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

28th 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) or MS2830A Signal Analyzer Operation Manual (Mainframe Operation). Please also refer to this document before using the equipment.
- Keep this manual with the equipment.

ANRITSU CORPORATION

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



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



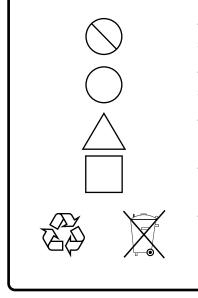
WARNING This indicates a hazardous procedure that could result in serious injury or death if not performed properly.



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 Signal Analyzer Operation Manual Signal Analyzer Function Remote Control

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When you dispose of export-controlled items, the products/manuals need to be broken/shredded so as not to be unlawfully used for military purpose.

About This Manual

Operation manual configuration

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

MS2690A/MS2691A/MS2692A MS2830A Signal Analyzer Signal Analyzer Operation Manual **Operation Manual** (Main Frame Operation) Or (Main Frame Operation) MS2690A/MS2691A/MS2692A and MS2830A Signal Analyzer Operation Manual (Main Frame Remote Control) MS2690A/MS2691A/MS2692A MS2830A Signal Analyzer Operation Manual Signal Analyzer Operation Manual (Signal Analyzer Function Or (Signal Analyzer Function Operation) Operation) MS2690A/MS2691A/MS2692A and MS2830A Signal Analyzer Operation Manual (Signal Analyzer Function Remote Control) MS2690A/MS2691A/MS2692A MS2830A Spectrum Analyzer Operation Manual Spectrum Analyzer Operation Manual (Spectrum Analyzer Function Or (Spectrum Analyzer Function Operation) Operation) MS2690A/MS2691A/MS2692A and MS2830A Signal Analyzer Operation Manual (Spectrum Analyzer Function Remote Control) MS2690A/MS2691A/MS2692A and MS2830A Signal Analyzer Operation Manual (Phase Noise Measurement Function Operation) MS2690A/MS2691A/MS2692A and MS2830A Signal Analyzer Operation Manual (Phase Noise Measurement Function Remote Control)

- 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) <This document>

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)

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, common functions and common remote functions of the Phase Noise Measurement function

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.

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Chapter 1 Overview

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

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1.1 Overview

Automatic measurement can be performed by using this instrument in connection with an external controller (PC). This instrument is standardly 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 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 Signal Analyzer Operation Manual (Mainframe Remote Control)" for details.

To use the Signal Analyzer function on the MS2830A, Analysis Bandwidth 10 MHz Option or greater is required.

This chapter provides detailed specifications of SCPI Remote Control Command to execute the functions of this application by functions. Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for detailed specifications on IEEE488.2 common device message and application common device messages.

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:UNIT:FREQuency?	
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[:SENSe]:CCDF :PSTatistic:RTRace[:STATe]?	
[:SENSe]:CCDF :PSTatistic:GAUSsian[:STATe] ON OFF 1 0	
[:SENSe]:CCDF :PSTatistic:GAUSsian[:STATe]?	2-251
:CALCulate:MARKer[1][:PEAK]:X:DELTa?	
:DISPlay:WINDow[1]:TRACe:X[:SCALe]:PDIVision <rel_ampl></rel_ampl>	
:DISPlay:WINDow[1]:TRACe:X[:SCALe]:PDIVision?	
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:CALCulate:MARKer:AXIS?	
:CALCulate:MARKer[1][:PEAK]:X:DELTa?	
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EXTernal[1] IMMediate WIF RFBurst VIDeo SG BBIF	2-268
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:TRACe[:DATA]:NEGative? [<start>[,<length>]]</length></start>	2-273
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	:CALCulate:TMARker[1] 2:X?	
	:CALCulate:TMARker:COUPle:ZONE[:STATe] OFF[ON]0]1	
	:CALCulate:TMARker:COUPle:ZONE[:STATe]?	
	:CALCulate:ANALyze:SPECtrum	
	:CALCulate:ANALyze:SPGRam	
	:CALCulate:TMARker[1] 2:PEAK:X?	
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:OFFSet <real></real>	
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:OFFSet?	
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:MODE <mode></mode>	
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:MODE?	
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:PDIVision <real></real>	
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:PDIVision?	
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence <time></time>	
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	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence:MODE?	
2.8	Measure Common Function Settings.	
	[:SENSe]:RADio:STANdard[:SELect]	•.
	OFF WCDMADN WCDMAUP MWIMAXDL MWIMAXUL 3GLTE_DL	
	3GLTE_ULIETC_DSRCITDSCDMAIXGPHSICDMA2KFWDIEVDOFWDI	
	3GLTE_TDD_DL 3GLTE_TDD_UL ISDBTMM	2-288
	[:SENSe]:RADio:STANdard[:SELect]?	
	:CONFigure:SANalyzer	
	:CONFigure?	
	[:SENSe]:RADio:STANdard:LOAD <function>[,<pattern>]</pattern></function>	
	[:SENSe]:RADio:STANdard:LOAD? <function></function>	
	[:SENSe]:FREQuency:SYNThesis:LPHase:STATe?	
2.9	Adjacent Channel Power Measurement Settings	
2.5	[:SENSe]:ACPower[:STATe] ON OFF 1 0	
	:CALCulate:ACPower[:STATe] ON OFF 1 0	
	[:SENSe]:ACPower[:STATe]?	
	:CALCulate:ACPower[:STATe]?	
	[:SENSe]:ACPower:CARRier[1]:RCARrier <integer></integer>	
	:CALCulate:ACPower:CARRier[1]:RCARrier <integer></integer>	
	[:SENSe]:ACPower:CARRier[1]:RCARrier?	
	:CALCulate:ACPower:CARRier[1]:RCARrier?	
	[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod STOTal CTOTal BSIDes CSELect	
	:CALCulate:ACPower:CARRier[1]:RCARrier:METHod STOTal CTOTal BSIDes CSELect	
	[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod?	
	:CALCulate:ACPower:CARRier[1]:RCARrier:METHod?	
	[:SENSe]:ACPower:CORRection:NOISe[:AUTO] ON OFF 1 0	
	:CALCulate:ACPower:CORRection:NOISe[:AUTO] ON OFF 1 0	

[:SENSe]:ACPower:CORRection:NOISe[:AUTO]?	
:CALCulate:ACPower:CORRection:NOISe[:AUTO]?	
[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration] <bandwidth></bandwidth>	
:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration] <bandwidth></bandwidth>	2-314
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[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration] <bandwidth></bandwidth>	2-316
:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration] <bandwidth></bandwidth>	2-317
[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?	2-318
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[:SENSe]:ACPower:CARRier[1]:RCFRequency <freq></freq>	2-320
:CALCulate:ACPower:CARRier[1]:RCFRequency <freq></freq>	2-321
[:SENSe]:ACPower:CARRier[1]:RCFRequency?	2-321
:CALCulate:ACPower:CARRier[1]:RCFRequency?	2-322
[:SENSe]:ACPower:CARRier[1]:COUNt <integer></integer>	2-323
:CALCulate:ACPower:CARRier[1]:COUNt <integer></integer>	
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:CALCulate:ACPower:CARRier[1]:COUNt?	
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:CALCulate:ACPower:CARRier[1]:LIST:WIDTh <bandwidth></bandwidth>	
[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh?	
:CALCulate:ACPower:CARRier[1]:LIST:WIDTh?	
[:SENSe]:ACPower:OFFSet[1]:LIST:STATe ON OFF 1 0,ON OFF 1 0,ON OFF 1 0	
:CALCulate: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?	
[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency] <freq>,<freq>,<freq></freq></freq></freq>	
:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency] <freq>,<freq>,<freq></freq></freq></freq>	
[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]?	
:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency]?	
[:SENSe]:ACPower:CARRier[1]:LIST:METHod IBW RRC RC	
:CALCulate:ACPower:CARRier[1]:LIST:METHod IBW RRC RC	
[:SENSe]:ACPower:CARRier[1]:LIST:METHod?	
:CALCulate:ACPower:CARRier[1]:LIST:METHod?	
[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE RECT NYQuist RNYQuist	
:CALCulate:ACPower:CARRier[1]:FILTer:TYPE RECT NYQuist RNYQuist	
[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?	
:CALCulate:ACPower:CARRier[1]:FILTer:TYPE?	
[:SENSe]:ACPower:FILTer[:RRC][:STATe] OFF ON 0 1	
:CALCulate:ACPower:FILTer[:RRC][:STATe] OFF ON 0 1	
[:SENSe]:ACPower:FILTer[:RRC][:STATe]?	
:CALCulate:ACPower:FILTer[:RRC][:STATe]?	
[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE RECT NYQuist RNYQuist	2-341
:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE RECT NYQuist RNYQuist	0 0 4 0

