABS`	ABS1 Judges using the absolute level upper limit 1.
`REL`	REL Judges using the relative level upper limit.
`AND`	ABS1 and REL Judges “AND” using the absolute level upper limit 1 and relative level upper limit.
`OR`	ABS1 or REL Judges “OR” using the absolute level upper limit 1 and relative level upper limit.
`AAND`	(ABS1 and REL) and ABS2 Judges “AND” using the absolute level upper limit 1 and relative level upper limit. Judges “AND” using the result and the absolute level upper limit 2.
`AOR`	(ABS1 or REL) and ABS2 Judges “OR” using the absolute level upper limit 1 and relative level upper limit. Judges “AND” using the result and the absolute level upper limit 2.

AND2	ABS1 and ABS2 Judges “AND” using the absolute level upper limit 1 and the absolute level upper limit 2.

Example of Use

To judge using the absolute level upper limit 1.

```
SEM:LOG:OFFS:LIST:TEST
ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS
SEM:LOG:OFFS:LIST:TEST?
> ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS,ABS
```

SEM:OFFS:LIST:ATT/SEM:OFFS:LIST:ATT?

Spectrum Emission Mask Attenuator

Function

This command sets the Attenuator value in measuring the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:ATT
rel_ampl_1[,rel_ampl_2[,rel_ampl_3[,rel_ampl_4[,rel_ampl
_5[,rel_ampl_6[,rel_ampl_7[,rel_ampl_8[,rel_ampl_9[,rel_
ampl_10[,rel_ampl_11[,rel_ampl_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:ATT?
```

Response

```
rel_ampl_1,rel_ampl_2,rel_ampl_3,rel_ampl_4,rel_ampl_5,r
el_ampl_6,rel_ampl_7,rel_ampl_8,rel_ampl_9,rel_ampl_10,r
el_ampl_11,rel_ampl_12
```

Returns a value of dB units, without a suffix code.

Parameter

`rel_ampl_n`		Attenuator value in measuring Offset-n measurement
	Range	0 to 60 dB
	Resolution	2 dB step
	Suffix code	DB dB is used when omitted.
	`AUTO`	Sets the attenuator value automatically.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the attenuator value of the offset.

```
SEM:OFFS:LIST:ATT
0DB,0DB,0DB,0DB,0DB,0DB,0DB,0DB,0DB,0DB,0DB,0DB
SEM:OFFS:LIST:ATT?
> 0,0,0,0,0,0,0,0,0,0,0,0
```

SEM:OFFS:LIST:BAND/SEM:OFFS:LIST:BAND?

Spectrum Emission Mask Offset Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW) of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:BAND
bandwidth_1[,bandwidth_2[,bandwidth_3[,bandwidth_4[,band
width_5[,bandwidth_6[,bandwidth_7[,bandwidth_8[,bandwidt
h_9[,bandwidth_10[,bandwidth_11[,bandwidth_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:BAND?
```

Response

```
bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidt
h_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,band
width_10,bandwidth_11,bandwidth_12
```

Returns a value of Hz units, without a suffix code.

Parameter

`bandwidth_n` Resolution bandwidth (RBW) of Offset-n

[MS269xA]

Range/Resolution 30 Hz to 3 MHz (1-3 sequence),
50 kHz, 5 MHz, 10 MHz, 20 MHz

[MS2830A], [MS2840A]

Range/Resolution 30 Hz to 3 MHz (1-3 sequence),
500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz

[Common]

Suffix code HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
Hz is used when omitted.

Details

For the MS2830A, MS2840A, RBW of 20 MHz and higher can be used only when MS2830A-005/105/007/009/109, MS2840A-005/105/009/109 is installed.

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the resolution bandwidth of the offset.

```
SEM:OFFS:LIST:BAND
30KHZ,30KHZ,30KHZ,1MHZ,1MHZ,1MHZ,30KHZ,30KHZ,30KHZ,1MHZ,
1MHZ,1MHZ
SEM:OFFS:LIST:BAND?
>
30000,30000,30000,1000000,1000000,1000000,30000,30000,30
000,1000000,1000000,1000000
```

SEM:OFFS:LIST:BAND:AUTO/SEM:OFFS:LIST:BAND:AUTO?

Spectrum Emission Mask Resolution Bandwidth Auto/Manual

Function

This command sets the resolution bandwidth (RBW) of the offset for Spectrum Emission Mask measurement automatically.

Command

```
SEM:OFFS:LIST:BAND:AUTO
switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,
switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,
switch_9_com[,switch_10_com[,switch_11_com[,switch_12_co
m]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:BAND:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res
```

Parameter

switch_n_com	Automatic setting function of RBW in measuring Offset-n
ON|1	Sets the automatic setting function to On.
OFF|0	Sets the automatic setting function to Off.
switch_n_res	Automatic setting function of RBW in measuring Offset-n
1	Automatic setting function is On.
0	Automatic setting function is Off.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual(Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the resolution bandwidth of the offset automatically.

```
SEM:OFFS:LIST:BAND:AUTO
ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON
SEM:OFFS:LIST:BAND:AUTO?
> 1,1,1,1,1,1,1,1,1,1,1,1
```

SEM:OFFS:LIST:BAND:INT/SEM:OFFS:LIST:BAND:INT?

Spectrum Emission Mask Offset Integrate Bandwidth

Function

This command sets Integrate BW of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:BAND:INT
bandwidth_1[,bandwidth_2[,bandwidth_3[,bandwidth_4[,band
width_5[,bandwidth_6[,bandwidth_7[,bandwidth_8[,bandwidt
h_9[,bandwidth_10[,bandwidth_11[,bandwidth_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:BAND:INT?
```

Response

```
bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidt
h_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,band
width_10,bandwidth_11,bandwidth_12
```

Returns a value of Hz units, without a suffix code.

Parameter

`bandwidth_n`	Integrate BW of Offset-n
Range	30 Hz to 20 MHz
Resolution	Integrate BW is as below. 1 Hz (30 Hz to 1 kHz) 10 Hz (1 to 10 kHz) 100 Hz (10 to 100 kHz) 1 kHz (100 kHz to 1 MHz) 10 kHz (1 to 20 MHz)
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Details

The setting range of this function is limited depending on the setting of RBW of the target offset. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual(Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.
This command is not available when Detection of the target offset is set to the following:

- Pos&Neg
- Positive
- Negative
- Sample

Example of Use

To set Integrate BW of the offset.

```
SEM:OFFS:LIST:BAND:INT
3KHZ,3KHZ,3KHZ,10KHZ,10KHZ,10KHZ,3KHZ,3KHZ,3KHZ,10KHZ,10
KHZ,10KHZ
SEM:OFFS:LIST:BAND:INT?
>
3000,3000,3000,10000,10000,10000,3000,3000,3000,10000,10
000,10000
```

SEM:OFFS:LIST:BAND:INT:AUTO/SEM:OFFS:LIST:BAND:INT:AUTO?

Spectrum Emission Mask Offset Integrate Bandwidth Auto/Manual

Function

This command sets Integrate BW of the offset for Spectrum Emission Mask measurement automatically.

Command

```
SEM:OFFS:LIST:BAND:INT:AUTO
switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,
switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,
switch_9_com[,switch_10_com[,switch_11_com[,switch_12_co
m]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:BAND:INT:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res
```

Parameter

`switch_n_com`	Automatic setting of Integrate BW of Offset-n
`ON|1`	Enables the automatic setting function.
`OFF|0`	Disables the automatic setting function.
`switch_n_res`	Integrate BW of Offset-n
`1`	Enables the automatic setting function.
`0`	Disables the automatic setting function.

Details

The setting range of this function is limited depending on the setting of RBW of the target offset. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual(Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

This command is not available when Detection of the target offset is set to the following:

- Pos&Neg
- Positive
- Negative
- Sample

Example of Use

To set Integrate BW of the offset automatically.

```
SEM:OFFS:LIST:BAND:INT:AUTO
ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON
SEM:OFFS:LIST:BAND:INT:AUTO?
> 1,1,1,1,1,1,1,1,1,1,1,1
```

SEM:OFFS:LIST:BAND:VID/SEM:OFFS:LIST:BAND:VID?

Spectrum Emission Mask Video Bandwidth

Function

This command sets the video bandwidth (VBW) of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:BAND:VID
bandwidth_1[,bandwidth_2[,bandwidth_3[,bandwidth_4[,band
width_5[,bandwidth_6[,bandwidth_7[,bandwidth_8[,bandwidt
h_9[,bandwidth_10[,bandwidth_11[,bandwidth_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:BAND:VID?
```

Response

```
bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidt
h_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,band
width_10,bandwidth_11,bandwidth_12
```

Returns a value of Hz units, without a suffix code.
Returns OFF when set to Off.

Parameter

`bandwidth_n`	Video bandwidth of Offset-n (VBW)
Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
	Hz is used when omitted.
`OFF`	Sets VBW to Off.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the video bandwidth of the offset.

```
SEM:OFFS:LIST:BAND:VID
3KHZ,3KHZ,3KHZ,10KHZ,10KHZ,10KHZ,3KHZ,3KHZ,3KHZ,10KHZ,10
KHZ,10KHZ
SEM:OFFS:LIST:BAND:VID?
>
3000,3000,3000,10000,10000,10000,3000,3000,3000,10000,10
000,10000
```

SEM:OFFS:LIST:BAND:VID:AUTO/SEM:OFFS:LIST:BAND:VID:AUTO?

Spectrum Emission Mask Offset Video Bandwidth

Function

This command sets the video bandwidth (VBW) of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:BAND:VID:AUTO
switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,
switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,
switch_9_com[,switch_10_com[,switch_11_com[,switch_12_co
m]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:BAND:VID:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res
```

Parameter

switch_n_com	Automatic On/Off of Offset-n
ON|1	Enables the automatic setting function.
OFF|0	Disables the automatic setting function.
switch_n_res	Automatic On/Off of Offset-n
1	Enables the automatic setting function.
0	Disables the automatic setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual(Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the video bandwidth of the offset automatically.

```
SEM:OFFS:LIST:BAND:VID:AUTO
ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON,ON
SEM:OFFS:LIST:BAND:VID:AUTO?
> 1,1,1,1,1,1,1,1,1,1,1,1
```


SEM:OFFS:LIST:BAND:VID:MODE/SEM:OFFS:LIST:BAND:VID:MODE?

Spectrum Emission Mask Offset Video Bandwidth Mode

Function

This command sets the processing method for the video bandwidth(VBW) of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:BAND:VID:MODE
method_1[,method_2[,method_3[,method_4[,method_5[,method
_6[,method_7[,method_8[,method_9[,method_10[,method_11[,
method_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:BAND:VID:MODE?
```

Response

```
method_1,method_2,method_3,method_4,method_5,method_6,me
thod_7,method_8,method_9,method_10,method_11,method_12
```

Parameter

`method_n`	Processing method for VBW of Offset-n
`VID`	Normal VBW
`POW`	Power VBW

Example of Use

To set the method of processing the video bandwidth of the offset to Normal VBW.

```
SEM:OFFS:LIST:BAND:VID:MODE
VID,VID,VID,VID,VID,VID,VID,VID,VID,VID,VID,VID
SEM:OFFS:LIST:BAND:VID:MODE?
> VID,VID,VID,VID,VID,VID,VID,VID,VID,VID,VID,VID
```

SEM:OFFS:LIST:DET/SEM:OFFS:LIST:DET?

Spectrum Emission Mask Offset Detection Mode

Function

This command selects the detection type of the waveform pattern of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:DET
mode_1[,mode_2[,mode_3[,mode_4[,mode_5[,mode_6[,mode_7[,
mode_8[,mode_9[,mode_10[,mode_11[,mode_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:DET?
```

Response

```
mode_1,mode_2,mode_3,mode_4,mode_5,mode_6,mode_7,mode_8,
mode_9,mode_10,mode_11,mode_12
```

Parameter

mode_n	Selection of detection type of Offset-n
NORM	Detects positive and negative peaks simultaneously.
POS	Positive peak detection
NEG	Negative peak detection
SAMP	Sampling detection
RMS|AVER	RMS detection

Example of Use

To set the detection type of the offset to POS (positive peak).

```
SEM:OFFS:LIST:DET
POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS
SEM:OFFS:LIST:DET?
> POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS,POS
```

SEM:OFFS:LIST:FREQ:STAR/SEM:OFFS:LIST:FREQ:STAR?

Spectrum Emission Mask Offset Start Frequency

Function

This command sets the start frequency of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:FREQ:STAR
freq_1[,freq_2[,freq_3[,freq_4[,freq_5[,freq_6[,freq_7[,
freq_8[,freq_9[,freq_10[,freq_11[,freq_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:FREQ:STAR?
```

Response

```
freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,
freq_9,freq_10,freq_11,freq_12
```

Returns a value of Hz units, without a suffix code.

Parameter

freq_n	Start frequency of Offset-n
Range	0 to 499999700 Hz
Resolution	2 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Example of Use

To set the start frequency of the offset to 4 MHz.

```
SEM:OFFS:LIST:FREQ:STAR
4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4MHZ,4
MHZ
SEM:OFFS:LIST:FREQ:STAR?
>
4000000,4000000,4000000,4000000,4000000,4000000,4000000,
4000000,4000000,4000000,4000000,4000000
```

SEM:OFFS:LIST:FREQ:STOP/SEM:OFFS:LIST:FREQ:STOP?

Spectrum Emission Mask Offset Stop Frequency

Function

This command sets the stop frequency of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:FREQ:STOP
freq_1[,freq_2[,freq_3[,freq_4[,freq_5[,freq_6[,freq_7[,
freq_8[,freq_9[,freq_10[,freq_11[,freq_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:FREQ:STOP?
```

Response

```
freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,
freq_9,freq_10,freq_11,freq_12
```

No suffix code. Value is returned in Hz units.

Parameter

`freq_n`	Stop frequency of Offset-n
Range	300 to 500000000 Hz
Resolution	2 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.

Example of Use

To set the stop frequency of the offset.

```
SEM:OFFS:LIST:FREQ:STOP
6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6MHZ,6
MHZ
SEM:OFFS:LIST:FREQ:STOP?
>
6000000,6000000,6000000,6000000,6000000,6000000,6000000,
6000000,6000000,6000000,6000000,6000000
```

SEM:OFFS:LIST:RLEV/SEM:OFFS:LIST:RLEV?

Spectrum Emission Mask Offset Reference Level

Function

This command sets the reference level of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:RLEV
ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,ampl_7[,
ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:RLEV?
```

Response

```
rel_ampl_1,rel_ampl_2,rel_ampl_3,rel_ampl_4,rel_ampl_5,r
el_ampl_6,rel_ampl_7,rel_ampl_8,rel_ampl_9,rel_ampl_10,r
el_ampl_11,rel_ampl_12
```

Returns a value of dBm units, without a suffix code.

Parameter

ampl_n		Reference level of Offset-n
	Range	Value equivalent to –120 to +50 dBm
	Resolution	0.01 dB
	Suffix code	DBM,DM dBm is used when omitted.

Example of Use

To set the reference level of the offset to 0 dBm.

```
SEM:OFFS:LIST:RLEV 0,0,0,0,0,0,0,0,0,0,0,0
SEM:OFFS:LIST:RLEV?
>
0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0
.00
```

SEM:OFFS:LIST:RLEV:AUTO/SEM:OFFS:LIST:RLEV:AUTO?

Spectrum Emission Mask Offset Reference Level Auto/Manual

Function

This command sets the reference level of the offset for Spectrum Emission Mask measurement automatically.

Command

```
SEM:OFFS:LIST:RLEV:AUTO
switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,
switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,
switch_9_com[,switch_10_com[,switch_11_com[,switch_12_co
m]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:RLEV:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res
```

Parameter

`switch_n_com`	Automatic setting of Reference Level of Offset-n
`ON|1`	Enables the automatic setting function.
`OFF|0`	Disables the automatic setting function.
`switch_n_res`	Automatic setting of Reference Level of Offset-n
`1`	Automatic setting function is enabled.
`0`	Automatic setting function is disabled.

Details

The same value as the reference level in measuring the reference power is used in the automatic setting.

Example of Use

To set the reference level of the offset automatically.

```
SEM:OFFS:LIST:RLEV:AUTO
ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF,ON,ON
SEM:OFFS:LIST:RLEV:AUTO?
> 1,1,0,0,1,1,1,1,0,0,1,1
```

SEM:OFFS:LIST:STAR:ABS/SEM:OFFS:LIST:STAR:ABS?

Spectrum Emission Mask Offset Start Frequency Absolute Limit Level

Function

This command sets the absolute level upper limit of the offset start frequency for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:STAR:ABS
integer,ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,
ampl_7[,ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]
]]]]
```

Query

```
SEM:OFFS:LIST:STAR:ABS? integer
```

Response

```
ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,
ampl_9,ampl_10,ampl_11,ampl_12
```

Returns a value of dBm units, without a suffix code.

Parameter

`integer`	Absolute level
`1`	Absolute level 1
`2`	Absolute level 2
`ampl_n`	Absolute level upper limit of Offset-n start frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	DBM,DM dBm is set when omitted.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To set the absolute level upper limit 2 of the start frequency of the offset.

```
SEM:OFFS:LIST:STAR:ABS 2,0,-2,-2,0,0,-10,0,-2,-2,0,0,-10
SEM:OFFS:LIST:STAR:ABS? 2
>
0.00,-2.00,-2.00,0.00,0.00,-10.00,0.00,-2.00,-2.00,0.00,
0.00,-10.00
```

SEM:OFFS:LIST:STAR:RCAR/SEM:OFFS:LIST:STAR:RCAR?

Spectrum Emission Mask Offset Start Frequency Limit Level

Function

This command sets the relative level limit of the offset start frequency for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:STAR:RCAR
ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,ampl_7[,
ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:STAR:RCAR?
```

Response

```
ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,
ampl_9,ampl_10,ampl_11,ampl_12
```

Returns a value of dBm units, without a suffix code.

Parameter

`ampl_n`		Relative level limit of Offset-n start frequency
	Range	–200 to +50 dBm
	Resolution	0.01 dB
	Suffix code	DB dB is set when omitted.

Example of Use

To set the relative level limit of the start frequency of the offset.

```
SEM:OFFS:LIST:STAR:RCAR 0,0,0,0,0,0,0,0,0,0,0,0
SEM:OFFS:LIST:STAR:RCAR?
>
0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0
.00
```

SEM:OFFS:LIST:STAT/SEM:OFFS:LIST:STAT?

Spectrum Emission Mask Offset On/Off

Function

This command sets the offset for Spectrum Emission Mask measurement On/Off.

Command

```
SEM:OFFS:LIST:STAT
switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,
switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,
switch_9_com[,switch_10_com[,switch_11_com[,switch_12_co
m]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:STAT?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res
```

Parameter

switch_n_com	Offset-n On/Off
ON|1	On
Off|0	Off
switch_n_res	Offset-n On/Off
1	Offset-n is On.
0	Offset-n is Off.

Example of Use

To set the offset.

```
SEM:OFFS:LIST:STAT
ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF
SEM:OFFS:LIST:STAT?
> 1,1,1,1,0,0,1,1,1,1,0,0
```

SEM:OFFS:LIST:STOP:ABS/SEM:OFFS:LIST:STOP:ABS?

Spectrum Emission Mask Offset Stop Frequency Absolute Limit Level

Function

This command sets the absolute level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:STOP:ABS
integer,ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,
ampl_7[,ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]
]]]]
```

Query

```
SEM:OFFS:LIST:STOP:ABS? integer
```

Response

```
ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,
ampl_9,ampl_10,ampl_11,ampl_12
```

Returns a value of dBm units, without a suffix code.

Parameter

`integer`	Absolute level
`1`	Absolute level 1
`2`	Absolute level 2
`ampl_n`	Absolute level upper limit of Offset-n stop frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	DBM,DM dBm is used when omitted.

Details

ABSolute1 sets the absolute level upper limit 1, and ABSolute2 sets the absolute level upper limit 2.

Example of Use

To set the absolute level upper limit 2 of the stop frequency of the offset.

```
SEM:OFFS:LIST:STOP:ABS
2,-10,-10,-10,-5,-5,-10,-10,-10,-10,-5,-5,-10
SEM:OFFS:LIST:STOP:ABS? 2
>
-10.00,-10.00,-10.00,-5.00,-5.00,-10.00,-10.00,-10.00,-1
0.00,-5.00,-5.00,-10.00
```

SEM:OFFS:LIST:STOP:RCAR/SEM:OFFS:LIST:STOP:RCAR?

Spectrum Emission Mask Offset Stop Frequency Limit Level

Function

This command sets the relative level upper limit of the offset stop frequency for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:STOP:RCAR
ampl_1[,ampl_2[,ampl_3[,ampl_4[,ampl_5[,ampl_6[,ampl_7[,
ampl_8[,ampl_9[,ampl_10[,ampl_11[,ampl_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:STOP:RCAR?
```

Response

```
ampl_1,ampl_2,ampl_3,ampl_4,ampl_5,ampl_6,ampl_7,ampl_8,
ampl_9,ampl_10,ampl_11,ampl_12
```

Returns a value of dB units, without a suffix code.

Parameter

ampl_n	Relative level upper limit of Offset-n stop frequency
Range	–200 to +50 dBm
Resolution	0.01 dB
Suffix code	DB dB is used when omitted.

Example of Use

To set the absolute level upper limit 2 of the stop frequency of the offset.

```
SEM:OFFS:LIST:STOP:RCAR
-30,-30,-30,-30,-30,-30,-30,-30,-30,-30,-30,-30
SEM:OFFS:LIST:STOP:RCAR?
>
-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,-30.00,
-30.00,-30.00,-30.00,-30.00
```

SEM:OFFS:LIST:SWE:POIN/SEM:OFFS:LIST:SWE:POIN?

Spectrum Emission Mask Offset Trace Point

Function

This command sets the number of the frequency points of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:SWE:POIN
integer_1[,integer_2[,integer_3[,integer_4[,integer_5[,i
nteger_6[,integer_7[,integer_8[,integer_9[,integer_10[,i
nteger_11[,integer_12]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:SWE:POIN?
```

Response

```
integer_1,integer_2,integer_3,integer_4,integer_5,intege
r_6,integer_7,integer_8,integer_9,integer_10,integer_11,
integer_12
```

Parameter

`integer_n`		Number of frequency points of Offset-n
	Range	11 to 30001
	Resolution	Any of the following values can be selected: 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)
	Suffix code	None

Example of Use

To set the frequency point of the offset.

```
SEM:OFFS:LIST:SWE:POIN
2001,2001,2001,2001,2001,2001,2001,2001,2001,2001,2001,2
001
SEM:OFFS:LIST:SWE:POIN?
>
2001,2001,2001,2001,2001,2001,2001,2001,2001,2001,2001,2
001
```

SEM:OFFS:LIST:SWE:TIME/SEM:OFFS:LIST:SWE:TIME?

Spectrum Emission Mask Offset Sweep Time

Function

This command sets the sweep time of the offset for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:LIST:SWE:TIME
time_1[,time_2[,time_3[,time_4[,time_5[,time_6[,time_7[,
time_8[,time_9[,time_10[,time_11[,time_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:SWE:TIME?
```

Response

```
time_1,time_2,time_3,time_4,time_5,time_6,time_7,time_8,
time_9,time_10,time_11,time_12
```

Returns a value of s units, without a suffix code.

Parameter

time_n	Sweep time of Offset-n	
Range		
[MS269xA]	2 ms to 1000 s	
[MS2830A]	1 ms to 1000 s	
[MS2840A]	1 ms to 1000 s	
Resolution	1 ms	(time_n ≤ 1 s)
	0.1 s	(1 s < time_n < 10 s)
	1 s	(10 s ≤ time_n)
Suffix code	NS,US,MS,S	
	S is used when omitted.	

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the sweep time of the offset.

```
SEM:OFFS:LIST:SWE:TIME
40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS,40MS
SEM:OFFS:LIST:SWE:TIME?
>
0.040000,0.040000,0.040000,0.040000,0.040000,0.040000,0.040000,0.040000,0.040000,0.040000,0.040000,0.040000
```

SEM:OFFS:LIST:SWE:TIME:AUTO/SEM:OFFS:LIST:SWE:TIME:AUTO?

Spectrum Emission Mask Offset Sweep Time Auto/Manual

Function

This command sets the sweep time of the offset for Spectrum Emission Mask measurement automatically.

Command

```
SEM:OFFS:LIST:SWE:TIME:AUTO
switch_1_com[,switch_2_com[,switch_3_com[,switch_4_com[,
switch_5_com[,switch_6_com[,switch_7_com[,switch_8_com[,
switch_9_com[,switch_10_com[,switch_11_com[,switch_12_co
m]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:SWE:TIME:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res
```

Parameter

switch_n_com	Automatic setting of the sweep time of Offset-n
ON|1	Enables the automatic setting function.
OFF|0	Disables the automatic setting function.
switch_n_res	Automatic setting of the sweep time of Offset-n
1	Enables the automatic setting function.
0	Disables the automatic setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the sweep time of the offset automatically.

```
SEM:OFFS:LIST:SWE:TIME:AUTO
OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF,OFF
SEM:OFFS:LIST:SWE:TIME:AUTO?
> 0,0,0,0,0,0,0,0,0,0,0,0
```

SEM:OFFS:LIST:SWE:TIME:AUTO:MODE/SEM:OFFS:LIST:SWE:TIME:AUTO:MODE?

Spectrum Emission Mask Offset Auto Sweep Time Select

Function

This command sets the Normal/Fast mode in the case that the sweep time of the offset for Spectrum Emission Mask measurement is Auto.

Command

```
SEM:OFFS:LIST:SWE:TIME:AUTO:MODE
mode_1[,mode_2[,mode_3[,mode_4[,mode_5[,mode_6[,mode_7[,
mode_8[,mode_9[,mode_10[,mode_11[,mode_12]]]]]]]]]]]
```

Query

```
SEM:OFFS:LIST:SWE:TIME:AUTO:MODE?
```

Response

```
mode_1,mode_2,mode_3,mode_4,mode_5,mode_6,mode_7,mode_8,
mode_9,mode_10,mode_11,mode_12
```

Parameter

`mode_n`	Normal/Fast of sweep time of Offset-n
`NORM`	Normal sweep time
`FAST`	High-speed sweep mode

Example of Use

To set the sweep mode in the case that the sweep time of the offset is Auto.

```
SEM:OFFS:LIST:SWE:TIME:AUTO:MODE
NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,N
ORM
SEM:OFFS:LIST:SWE:TIME:AUTO:MODE?
>
NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,NORM,N
ORM
```

SEM:OFFS:LIST:SWE:RUL:FFT:RWID?

Spectrum Emission Mask Offset Sweep Type Select Rules Real FFT Width Query

Function

This command queries the FFT width that is actually used for the sweep/FFT switch rule during offset measurement in the Spectrum Emission Mask measurement.

Query

```
SEM:OFFS:LIST:SWE:RUL:FFT:RWID?
```

Response

```
freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,
freq_9,freq_10,freq_11,freq_12
```

Parameter

`Freq_n`	FFT width
Range	40 kHz or 2 MHz
Resolution	1 Hz
Suffix code	None. Value is returned in Hz units.

Details

This command is not available for MS269x Series.
Though the specified width is used as the FFT width on a priority basis, it is changed automatically according to the SPAN/RBW/VBW measurement conditions. This command queries the FFT width that is actually used.

Example of Use

To query the FFT width that is actually used.

```
SEM:OFFS:LIST:SWE:RUL:FFT:RWID?
> 40000, 40000, 40000, 40000, 40000, 40000, 40000, 40000,
40000, 40000, 40000, 40000
```

SEM:OFFS:LIST:SWE:RUL:RTYP?

Spectrum Emission Mask Sweep Type Select Rules Real Type Query

Function

This command queries the sweep mode (sweep or FFT) that is executed during reference power measurement in the Spectrum Emission Mask measurement.

Query

```
SEM:OFFS:LIST:SWE:RUL:RTYP?
```

Response

```
type_1,type_2,type_3,type_4,type_5,type_6,type_7,type_8,
type_9,type_10,type_11,type_12
```

Parameter

`Type_n`	Sweep mode
`SWE`	Performs measurement using sweep.
`FFT`	Performs measurement using FFT.

Details

This command is not available for MS269x Series.

Example of Use

To query the sweep mode used for measurement under the current setting.

```
SEM:OFFS:LIST:SWE:RUL:RTYP?
> FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT,FFT
```

SEM:OFFS:SIDE/SEM:OFFS:SIDE?

Spectrum Emission Mask Limit Side

Function

This command selects the judging area for Spectrum Emission Mask measurement.

Command

```
SEM:OFFS:SIDE side
```

Query

```
SEM:OFFS:SIDE?
```

Response

```
side
```

Parameter

side	Judging area
BOTH	Upper/Lower offset
POS	Upper offset
NEG	Lower offset

Example of Use

To set the upper offset as the judging area.

```
SEM:OFFS:SIDE POS
SEM:OFFS:SIDE?
> POS
```

SEM:RAC/SEM:RAC?

Couple Ref & ATT

Function

This command enables/disables sharing of the Reference Level and Attenuator settings for the Spectrum Emission Mask measurement.

Command

```
SEM:RAC switch_com
```

Query

```
SEM:RAC?
```

Response

```
switch_res
```

Parameter

`switch_com`	Setting sharing On/OFF
`ON|1`	Enables setting sharing (On).
`OFF|0`	Disables setting sharing (Off).
`switch_res`	Setting sharing On/Off
`1`	On
`0`	Off

Details

The values set in Reference Level and Attenuator of Reference Setup are set to those of Offset Setup, when this function is set to On.

Example of Use

To set the shared setting of Reference Level and Attenuator for Spectrum Emission Mask measurement to On.

```
SEM:RAC ON
SEM:RAC?
> 1
```

SEM:SWE:POIN/SEM:SWE:POIN?

Spectrum Emission Mask Trace Point

Function

This command selects the frequency display point in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:SWE:POIN integer
```

Query

```
SEM:SWE:POIN?
```

Response

```
integer
```

Parameter

`integer`		Number of frequency point
	Range	11 to 30001
	Resolution	Any of the following values can be selected: 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)
	Suffix code	None

Example of Use

To set the frequency display point number in measuring the reference power to 2001.

```
SEM:SWE:POIN 2001
SEM:SWE:POIN?
> 2001
```

SEM:SWE:RUL:FFT:RWID?

Spectrum Emission Mask Sweep Type Select Rules Real FFT Width Query

Function

This command queries the FFT width that is actually used for the sweep/FFT switch rule during reference power measurement in the Spectrum Emission Mask measurement.

Query

```
SEM:SWE:RUL:FFT:RWID?
```

Response

`freq`	FFT width
Range	40 kHz or 2 MHz
Resolution	1 Hz
Suffix code	None. Value is returned in Hz units.

Details

This command is not available for MS269x Series.
Though the specified width is used as the FFT width on a priority basis, it is changed automatically according to the SPAN/RBW/VBW measurement conditions. This command queries the FFT width that is actually used.

Example of Use

To query the FFT width that is actually used.

```
SEM:SWE:RUL:FFT:RWID?
> 40000
```

SEM:SWE:RUL:RTYP?

Spectrum Emission Mask Sweep Type Select Rules Real Type Query

Function

This command queries the sweep mode (sweep or FFT) that is executed during reference power measurement in the Spectrum Emission Mask measurement.

Query

```
SEM:SWE:RUL:RTYP?
```

Response

```
type
```

Parameter

type	Sweep mode
SWE	Performs measurement using sweep.
FFT	Performs measurement using FFT.

Details

This command is not available for MS269x Series.

Example of Use

To query the sweep mode used for measurement under the current setting.