	0.040
[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?	
:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE?	
:DISPlay:ACPower:RESult:TYPE CARRier OFFSet	
:DISPlay:ACPower:RESult:TYPE?	
[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real></real>	
:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real></real>	
[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?	
:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa?	
[:SENSe]:ACPower:FILTer[:RRC]:ALPHa <real></real>	
:CALCulate:ACPower:FILTer[:RRC]:ALPHa <real></real>	
[:SENSe]:ACPower:FILTer[:RRC]:ALPHa?	
:CALCulate:ACPower:FILTer[:RRC]:ALPHa?	
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:CALCulate:ACPower:MARKer[1] 2 3 4 5 6 7 8 9 10:MAXimum:NEXT	.2-358
:CALCulate:ACPower:MARKer[1] 2 3 4 5 6 7 8 9 10:X <freq> <time> <sample> <dist></dist></sample></time></freq>	.2-359
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:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision ?	
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real></real>	.2-362
:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?	
:TRIGger:ACPower[:SEQuence]:SOURce EXTernal[1] IMMediate WIF RFBurst VIDeo SG	
BBIF	
:TRIGger:ACPower[:SEQuence]:SOURce?	
[:SENSe]:ACPower:AVERage:COUNt <integer></integer>	
[:SENSe]:ACPower:AVERage:COUNt?	
[:SENSe]:ACPower:AVERage[:STATe] ON OFF 1 0	
[:SENSe]:ACPower:AVERage[:STATe]?	
[:SENSe]:ACPower:BANDwidth[:RESolution] <freq></freq>	
:CALCulate:ACPower:BANDwidth[:RESolution] <freq></freq>	
[:SENSe]:ACPower:BANDwidth[:RESolution]?	
:CALCulate:ACPower:BANDwidth[:RESolution]?	
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO ON OFF 1 0	
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO ON OFF 1 0	
[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?	
:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?	
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	:CALCulate:ACPower:DETector[:FUNCtion] NORMal POSitive NEGative AVERage	2-371
	[:SENSe]:ACPower:DETector[:FUNCtion]?	2-371
	:CALCulate:ACPower:DETector[:FUNCtion]?	2-372
	[:SENSe]:ACPower:FREQuency:SPAN <freq></freq>	2-372
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	[:SENSe]:ACPower:SWEep:TIME <time></time>	2-373
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	[:SENSe]:ACPower:SWEep:TIME:AUTO?	2-374
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	OFF	2-375
	:CALCulate:ACPower:MARKer[1]]2 3 4 5 6 7 8 9 10:MODE?	2-375
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	[:SENSe]:CHPower:FREQuency:CENTer?	2-383
	:CALCulate:CHPower:FREQuency:CENTer?	2-384
	[:SENSe]:CHPower:BANDwidth:INTegration <freq></freq>	2-384
	:CALCulate:CHPower:BANDwidth:INTegration <freq></freq>	2-385
	[:SENSe]:CHPower:BANDwidth:INTegration?	2-385
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	[:SENSe]:CHPower:FILTer:TYPE?	2-387
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	:CALCulate:CHPower:FILTer[:RRC]:ALPHa <real></real>	2-391
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	[:SENSe]:BPOWer :TXPower:CORRection:NOISe[:AUTO]?	
	:CALCulate:BPOWer :TXPower:CORRection:NOISe[:AUTO]?	
	:CONFigure:BPOWer :TXPower	
	:INITiate:BPOWer :TXPower	
	:FETCh:BPOWer :TXPower[n]?	
	:READ:BPOWer[:TXPower[n]?	
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	:STATus:QUEStionable:MEASure:CONDition?	2-557
	:STATus:QUEStionable:MEASure:ENABle <integer></integer>	2-558
	:STATus:QUEStionable:MEASure:ENABle?	2-558
	:STATus:QUEStionable:MEASure:NTRansition <integer></integer>	2-559
	:STATus:QUEStionable:MEASure:NTRansition?	2-559
	:STATus:QUEStionable:MEASure:PTRansition <integer></integer>	2-560
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	[:SENSe]:MIXer:LOSS?	

2.1 Frequency Settings

Table 2.1-1 lists device messages for setting frequency.

Function	Device Message
O to E	[:SENSe]:FREQuency:CENTer <freq></freq>
Center Frequency	[:SENSe]:FREQuency:CENTer?
Frequency Step	[:SENSe]:FREQuency:CENTer:STEP[:INCRement] <freq></freq>
Size	[:SENSe]:FREQuency:CENTer:STEP[:INCRement]?
Chart Engennen	[:SENSe]:FREQuency:STARt <freq></freq>
Start Frequency	[:SENSe]:FREQuency:STARt?
Ctore Encourses	[:SENSe]:FREQuency:STOP <freq></freq>
Stop Frequency	[:SENSe]:FREQuency:STOP?
Create English and an	[:SENSe]:FREQuency:SPAN <freq></freq>
Span Frequency	[:SENSe]:FREQuency:SPAN?
Frequency Band	[:SENSe]:FREQuency:BAND:MODE NORMal SPURious
Mode	[:SENSe]:FREQuency:BAND:MODE?
Sampling Rate [:SENSe]:FREQuency:SRATe?	
Switching Speed	[:SENSe]:FREQuency:SYNThesis[:STATe] BPHase NORMal FAST
Switching Speed	[:SENSe]:FREQuency:SYNThesis[:STATe]?