```
SEM:SWE:RUL:RTYP?
> FFT
```

SEM:SWE:TIME/SEM:SWE:TIME?

Spectrum Emission Mask Sweep Time

Function

This command sets the sweep time in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:SWE:TIME time
```

Query

```
SEM:SWE:TIME?
```

Response

`time`

Returns a value of s units, without a suffix code.

Parameter

`time`	Sweep time	
Range		
[MS269xA]	2 ms to 1000 s	
[MS2830A]	1 ms to 1000 s	
[MS2840A]	1 ms to 1000 s	
Resolution	1 ms	(time ≤ 1 s)
	0.1 s	(1 s < time < 10 s)
	1 s	(10 s ≤ time)
Suffix code	NS,US,MS,S	
	S is used when omitted.	

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the sweep time in measuring the reference power to 20 ms.

```
SEM:SWE:TIME 20MS
SEM:SWE:TIME?
> 0.020000
```

SEM:SWE:TIME:AUTO/SEM:SWE:TIME:AUTO?

Spectrum Emission Mask Sweep Time Auto/Manual

Function

This command sets the sweep time in measuring the reference power for Spectrum Emission Mask measurement.

Command

```
SEM:SWE:TIME:AUTO switch_com
```

Query

```
SEM:SWE:TIME:AUTO?
```

Response

```
switch_res
```

Parameter

`switch_com`	Automatic setting of sweep time
`ON|1`	Enables the automatic setting function.
`OFF|0`	Disables the automatic setting function.
`switch_res`	Automatic setting of sweep time
`1`	Enables the automatic setting function.
`0`	Disables the automatic setting function.

Details

The setting range of this function is limited depending on the settings of other parameters. Refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details.

Example of Use

To set the sweep time in measuring the reference power automatically.

```
SEM:SWE:TIME:AUTO ON
SEM:SWE:TIME:AUTO?
> 1
```

SEM:SWE:TIME:AUTO:MODE/SEM:SWE:TIME:AUTO:MODE?

Spectrum Emission Mask Auto Sweep Time Select

Function

This command sets the Normal/Fast mode in the case that the sweep time in measuring the reference power for Spectrum Emission Mask measurement is Auto.

Command

```
SEM:SWE:TIME:AUTO:MODE mode
```

Query

```
SEM:SWE:TIME:AUTO:MODE?
```

Response

```
mode
```

Parameter

`mode`	Normal/Fast of sweep time
`NORM`	Normal sweep time
`FAST`	High-speed sweep mode

Example of Use

To set the sweep mode in the case that the sweep time in measuring the reference power is Auto to FAST.

```
SEM:SWE:TIME:AUTO:MODE FAST
SEM:SWE:TIME:AUTO:MODE?
> FAST
```

SEM:TYPE/SEM:TYPE?

Spectrum Emission Mask Reference Type

Function

This command sets the reference for Spectrum Emission Mask measurement.

Command

```
SEM:TYPE type
```

Query

```
SEM:TYPE?
```

Response

```
type
```

Parameter

type	Type of reference
TPR	Uses the reference power as the integral power in Channel BW.
PKR	Uses the reference power as the peak power in Channel BW.
FIX	Uses the reference power as the fixed value.

Example of Use

To set the reference power to the integral power in Channel BW.

```
SEM:TYPE TPR
SEM:TYPE?
> TPR
```

SIGID/SIGID?

Signal Identifier

Function

This command enables/disables signal identifier operation, which identifies measured signal and image signal when external mixer is used.

Command

```
SIGID switch
```

Query

```
SIGID?
```

Response

```
switch
```

Parameter

`switch`	Signal ID
`1`	Selects signal ID.
`0`	Does not select signal ID.

Details

This function is available when Option 044/045 is installed for MS2830A.
This function is available when Option 044/046 is installed for MS2840A.

Example of Use

To sweep while identifying measured signal and image signal.

```
SIGID 1
SIGID?
> 1
```

SMA/SMA?

Write and Query Trace Data (Trace A)

Function

This command writes and queries the trace data of Trace A. This function targets negative detection trace data when the detection mode is Positive & Negative (Normal mode).

Command

```
SMA wpoint,data
```

Query

```
SMA? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This command is not available during the Spectrum Emission Mask measurement.

Example of Use

To set –20 dBm at the 1st point and –21 dBm at the 2nd point.

```
SMA 1,-20000
SMA 2,-21000
SMA? 1,2
> -20000,-21000
```

SMB/SMB?

Write and Query Trace Data (Trace B)

Function

This command writes and queries the trace data of Trace B. This function targets negative detection trace data when the detection mode is Positive & Negative (Normal mode).

Command

```
SMB wpoint,data
```

Query

```
SMB? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This command is not available during the Spectrum Emission Mask measurement.

Example of Use

To set –20 dBm at the 1st point and –21 dBm at the 2nd point.

```
SMB 1,-20000
SMB 2,-21000
SMB? 1,2
> -20000,-21000
```

SMC/SMC?

Write and Query Trace Data (Trace C)

Function

This command writes and queries the trace data of Trace C. This function targets negative detection trace data when the detection mode is Positive & Negative (Normal mode).

Command

```
SMC wpoint,data
```

Query

```
SMC? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501,1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This command is not available during the Spectrum Emission Mask measurement.

Example of Use

To set –20 dBm to point 1 and –21 dBm to point 2.

```
SMC 1,-20000
SMC 2,-21000
SMC? 1,2
> -20000,-21000
```

SMD/SMD?

Write and Query Trace Data (Trace D)

Function

This command writes and queries the trace data of Trace D. This function targets negative detection trace data when the detection mode is Positive & Negative (Normal mode).

Command

```
SMD wpoint,data
```

Query

```
SMD? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spurious Emission measurement.

Example of Use

To set –20 dBm at the first point and set –21 dBm at the second point.

```
SMD 1,-20000
SMD 2,-21000
SMD? 1,2
> -20000,-21000
```

SME/SME?

Write and Query Trace Data (Trace E)

Function

This command writes and queries the trace data of Trace E. This function targets negative detection trace data when the detection mode is Positive & Negative (Normal mode).

Command

```
SME wpoint,data
```

Query

```
SME? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spurious Emission measurement.

Example of Use

To set –20 dBm at the first point and set –21 dBm at the second point.

```
SME 1,-20000
SME 2,-21000
SME? 1,2
> -20000,-21000
```

SMF/SMF?

Write and Query Trace Data (Trace F)

Function

This command writes and queries the trace data of Trace F. This function targets negative detection trace data when the detection mode is Positive & Negative (Normal mode).

Command

```
SMF wpoint,data
```

Query

```
SMF? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.

Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spurious Emission measurement.

Example of Use

To set –20 dBm at the first point and set –21 dBm at the second point.

```
SMF 1,-20000
SMF 2,-21000
SMF? 1,2
> -20000,-21000
```

SMZ/SMZ?

Write and Query Trace Data (Gate View)

Function

This command writes and queries the trace data for Gate View. This command targets negative detection trace data when the detection mode is Positive & Negative (Normal mode).

Command

```
SMZ wpoint,data
```

Query

```
SMZ? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	Integers in 0.001 dB units (on log scale). { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This command is not available when Gate View is set to Off.

Example of Use

To set –20 dBm at the 1st point and –21 dBm at the 2nd point.

```
SMZ 1,-20000
SMZ 2,-21000
SMZ? 1,2
> -20000,-21000
```

SNGLS

Single Sweep Mode

Function

This command sets the sweep mode to Single and start the single sweep.

Command

```
SNGLS
```

Details

Starting sweep with this function executes the following command during sweep.
To read out the measurement results after executing this command, perform the synchronization control using the “*WAI” command.

Example of Use

To start single sweep.

```
SNGLS
```

SOF/SOF?

Stop Frequency

Function

This command sets the stop frequency.

Command

```
SOF freq
```

Query

```
SOF?
```

Response

```
freq
```

Returns a value in Hz units, without a suffix code.

Parameter

`freq`		Stop frequency
	Range	
	[MS269xA]	–99.999700 MHz to 6.05 GHz (MS2690A)
		–99.999700 MHz to 13.6 GHz (MS2691A)
		–99.999700 MHz to 26.6 GHz (MS2692A)
	[MS2830A]	–99.9997 MHz to 3.7 GHz (Option 040)
		–99.9997 MHz to 6.1 GHz (Option 041)
		–99.9997 MHz to 13.6 GHz (Option 043)
		–99.9997 MHz to 26.6 GHz (Option 044)
		–99.9997 MHz to 43.1 GHz (Option 045)
	[MS2840A]	–99.9997 MHz to 3.7 GHz (Option 040)
		–99.9997 MHz to 6.1 GHz (Option 041)
		–99.9997 MHz to 27 GHz (Option 044)
		–99.9997 MHz to 45 GHz (Option 046)
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.

Details

This command is not available during the Spectrum Emission Mask or the Spurious Emission measurement.

Example of Use

To set the stop frequency to 123.456 kHz.

```
SOF 123456
SOF 123456HZ
SOF 123.456KHZ
SOF 0.123456MHZ
SOF?
> 123456
```

SPF/SPF?

Frequency Span

Function

This command sets the frequency span.

Command

```
SPF freq
```

Query

```
SPF?
```

Response

```
freq
```

No suffix code. Value is returned in Hz units.

Parameter

`freq`		Frequency span
Range		
[MS269xA]		0 Hz, 300 Hz to 6.15 GHz (MS2690A)
		0 Hz, 300 Hz to 13.7 GHz (MS2691A)
		0 Hz, 300 Hz to 26.7 GHz (MS2692A)
[MS2830A]		0 Hz, 300 Hz to 3.8 GHz (Option 040)
		0 Hz, 300 Hz to 6.2 GHz (Option 041)
		0 Hz, 300 Hz to 13.7 GHz (Option 043)
		0 Hz, 300 Hz to 26.7 GHz (Option 044)
		0 Hz, 300 Hz to 43.2 GHz (Option 045)
[MS2840A]		0 Hz, 300 Hz to 3.8 GHz (Option 040)
		0 Hz, 300 Hz to 6.2 GHz (Option 041)
		0 Hz, 300 Hz to 27.1 GHz (Option 044)
		0 Hz, 300 Hz to 45.1 GHz (Option 046)
Resolution		2 Hz
Suffix code		HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.

Details

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement
- During the Spurious Emission measurement

Example of Use

To set the frequency span to 123.456 kHz.

```
SPF 123456
SPF 123456HZ
SPF 123.456KHZ
SPF 0.123456MHZ
SPF?
> 123456
```

SPUR/SPUR?

Measure Spurious Emission

Function

This command executes the Spurious Emission measurement.

Command

```
SPUR switch_com
```

Query

```
SPUR?
```

Response

```
switch_res
```

Parameter

`switch_com`	Spurious measurement On/Off
`ON|1`	Spurious measurement is enabled.
`OFF|0`	Spurious measurement is disabled.
`switch_res`	Spurious measurement On/Off
`1`	Spurious measurement is enabled.
`0`	Spurious measurement is disabled.

Details

This command is not available in the following cases:

- When Scale Mode is set to Lin.
- In Time Domain mode

When Spurious Emission measurement is set to On, the active trace is set to A.

Example of Use

To set the Spurious measurement to On.

```
SPUR ON
SPUR?
> 1
```

SPUR:ATT/SPUR:ATT?

Spurious Emission Attenuator

Function

This command sets the attenuator value of each segment.

Command

```
SPUR:ATT
rel_ampl_1|AUTO,rel_ampl_2|AUTO,rel_ampl_3|AUTO,rel_ampl
_4|AUTO,rel_ampl_5|AUTO,rel_ampl_6|AUTO,rel_ampl_7|AUTO,
rel_ampl_8|AUTO,rel_ampl_9|AUTO,rel_ampl_10|AUTO,rel_amp
l_11|AUTO,rel_ampl_12|AUTO,rel_ampl_13|AUTO,rel_ampl_14|
AUTO,rel_ampl_15|AUTO,rel_ampl_16|AUTO,rel_ampl_17|AUTO,
rel_ampl_18|AUTO,rel_ampl_19|AUTO,rel_ampl_20|AUTO
```

Query

```
SPUR:ATT?
```

Response

```
rel_ampl_1,rel_ampl_2,rel_ampl_3,rel_ampl_4,rel_ampl_5,r
el_ampl_6,rel_ampl_7,rel_ampl_8,rel_ampl_9,rel_ampl_10,r
el_ampl_11,rel_ampl_12,rel_ampl_13,rel_ampl_14,rel_ampl_
15,rel_ampl_16,rel_ampl_17,rel_ampl_18,rel_ampl_19,rel_a
mpl_20
```

Value is returned in DB units, without suffix code.

Parameter

`rel_ampl_n`		Attenuator value of Segment n
	Range	0 to 60 dB
	Resolution	2 dB step
	Suffix code	DB
		DB is used even when omitted.
	`AUTO`	Attenuator value is automatically set (Default).

Example of Use

To set the attenuator value.

```
SPUR:ATT
10DB,10DB,12DB,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,A
UTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO,AUTO
SPUR:ATT?
>
10,10,12,10,10,10,10,10,10,10,10,10,10,10,10,10,10,10
,10
```

SPUR:AVER:COUN/SPUR:AVER:COUN?

Spurious Emission Storage Count

Function

This command sets the storage count of each segment.

Command

```
SPUR:AVER:COUN
integer_1,integer_2,integer_3,integer_4,integer_5,intege
r_6,integer_7,integer_8,integer_9,integer_10,integer_11,
integer_12,integer_13,integer_14,integer_15,integer_16,i
nteger_17,integer_18,integer_19,integer_20
```

Query

```
SPUR:AVER:COUN?
```

Response

```
integer_1,integer_2,integer_3,integer_4,integer_5,intege
r_6,integer_7,integer_8,integer_9,integer_10,integer_11,
integer_12,integer_13,integer_14,integer_15,integer_16,i
nteger_17,integer_18,integer_19,integer_20
```

Parameter

`integer_n`	Storage count of Segment n
Range	1 to 9999
Resolution	1
Default	10 times

Example of Use

To set the storage count of each segment.

```
SPUR:AVER:COUN
10,10,10,20,20,5,5,5,5,5,5,5,10,10,10,10,10,10,10,10
SPUR:AVER:COUN?
> 10,10,10,20,20,5,5,5,5,5,5,5,10,10,10,10,10,10,10,10
```

SPUR:AVER:COUN:COUP/SPUR:AVER:COUN:COUP?

Couple Storage Count

Function

This command sets the shared setting of the storage count in each segment to On/Off.

Command

```
SPUR:AVER:COUN:COUP switch_com
```

Query

```
SPUR:AVER:COUN:COUP?
```

Response

```
switch_res
```

Parameter

`switch_com`	Shared setting On/Off
`ON|1`	Shared setting is On.
`OFF|0`	Shared setting is Off.
`switch_res`	Shared setting On/Off
`1`	Shared setting is On.
`0`	Shared setting is Off.

Details

When it is set to On, the storage count set in Displayed segment is set to all the segments.

Example of Use

To set the shared setting of the storage count in each segment to On.

```
SPUR:AVER:COUN:COUP ON
SPUR:AVER:COUN:COUP?
> 1
```

SPUR:BAND/SPUR:BAND?

Spurious Emission Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW) of each segment.

Command

```
SPUR:BAND
bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidt
h_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,band
width_10,bandwidth_11,bandwidth_12,bandwidth_13,bandwidt
h_14,bandwidth_15,bandwidth_16,bandwidth_17,bandwidth_18
,bandwidth_19,bandwidth_20
```

Query

```
SPUR:BAND?
```

Response

```
bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidt
h_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,band
width_10,bandwidth_11,bandwidth_12,bandwidth_13,bandwidt
h_14,bandwidth_15,bandwidth_16,bandwidth_17,bandwidth_18
,bandwidth_19,bandwidth_20
```

Value is returned in Hz units, without suffix code.

Parameter

`bandwidth_n` Resolution bandwidth (RBW)of Segment n

[MS269xA]

Range/Resolution 30 Hz to 3 MHz (1-3 sequence),
50 kHz, 5 MHz, 10 MHz, 20 MHz

[MS2830A], [MS2840A]

Range/Resolution 30 Hz to 3 MHz (1-3 sequence),
500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz

[Common]

Suffix code HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
Hz is used when omitted.

Example of Use

To set the resolution bandwidth (RBW) of each segment.