 Table 2.1-1
 Device messages for setting frequency

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SCPI Device Message Details

[:SENSe]:FREQuency:CENTer <freq> Center Frequency</freq>			
Function			
	This command sets th	ne center frequency.	
Command			
Command	[:SENSe]:FREQuenc	cv:CENTer <freg></freg>	
Parameter			
	<freq></freq>	Center frequency	
	Range		
	[MS269xA]	0 to 6 GHz (MS2690A)	
		0 to 13.5 GHz (MS2691A)	
		0 to 26.5 GHz (MS2692A)	
	[MS2830A]	0 Hz to 3.6 GHz (Option 040)	
		0 Hz to 6.0 GHz (Option 041)	
		0 Hz to 13.5 GHz (Option 043)	
		0 Hz to 26.5 GHz (Option 044)	
		0 Hz to 43 GHz (Option 045)	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default		
	[MS269xA]	6.00 GHz (MS2690A)	
		6.00 GHz (MS2691A)	
		6.00 GHz (MS2692A)	
	[MS2830A]	3.6 GHz (Option 040)	
		3.6 GHz (Option 041)	
		3.6 GHz (Option 043)	
		3.6 GHz (Option 044)	
		3.6 GHz (Option 045)	
Details			
	This command is not a executed.	available while the Replay function is being	
	This command is limi	ted by the Frequency Span settings.	
	When MS2690A/91/92A is used and Frequency Span is 50 MHz or more, the lower limit frequency is 100 MHz. When MS2830A is used and Frequency Span is 50 MHz or more, the lower limit frequency is 300 MHz.		
	This function is restri	cted in the following condition:	
		s fixed to 0 Hz when Terminal is set to DigRF 3G	

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.		
Query			
	[:SENSe]:FREQuency	Y:CENTer?	
Response			
	<freq></freq>		
Parameter			
	<freq></freq>	Center frequency	
	Range	Center frequency	
	[MS269xA]	0 to 6 GHz (MS2690A)	
		0 to 13.5 GHz (MS2691A)	
		0 to 26.5 GHz (MS2692A)	
	[MS2830A]	0 Hz to 3.6 GHz (Option 040)	
		0 Hz to 6.0 GHz (Option 041)	
		0 Hz to 13.5 GHz (Option 043)	
		0 Hz to 26.5 GHz (Option 044)	
		0 Hz to 43 GHz (Option 045)	
	Resolution	1 Hz	
	Suffix code	None. Value is returned in Hz units.	
Example of Use			
	To query the center frequency.		
	FREQ:CENT?		
	> 123456		

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

Frequency Step Size

Function			
	This command sets the	e step size of the center, start and stop frequency.	
Command			
	[:SENSe]:FREQuency	y:CENTer:STEP[:INCRement] <freq></freq>	
Parameter			
	<freq></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)	
	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 10	0000	

[: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></freq>		
Parameter			
	<freq></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)	
	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:STARt <freq>

Start Frequency

Function			
	This command sets the start frequency.		
Command			
	[:SENSe]:FREQuency:STARt <freq></freq>		
Parameter			
	<freq></freq>	Start frequency	
	[MS269xA]	0 to 6.0 GHz (MS2690A)	
		0 to 13.5 GHz (MS2691A)	
		0 to 26.5 GHz (MS2692A)	
	[MS2830A]	0 Hz to 3.6 GHz (Option 040)	
		0 Hz to 6.0 GHz (Option 041)	
		0 Hz to 13.5 GHz (Option 043)	
		0 Hz to 26.5 GHz (Option 044)	
		0 Hz to 43 GHz (Option 045)	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default	5.984375 GHz (MS269xA)	
		3.584375 GHz (MS2830A-005/105/007/009/109/	
		077/177/078/177)	
		3.595 GHz (MS2830A-006/106)	
Details			
	This command is not available while the Replay function is being executed.		
	This command is limited by the Frequency Span settings.		
	When MS2690A/91/92A is used and Frequency Span is 50 MHz or more, the lower limit frequency is 100 MHz.		
	When MS2830A is used and Frequency Span is 50 MHz or more, the lower limit frequency is 300 MHz.		
	This function is restricted in the following condition:		
	• Start frequency is fixed to -270.833 kHz (for GSM) or -3.84 MHz (for W-CDMA) when Terminal is set to DigRF 3G (only for MS269x Series).		
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></freq>		
Parameter			
i didiffeter	<freq></freq>	Start frequency	
	Range	Range subtracting Frequency Span/2 from any	
		of the following center frequency ranges:	
	[MS269xA]	0 to 6.0 GHz (MS2690A)	
		0 to 13.5 GHz (MS2691A)	
		0 to 26.5 GHz (MS2692A)	
	[MS2830A]	0 Hz to 3.6 GHz (Option 040)	
		0 Hz to 6.0 GHz (Option 041)	
		0 Hz to 13.5 GHz (Option 043)	
		0 Hz to 26.5 GHz (Option 044)	
		0 Hz to 43 GHz (Option 045)	
	Resolution	1 Hz	
		No suffix code. Value is returned in Hz units.	
Example of Use			
	To query the start frequency.		
	FREQ:STAR?		
	> 100000000		

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[:SENSe]:FREQuency:STOP <freq> Stop Frequency Function This command sets the stop frequency. Command [:SENSe]:FREQuency:STOP <freq> Parameter <freq> Stop frequency Range Range adding Frequency Span/2 to any of the following center frequency ranges: [MS269xA] 0 to 6.0 GHz (MS2690A) 0 to 13.5 GHz (MS2691A) 0 to 26.5 GHz (MS2692A) [MS2830A] 0 Hz to 3.6 GHz (Option 040) 0 Hz to 6.0 GHz (Option 041) 0 Hz to 13.5 GHz (Option 043) 0 Hz to 26.5 GHz (Option 044) 0 Hz to 43 GHz (Option 045) Resolution $1 \, \text{Hz}$ HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Suffix code Hz is used when omitted. Default 6.015625 GHz (MS269xA) 3.615625 GHz (MS2830A005/105/007/009/109/ 077/177/078/177) 3.605 GHz (MS2830A-006/106) Details This command is not available while the Replay function is being executed. This command is limited by the Frequency Span setting. This function is restricted in the following condition: • If using the MS269x Series, when the terminal is set to DigRF 3G, the stop frequency is fixed at +270.833 kHz (when the Target System selected GSM) or +3.84 MHz (when the Target System selected W-CDMA). Example of Use

To set the stop frequency to 10 MHz. FREQ:STOP 10000KHZ

[:SENSe]:FREQuency:STOP?

Stop Frequency Query

Function	This command queries	s the stop frequency.
Query	[:SENSe]:FREQuenc	y:STOP?
Response	<freq></freq>	
Parameter		
	<freq></freq>	Stop frequency
	Range	Range adding Frequency Span/2 to any of the
		following center frequency ranges:
	[MS269xA]	0 to 6.0 GHz (MS2690A)
		0 to 13.5 GHz (MS2691A)
		0 to 26.5 GHz (MS2692A)
	[MS2830A]	0 Hz to 3.6 GHz (Option 040)
		0 Hz to 6.0 GHz (Option 041)
		0 Hz to 13.5 GHz (Option 043)
		0 Hz to 26.5 GHz (Option 044)
		0 Hz to 43 GHz (Option 045)
	Resolution	1 Hz
		No suffix code. Value is returned in Hz units.
Details		
	This command is limit	ed by the Frequency Span settings.
	more, the lower lin	1/92A is used and Frequency Span is 50 MHz or nit frequency is 100 MHz. Is used and Frequency Span is 50 MHz or more, the ney is 300 MHz.
Example of Use		
	To query the stop frequ	lency.
	FREQ:STOP?	
	> 1000000	