```
SPUR:BAND
3KHZ,3KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KH
Z,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,
10KHZ
SPUR:BAND?
>
3000,3000,10000,10000,10000,10000,10000,10000,10000,1000
0,10000,10000,10000,10000,10000,10000,10000,10000,10000,
```

```
10000
```

SPUR:BAND:AUTO/SPUR:BAND:AUTO?

Spurious Emission Resolution Bandwidth Auto/Manual

Function

This command sets RBW of each segment to Auto/Manual.

Command

```
SPUR:BAND:AUTO
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
SPUR:BAND:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

`switch_n_com`	RBW in segment n Auto/Manual
`ON|1`	RBW is set to AUTO.
`OFF|0`	RBW is set to Manual.
`switch_n_res`	RBW in segment n Auto/Manual
`1`	RBW is set to AUTO.
`0`	RBW is set to Manual.

Example of Use

To set RBW to Auto/Manual.

```
SPUR:BAND:AUTO
ON,ON,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,ON,ON,ON,ON,OFF,OF
F,ON,ON
SPUR:BAND:AUTO?
> 1,1,1,1,1,1,0,0,1,1,1,1,1,1,1,1,0,0,1,1
```

SPUR:BAND:VID/SPUR:BAND:VID?

Spurious Emission Video Bandwidth

Function

This command sets the video bandwidth (VBW) of each segment.

Command

```
SPUR:BAND:VID
bandwidth_1|OFF,bandwidth_2|OFF,bandwidth_3|OFF,bandwidt
h_4|OFF,bandwidth_5|OFF,bandwidth_6|OFF,bandwidth_7|OFF,
bandwidth_8|OFF,bandwidth_9|OFF,bandwidth_10|OFF,bandwid
th_11|OFF,bandwidth_12|OFF,bandwidth_13|OFF,bandwidth_14
|OFF,bandwidth_15|OFF,bandwidth_16|OFF,bandwidth_17|OFF,
bandwidth_18|OFF,bandwidth_19|OFF,bandwidth_20|OFF
```

Query

```
SPUR:BAND:VID?
```

Response

```
bandwidth_1|OFF,bandwidth_2|OFF,bandwidth_3|OFF,bandwidt
h_4|OFF,bandwidth_5|OFF,bandwidth_6|OFF,bandwidth_7|OFF,
bandwidth_8|OFF,bandwidth_9|OFF,bandwidth_10|OFF,bandwid
th_11|OFF,bandwidth_12|OFF,bandwidth_13|OFF,bandwidth_14
|OFF,bandwidth_15|OFF,bandwidth_16|OFF,bandwidth_17|OFF,
bandwidth_18|OFF,bandwidth_19|OFF,bandwidth_20|OFF
```

Value is returned in Hz units, without suffix code. When set to Off, Off is returned.

Parameter

`bandwidth_n`	Video bandwidth of Segment n(VBW)
Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
`OFF`	VBW is set to Off.

Details

The setting range of this function is limited depending on the setting of RBW. For details, refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)*.

Example of Use

To set the video bandwidth of each segment.

```
SPUR:BAND:VID
3KHZ,3KHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1
MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ
SPUR:BAND:VID?
>
3000,3000,1000000,1000000,1000000,1000000,1000000,100000
0,1000000,1000000,1000000,1000000,1000000,1000000,100000
0,1000000,1000000,1000000,1000000,1000000
```

SPUR:BAND:VID:AUTO/SPUR:BAND:VID:AUTO?

Spurious Emission Video Bandwidth Auto/Manual

Function

This command sets the video bandwidth (VBW) of each segment to Auto/Manual.

Command

```
SPUR:BAND:VID:AUTO
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
SPUR:BAND:VID:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

`switch_n_com`	Auto mode On/Off
`ON|1`	Auto mode is set to On.
`OFF|0`	Auto mode is set to Off.
`switch_n_res`	Auto mode On/Off
`1`	Auto mode is set to On.
`0`	Auto mode is set to Off.

Example of Use

To set the resolution bandwidth of the offset to Auto.

```
SPUR:BAND:VID:AUTO
ON,ON,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,ON,ON,OFF,OFF,ON,O
N,ON,ON
SPUR:BAND:VID:AUTO?
> 1,1,1,1,1,1,0,0,1,1,1,1,1,1,0,0,1,1,1,1
```

SPUR:DET/SPUR:DET?

Spurious Emission Detection Mode

Function

This command selects the detection mode of the waveform pattern in each segment.

Command

```
SPUR:DET
mode_1,mode_2,mode_3,mode_4,mode_5,mode_6,mode_7,mode_8,
mode_9,mode_10,mode_11,mode_12,mode_13,mode_14,mode_15,m
ode_16,mode_17,mode_18,mode_19,mode_20
```

Query

```
SPUR:DET?
```

Response

```
mode_1,mode_2,mode_3,mode_4,mode_5,mode_6,mode_7,mode_8,
mode_9,mode_10,mode_11,mode_12,mode_13,mode_14,mode_15,m
ode_16,mode_17,mode_18,mode_19,mode_20
```

Parameter

mode_n	Detection mode of Segment n
NORM	Simultaneous detection of Positive and Negative peaks
POS	Positive peak detection
NEG	Negative peak detection
SAMP	Sample detection
RMS	RMS detection

Example of Use

To query the detection mode of the waveform pattern in each segment.

```
SPUR:DET
POS,POS,POS,NEG,NEG,NORM,NORM,RMS,SAMP,POS,POS,POS,POS,P
OS,POS,POS,POS,POS,POS,POS
SPUR:DET?
>
POS,POS,POS,NEG,NEG,NORM,NORM,RMS,SAMP,POS,POS,POS,POS,P
OS,POS,POS,POS,POS,POS,POS
```

SPUR:FREQ:STAR/SPUR:FREQ:STAR?

Spurious Emission Start Frequency

Function

This command sets the start frequency of each segment.

Command

```
SPUR:FREQ:STAR
freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,
freq_9,freq_10,freq_11,freq_12,freq_13,freq_14,freq_15,f
req_16,freq_17,freq_18,freq_19,freq_20
```

Query

```
SPUR:FREQ:STAR?
```

Response

```
freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,
freq_9,freq_10,freq_11,freq_12,freq_13,freq_14,freq_15,f
req_16,freq_17,freq_18,freq_19,freq_20
```

No suffix code. Value is returned in Hz units.

Parameter

`freq_n`	Start frequency of segment n
[MS269xA]	–100 MHz to 6.0499997 GHz (MS2690A)
	–100 MHz to 13.5999997 GHz (MS2691A)
	–100 MHz to 26.5999997 GHz (MS2692A)
[MS2830A]	–100 MHz to 3.6999997 GHz (MS2830A-040)
	–100 MHz to 6.0999997 GHz (MS2830A-041)
	–100 MHz to 13.5999997 GHz (MS2830A-043)
	–100 MHz to 26.5999997 GHz (MS2830A-044)
	–100 MHz to 43.0999997 GHz (MS2830A-045)
[MS2840A]	–100 MHz to 3.6999997 GHz (MS2840A-040)
	–100 MHz to 6.0999997 GHz (MS2840A-041)
	–100 MHz to 26.9999997 GHz (MS2840A-044)
	–100 MHz to 44.9999997 GHz (MS2840A-046)
Resolution	1 Hz
Suffix Code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
	Hz is used when omitted.

Example of Use

To set the start frequency of each segment.

```
SPUR:FREQ:STAR
9KHZ,100kHz,40MHz,1.1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1
GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz,1GHz
SPUR:FREQ:STAR?
```

```
>
9000,100000,40000000,11000000000,1000000000,1000000000,1
000000000,1000000000,1000000000,1000000000,1000000000,10
00000000,1000000000,1000000000,1000000000,1000000000,100
0000000,1000000000,1000000000,1000000000
```

SPUR:FREQ:STOP/SPUR:FREQ:STOP?

Spurious Emission Stop Frequency

Function

This command sets the stop frequency of each segment.

Command

```
SPUR:FREQ:STOP
freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,
freq_9,freq_10,freq_11,freq_12,freq_13,freq_14,freq_15,f
req_16,freq_17,freq_18,freq_19,freq_20
```

Query

```
SPUR:FREQ:STOP?
```

Response

```
freq_1,freq_2,freq_3,freq_4,freq_5,freq_6,freq_7,freq_8,
freq_9,freq_10,freq_11,freq_12,freq_13,freq_14,freq_15,f
req_16,freq_17,freq_18,freq_19,freq_20
```

Value is returned in Hz units, without a suffix code.

Parameter

`freq_n`	Stop frequency of Segment n
Range	
[MS269xA]	–99.9997 MHz to 6.05 GHz (MS2690A)
	–99.9997 MHz to 13.6 GHz (MS2691A)
	–99.9997 MHz to 26.6 GHz (MS2692A)
[MS2830A]	–99.9997 MHz to 3.7 GHz (MS2830A-040)
	–9.9997 MHz to 6.1 GHz (MS2830A-041)
	–99.9997 MHz to 13.6 GHz (MS2830A-043)
	–99.9997 MHz to 26.6 GHz (MS2830A-044)
	–99.9997 MHz to 43.1 GHz (MS2830A-045)
[MS2840A]	–99.9997 MHz to 3.7 GHz (MS2840A-040)
	–9.9997 MHz to 6.1 GHz (MS2840A-041)
	–99.9997 MHz to 27 GHz (MS2840A-044)
	–99.9997 MHz to 45 GHz (MS2840A-046)
Resolution	1 Hz
Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
	Hz is used when omitted.

Example of Use

To set the stop frequency of each segment.

```
SPUR:FREQ:STOP
150kHz,40MHz,1.1GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5
GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5
GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz,12.5GHz
SPUR:FREQ:STOP?
>
150000,40000000,1100000000,12500000000,12500000000,12500
000000,12500000000,12500000000,12500000000,12500000000,1
2500000000,12500000000,12500000000,12500000000,125000000
00,12500000000,12500000000,12500000000,12500000000,12500
000000
```

SPUR:FST/SPUR:FST?

Fail Stop

Function

This command sets whether to stop the measurement when a “Fail” segment has been found.

Command

```
SPUR:FST switch_com
```

Query

```
SPUR:FST?
```

Response

```
switch_res
```

Parameter

`switch_com`	Fail Stop On/Off
`ON|1`	Fail Stop is set to On.
`OFF|0`	Fail Stop is set to Off.
`switch_res`	Fail Stop On/Off
`1`	Fail Stop is set to On.
`0`	Fail Stop is set to Off.

Example of Use

To stop the measurement when a “Fail” segment has been found.

```
SPUR:FST ON
SPUR:FST?
> 1
```

SPUR:PEAK:RES/SPUR:PEAK:RES?

Spurious Emission Search Resolution

Function

This command sets the spurious search resolution when Result Type is set to Peaks.

Command

```
SPUR:PEAK:RES
rel_ampl_1,rel_ampl_2,rel_ampl_3,rel_ampl_4,rel_ampl_5,rel_ampl_6,rel_ampl_7,rel_ampl_8,rel_ampl_9,rel_ampl_10,rel_ampl_11,rel_ampl_12,rel_ampl_13,rel_ampl_14,rel_ampl_15,rel_ampl_16,rel_ampl_17,rel_ampl_18,rel_ampl_19,rel_ampl_20
```

Query

```
SPUR:PEAK:RES?
```

Response

```
rel_ampl_1,rel_ampl_2,rel_ampl_3,rel_ampl_4,rel_ampl_5,rel_ampl_6,rel_ampl_7,rel_ampl_8,rel_ampl_9,rel_ampl_10,rel_ampl_11,rel_ampl_12,rel_ampl_13,rel_ampl_14,rel_ampl_15,rel_ampl_16,rel_ampl_17,rel_ampl_18,rel_ampl_19,rel_ampl_20
```

Value is returned in dB units, without suffix code.

Parameter

rel_ampl_n	Spurious search resolution of Segment n
Range	0.001 to 50.00 dB
Resolution	0.001 dB
Suffix code	DB

Example of Use

To set the spurious search resolution.

```
SPUR:PEAK:RES 6,6,6,6,6,10,10,10,6,6,6,6,6,6,6,6,6,6,6
SPUR:PEAK:RES?
>
6.000,6.000,6.000,6.000,6.000,10.000,10.000,10.000,6.000,6.000,6.000,6.000,6.000,6.000,6.000,6.000,6.000,6.000,6.000
```

SPUR:PEAK:THR/SPUR:PEAK:THR?

Spurious Emission Search Threshold Level

Function

This command sets the spurious search threshold when Result Type is Peak.

Command

```
SPUR:PEAK:THR
real_1,real_2,real_3,real_4,real_5,real_6,real_7,real_8,
real_9,real_10,real_11,real_12,real_13,real_14,real_15,r
eal_16,real_17,real_18,real_19,real_20
```

Query

```
SPUR:PEAK:THR?
```

Response

```
real_1,real_2,real_3,real_4,real_5,real_6,real_7,real_8,
real_9,real_10,real_11,real_12,real_13,real_14,real_15,r
eal_16,real_17,real_18,real_19,real_20
```

Value is returned in dBm units, without suffix code.

Parameter

`real_n`	Spurious search threshold value of Segment n
Range	–200 dBm to 50 dBm
Resolution	0.01 dB
Suffix code	DBM,DM

Example of Use

To set the spurious search threshold.

```
SPUR:PEAK:THR
-70,-70,-90,-90,-90,-90,-90,-90,-90,-90,-90,-90,-90,-90,
-90,-90,-90,-90,-90,-90
SPUR:PEAK:THR?
>
-70.00,-70.00,-90.00,-90.00,-90.00,-90.00,-90.00,-90.00,
-90.00,-90.00,-90.00,-90.00,-90.00,-90.00,-90.00,-90.00,
-90.00,-90.00,-90.00,-90.00
```

SPUR:POW:GAIN/SPUR:POW:GAIN?

Spurious Emission Preamp On/Off

Function

This command sets the pre-amp of each segment to On/Off.

Command

```
SPUR:POW:GAIN
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
SPUR:POW:GAIN?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

`switch_n_res`	Pre-amp On/Off
`ON|1`	Pre-amp is set to On.
`OFF|0`	Pre-amp is set to Off.
Default	Off
`switch_n_res`	Pre-amp On/Off
`1`	Pre-amp is set to On.
`0`	Pre-amp is set to Off.

Details

[MS269xA]

This command is turned off and thus invalid when Option 008/108 6 GHz Preamplifer is NOT installed.

[MS2830A]

This command is turned off and thus invalid when Option 008/108/068/168 Preamplifer is NOT installed.

[MS2840A]

This command is turned off and thus invalid when Option 008/108/068/168/069/169 Preamplifer is NOT installed.

Example of Use

To set the pre-amp of each segment.

```
SPUR:POW:GAIN
ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF
,ON,ON,ON
SPUR:POW:GAIN?
> 1,1,1,0,0,1,1,1,1,0,0,1,1,1,1,0,0,1,1,1
```

SPUR:SEGM:NUMB/SPUR:SEGM:NUMB?

Edit Segment Number

Function

This command sets the segment to set a parameter in.

Command

```
SPUR:SEGM:NUMB integer
```

Query

```
SPUR:SEGM:NUMB?
```

Response

```
integer
```

Parameter

`integer`	Segment number
Range	1 to 20
Resolution	1

Example of Use

To set 3 to the segment to set a parameter in.

```
SPUR:SEGM:NUMB 3
SPUR:SEGM:NUMB?
> 3
```

SPUR:SEGM:STAT/SPUR:SEGM:STAT?