[:SENSe]:FREQuency:SPAN <freq>

Span Frequency

Function				
	This command sets the	e span frequency.		
Command				
	[:SENSe]:FREQuency	y:SPAN <freq></freq>		
Parameter				
	<freq></freq>	Span frequency		
	Range/Resolution			
	[MS269xA]	1000, 2500, 500	0, 10000, 25000, 50000, 100000,	
			, 1000000, 2500000, 5000000,	
		10000000, 2500		
		5000000^{*1*2} ,	$62500000^{*2}, \qquad 10000000^{*1*3},$	
		12500000^{*1*3}		
	[MS2830A]		$5000^{*2}, 10000^{*2}, 25000^{*2},$	
			*2,250000*2, 500000*2,	
			000*2, 5000000*2,	
			00000*1, 31250000*1	
		50000000*3, 625		
	Suffix code	10000000*4, 12		
	Sumx code		MHZ, MZ, GHZ, GZ	
		^{Hz} is used when	a omitted.	
	Default value			
	[MS269xA]	$31.25 \mathrm{~MHz}$		
	[MS2830A]	31.25 MHz	(Option 005/105/007/009/109/ 077/177/078/177)	
		$10 \mathrm{~MHz}$	(Option 006/106)	
Details				
	This command is not a executed.	vailable while the	Replay function is being	
	This command is limit	ed by the Frequen	cy Band Mode, Center	
	Frequency, and Termir	nal settings.		
	[MS269xA]			
	*1:Option 004/104			
	The following fre	equency spans ar	e available when the Wideband	
	Analysis Hardware option is installed:			
	50000000, 10	0000000, 1250000	00	
	*2:Option 077/177			
	_		re available when the Analysis	
	Bandwidth Extens	sion to 62.5 MHz o	ption is installed:	
	5000000, 62	500000		

*3:Option 078/178

In addition to the *2, the following frequency spans are available when the Analysis Bandwidth Extension to 125 MHz option is installed:

10000000, 125000000

The following frequency spans are not available when the Frequency Band Mode is Spurious.

5000000, 62500000, 100000000, 125000000

[MS2830A]

*1: Option 005/105/007/009/109

In addition to the *2 below, the following frequency spans are available when the Analysis Bandwidth Extension to 31.25 MHz option is installed:

25000000, 31250000

*2: Option 006/106

The following frequency spans are available when the Analysis Bandwidth 10 MHz option is installed:

1000, 2500, 5000, 10000, 25000, 50000, 100000, 250000, 500000, 1000000, 2500000, 5000000, 10000000

*3: Option 077/177

In addition to the *1, the following frequency spans are available when the Analysis Bandwidth Extension to 62.5 MHz option is installed:

50000000, 62500000

*4: Option 078/178

In addition to the *3, the following frequency spans are available when the Analysis Bandwidth Extension to 125 MHz option is installed:

100000000, 125000000

The following frequency spans are not available when the Frequency Band Mode is Spurious.

5000000, 62500000, 100000000, 125000000

This function is restricted in the following condition:

- If using the MS269x Series, when Terminal is set to DigRF 3G, the span frequency is fixed at 541.666 kHz (when the Target System selected GSM) or 7.68 MHz (when the Target System selected W-CDMA).
- This command is not available when the Replay function is executed.

2

SCPI Device Message Details

Example of Use	
	To set the span frequency to 1 kHz.
	FREQ:SPAN 1kHZ
Related Command	
	This command has the same function as the following commands:
	[:SENSe]:ACPower:FREQuency:SPAN
	[:SENSe]:CHPower:FREQuency:SPAN
	[:SENSe]:OBWidth:FREQuency:SPAN

2

SCPI Device Message Details

[:SENSe]:FREQuency:SPAN? Span Frequency Query Function This command queries the span frequency. Query [:SENSe]:FREQuency:SPAN? Response <freq> Parameter <freq> Span frequency Range/Resolution [MS269xA] 1000, 2500, 5000, 10000, 25000, 50000, 100000, 250000, 500000, 1000000, 2500000, 5000000, 1000000, 2500000, 31250000 5000000^{*1*2} , 62500000^{*2} , 10000000*1*3, 12500000*1*3 [MS2830A] 1000*2, 2500*2, 5000*2, 10000*2, 25000*2, 50000, 100000^{*2} . 250000^{*2} , 500000^{*2} , 100000^{*2} , $2500000*_{2}$, 5000000^{*2} , $10000000^{*2}, 25000000^{*1}, 31250000^{*1}$ 5000000*3, 62500000*3, 10000000*4, 125000000*4 Suffix code None. Value is returned in Hz units. Details This command is not available while the Replay function is being executed. This command is limited by the Frequency Band Mode, Center Frequency, and Terminal settings. [MS269xA] *1:Option 004/104 The following frequency spans are available when the Wideband Analysis Hardware option is installed: 5000000, 10000000, 12500000 *2:Option 077/177 The following frequency spans are available when the Analysis Bandwidth Extension to 62.5 MHz option is installed:

5000000, 62500000

*3:Option 078/178

In addition to the *2, the following frequency spans are available when the Analysis Bandwidth Extension to 125 MHz option is installed:

10000000, 125000000

[MS2830A]

*1: Option 005/105/007/009/109

The following frequency spans are available when the Analysis Bandwidth Extension to 31.25 MHz option is installed:

25000000, 31250000

*2: Option 006/106

The following frequency spans are available when the Analysis Bandwidth 10 MHz option is installed:

1000, 2500, 5000, 10000, 25000, 50000, 100000, 250000, 500000, 1000000, 2500000, 5000000, 10000000

*3: Option 077/177

In addition to the *1, the following frequency spans are available when the Analysis Bandwidth Extension to 62.5 MHz option is installed:

50000000, 62500000

*4: Option 078/178

The following frequency spans are available when the Analysis Bandwidth Extension to 125 MHz option is installed: 100000000, 125000000

This function is restricted in the following condition:

- If using the MS269x Series, when Terminal is set to DigRF 3G, the span frequency is fixed at 541.666 kHz (when the Target System selected GSM) or 7.68 MHz (when the Target System selected W-CDMA).
- This command is not available when the Replay function is executed.

To query the span frequency. FREQ:SPAN? > 1000

Related Command

Example of Use

This command has the same function as the following commands.

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

[:SENSe]:OBWidth:FREQuency:SPAN?

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

Frequency Band Mode

Function	path is switched to the	e frequency band path. The frequency at which the e preselector band or a path that does not pass	
	through the preselector can be set with this function.		
Command	[:SENSe]:FREOuenc	y:BAND:MODE <mode></mode>	
Parameter		2 • • • • • •	
	<mode> [MS269xA]</mode>	Frequency band mode	
	NORMal	Sets the frequency to switch to the preselector band to 6.0 GHz (Default value).	
	SPURious	Sets the frequency to switch to the preselector band to 3.0 GHz	
	[MS2830A-041/043/044	4/045]	
	NORMal	Sets the frequency to switch to the preselector band to 4.0 GHz (Default value).	
	SPURious	Sets the frequency to switch to the preselector band to 3.5 GHz.	
Details			
	[MS269xA]		
	This command is not available in the following cases:		
	• When using the MS2690A.		
	• Fixed to NORMAL when the Option 003/103 pre-selector lower		
	 expansion is not installed in the MS2691A/MS2692A. SPURIOUS cannot be set when Frequency Span is set to 50 MHz or more. 		
	 more. When Terminal is set to DigRF 3G (only for MS269x Series). When the Replay function is being executed. 		
	[MS2830A]		
		wailable for Option 040 3.6 GHz Signal Analyzer. set when Frequency Span is set to 50 MHz or	
Example of Use			
	To set the frequency to FREQ:BAND:MODE NOT	o switch to the preselector band to 6.0 GHz.	

[: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	y:BAND:MODE?	
Response			
	<mode></mode>		
Parameter			
	<mode></mode>	Frequency band mode	
	[MS269xA]		
	NORM	Sets the frequency to switch to the preselector	
		band to 6.0 GHz (Default value).	
	SPUR	Sets the frequency to switch to the preselector	
		band to 3.0 GHz	
	[MS2830A-041/043/044	4/045]	
	NORM	Sets the frequency to switch to the preselector	
		band to 4.0 GHz (Default value).	
	SPUR	Sets the frequency to switch to the preselector	
		band to 3.5 GHz.	
Example of Use			
	To query the frequency band path.		
	FREQ:BAND:MODE?		
	> NORM		
	~		
[:SENSe]:FREQuency	/:SRATe?		
Sampling Rate Query			
Function			
	This command queries	the sampling rate of waveform capturing.	
Query			
	[:SENSe]:FREQuency:SRATe?		
Response			
	<freq></freq>		
	No suffix code. Val	ue is returned in Hz units.	
Example of Use			
	To query the sampling rate.		
	FREQ:SRAT?		

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

Switching Speed

Function				
	This command selects the switching speed of frequency.			
Command				
	[:SENSe]:FREQuency	y:SYNThesis[:STATe] <mode></mode>		
Parameter				
	<mode></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 at the cost of the		
		phase noise characteristic.		
Details				
	This command is available only for MS2830A.			
	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 sy FREQ:SYNT FAST	witching mode to the speed priority mode.		

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

Switching Speed Query

Function	This command queries	the switching speed of frequency.	
Query	[:SENSe]:FREQuency:SYNThesis[:STATe]?		
Response			
	<mode></mode>	Frequency switching speed	
Parameter			
	<mode></mode>	Frequency switching speed	
	BPHase	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 at the cost of the	
		phase noise characteristic.	
Details		F	
Dotano	This command is avail	able only for MS2830A.	
	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 sw FREQ:SYNT? > FAST	itching speed	

2.2 Level Settings

Table 2.2-1 lists device messages for setting a level.

Function	Device Message
Deferrer og Laurel	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real></real>
Reference Level	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?
RF Attenuator	[:SENSe]:POWer[:RF]:ATTenuation <rel_ampl></rel_ampl>
nr Attenuator	[:SENSe]:POWer[:RF]:ATTenuation?
RF Attenuator	[:SENSe]:POWer[:RF]:ATTenuation:AUTO ON OFF 1 0
Auto/Manual	[:SENSe]:POWer[:RF]:ATTenuation:AUTO?
Soolo Mada	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:SPACing LINear LOGarithmic
Scale Mode	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:SPACing?
Log Coolo II:+	:UNIT:POWer DBM DBMV V W DBUV DBUVE DBUVM
Log Scale Unit	:UNIT:POWer?
Ref.Level Offset	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEvel:OFFSet <rel_ampl></rel_ampl>
Value	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEvel:OFFSet?
Reference Level	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet:STATe ON OFF 1 0
Offset Mode	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel:OFFSet:STATe?
Duo Ama	[:SENSe]:POWer[:RF]:GAIN[:STATe] ON OFF 1 0
Pre Amp	[:SENSe]:POWer[:RF]:GAIN[:STATe]?

Table 2.2-1	Device	messages	for	setting	level
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: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></real>
Parameter			
	<real></real>	Reference l	evel
	Range		valent to –120 to +50 dBm (regardless
			and Pre-Amp settings when the
		Replay fun	ction is executed)
	Resolution	0.01 dB (W units)	hen scale unit settings are dB-system
		0.01 pV (W	hen scale unit settings are V-system
		units)	
		0.01 yW (W	Then 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
		Log Scale U	nit setting applies when omitted.
		V is used for	r Linear Scale.
	Default value	0 dBm	
Example of Use			
	To set the reference lev	vel to 0 dBm	
	DISP:WIND:TRAC:Y:RLEV ODBM		

Related Command

This command has the same function as the following commands.

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

Reference Level Query

Function	This command queries	the reference level	
	This command queries		
Query			
Doononoo	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?	
Response	<real></real>		
Parameter			
	<real></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)	
		urns a value in the unit set in Log Scale Unit when to Log. (Note: V units for V, W units for W)	
	This command returns a value in V units when Scale Mode is set to		
	Linear.		
Example of Use			
•	To query the reference	e level.	
	DISP:WIND:TRAC:Y:	RLEV?	
	> 0.00		
Related Command			
		e same function as the following commands. VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe	
	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe 1?		
	:DISPlay:OBWidth: l?	VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe	
	:DISPlay:BPOWer : e]:RLEVel?	TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL	

[:SENSe]:POWer[:RF] RF Attenuator	:ATTenuation <rel_< th=""><th>_ampl></th></rel_<>	_ampl>	
Function	This command sets the	attenuator.	
Command	[:SENSe]:POWer[:RF]:ATTenuation <rel_ampl></rel_ampl>		
Parameter	<rel ampl=""></rel>	Attenuator value	
	Range	0 to 60 dB	
	Resolution	2 dB	
	Suffix code	DB dB is used when omitted.	
Details	Default value	10 dB	
	This command is not available while the Replay function is being executed.		
	This command is not available in the following case:		
Example of Use	• When Terminal is set to DigRF 3G (only for MS269x Series). Imple of Use To set the attenuator to 10 dB. POW:ATT 10		
·			

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

RF Attenuator Query

Function			
	This command queries the attenuator.		
Query			
	[:SENSe]:POWer[:R]	F]:ATTenuation?	
Response			
	<rel_ampl></rel_ampl>		
Parameter			
	<rel_ampl></rel_ampl>	Attenuator value	
	Range	0 to 60 dB	
	Resolution	2 dB	
		No suffix code. Value is returned in dB units.	
	Default value	10 dB	
Example of Use			
	To query the attenuate	r value.	
	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.		2
Command			
Command			\mathbf{v}
	[:SENSe]:POWer[:RE	[]ATTenuation:AUTO <switch></switch>	Õ
Parameter			PI
	<switch></switch>	Automatic attenuation setting function On/Off	De
	0 OFF	Disables the automatic attenuation setting	SCPI Device
		function.	
	1 ON	Enables the automatic attenuation setting	Message
		function (Default).	SS
Details			ag
	This command is not a	vailable while the Replay function is being	
	executed.	valiable while the hepitay fullential is being	Details
	This command is not available in the following case:		
	This command is not a	valiable in the following case.	
	• When Terminal is s	elected for DigRF 3G (only for MS269x Series).	
Example of Use			
	To enable the automat	ic attenuation setting function.	
	POW:ATT:AUTO ON		

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

RF Attenuator Auto/Manual Query

Function	This command queries setting function.	the On/Off state of the automatic attenuation
Query	[:SENSe]:POWer[:RE	7]ATTenuation:AUTO?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Automatic mode On/Off
	0	On
	1	Off
Example of Use		
	To query the On/Off sta POW:ATT:AUTO? > 1	ate of the automatic attenuation setting function.