Segment On/Off

Function

This command sets the segment to On/Off.

Command

```
SPUR:SEGM:STAT
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
SPUR:SEGM:STAT?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

`switch_n_com`	Segment n On/Off
`ON|1`	Segment is set to On.
`OFF|0`	Segment is set to Off.
`switch_n_res`	Segment n On/Off
`1`	Segment is set to On.
`0`	Segment is set to Off.

Details

You cannot set all the segments to Off at the same time.

Example of Use

To set the segment to On/Off.

```
SPUR:SEGM:STAT
ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,
OFF,ON,ON
SPUR:STAT?
> 1,1,0,1,1,0,1,1,0,1,1,0,1,1,0,1,1,0,1,1
```

SPUR:SWE:PAUS/SPUR:SWE:PAUS?

Pause before Sweep

Function

This command configures the setting to pause before sweep of each segment.

Command

```
SPUR:SWE:PAUS
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
SPUR:SWE:PAUS?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

`switch_n_com`	Pause before sweep On/Off
`ON|1`	Pause before sweep.
`OFF|0`	Not pause before sweep.
`switch_n_res`	Pause before sweep On/Off
`1`	Pause before sweep.
`0`	Pause before sweep.

Details

- When it is set to On, the dialog box is displayed before measuring the segment, and the measurement will pause.
- The measurement does not pause during remote operation. Also, when it has switched to remote operation during pause, the measurement will restart.

Example of Use

To configure the setting to pause before sweep of each segment.

```
SPUR:SWE:PAUS
ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,OFF,OFF
,ON,ON,ON
SPUR:SWE:PAUS?
> 1,1,1,0,0,1,1,1,1,0,0,1,1,1,1,0,0,1,1,1
```

SPUR:SWE:POIN/SPUR:SWE:POIN?

Spurious Emission Trace Point

Function

This command sets the number of the points in the trace data of each segment.

Command

```
SPUR:SWE:POIN
integer_1,integer_2,integer_3,integer_4,integer_5,intege
r_6,integer_7,integer_8,integer_9,integer_10,integer_11,
integer_12,integer_13,integer_14,integer_15,integer_16,i
nteger_17,integer_18,integer_19,integer_20
```

Query

```
SPUR:SWE:POIN?
```

Response

```
integer_1,integer_2,integer_3,integer_4,integer_5,intege
r_6,integer_7,integer_8,integer_9,integer_10,integer_11,
integer_12,integer_13,integer_14,integer_15,integer_16,i
nteger_17,integer_18,integer_19,integer_20
```

Parameter

integer_n	Number of points in trace data of Segment n
11	11 points
21	21 points
41	41 points
51	51 points
101	101 points
201	201 points
251	251 points
401	401 points
501	501 points

1001	1001 points
2001	2001 points
5001	5001 points
10001	10001 points
30001	30001 points (MS269xA Only)

Example of Use

To set the number of the points in the trace data of each segment.

```
SPUR:SWE:POIN
1001,5001,5001,5001,10001,10001,10001,10001,10001,10001,
10001,10001,10001,10001,10001,10001,10001,10001,10001,10
001
SPUR:SWE:POIN?
>
1001,5001,5001,5001,10001,10001,10001,10001,10001,10001,
10001,10001,10001,10001,10001,10001,10001,10001,10001,10
001
```

SPUR:SWE:TIME/SPUR:SWE:TIME?

Spurious Emission Sweep Time

Function

This command sets the sweep time of each segment.

Command

```
SPUR:SWE:TIME
seconds_1,seconds_2,seconds_3,seconds_4,seconds_5,second
s_6,seconds_7,seconds_8,seconds_9,seconds_10,seconds_11,
seconds_12,seconds_13,seconds_14,seconds_15,seconds_16,s
econds_17,seconds_18,seconds_19,seconds_20
```

Query

```
SPUR:SWE:TIME?
```

Response

```
seconds_1,seconds_2,seconds_3,seconds_4,seconds_5,second
s_6,seconds_7,seconds_8,seconds_9,seconds_10,seconds_11,
seconds_12,seconds_13,seconds_14,seconds_15,seconds_16,s
econds_17,seconds_18,seconds_19,seconds_20
```

Value is returned in s units, without suffix code.

Parameter

seconds_n	Sweep Time of Segment n
Range	
[MS269xA]	2 ms to 1000 s
[MS2830A]	1 ms to 1000 s
[MS2840A]	1 ms to 1000 s
Resolution	1 ms(time ≤1 s)
	0.1 s (1 s < time < 10 s)
	1 s (10 s ≤ time)
Suffix code	NS, US, MS, S
	S is used when omitted.
Default	Auto value

Example of Use

To set Sweep Time of each segment.

```
SWE:TIME
0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.2,0.3,0.1,0.1,
0.1,0.1,0.1,0.1,0.1,0.1
SPUR:SWE:TIME?
>
0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.
100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.10
0000,0.100000,0.100000,0.100000,0.100000,0.100000,0.1000
00,0.100000
```

SPUR:SWE:TIME:AUTO/SPUR:SWE:TIME:AUTO?

Spurious Emission Sweep Time Auto/Manual

Function

This command sets the sweep time of each segment to Auto/Manual.

Command

```
SPUR:SWE:TIME:AUTO
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
SPUR:SWE:TIME:AUTO?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

`switch_n_com`	Sweep time of Segment n Auto/Manual
`ON|1`	Sweep Time is set to Auto.
`OFF|0`	Sweep Time is set to Manual.
`switch_n_res`	Sweep time of Segment n Auto/Manual
`1`	Sweep Time is set to Auto.
`0`	Sweep Time is set to Manual.

Example of Use

To set the sweep time of each segment to Auto/Manual.

```
SPUR:SWE:TIME:AUTO
ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,OFF,ON,ON,
OFF,ON,ON
SPUR:SWE:TIME:AUTO?
> 1,1,0,1,1,0,1,1,0,1,1,0,1,1,0,1,1,0,1,1
```

SPUR:SYNT:LPH/SPUR:SYNT:LPH?

Low Phase Noise for Spurious Emission Measurement

Function

This command enables/disables Low Phase Noise function during Spurious Emission measurement.

Command

```
SPUR:SYNT:LPH switch
```

Query

```
SPUR:SYNT:LPH?
```

Response

```
switch
```

Parameter

`switch`	Low Phase Noise switch
`ON|1`	Enables Low Phase Noise switch.
`OFF|0`	Disables Low Phase Noise switch.
Default	Off

Detail

This function is available when MS2830A-062/066 or MS2840A-066/166 is installed.
This function does not depend on the setting of the Low Phase Noise switch at System Config. The setting-enabled conditions are as follows:

Function status	System Config Low Phase Noise switch status	Low Phase Noise switch status
On	On	Enables the Low Phase Noise function during Spurious Emission measurement.
	Off	
Off	On	Disables the Low Phase Noise function during Spurious Emission measurement.
	Off	

The status at other than spurious emission measurement is reflected by the System Config switch.
The phase noise characteristics can be improved using the Low Phase Noise Function when the Low Phase Noise switch is On, the frequency range is –20 MHz ≤ f ≤ 3.7 GHz (–20 MHz ≤ f < 3.5 GHz when Frequency Band Mode is Spurious) and the Span Frequency is less than 1 MHz. However, if a signal outside the DUT frequency range is input while using the Low Phase Noise Function, it may be possible to measure spurious noise generated within the unit.
Refer to the *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* for details about spurious noise

generation and appropriate conditions for using the Low Phase Noise Function.

Example of Use

To enable the Low Phase Noise function during Spurious Emission measurement.

```
SPUR:SYNT:LPH ON
SPUR:SYNT:LPH?
> 1
```

SPUR:TDOM:BAND/SPUR:TDOM:BAND?

Spurious Emission Time Domain RBW

Function

This command sets RBW when performing Time Domain Measurement.

Command

```
SPUR:TDOM:BAND
bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidt
h_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,band
width_10,bandwidth_11,bandwidth_12,bandwidth_13,bandwidt
h_14,bandwidth_15,bandwidth_16,bandwidth_17,bandwidth_18
,bandwidth_19,bandwidth_20
```

Query

```
SPUR:TDOM:BAND?
```

Response

```
bandwidth_1,bandwidth_2,bandwidth_3,bandwidth_4,bandwidt
h_5,bandwidth_6,bandwidth_7,bandwidth_8,bandwidth_9,band
width_10,bandwidth_11,bandwidth_12,bandwidth_13,bandwidt
h_14,bandwidth_15,bandwidth_16,bandwidth_17,bandwidth_18
,bandwidth_19,bandwidth_20
```

Value is returned in Hz units, without suffix code.

Parameter

`bandwidth_n` Resolution bandwidth (RBW) of Segment n

[MS269xA]

Range/Resolution 30 Hz to 31.25 MHz
However, the settable value is 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz or 31.25 MHz.

[MS2830A], [MS2840A]

Range/Resolution 30 Hz to 31.25 MHz
However, the settable value is 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz or 31.25 MHz.

[Common]

Suffix Code HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ
Hz is used when omitted.

Details

For the MS2830A, MS2840A, RBW of 20 MHz and higher can be used only when MS2830A-005/105/007/009/109, MS2840A-005/105/009/109 is installed.
For RBW 31.25 MHz, it is not a Gauss filter but a flat-top characteristic filter.

Example of Use

To set RBW when performing Time Domain Measurement.

```
SPUR:TDOM:BAND
3KHZ,3KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KH
Z,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,10KHZ,
10KHZ
SPUR:TDOM:BAND?
>
3000,3000,10000,10000,10000,10000,10000,10000,10000,1000
0,10000,10000,10000,10000,10000,10000,10000,10000,10000,
10000
```

SPUR:TDOM:BAND:COUP/SPUR:TDOM:BAND:COUP?

Spurious Emission Couple Segment RBW

Function

This command enables/disables the function that the value set in Segment Setup is automatically set to RBW when performing Time Domain Measurement.

Command

```
SPUR:TDOM:BAND:COUP
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
SPUR:TDOM:BAND:COUP?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

switch_n_com	Shared setting On/Off
ON|1	On
OFF|0	Off
switch_n_res	Shared setting On/Off
1	On
0	Off

Example of Use

To enable/disable the function that the value set in Segment Setup is automatically set to RBW when performing Time Domain Measurement.

```
SPUR:TDOM:BAND:COUP
ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,ON,ON,ON,OFF,OFF,ON,O
N,ON,ON
SPUR:TDOM:BAND:COUP?
> 1,1,1,1,0,0,1,1,1,1,1,1,1,1,0,0,1,1,1,1
```

SPUR:TDOM:BAND:VID/SPUR:TDOM:BAND:VID?

Spurious Emission Time Domain VBW

Function

This command sets VBW when performing Time Domain Measurement.

Command

```
SPUR:TDOM:BAND:VID
bandwidth_1|OFF,bandwidth_2|OFF,bandwidth_3|OFF,bandwidt
h_4|OFF,bandwidth_5|OFF,bandwidth_6|OFF,bandwidth_7|OFF,
bandwidth_8|OFF,bandwidth_9|OFF,bandwidth_10|OFF,bandwid
th_11|OFF,bandwidth_12|OFF,bandwidth_13|OFF,bandwidth_14
|OFF,bandwidth_15|OFF,bandwidth_16|OFF,bandwidth_17|OFF,
bandwidth_18|OFF,bandwidth_19|OFF,bandwidth_20|OFF
```

Query

```
SPUR:TDOM:BAND:VID?
```

Response

```
bandwidth_1|OFF,bandwidth_2|OFF,bandwidth_3|OFF,bandwidt
h_4|OFF,bandwidth_5|OFF,bandwidth_6|OFF,bandwidth_7|OFF,
bandwidth_8|OFF,bandwidth_9|OFF,bandwidth_10|OFF,bandwid
th_11|OFF,bandwidth_12|OFF,bandwidth_13|OFF,bandwidth_14
|OFF,bandwidth_15|OFF,bandwidth_16|OFF,bandwidth_17|OFF,
bandwidth_18|OFF,bandwidth_19|OFF,bandwidth_20|OFF
```

Value is returned in Hz units, without suffix code. When set to Off, Off is returned.

Parameter

`bandwidth_n`		Video bandwidth of Segment n (VBW)
	Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ Hz is used when omitted.
	`OFF`	VBW is set to Off.

Details

The setting range of this function is limited depending on the setting of RBW. For details, refer to *MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* or *MS2830A/MS2840A Signal Analyzer Operation Manual (Spectrum Analyzer Function Operation)* .

Example of Use

To set VBW when performing Time Domain Measurement.

```
SPUR:TDOM:BAND:VID
3KHZ,3KHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1
MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ,1MHZ
SPUR:TDOM:BAND:VID?
>
3000,3000,1000000,1000000,1000000,1000000,1000000,100000
0,1000000,1000000,1000000,1000000,1000000,1000000,100000
0,1000000,1000000,1000000,1000000,1000000
```

SPUR:TDOM:BAND:VID:COUP/SPUR:TDOM:BAND:VID:COUP?

Spurious Emission Couple Segment VBW

Function

This command enables/disables the function that the value set in Segment Setup is automatically set to VBW when performing Time Domain Measurement.

Command

```
SPUR:TDOM:BAND:VID:COUP
switch_1_com,switch_2_com,switch_3_com,switch_4_com,swit
ch_5_com,switch_6_com,switch_7_com,switch_8_com,switch_9
_com,switch_10_com,switch_11_com,switch_12_com,switch_13
_com,switch_14_com,switch_15_com,switch_16_com,switch_17
_com,switch_18_com,switch_19_com,switch_20_com
```

Query

```
SPUR:TDOM:BAND:VID:COUP?
```

Response

```
switch_1_res,switch_2_res,switch_3_res,switch_4_res,swit
ch_5_res,switch_6_res,switch_7_res,switch_8_res,switch_9
_res,switch_10_res,switch_11_res,switch_12_res,switch_13
_res,switch_14_res,switch_15_res,switch_16_res,switch_17
_res,switch_18_res,switch_19_res,switch_20_res
```

Parameter

`switch_n_com`	Shared setting On/Off
`ON|1`	On
`OFF|0`	Off
`switch_n_res`	Shared setting On/Off
`1`	On
`0`	Off

Example of Use

To enable/disable the function that the value set in Segment Setup is automatically set to VBW when performing Time Domain measurement.

```
SPUR:TDOM:BAND:VID:COUP
ON,ON,ON,ON,OFF,OFF,ON,ON,ON,ON,ON,ON,ON,OFF,OFF,ON,O
N,ON,ON
SPUR:TDOM:BAND:VID:COUP?
> 1,1,1,1,0,0,1,1,1,1,1,1,1,1,0,0,1,1,1,1
```

SPUR:TDOM:DET/SPUR:TDOM:DET?

Spurious Emission Time Domain Detection

Function

This command selects the detection mode of the waveform pattern when performing Time Domain measurement.

Command

```
SPUR:TDOM:DET
mode_1,mode_2,mode_3,mode_4,mode_5,mode_6,mode_7,mode_8,
mode_9,mode_10,mode_11,mode_12,mode_13,mode_14,mode_15,m
ode_16,mode_17,mode_18,mode_19,mode_20
```

Query

```
SPUR:TDOM:DET?
```

Response

```
mode_1,mode_2,mode_3,mode_4,mode_5,mode_6,mode_7,mode_8,
mode_9,mode_10,mode_11,mode_12,mode_13,mode_14,mode_15,m
ode_16,mode_17,mode_18,mode_19,mode_20
```

Parameter

mode_n	Detection mode of Segment n
POS	Positive peak detection
SAMP	Sample detection
RMS	RMS detection

Example of Use

To select the detection mode of the waveform pattern when performing Time Domain Measurement.

```
SPUR:TDOM:DET
POS,POS,POS,RMS,POS,POS,POS,POS,POS,POS,RMS,POS,POS,POS,
POS,POS,POS,RMS,POS,POS
SPUR:TDOM:DET?
>
POS,POS,POS,RMS,POS,POS,POS,POS,POS,POS,RMS,POS,POS,POS,
POS,POS,POS,RMS,POS,POS
```

SPUR:TDOM:SPAN:ZERO/SPUR:TDOM:SPAN:ZERO?