: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></mode>	
Parameter			
	<mode></mode>	Scale mode	
	LOGarithmic	Log scale (Default)	
	LINear	Linear scale	
Details			
		vailable when Trace Mode is set to Spectrogram or	
	No Trace.		
Example of Use			
	To set the scale mode	to Linear scale.	
	DISP:WIND:TRAC:Y:	SPAC LIN	
:DISPlay:WINDow[1]:	TRACe:YI:SCALe	1.SPACing?	
Scale Mode Query		1.017 (Onig.	
		J. o. / tonig.	
Scale Mode Query			
Scale Mode Query	This command queries		
Scale Mode Query			
Scale Mode Query Function	This command queries		
Scale Mode Query Function	This command queries	s the scale mode.	
Scale Mode Query Function Query	This command queries	s the scale mode.	
Scale Mode Query Function Query	This command queries	s the scale mode.	
Scale Mode Query Function Query Response	This command queries	s the scale mode.	
Scale Mode Query Function Query Response	This command queries :DISPlay:WINDow[1 <mode></mode>	s the scale mode.]:TRACe:Y[:SCALe]:SPACing?	
Scale Mode Query Function Query Response	This command queries :DISPlay:WINDow[1 <mode> <mode></mode></mode>	s the scale mode.]:TRACe:Y[:SCALe]:SPACing? Scale mode	
Scale Mode Query Function Query Response Parameter	This command queries :DISPlay:WINDow[1 <mode> <mode> LOG</mode></mode>	s the scale mode.]:TRACe:Y[:SCALe]:SPACing? Scale mode Log scale	
Scale Mode Query Function Query Response	This command queries :DISPlay:WINDow[1 <mode> <mode> LOG LIN</mode></mode>	s the scale mode.]:TRACe:Y[:SCALe]:SPACing? Scale mode Log scale Linear scale	
Scale Mode Query Function Query Response Parameter	This command queries :DISPlay:WINDow[1 <mode> <mode> LOG</mode></mode>	s the scale mode.]:TRACe:Y[:SCALe]:SPACing? Scale mode Log scale Linear scale de.	
Scale Mode Query Function Query Response Parameter	This command queries :DISPlay:WINDow[1 <mode> <mode> LOG LIN To query the scale mode</mode></mode>	s the scale mode.]:TRACe:Y[:SCALe]:SPACing? Scale mode Log scale Linear scale de.	

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

Log Scale Unit

Function			
	This command sets the level display unit system in Log scale mode.		
Command			
	:UNIT:POWer <unit></unit>		
Parameter			
	<unit></unit>	Level display unit in Log scale mode	
	DBM	dBm (Default)	
	DBMV	dBmV	
	DBUV	dBµV	
	DBUVE	dBµV (emf)	
	V	V	
	W	W	
	DBUVM	dBµV/m	
Details			
	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 in Log scale mode to V. UNIT: POW V		

:UNIT:POWer?

Log Scale Unit Query

Function		
	This command queries	the level display unit system in Log scale mode.
Query		
	:UNIT:POWer?	
Response		
	<unit></unit>	
Parameter		
	<unit></unit>	Level display unit in Log scale mode
	DBM	dBm
	DBMV	dBmV
	DBUV	dBµV
	DBUVE	dBµV (emf)
	V	V
	W	W
	DBUVM	dBµV/m
Example of Use		
	To query the level disp	lay unit in Log scale mode.
	UNIT: POW?	
	> V	

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

Ref.Level Offset Value

Function			
	This command sets the	e offset value of the reference level offset function.	
Command			
	:DISPlay:WINDow[1]	:TRACe:Y[:SCALe]:RLEVel:OFFSet	
	<rel_ampl></rel_ampl>		
Parameter			
	<rel_ampl></rel_ampl>	Reference Level Offset Value	
	Range	-100.00 to +100.00 dB	
	Resolution	0.01 dB	
	Suffix code	DB	
		dB is used when omitted.	
	Default value	0 dB	
Details			
	This command is not available in the following case:		
	• When Terminal is selected for DigRF 3G (only for MS269x Series).		
Example of Use			
		rel offset function to +10 dB.	
	DISP:WIND:TRAC:Y:RLEV:OFFS 10		

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

Ref.Level Offset Value Query

Function	-	the offset value of the reference level offset
	function.	
Query		
_	:DISPlay:WINDow[1]]:TRACe:Y[:SCALe]:RLEVel:OFFSet?
Response	<rel ampl=""></rel>	
Parameter		
	<rel_ampl></rel_ampl>	Reference level offset value
	Range	-100.00 to +100.00 dB
	Resolution	0.01 dB
	Suffix code	DB
		DB is used even if the suffix code is 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	s/disables the reference level offset function.
Command		
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:RLEvel:OFFSet:STATe
	<switch></switch>	
Parameter		
	<switch></switch>	Reference level offset function On/Off
	ON 1	Enables the reference level offset function.
	OFF 0	Disables the reference level offset function
		(Default)
Details		
	This command is not a	vailable in the following case:
Example of Use	• When Terminal is selected for DigRF 3G (only for MS269x Series To enable the reference level offset function. DISP:WIND:TRAC:Y:RLEVOFFS: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.	
Query		
	:DISPlay:WINDow[1]]:TRACe:Y[:SCALe]:RLEvel:OFFSet:STATe?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Reference level offset function On/Off
	1	On
	0	Off
Example of Use		
	To query the On/Off state of the reference level offset function.	
	DISP:WIND:TRAC:Y:RLEVOFFS:STAT?	
	> 1	

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

Function				
		This command sets the pre-amplifier to On/Off.		
Command				
		[:SENSe]:POWer[:R	RF]:GAIN[:STATe] <switch></switch>	
Parameter				
		<switch></switch>	Pre-amplifier On/Off	
		ON 1	Sets Pre-amplifier to On.	
		OFF 0	Sets Pre-amplifier to Off (Default value).	
Details				
	[MS269xA]	This command is turned off and thus invalid when Option 008/108 6 GHz		
		Preamplifier is NOT installed.		
	[MS2830A]	This command is turned off and thus invalid when Option		
		008/108/068/168 Preamplifier is NOT installed.		
	[Common]	This command is not available in the following case:		
		• When Terminal is selected for DigRF 3G (only for MS269x Series).		
		• Replay function is being executed.		
Example of Use				
		To set the pre-amplific	er to On	
		POW: GAIN ON		
		2 0 0		

[: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></switch>	
Parameter		
	<switch></switch>	Pre-amplifier On/Off
	1	On
	0	Off
Example of Use		
	To query the On/Off sta	ate of the pre-amplifier.
	POW:GAIN?	
	> 1	

2.3 Trigger Settings

Table 2.3-1 lists device messages for setting triggers.

Function	Device Message
Trigger Switch	:TRIGger[:SEQuence][:STATe] ON OFF 1 0
	:TRIGger[:SEQuence][:STATe]?
	:TRIGger[:SEQuence]:SOURce
Trigger Source	EXTernal[1] IMMediate WIF RFBurst VIDeo SG BBIF FRAMe
	:TRIGger[:SEQuence]:SOURce?
Trigger Slope	:TRIGger[:SEQuence]:SLOPe POSitive NEGative
Trigger Slope	:TRIGger[:SEQuence]:SLOPe?
Tuinnen Dalam	:TRIGger[:SEQuence]:DELay <time></time>
Trigger Delay	:TRIGger[:SEQuence]:DELay?
Log Scale Video	:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic] <level></level>
Trigger Level	:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic]?
Linear Scale Video	:TRIGger[:SEQuence]:VIDeo:LEVel:LINear <level></level>
Trigger Level	:TRIGger[:SEQuence]:VIDeo:LEVel:LINear?
Video Trigger	:TRIGger[:SEQuence]:VIDeo:SLOPe POSitive NEGative
Slope	:TRIGger[:SEQuence]:VIDeo:SLOPe?
Video Trigger	:TRIGger[:SEQuence]:VIDeo:DELay <time></time>
Delay	:TRIGger[:SEQuence]:VIDeo:DELay?
Wide IF Trigger	:TRIGger[:SEQuence]:WIF :RFBurst:LEVel:ABSolute <ampl></ampl>
Level	:TRIGger[:SEQuence]:WIF :RFBurst:LEVel:ABSolute?
Wide IF Trigger	:TRIGger[:SEQuence]:WIF :RFBurst:SLOPe POSitive NEGative
Slope	:TRIGger[:SEQuence]:WIF :RFBurst:SLOPe?
Wide IF Trigger	:TRIGger[:SEQuence]:WIF :RFBurst:DELay <time></time>
Delay	:TRIGger[:SEQuence]:WIF :RFBurst:DELay?
m ·	:TRIGger[:SEQuence]:HOLDoff <time></time>
Trigger Hold	:TRIGger[:SEQuence]:HOLDoff?
Trigger Hold	:TRIGger[:SEQuence]:HOLDoff:STATe OFF ON 0 1
On/Off	:TRIGger[:SEQuence]:HOLDoff:STATe?
Frame Trigger	:TRIGger[:SEQuence]:FRAMe:PERiod <time></time>
Period	:TRIGger[:SEQuence]:FRAMe:PERiod?
	:TRIGger[:SEQuence]:FRAMe:SYNC
Frame Sync Source	EXTernal[1] IMMediate Off WIF RFBurst
-	:TRIGger[:SEQuence]:FRAMe:SYNC?
Enome Cruzz Office i	:TRIGger[:SEQuence]:FRAMe:OFFSet <time></time>
Frame Sync Offset	:TRIGger[:SEQuence]:FRAMe:OFFSet?