Time Domain Measurement

Function

This command sets whether to measure the spurious power by using Time Domain.

Command

```
SPUR:TDOM:SPAN:ZERO switch_com
```

Query

```
SPUR:TDOM:SPAN:ZERO?
```

Response

```
switch_res
```

Parameter

`switch_com`	Time Domain measurement On/Off
`ON|1`	Time Domain measurement is set to On.
`OFF|0`	Time Domain measurement is set to Off.
`switch_res`	Time Domain measurement On/Off
`1`	Time Domain measurement On
`0`	Time Domain measurement Off

Example of Use

To measure the spurious power by using Time Domain.

```
SPIR:TDOM:SPAN:ZERO ON
SPIR:TDOM:SPAN:ZERO?
> 1
```

SPUR:TDOM:SWE:TIME/SPUR:TDOM:SWE:TIME?

Spurious Emission Time Domain Sweep Time

Function

This command sets the sweep time when performing Time Domain measurement.

Command

```
SPUR:TDOM:SWE:TIME
seconds_1,seconds_2,seconds_3,seconds_4,seconds_5,second
s_6,seconds_7,seconds_8,seconds_9,seconds_10,seconds_11,
seconds_12,seconds_13,seconds_14,seconds_15,seconds_16,s
econds_17,seconds_18,seconds_19,seconds_20
```

Query

```
SPUR:TDOM:SWE:TIME?
```

Response

```
seconds_1,seconds_2,seconds_3,seconds_4,seconds_5,second
s_6,seconds_7,seconds_8,seconds_9,seconds_10,seconds_11,
seconds_12,seconds_13,seconds_14,seconds_15,seconds_16,s
econds_17,seconds_18,seconds_19,seconds_20
```

Value is returned in s units, without suffix code.

Parameter

seconds_n		Sweep time of Segment n
	Range	1 μs to 1000 s (For Time-axis measurement)
	Suffix code	NS,US,MS,S S is used when omitted.
	Default	Auto value

Example of Use

To set the sweep time when performing Time Domain measurement.

```
SPUR:TDOM:SWE:TIME
0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.2,0.3,0.1,0.1,
0.1,0.1,0.1,0.1,0.1,0.1
SPUR:TDOM:SWE:TIME?
>
0.100000,0.100000,0.100000,0.100000,0.100000,0.100000,0.
100000,0.100000,0.100000,0.100000,0.200000,0.300000,0.10
0000,0.100000,0.100000,0.100000,0.100000,0.100000,0.1000
00,0.100000
```

SPUR:TYPE/SPUR:TYPE?

Spurious Emission Result Type

Function

This command selects the measurement result type.

Command

```
SPUR:TYPE type_com
```

Query

```
SPUR:TYPE?
```

Response

```
type_res
```

Parameter

type_com	Measurement result type
WORS	Point with the least margin from the limit line is displayed.
EXAM	Same as above
PEAK	Spurious detected by the detection resolution and the threshold set in each segment is displayed.
FULL	Same as above
type_res	Measurement result type
WORS	Point with the least margin from the limit line
PEAK	Spurious detected by the detection resolution and the threshold set in each segment is displayed.

Details

This command is not available when performing Time Domain measurement.

Example of Use

To display the point with the least margin from the limit line.

```
SPUR:TYPE EXAM
SPUR:TYPE?
> WORS
```

SRCHTH/SRCHTH?

Peak Search Mode

Function

This command specifies the detection mode for the threshold value (Peak Search Threshold Level) in peak point detection.

Command

```
SRCHTH mode
```

Query

```
SRCHTH?
```

Response

```
mode
```

Parameter

mode	Threshold value detection mode
OFF	Detects full range (No range limit).
ON	Sets the detection limit to ON.
ABOVE	Detects only in the range above the threshold value.
BELOW	Detects only in the range below the threshold value.

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To detect the peak point from the data greater than the threshold value:

```
SRCHTH ABOVE
SRCHTH?
> ABOVE
```

SRCHTHLVL/SRCHTHLVL?

Peak Search Threshold Level

Function

This command sets the threshold value when detecting a peak point.

Command

```
SRCHTHLVL level
```

Query

```
SRCHTHLVL?
```

Response

`level`

Returns a value according to the scale unit settings, without a suffix code.
Units are μV when set to V, and units are μW when set to W.

Parameter

`level` Threshold value when detecting peak point

Range: Full width of Y-axis

Resolution: 0.01 dB (When scale unit settings are dB-system units)
0.01 pV (When scale unit settings are V-system units)
0.01 yW (When scale unit settings are W-system units)

Suffix code:

`DBM, DM`	dBm
`DBMV`	dBmV
`DBUV`	dBμV
`DBUVE`	dBμV (emf)
`DBUVM`	dBμV/m
`V`	V
`MV`	mV
`UV`	μV
`W`	W
`MW`	mW
`UW`	μW
`NW`	nW
`PW`	pW
`FW`	fW

Scale unit settings apply when omitted.
V is used for Linear Scale.

Details

This command is not available during the Spurious Emission measurement and when Displayed Segment Mode is set to Auto.
Not available during Spectrum Emission Mask measurement.

Example of Use

To set the threshold value when detecting peak point to –10 dBm.

```
SRCHTHLVL -10
SRCHTHLVL?
> -10.00
```

ST/ST?

Sweep Time

Function

This command sets the sweep time. Each parameter is specified in accordance with the already specified frequency axis or time axis measurement.

Command

```
ST time
ST AUTO
```

Query

```
ST?
```

Response

```
time
```

No suffix code. Value is returned in μs units.

Parameter

`time`	Sweep time
Range	
[MS269xA]	2 ms to 1000 s (For frequency axis measurement) 1 μs to 1000 s (For time axis measurement)
[MS2830A], [MS2840A]	1 ms to 1000 s (For frequency axis measurement) 1 ms to 999999 s (For frequency axis measurement and when in response) 1 μs to 1000 s (For time axis measurement)
Suffix code	NS, US, MS, S ms is used when omitted.

AUTO	Sets the optimum value from RBW, WBW and Span.

Details

This command is not available during FFT sweep.
This command is not available during the Spectrum Emission Mask or the Spurious Emission measurement.

Example of Use

To set the sweep time to 20 ms.

```
ST 20
ST 20000US
ST 20MS
ST 0.02S
ST?
> 20000
```

STF/STF?

Start Frequency

Function

This command sets the start frequency.

Command

```
STF freq
```

Query

```
STF?
```

Response

```
freq
```

Returns a value in Hz units, without a suffix code.

Parameter

`freq`		Start frequency
Range		
[MS269xA]		–100 MHz to 6.0499997 GHz (MS2690A)
		–100 MHz to 13.5999997 GHz (MS2691A)
		–100 MHz to 26.5999997 GHz (MS2692A)
[MS2830A]		–100 MHz to 3.6999997 GHz (Option 040)
		–100 MHz to 6.0999997 GHz (Option 041)
		–100 MHz to 13.5999997 GHz (Option 043)
		–100 MHz to 26.5999997 GHz (Option 044)
		–100 MHz to 43.0999997 GHz (Option 045)
[MS2840A]		–100 MHz to 3.6999997 GHz (Option 040)
		–100 MHz to 6.0999997 GHz (Option 041)
		–100 MHz to 26.9999997 GHz (Option 044)
		–100 MHz to 44.9999997 GHz (Option 046)
Resolution		1 Hz
Suffix code		HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.

Details

This command is not available during the Spectrum Emission Mask or the Spurious Emission measurement.

Example of Use

To set the start frequency to 123.456 kHz.

```
STF 123456
STF 123456HZ
STF 123.456KHZ
STF 0.123456MHZ
STF?
> 123456
```

STMODE/STMODE?

Auto Sweep Time Mode

Function

This command sets normal/fast mode when sweep time is AUTO.

Command

```
STMODE mode
```

Query

```
STMODE?
```

Response

```
mode
```

Parameter

mode	Sweep time
NORMAL	Normal sweep time
FAST	Fast sweep mode

Details

This command is not available during the Spectrum Emission Mask measurement.

Example of Use

To set the sweep time to fast mode.

```
STMODE FAST
STMODE?
> FAST
```

STORAGECOUNT/STORAGECOUNT?

Storage Count

Function

This command sets the storage mode count.

Command

```
STORAGECOUNT count
```

Query

```
STORAGECOUNT?
```

Response

```
count
```

Parameter

`count`	Storage mode count
Range	2 to 9999

Details

This command is not available during the Spurious Emission measurement.

Example of Use

To set the storage mode count to 10 times.

```
STORAGECOUNT 10
STORAGECOUNT?
> 10
```

STORAGEMODE/STORAGEMODE?

Storage Mode (Active Trace)

Function

This command selects the storage mode of the active trace.

Command

```
STORAGEMODE mode
```

Query

```
STORAGEMODE?
```

Response

```
mode
```

Parameter

`mode`	Storage mode
`OFF`	Off
`MAX`	Max Hold
`AVG`	Average
`MIN`	Min Hold
`LINAVG`	Linear Average

Details

Trace B, C, D, E, and F cannot be set during the Spurious Emission measurement.

Example of Use

To set the active trace storage mode to Average.

```
STORAGEMODE AVG
STORAGEMODE?
> AVG
```

SVCSVWAVE

Save Wave Data

Function

This command saves waveform data into a CSV file.

Command

```
SVCSVWAVE file,device
```

Parameter

`file`	Name of file to be saved Character string within 32 characters enclosed by double quotes (" ") or single quotes (' '). (excluding extension) The following characters cannot be used. \ / : * ? " ″ ` ′ < > | File name is automatically set to "WaveData date consequential number.csv" when omitted.
`device`	Drive name A,B,D,E,F,... D drive is used when omitted.

Details

When a file name is omitted, 0 to 99 are added to files. If all of the numbers is already used, no more files can be saved.
Files is saved in the following directory of the specified drive.
\Anritsu Corporation\Signal Analyzer\User Data
\Trace Data\Spectrum Analyzer
Up to 1000 files can be saved in the folder.
This command is not available when Spectrum Emission Mask is set to On and when Gate View is set to Off.

Example of Use

To save a waveform data file "trace" into drive E.

```
SVCSVWAVE "trace",e
```

SWEEPCOUNT?

Sweep Count

Function

This command queries the sweep count.

Query

```
SWEEPCOUNT?
```

Response

`count`	Sweep count
Range	0 to 9999

Details

During the Spectrum Emission Mask measurement, the sweep count is displayed as a percentage in the screen.
Convert it in percentage as follows:
Count / Specified storage count ×100

Example of Use

To query the sweep count.

```
SWEEPCOUNT?
> 1
```

SWE:EGAT:HOLD/SWE:EGAT:HOLD?

Gate Hold

Function

This command sets the time during which gate input is disabled for a set time, from the first gate input signal until the next gate signal input, during gate sweep.

Command

```
SWE:EGAT:HOLD time
```

Query

```
SWE:EGAT:HOLD?
```

Response

```
time
```

Suffix code	None. Value is returned in s units.

Parameter

`time`	Offset time
Range	0 to 1 s
Resolution	10 ns
Suffix code	NS, US, MS, S S is used when the suffix code is omitted.
Default	100 µs

Details

This command is not available for MS269x Series.
The Gate Hold (ON/OFF) function is set to ON when the value is changed with this function.

Example of Use

To set the gate input disable time to 100 ms.

```
SWE:EGAT:HOLD 100ms
SWE:EGAT:HOLD?
> 0.10000000
```

SWE:EGAT:HOLD:STAT/SWE:EGAT:HOLD:STAT?

Gate Hold On/Off

Function

This command switches On/Off the function to disable gate input for a set time, from the first gate input signal until the next gate signal input, during gate sweep.

Command

```
SWE:EGAT:HOLD:STAT switch_com
```

Query

```
SWE:EGAT:HOLD:STAT?
```

Response

```
switch_res
```

Parameter

`switch_com`	Sets Gate Hold to On/Off.
`ON|1`	Sets Gate Hold to On.
`OFF|0`	Sets Gate Hold to Off.
`switch_res`	Gate Hold On/Off
`1`	Gate Hold is On.
`0`	Gate Hold is Off.

Details

This command is not available for MS269x Series.
The Gate Sweep (On/Off) function is automatically set to On when this function is set to On.

Example of Use

To set the gate input disable time setting to On.

```
SWE:EGAT:HOLD:STAT ON
SWE:EGAT:HOLD:STAT?
> 1
```

SWE:EGAT:TIME/SWE:EGAT:TIME?

Gate View Sweep Time

Function

This command sets the sweep time for Gate View.
This parameter and the one for setting the sweep time for time axis measurement reference the same value.

Command

```
SWE:EGAT:TIME time
```

Query

```
SWE:EGAT:TIME?
```

Response

```
time
```

Parameter

`time`		Sweep time
	Range	1 µs to 1000 s
	Resolution	1 ms (time≤1 s)
		0.1 s (1 s <time < 10 s)
		1 s (10 s≤time)
	Suffix code	NS,US,MS,S
		S is used when omitted.

Details

This command is not available when Gate View is set to Off.

Example of Use

To set the sweep time to 100 ms.

```
SWE:EGAT:TIME 0.1
SWE:EGAT:TIME?
> 0.100000
```

SWE:EGAT:VIEW/SWE:EGAT:VIEW?

Gate View

Function

This command sets whether to display the gate view.

Command

```
SWE:EGAT:VIEW switch_com
```

Query

```
SWE:EGAT:VIEW?
```

Response

```
switch_res
```

Parameter

`switch_com`	Displays or hides Gate View.
`OFF|0`	Hides Gate View.
`ON|1`	Displays Gate View.
`switch_res`	Displays or hides Gate View.
`0`	Hides Gate View.
`1`	Displays Gate View.

Details

This command is not available during time domain measurement. This command is not available when Gate Sweep is set to Off.

Example of Use

To display Gate View.

```
SWE:EGAT:VIEW ON
SWE:EGAT:VIEW?
> 1
```

SWE:EGAT:VIEW:BAND/SWE:EGAT:VIEW:BAND?

Gate View Resolution Bandwidth

Function

This command sets the resolution bandwidth (RBW) for Gate View.
This parameter and the one for setting the RBW for time axis measurement reference the same value.

Command

```
SWE:EGAT:VIEW:BAND freq
```

Query

```
SWE:EGAT:VIEW:BAND?
```

Response

```
freq
```

Parameter

`freq` Resolution bandwidth (RBW)

[MS269xA]

Range/Resolution: 30 Hz to 31.25 MHz
However, the settable value is 30 Hz to 3 MHz (1-3 sequence), 50 kHz, 5 MHz, 10 MHz, 20 MHz or 31.25 MHz.

[MS2830A], [MS2840A]

Range/Resolution: 30 Hz to 31.25 MHz
However, the settable value is 30 Hz to 3 MHz (1-3 sequence), 500 Hz, 50 kHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz or 31.25 MHz.

[Common]

Suffix code: HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
Hz is used when omitted.

Details

The automatic resolution bandwidth setting function is disabled when the resolution bandwidth (RBW) is changed.
This command is not available when Gate View is set to Off.

Example of Use

To set the RBW for Gate View to 3 kHz.

```
SWE:EGAT:VIEW:BAND 3KHZ
SWE:EGAT:VIEW:BAND?
> 3000
```

SWE:EGAT:VIEW:BAND:AUTO/SWE:EGAT:VIEW:BAND:AUTO?

Gate View Resolution Bandwidth Auto/Manual

Function

This command automatically sets the resolution bandwidth (RBW) for Gate View.
This parameter and the one for automatically setting the RBW for time axis measurement reference the same value.

Command

```
SWE:EGAT:VIEW:BAND:AUTO switch_com
```

Query

```
SWE:EGAT:VIEW:BAND:AUTO?
```

Response

```
switch_res
```

Parameter

`switch_com`	Automatic setting
`OFF|0`	Disables the automatic setting.
`ON|1`	Enables the automatic setting.
`switch_res`	Automatic setting
`0`	Automatic setting is Off.
`1`	Automatic setting is On.

Details

This command is not available when Gate View is set to Off.

Example of Use

To enable the automatic setting of the RBW for Gate View.

```
SWE:EGAT:VIEW:BAND:AUTO ON
SWE:EGAT:VIEW:BAND:AUTO?
> 1
```

SWE:EGAT:VIEW:BAND:VID/SWE:EGAT:VIEW:BAND:VID?

Gate View Video Bandwidth

Function

This command sets the video bandwidth (VBW) for Gate View.
This parameter and the one for setting the VBW for time axis measurement reference the same value.

Command

```
SWE:EGAT:VIEW:BAND:VID freq
```

Query

```
SWE:EGAT:VIEW:BAND:VID?
```

Response

```
freq
```

Parameter

`freq`		Video bandwidth (VBW)
	Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz, OFF
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Details

The automatic video bandwidth setting function is disabled when the video bandwidth (VBW) is changed.
This command is not available when Gate View is set to Off.
This command is not available when Gate View Detection is set to RMS.

Example of Use

To set the VBW to 3 kHz.

```
SWE:EGAT:VIEW:BAND:VID 3KHZ
SWE:EGAT:VIEW:BAND:VID?
> 3000
```

SWE:EGAT:VIEW:BAND:VID:AUTO/SWE:EGAT:VIEW:BAND:VID:AUTO?

Gate View Video Bandwidth Auto/Manual

Function

This command automatically sets the video bandwidth (VBW) for Gate View.
This parameter and the one for setting the VBW for time axis measurement reference the same value.

Command

```
SWE:EGAT:VIEW:BAND:VID:AUTO switch_com
```

Query

```
SWE:EGAT:VIEW:BAND:VID:AUTO?
```

Response

```
switch_res
```

Parameter

`switch_com`	Automatic setting
`OFF|0`	Disables the automatic setting.
`ON|1`	Enables the automatic setting.
`switch_res`	Automatic setting
`0`	Automatic setting Off.
`1`	Automatic setting On.

Details

This command is not available when Gate View is set to Off.

Example of Use

To enable the automatic setting for VBW.

```
SWE:EGAT:VIEW:BAND:VID:AUTO ON
SWE:EGAT:VIEW:BAND:VID:AUTO?
> 1
```

SWE:EGAT:VIEW:DET/SWE:EGAT:VIEW:DET?

Gate View Detection Mode

Function

This command selects the waveform pattern detection mode for Gate View.
This parameter and the one for setting the waveform pattern detection mode for time axis measurement reference the same value.

Command

```
SWE:EGAT:VIEW:DET det
```

Query

```
SWE:EGAT:VIEW:DET?
```

Response

```
det
```

Parameter

det	Detection mode
NORM	Simultaneous detection of positive and negative peaks
POS	Positive peak detection
NEG	Negative peak detection
SAMP	Sample detection
RMS	RMS detection

Details

This command is not available when Gate View is set to Off.

Example of Use

To set the detection mode to positive peak detection.

```
SWE:EGAT:VIEW:DET POS
SWE:EGAT:VIEW:DET?
> POS
```

SWE:EGAT:VIEW:FREQ/SWE:EGAT:VIEW:FREQ?

Gate View Frequency

Function

This command sets the center frequency for Gate View.

Command

```
SWE:EGAT:VIEW:FREQ freq
```

Query

```
SWE:EGAT:VIEW:FREQ?
```

Response

```
freq
```

Parameter

`freq`	Center Frequency
[MS269xA]	–100 MHz to 6.05 GHz (MS2690A)
	–100 MHz to 13.6 GHz (MS2691A)
	–100 MHz to 26.6 GHz (MS2692A)
[MS2830A]	–100 MHz to 3.7 GHz (MS2830A-040)
	–100 MHz to 6.1 GHz (MS2830A-041)
	–100 MHz to 13.6 GHz (MS2830A-043)
	–100 MHz to 26.6 GHz (MS2830A-044)
	–100 MHz to 43.1 GHz (MS2830A-045)
[MS2840A]	–100 MHz to 3.7 GHz (MS2840A-040)
	–100 MHz to 6.1 GHz (MS2840A-041)
	–100 MHz to 26.6 GHz (MS2840A-044)
	–100 MHz to 44.6 GHz (MS2840A-046)
Resolution	1 Hz
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Details

This command is not available when Gate View is set to Off.

Example of Use

To set the center frequency for Gate View.

```
SWE:EGAT:VIEW:FREQ 123456
SWE:EGAT:VIEW:FREQ?
> 123456
```

SWE:EGAT:VIEW:FREQ:AUTO/SWE:EGAT:VIEW:FREQ:AUTO?

Gate View Frequency Mode

Function

This command selects the center frequency setting mode for Gate View.

Command

```
SWE:EGAT:VIEW:FREQ:AUTO switch_com
```

Query

```
SWE:EGAT:VIEW:FREQ:AUTO?
```

Response

```
switch_res
```

Parameter

`switch_com`	Center frequency setting mode
`OFF|0`	Sets the center frequency manually.
`ON|1`	Automatically sets the center frequency to that for the frequency domain.
`switch_res`	Center frequency setting mode
`0`	Sets the center frequency manually.
`1`	Automatically sets the center frequency to that for the frequency domain.

Details

This command is not available when Gate View is set to Off.

Example of Use

To manually set the center frequency for Gate View.

```
SWE:EGAT:VIEW:FREQ:AUTO OFF
SWE:EGAT:VIEW:FREQ:AUTO?
> 0
```

SWE:EGAT:VIEW:POIN/SWE:EGAT:VIEW:POIN?

Gate View Trace Point

Function

This command sets the number of trace display points for Gate View. This parameter and the one for setting the number of trace display points for time axis measurement reference the same value.

Command

```
SWE:EGAT:VIEW:POIN integer
```

Query

```
SWE:EGAT:VIEW:POIN?
```

Response

```
integer
```

Parameter

`integer`	Number of trace display points
`11`	11 points
`21`	21 points
`41`	41 points
`51`	51 points
`101`	101 points
`201`	201 points
`251`	251 points
`401`	401 points
`501`	501 points
`1001`	1001 points
`2001`	2001 points
`5001`	5001 points
`10001`	10001 points
`30001`	30001 points (MS269xA Only)

Details

This command is not available when Gate View is set to Off.

Example of Use

To set the number of trace display points to 2001.

```
SWE:EGAT:VIEW:POIN 2001
SWE:EGAT:VIEW:POIN?
> 2001
```

SWE:RUL/SWE:RUL?

Auto Sweep Type Select Rules

Function

This command sets the rule for switching between sweep and FFT during measurement.

Command

```
SWE:RUL rules
```

Query

```
SWE:RUL?
```

Parameter

rules	Switching rules
DRAN	Selects sweep/FFT prioritizing dynamic range.
SPE	Selects sweep/FFT prioritizing measurement speed.
OSW	Uses only sweep.
PSW	Prioritizes sweep for selection. Uses FFT only for RBW that cannot be measured by sweep.
PFFT	Prioritizes FFT for selection. Uses sweep only for RBW that cannot be measured by FFT.

Details

This command is not available for MS269x Series.
Uses 40 kHz or lower for the FFT width when DRANge is specified.
Uses 2 MHz or lower for the FFT width when SPEed is specified.
Uses 40 kHz or lower for the FFT width when PSWeep is specified.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions.
The setting is fixed to OSWeep during time domain (0span).
The setting is fixed to OSWeep when Gate Sweep is On.
The setting is fixed to OSWeep when Sweep Time(Auto/Manual) is Manual.
The setting is fixed to OSWeep during Spurious Emission measurement.

Example of Use

To give priority to dynamic range for the sweep/FFT switch rule.

```
SWE:RUL DRAN
SWE:RUL?
> DRAN
```

SWE:RUL:FFT:RWID?

Sweep Type Select Rules Real FFT Width Query

Function

This command queries the FFT width that is actually used for the sweep/FFT switch rule during measurement.

Query

```
SWE:RUL:FFT:RWID?
```

Response

freq	FFT width
Range	40 kHz or 2 MHz
Resolution	1 Hz
Suffix code	None. Value is returned in Hz units.

Details

This command is not available for MS269x Series.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions.
This command queries the FFT width that is actually used.

Example of Use

To query the FFT width that is actually used.

```
SWE:RUL:FFT:RWID?
> 40000
```

SWE:RUL:FFT:WIDT/SWE:RUL:FFT:WIDT?

Sweep Type Select Rules FFT Width

Function

This command sets the FFT width when FFT Priority is selected, for the sweep/FFT Switching rules during measurement.

Command

```
SWE:RUL:FFT:WIDT freq
```

Query

```
SWE:RUL:FFT:WIDT?
```

Parameter

`freq`		FFT width
	Range	40 kHz or 2 MHz
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
	Default	40 kHz

Details

This command is not available for MS269x Series.
When a value other than 40 kHz or 2 MHz is set, the value is rounded off to the smaller value and set.
This command can be set only when Sweep Type Rules is FFT Priority.
The specified width is used as the FFT width on a priority basis, but it is automatically changed by the SPAN/RBW/VBW measurement conditions.

Example of Use

To set the FFT width to 40 kHz.

```
SWE:RUL:FFT:WIDT 40KHZ
SWE:RUL:FFT:WIDT?
> 40000
```

SWE:RUL:RTYP?

Sweep Type Select Rules Real Type Query

Function

This command queries the sweep mode (sweep or FFT) that is executed during measurement.

Query

```
SWE:RUL:RTYP?
```

Response

```
type
```

Parameter

`type`	Sweep mode
`SWE`	Performs measurement using sweep.
`FFT`	Performs measurement using FFT.

Details

This command is not available for MS269x Series.

Example of Use

To query the sweep type used for measurement under the current setting.

```
SWE:RUL:RTYP?
> FFT
```

SWP/SWP?

Single Sweep/Sweep Status Query

Function

This command sets the sweep mode to single and starts single sweep. Also, it reads the sweep status (sweep done/during sweeping).

Command

```
SWP
```

Query

```
SWP?
```

Response

`status`	Sweep status
`0`	Sweep done
`1`	During sweeping

Details

Starting sweep with this function makes the following command wait without being processed until sweep is finished.

Example of Use

To start single sweep and read the sweep status.

```
SNGLS
SWP?
> 1
```

SWSTART

Restart Sweep

Function

This command restarts the sweep.

Command

```
SWSTART
```

Example of Use

To restart sweep.

```
SWSTART
```

SWSTOP

Stop Sweep

Function

This command stops the sweep.

Command

```
SWSTOP
```

Example of Use

To stop sweep.

```
SWSTOP
```

TDLY/TDLY?

Trigger Delay

Function

This command sets the delay from the trigger occurrence point to sweep start.

Command

```
TDLY time
```

Query

```
TDLY?
```

Response

```
time
```

No suffix code. Value is returned in μs units.

Parameter

`time`		Delay time to start gating
	Range	–1 to 1 s
	Resolution	20 ns
	Suffix code	NS, US, MS, S ms is used when omitted.

Example of Use

To set the trigger delay time to 20 ms.

```
TDLY 20
TDLY 20000US
TDLY 20MS
TDLY 0.02S
TDLY?
> 20000
```

TITLE/TITLE?

Register Title

Function

This command registers the title character string.

Command

```
TITLE string
```

Query

```
TITLE?
```

Response

```
string
```

Parameter

`string`	Character string within 32 characters enclosed by double quotes (" ") or single quotes (' ')

Example of Use

To set the title character string.

```
TITLE "MS2690A"
TITLE 'SPECTRUM ANALYZER'
TITLE?
> SPECTRUM ANALYZER
```

TRAC:SEM?

Query Trace Data Spectrum Emission Mask

Function

This function reads the trace data for Spectrum Emission Mask measurement.

Query

```
TRAC:SEM? trace
```

Response

```
data_1,data_2,...
```

Parameter

trace	Trace to save
REF	Reference trace
LOW1	Offset1 Lower side trace
LOW2	Offset2 Lower side trace
LOW3	Offset3 Lower side trace
LOW4	Offset4 Lower side trace
LOW5	Offset5 Lower side trace
LOW6	Offset6 Lower side trace
UPP1	Offset1 Upper side trace
UPP2	Offset2 Upper side trace
UPP3	Offset3 Upper side trace
UPP4	Offset4 Upper side trace
UPP5	Offset5 Upper side trace
UPP6	Offset6 Upper side trace
data_n	Level data
Resolution	Integer value for 0.001 dB units

Details

This function reads the Positive trace data when the Detection mode is Positive & Negative (Normal mode). When Spectrum Emission Mask measurement is Off, –999.0 is returned as the trace point minutes and seconds.

Example of Use

To read Reference data.

```
TRAC:SEM? REF
> -20.000,-20.231,-21.233,...
```

TRAC:SEM:NEG?

Query Negative Trace Data Spectrum Emission Mask

Function

This function reads the Negative Spectrum Emission Mask trace data when the Detection mode is Pos&Neg (Normal mode).

Query

```
TRACe:SEM:NEG? trace
```

Response

```
data_1,data_2,...
```

Parameter

`trace`	Trace to save
`REF`	Reference trace
`LOW1`	Offset1 Lower side trace
`LOW2`	Offset2 Lower side trace
`LOW3`	Offset3 Lower side trace
`LOW4`	Offset4 Lower side trace
`LOW5`	Offset5 Lower side trace
`LOW6`	Offset6 Lower side trace
`UPP1`	Offset1 Upper side trace
`UPP2`	Offset2 Upper side trace
`UPP3`	Offset3 Upper side trace
`UPP4`	Offset4 Upper side trace
`UPP5`	Offset5 Upper side trace
`UPP6`	Offset6 Upper side trace
`data_n`	Level data
Resolution	Integer value for 0.001 dB units

Details

This function reads the Negative trace data when the Detection mode is Positive & Negative (Normal mode). It reads the trace data acquired in the last Positive & Negative (Normal mode) in other detection modes. When Spectrum Emission Mask measurement is Off, –999.0 is returned as the trace point minutes and seconds.

Example of Use

To read Reference data.

```
TRAC:SEM:NEG? REF
> -20.000,-20.231,-21.233,...
```

TRGLVL/TRGLVL?

Trigger Level

Function

This command sets the threshold value of the level where trigger sweep starts.

Command

```
TRGLVL level
```

Query

```
TRGLVL?
```

Response

```
level
```

No suffix code. Refer to the parameters below for numerical values.

Parameter

`level` Threshold value of level where trigger sweep starts

When trigger signal source is video detection (Video) and at log scale:

Range	–150 to +50 dBm
Resolution	1 dB
Suffix code	DBM, DM dBm is used when omitted.

When trigger signal source is video detection (Video) and at linear scale:

Range	0 to 100%
Resolution	1%
Suffix code	None

When trigger signal source is wideband IF detection (Wide IF Video):

Range	–60 to 50 dBm
Resolution	1 dB
Suffix code	DBM, DM dBm is used when omitted.

Details

These settings are applied when the trigger signal source is video detection (Video) or wideband IF detection (Wide IF Video).

Example of Use

To set the threshold value of the level where trigger sweep starts to –10 dBm.

```
TRGLVL -10DBM
TRGLVL?
> -10
```

TRGS/TRGS?

Trigger Switch

Function

This command sets trigger sweep ON/OFF.

Command

```
TRGS switch
```

Query

```
TRGS?
```

Response

```
switch
```

Parameter

switch	Trigger sweep ON/OFF
FREE	No trigger sweep (Free Run)
TRGD	Sweep when triggered (Triggered)

Example of Use

To set to wait for a sweep trigger.

```
TRGS TRGD
TRGS?
> TRGD
```

TRGSLP/TRGSLP?