 Table 2.3-1
 Device messages for setting trigger

:TRIGger[:SEQuence][:STATe] ON|OFF|1|0

Trigger Switch

Function		
	This command sets the trigger to On/Off.	
Command		
	:TRIGger[:SEQuenc	e][:STATe] <switch></switch>
Parameter		
	<switch></switch>	Trigger On/Off
	OFF 0	Sets trigger to off (Default value).
	ON 1	Sets trigger to on.
Details		
	This command is not a	vailable while the Replay function is being
	executed.	
Example of Use		
	To set the trigger to O	n.
	TRIG ON	
	1 OTAT 10	

:TRIGger[:SEQuence][:STATe]?

Trigger Switch Query

Function	This command queries	the On/Off state of the trigger.
Query		
	:TRIGger[:SEQuence][:STATe]?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Trigger On/Off
	0	Off
	1	On
Example of Use		
	To query the On/Off sta	te of the trigger.
	TRIG?	
	> 0	

:TRIGger[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF|FRAMe Trigger Source

Function This command selects the trigger source. Command :TRIGger[: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) (Default value) SG SG Marker BBIF **Baseband Interface (BBIF)** [MS2830A] EXTernal[1] External input (Default) IMMediate Free run WIF|RFBurst Wideband IF detection (Wide IF Video) VIDeo Video detection (Video) SG SG Marker (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. Settings for External, Video, Wide IF Video, and SG Marker cannot be performed when Terminal is set to DigRF 3G (only for MS269x Series). [MS2830A] SG marker trigger can be selected only when the Option 020/120, 021/121 Vector Signal Generator is installed. [Common] This command is not available while the Replay function is being executed. 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:BPOWer|:TXPower[:SEQuence]:SOURce
- :TRIGger:CCDF|:PSTatistic[:SEQuence]:SOURce

:TRIGger[:SEQuence]:SOURce?

Trigger Source Query

Function	This command qu	This command queries the trigger source type.		
0				
Query	:TRIGger[:SEOu	:TRIGger[:SEQuence]:SOURce?		
Response	5.2	-		
	<source/>			
Parameter				
	<source/>	Trigger signal source type		
[MS269	-	External input (External)		
	IMM	Free run		
	WIF	Wideband IF detection (Wide IF Video)		
	VID	Video detection (Video) (Default value)		
	SG	SG Marker		
	BBIF	Baseband Interface (BBIF)		
[MS283	OA] EXT	External input (Default)		
	IMM	Free run		
	WIF	Wideband IF detection (Wide IF Video)		
	VID	Video detection (Video)		
	SG	SG Marker (SG Marker)		
	FRAM	Frame period trigger		
Details				
[MS269	signal generator is	SG marker trigger can be selected only when the Option 020/120 vector signal generator is installed. BBIF trigger cannot be selected only when		
	-	0 Baseband Interface Unit is not installed or the is Ver.6.00.00 or later.		
[MS283	- 00	SG marker trigger can be selected only when the Option 020/120, 021/121 Vector Signal Generator is installed.		
Evenuela of the				
Example of Use		· 1		
	1 0 00	To query the trigger signal source.		
	TRIG:SOUR?			
Dalata d Oanna an d	> VID			
Related Command	m i · 11			
	This command has the same function as the following commands			
:TRIGger:ACPower[:SEQuence]:SOURce?				
	:TRIGger:CHPower[:SEQuence]:SOURce?			
	-	th[:SEQuence]:SOURce?		
		:TRIGger:BPOWer :TXPower[:SEQuence]:SOURce?		
	:TRIGger:CCDF	:PSTatistic[:SEQuence]:SOURce?		

:TRIGger[:SEQuence]:SLOPe POSitive|NEGative

Trigger Slope

Function			
	This command sets the trigger detection mode (rising/falling).		
Command			
	:TRIGger[:SEQuence	e]:SLOPe <mode></mode>	
Parameter			
	<mode></mode>	Trigger detection mode	
	POSitive	Detects at the rising edge (Default value).	
	NEGative	Detects at the falling edge.	
Details			
	This command is not	available while the Replay function is being	
	executed.		
Example of Use			
	To detect at the rising trigger.		
	TRIG:SLOP POS		
Related Command			
	This command has the same function as the following commands.		
	:TRIGger[:SEQuence]:VIDeo:SLOPe		
	:TRIGger[:SEQuence]:WIF :RFBurst:SLOPe		
	:TRIGger[:SEQuence]:EXTernal[1]:SLOPe	

:TRIGger[:SEQuence Trigger Slope Query]:SLOPe?	
Function		
	This command queries	s the trigger detection method (rising/falling).
Query	:TRIGger[:SEQuenc	
Response	.IKIGGEI[.SEQUENC	e].510re:
	<mode></mode>	
Parameter		
	<mode></mode>	Trigger detection mode
	POS	Detects at the rising edge.
	NEG	Detects at the falling edge.
Example of Use		
	To query the trigger d	etection mode.
	TRIG:SLOP?	
	> POS	
Related Command		
	This command has the	e same function as the following commands.
	:TRIGger[:SEQuence]:VIDeo:SLOPe?	
	:TRIGger[:SEQuenc	e]:WIF :RFBurst:SLOPe?
	:TRIGger[:SEQuenc	e]:EXTernal[1]:SLOPe?

:TRIGger[:SEQuence]:DELay <time>

Trigger Delay

Function			
	This command sets the delay from trigger input to start of waveform		
	capturing.		
Command			
Commanu	:TRIGger[:SEQuence]:DELay <time></time>		
Parameter	· IRIOGET [• DEQUERE	J. Dillay (cime)	
	<time></time>	Delay time.	
	Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A	
	1001190/10000100101	Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" or "MS2830A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" for details.	
	Suffix code	NS, US, MS, S	
		S is used when omitted.	
	Default value 0 ns		
Details			
	This command is not available while the Replay function is being executed. This command is not available in the following case:		
	• When Terminal is selected for DigRF 3G (only for MS269x Series).		
Example of Use	• when reminaris s	elected for Dight 56 (only for MS209x Series).	
	To set the trigger delay to 20 ms.		
	TRIG:DEL 20MS		
Related Command			
	This command has the same function as the following commands.		
	:TRIGger[:SEQuence]:VIDeo:DELay		
	:TRIGger[:SEQuence]:WIF :RFBurst:DELay		
	:TRIGger[:SEQuence]:EXTernal[1]:DELay		

:TRIGger[:SEQuence]:DELay?