Trigger Slope

Function

This command sets the trigger detection mode (rise/fall).

Command

```
TRGSLP edge
```

Query

```
TRGSLP?
```

Response

```
edge
```

Parameter

edge	Trigger detection mode
RISE	Detects at the rising edge.
FALL	Detects at the falling edge.

Details

This function selects the trigger detection mode when the trigger signal source is video detection (Video), wideband IF detection (Wide IF Video), external input (External), SG Marker, or Baseband Interface (BBIF).

Example of Use

To detect at the rising edge.

```
TRGSLP RISE
TRGSLP?
> RISE
```

TRGSOURCE/TRGSOURCE?

Trigger Source

Function

This command selects trigger source.

Command

```
TRGSOURCE source
```

Query

```
TRGSOURCE?
```

Response

```
source
```

Parameter

`source`	Trigger signal source
[MS269xA]	
`VID`	Video detection (Video)
`WIDEVID`	Wideband IF detection (Wide IF Video)
`EXT`	External input (External)
`SG`	SG Marker
`BBIF`	Baseband Interface (BBIF)
[MS2830A], [MS2840A]	
`VID`	Video detection (Video)
`WIDEVID`	Wideband IF detection (Wide IF Video)
`EXT`	External input (External)
`SG`	SG Marker
`FRAME`	Frame period trigger

Details

[MS269xA]

SG Marker trigger can be selected only when the Option 020/120 Vector Signal Generator is installed.

BBIF trigger cannot be selected only when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.

[MS2830A], [MS2840A]

SG marker trigger can be selected only when the Option 020/120/021/121 Vector Signal Generator is installed.

Example of Use

To set the trigger signal source to video trigger.

```
TRGSOURCE VID
TRGSOURCE?
> VID
```

TRIG:FRAM:OFFS/TRIG:FRAM:OFFS?

Frame Sync Offset

Function

This command sets the offset time from frame trigger occurrence signal source input until the frame trigger occurrence.

Command

```
TRIG:FRAM:OFFS time
```

Query

```
TRIG:FRAM:OFFS?
```

Parameter

time		Offset time
	Range	0 to 1 s
	Resolution	10 ns
	Suffix code	NS, US, MS, S
		S is used when the suffix code is omitted.
	Default	0 s

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To set the frame trigger occurrence offset time to 100 ms.

```
TRIG:FRAM:OFFS 100MS
TRIG:FRAM:OFFS?
> 0.100000
```

TRIG:FRAM:PER/TRIG:FRAM:PER?

Frame Trigger Period

Function

This command sets the trigger occurrence period of the frame trigger.

Command

```
TRIG:FRAM:PER time
```

Query

```
TRIG:FRAM:PER?
```

Parameter

`time`		Frame trigger
	Range	1 µs to 1 s
	Resolution	10 ns
	Suffix code	NS,US,MS,S S is used when the suffix code is omitted.
	Default	10 ms

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To set the frame trigger occurrence period to 10 ms.

```
TRIG:FRAM:PER 10MS
TRIG:FRAM:PER?
> 0.01000000
```

TRIG:FRAM:SYNC/TRIG:FRAM:SYNC?

Frame Sync Source

Function

This command selects the synchronized signal source for frame trigger start.

Command

```
TRIG:FRAM:SYNC sync
```

Query

```
TRIG:FRAM:SYNC?
```

Parameter

sync	Synchronized signal source
EXT	External input (Default)
IMM	Free run
WIF	Wideband IF detection (Wide IF Video)

Details

This command is not available for MS269x Series.
This setting is shared by the trigger signal and gate signal. The same value is also used when frame trigger is selected as the gate signal source for gate sweep.

Example of Use

To set the frame trigger synchronized source to Wide IF Video trigger.

```
TRIG:FRAM:SYNC WIF
```

To query the frame trigger synchronized signal source.

```
TRIG:FRAM:SYNC?
> WIF
```

TRIG:HOLD/TRIG:HOLD?

Trigger Hold

Function

This command sets the time during which trigger input is disabled for a set time, from the first trigger input until the next trigger input.

Command

```
TRIG:HOLD time
```

Query

```
TRIG:HOLD?
```

Parameter

`time`		Offset time
	Range	0 to 1 s
	Resolution	10 ns
	Suffix code	NS, US, MS, S S is used when the suffix code is omitted.
	Default	100 µs

Details

This command is not available for MS269x Series.
The Trigger Hold (ON/OFF) function is set to ON when the value is changed with this function.
This command is not available for video trigger.

Example of Use

To set the trigger input disable time to 100 ms.

```
TRIG:HOLD 100MS
TRIG:HOLD?
> 0.10000000
```

TRIG:HOLD:STAT/TRIG:HOLD:STAT?

Trigger Hold On/Off

Function

This command sets On/Off the function to disable trigger input for a set time, from the first trigger input until the next trigger input.

Command

```
TRIG:HOLD:STAT switch_com
```

Query

```
TRIG:HOLD:STAT?
```

Response

```
Switch_res
```

Parameter

switch_com	Trigger Hold On/Off
ON|1	Sets the Trigger Hold function to On.
OFF|0	Sets the Trigger Hold function to Off.
switch_res	Trigger Hold On/Off
1	Trigger Hold function is On.
0	Trigger Hold function is Off.

Details

This command is not available for MS269x Series.
The Trigger (On/Off) function is automatically set to On when this function is set to On.

Example of Use

To set the trigger input disable time setting to On.

```
TRIG:HOLD:STAT ON
TRIG:HOLD:STAT?
> 1
```

TS

Single Sweep

Function

This command sets the sweep mode to single and starts single sweep.

Command

```
TS
```

Details

Starting sweep with this function makes the following command wait without being processed until sweep is finished.

Example of Use

To start single sweep.

```
TS
```

TSAVG

Average Sweep

Function

This command sets the storage mode to Average and starts sweep.

Command

```
TSAVG
```

Details

Starting sweep with this function makes the following command wait without being processed until sweep is finished.

Example of Use

To set the storage mode to Average and start sweep.

```
TSAVG
```

TSLINAVG

Linear Average Sweep

Function

This command sets storage mode to Linear Average and starts sweep.

Command

```
TSLINAVG
```

Details

Starting sweep with this function makes the following command wait without being processed until sweep is finished.

Example of Use

To set the storage mode to Linear Average and start sweep.

```
TSLINAVG
```

TSMAXHOLD

Max Hold Sweep

Function

This command sets the storage mode to Max Hold and start sweep.

Command

```
TSMAXHOLD
```

Details

Starting sweep with this function makes the following command wait without being processed until sweep is finished.

Example of Use

To set the storage mode to Max Hold and start sweep.

```
TSMAXHOLD
```

TSMINHOLD

Min Hold Sweep

Function

This command sets the storage mode to Min Hold and starts sweep.

Command

```
TSMINHOLD
```

Details

Starting sweep with this function makes the following command wait without being processed until sweep is finished.

Example of Use

To set the storage mode to Min Hold and start sweep.

```
TSMINHOLD
```

TTL/TTL?

Display Title

Function

This command displays/hides the title.

Command

```
TTL on_off
```

Query

```
TTL?
```

Response

```
on_off
```

Parameter

`on_off`	Title display On/Off
`ON`	Displays the title.
`OFF`	Hides the title.

Example of Use

To display the title.

```
TTL ON
TTL?
> ON
```

UCL?

Uncal Status Query

Function

This command queries the UNCAL status.

Query

```
UCL?
```

Response

```
status
```

Parameter

status	UNCAL status
0	Normal
1	UNCAL

Example of Use

To query the UNCAL status.

```
UCL?
> 1
```

UNC/UNC?

Display Uncal Message

Function

This command displays/hides UNCAL messages at Uncal.

Command

```
UNC on_off
```

Query

```
UNC?
```

Response

```
on_off
```

Parameter

`on_off`	UNCAL display On/Off
`ON`	Displays UNCAL.
`OFF`	Hides UNCAL.

Example of Use

To hide UNCAL.

```
UNC OFF
UNC?
> OFF
```

VAVG/VAVG?

Average Mode (Active Trace)

Function

This command sets the active trace average processing to On/Off and also sets the average count.

Command

```
VAVG on_off
VAVG count
```

Query

```
VAVG?
```

Response

```
count
```

Parameter

on_off	Average processing On/Off
ON	ON
OFF	OFF
count	Average count
Range	2 to 9999

Example of Use

To set the average count to 128 times.

```
VAVG ON
VAVG 128
VAVG?
> 128
```

VB/VB?

Video Bandwidth

Function

This command sets the video bandwidth (VBW). When Couple Time/Frequency Domain is set to Off, each parameter is specified in accordance with the already-specified frequency axis or time axis measurement.

Command

```
VB bandwidth
VB AUTO
VB OFF
```

Query

```
VB?
```

Response

```
bandwidth
```

Parameter

`bandwidth`		Video bandwidth (VBW)
	Range/Resolution	1 Hz to 10 MHz (1-3 sequence), 5 kHz, OFF
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
	`AUTO`	Sets the resolution bandwidth according to resolution bandwidth (RBW) settings.
	`OFF`	Does not set VBW.

Details

This command is not available during the Spectrum Emission Mask or the Spurious Emission measurement.

Example of Use

To set VBW to 3 kHz.

```
VB 3KHZ
VB?
> 3000
```

VBWMODE/VBWMODE?

Video Bandwidth Mode

Function

This command sets the processing mode of the video bandwidth (VBW).

Command

```
VBWMODE mode
```

Query

```
VBWMODE?
```

Response

```
mode
```

Parameter

mode	Video bandwidth (VBW) processing mode
VIDEO	Normal VBW
POWER	Power VBW

Details

This command is not available during the Spectrum Emission Mask measurement.

Example of Use

To set the mode to Power VBW.

```
VBWMODE POWER
```

WRITEMODE/WRITEMODE?

Trace Write Mode

Function

This command sets the writing mode of the active trace.

Command

```
WRITEMODE mode
```

Query

```
WRITEMODE?
```

Response

```
mode
```

Parameter

`mode`	Trace write mode
`0`	Updates the display for each measurement (Write mode).
`1`	Does not update the display for each measurement (View Mode).
`2`	Does not display (Blank mode).

Details

This command is not available during the Spectrum Emission Mask or the Spurious Emission measurement.

Example of Use

To update the active trace display for each measurement.

```
WRITEMODE 0
```

XMA/XMA?

Write and Query Trace Data (Trace A)

Function

This command writes and queries the trace data of Trace A in ASCII format.

Command

```
XMA wpoint,data
```

Query

```
XMA? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/Reference level(V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501,1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This function writes or reads positive detection trace data when the detection mode is Positive & Negative (Normal mode).
This command is not available during the Spectrum Emission Mask measurement.

Example of Use

To set –20 dBm at the 1st point and –21 dBm at the 2nd point.

```
XMA 1,-20000
XMA 2,-21000
XMA? 1,2
> -20000,-21000
```

XMB/XMB?

Write and Query Trace Data (Trace B)

Function

This command writes and queries the trace data of Trace B in ASCII format.

Command

```
XMB wpoint,data
```

Query

```
XMB? start,number
```

Response

```
data1,data2,...
```

Parameter

wpoint	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
data	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/Reference level(V) } × 10000 (At linear scale)
start	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
number	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This function writes and queries positive detection trace data when the detection mode is Positive & Negative (Normal mode).

This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spectrum Emission measurement.

Example of Use

To set –20 dBm at the 1st point and –21 dBm at the 2nd point.

```
XMB 1,-20000
XMB 2,-21000
XMB? 1,2
> -20000,-21000
```

XMC/XMC?

Write and Query Trace Data (Trace C)

Function

This command writes and queries the trace data of Trace C in ASCII format.

Command

```
XMC wpoint,data
```

Query

```
XMC? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/Reference level(V) } × 10000 (At linear scale)

`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501,1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This function writes and queries the positive detection trace data when the detection mode is Positive & Negative (Normal mode).
This command is not available in the following cases:

- During the Spectrum Emission Mask measurement.
- During the Spectrum Emission measurement.

Example of Use

To set –20 dBm at the 1st point and –21 dBm at the 2nd point.

```
XMC 1,-20000
XMC 2,-21000
XMC? 1,2
> -20000,-21000
```

XMD/XMD?

Write and Query Trace Data (Trace D)

Function

This command writes and queries the trace data of Trace D in ASCII format.

Command

```
XMD wpoint,data
```

Query

```
XMD? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501,1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This function writes and queries positive detection trace data when the detection mode is Positive & Negative (Normal mode).
This command is not available in the following cases:

- During the Spurious Emission measurement.
- During the Spectrum Emission Mask measurement.

Example of Use

To set –20 dBm at the first point and set –21 dBm at the second point.

```
XMD 1,-20000
XMD 2,-21000
XMD? 1,2
> -20000,-21000
```

XME/XME?

Write and Query Trace Data (Trace E)

Function

This command writes and queries the trace data of Trace E in ASCII format.

Command

```
XME wpoint,data
```

Query

```
XME? start,number
```

Response

```
data1,data2,...
```

Parameter

wpoint	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
data	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
start	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500,1000, 2000, 5000, 10000, 30000 (MS269xA Only)
number	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501,1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This function writes and queries positive detection trace data when the detection mode is Positive & Negative (Normal mode).
This command is not available in the following cases:

- During the Spurious Emission measurement.
- During the Spectrum Emission Mask measurement.

Example of Use

To set –20 dBm at the first point and set –21 dBm at the second point.

```
XME 1,-20000
XME 2,-21000
XME? 1,2
> -20000,-21000
```

XMF/XMF?

Write and Query Trace Data (Trace F)

Function

This command writes and queries the trace data of Trace F in ASCii format.

Command

```
XMF wpoint,data
```

Query

```
XMF? start,number
```

Response

```
data1,data2,...
```

Parameter

`wpoint`	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`data`	Level data to be written
Resolution	0.001 dB units (At log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
`start`	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
`number`	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This function writes and queries positive detection trace data when the detection mode is Positive & Negative (Normal mode).
This command is not available in the following cases:

- During the Spurious Emission measurement.
- During the Spectrum Emission Mask measurement.

Example of Use

To set –20 dBm at the 1st point and –21 dBm at the 2nd point.

```
XMF 1,-20000
XMF 2,-21000
XMF? 1,2
> -20000,-21000
```

XMZ/XMZ?

Write and Query Trace Data (Gate View)

Function

This command writes and queries the trace data of Gate View in ASCII format.

Command

```
XMZ wpoint,data
```

Query

```
XMZ? start,number
```

Response

```
data1,data2,...
```

Parameter

wpoint	Specify the writing position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
data	Level data to be written
Resolution	Integers in 0.001 dB units (on log scale) { Voltage value (V)/reference level (V) } × 10000 (At linear scale)
start	Specify the loading start position as the number of displayed points from the left edge of the screen.
Range	0 to 10, 20, 40, 50, 100, 200, 250, 400, 500, 1000, 2000, 5000, 10000, 30000 (MS269xA Only)
number	Number of items of data to be loaded
Range	1 to 11, 21, 41, 51, 101, 201, 251, 401, 501, 1001, 2001, 5001, 10001, 30001 (MS269xA Only)

Details

This function writes and queries positive detection trace data when the detection mode is Positive & Negative (Normal mode).
This command is not available when Gate View is set to Off.

Example of Use

To set –20 dBm at the 1st point and –21 dBm at the 2nd point.

```
XMZ 1,-20000
XMZ 2,-21000
XMZ? 1,2
> -20000,-21000
```

ZEROSPAN

Zero Span

Function

This command sets the frequency span to 0 Hz (time domain display mode).

Command

```
ZEROSPAN
```

Details

During other than the Burst Average measurement, the execution of Zero Span turns off the Measure function.

Example of Use

To set the span frequency to 0 Hz.

```
ZEROSPAN
```