Trigger Delay Query

Function		
	This command queries the delay from trigger input to start of waveform	
	capturing.	
Query	:TRIGger[:SEQuence):DELav?
Response	•••••••••••••••••••••••••••••••••••••••	
	<time></time>	
Parameter		
	<time></time>	Delay time
	Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" or "MS2830A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" for details.
		Returns a value in s units without a suffix code.
Example of Use		
	To query the trigger delay.	
	TRIG:DEL?	
	> 0.0200000	
Related Command		
	This command has the same function as the following commands.	
	:TRIGger[:SEQuence]:VIDeo:DELay?	
	:TRIGger[:SEQuence]:WIF :RFBurst:DELay?	
	:TRIGger[:SEQuence]:EXTernal[1]:DELay?	

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SCPI Device Message Details

:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic] <level>

Log Scale Video Trigger Level

Function			
	This command sets the threshold at the level to start the capture against		
	the video trigger in Log	g scale mode.	
Command			
	:TRIGger[:SEQuence	e]:VIDeo:LEVel[:LOGarithmic] <level></level>	
Parameter			
	<level></level>	Threshold at the level to start the capture	
	Range	-150 to $+50$ dBm	
	Resolution	1 dB	
	Suffix code	DBM, DM	
	Default value	-40 dBm	
Details			
	This command is not a executed.	vailable while the Replay function is being	
	This command is not a	vailable in the following case:	
Example of Use	• When Terminal is s	elected DigRF 3G (only for MS269x Series).	
·	To set the threshold of	the video trigger level in Log scale mode to -10	
	dBm.		
	TRIG:VID:LEV -10		

:TRIGger[:SEQuence]:VIDeo:LEVel[:LOGarithmic]?

Log Scale Video Trigger Level Query

Function		
	This command queries the threshold at the level to start the capture	
	against the video trigg	er in Log scale mode.
Query		
	:TRIGger[:SEQuence	e]:VIDeo:LEVel[:LOGarithmic]?
Response		
	<level></level>	
Parameter		
	<level></level>	Threshold at the level to start the capture
	Range	-150 to +50 dBm
	Resolution	1 dB
		No suffix code. Value is returned in dBm units.
Example of Use		
	To query the threshold	of the video trigger level in Log scale mode.
	TRIG:VID:LEV?	
	> -10	

:TRIGger[:SEQuence]:VIDeo:LEVel:LINear <level>

Linear Scale Video Trigger Level

Function			
	This command sets tl	he threshold at the level to start the capture against	
	the video trigger in Linear scale mode.		
Command			
	:TRIGger[:SEQuence]:VIDeo:LEVel:LINear <level></level>		
Parameter			
	<level></level>	Threshold at the level to start the capture	
	Range	0 to 100%	
	Resolution	1%	
	Suffix code	None	
	Default value	60%	
Details			
	This command is not executed.	available while the Replay function is being	
		anailable in the following acces	
		available in the following case:	
	• When Terminal is	set to DigRF 3G (only for MS269x Series).	
Example of Use			
	To set the threshold o	of the video trigger level in Linear scale mode to	
	50%.		
	TRIG:VID:LEV:LIN	50	

:TRIGger[:SEQuence]:VIDeo:LEVel:LINear?

Linear Scale Video Trigger Level Query

Function			
	This command queries the threshold at the level to start the capture		
	against the video trigger in Linear scale mode.		
Query			
_	:TRIGger[:SEQuence]:VIDeo:LEVel:LINear?		
Response			
Deverenter	<level></level>		
Parameter	(1 1)		
	<level></level>	Threshold at the level to start the capture	
	when the trigger s scale:	signal source is video detection (Video) and Lin	
	Range	0 to 100%	
	Resolution	1%	
		No suffix code. Value is returned in % units.	
Example of Use			
	To query the threshold of the video trigger level in Linear scale mode. TRIG:VID:LEV:LIN?		
	> 50		
:TRIGger[:SEQuence]	:VIDeo:SLOPe PC	DSitive NEGative	
Video Trigger Slope			
– <i>i</i>			
Function			
	This command sets the detection mode of the trigger (rising/falling).		
	Refer to :TRIGger [:SEQuence]:SLOPe.		
Related Command			
	This command has the same function as the following commands.		
	:TRIGger[:SEQuence]:SLOPe		
	:TRIGger[:SEQuence]:WIF :RFBurst:SLOPe :TRIGger[:SEQuence]:EXTernal[1]:SLOPe		
	.INTEGET[.SEQUENCE	el.mvrernar[1].prole	

:TRIGger[:SEQuence]:VIDeo:SLOPe?

Video Trigger Slope Query

Function	
	This command sets the detection method of the trigger (rising/falling).
	Refer to :TRIGger[:SEQuence]:SLOPe?
Related Command	
	This command has the same function as the following commands.
	:TRIGger[:SEQuence]:SLOPe?
	:TRIGger[:SEQuence]:SLOPe? :TRIGger[:SEQuence]:WIF :RFBurst:SLOPe?

:TRIGger[:SEQuence]:VIDeo:DELay <time>

Video Trigger Delay

Function	
	This command sets the delay from trigger input to start of waveform capturing.
	Refer to :TRIGger[:SEQuence]:DELay.
Related Command	
	This command has the same function as the following commands.
	:TRIGger[:SEQuence]:DELay
	:TRIGger[:SEQuence]:WIF :RFBurst:DELay
	:TRIGger[:SEQuence]:EXTernal[1]:DELay

:TRIGger[:SEQuence]:VIDeo:DELay?

Video Trigger Delay Query

Function	
	This command queries the delay from trigger input to start of waveform capturing.
	Refer to :TRIGger[:SEQuence]:DELay?
Related Command	
	This command has the same function as the following commands.
	:TRIGger[:SEQuence]:DELay?
	:TRIGger[:SEQuence]:WIF :RFBurst:DELay?
	:TRIGger[:SEQuence]:EXTernal[1]:DELay?

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SCPI Device Message Details

:TRIGger[:SEQuence]:WIF|:RFBurst:LEVel:ABSolute <ampl>

Wide IF Trigger Level

Function			
	This command sets the threshold at the level to start the capture against		
	the Wide IF Video trigger.		
Command			
	:TRIGger[:SEQuence	e]:WIF :RFBurst:LEVel:ABSolute <ampl></ampl>	
Parameter			
	<level></level>	Threshold at the level to start the capture	
	Range	-60 to 50 dBm	
	Resolution	1 dB	
	Default value	-20 dBm	
Details			
	This command is not available while the Replay function is being		
	executed.		
	This commond is not available in the following case:		
	This command is not available in the following case:		
	• When Terminal is selected for DigRF 3G (only for MS269x Series).		
Example of Use			
	To set the threshold of the Wide IF Video trigger level 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 at the level to start the capture		
	against the Wide IF Video trigger.		
Query			
	:TRIGger[:SEQuence	e]:WIF :RFBurst:LEVel:ABSolute?	
Response			
	<level></level>		
Parameter			
	<level></level>	Threshold at the level to start the capture	
	Range	-60 to 50 dBm	
	Resolution	1 dB	
		No suffix code. Value is returned in dBm units.	
Example of Use			
	To query the threshold of the Wide IF Video trigger level.		
	TRIG:WIF:LEV:ABS?		
	> 10		

:TRIGger[:SEQuence]:WIF|:RFBurst:SLOPe POSitive|NEGative

Wide IF Trigger Slope

Function	
	This command sets the trigger detection mode (rising/falling).
	Refer to :TRIGger[:SEQuence]:SLOPe.
Related Command	
	This command has the same function as the following commands. :TRIGger[:SEQuence]:SLOPe
	:TRIGger[:SEQuence]:VIDeo:SLOPe
	:TRIGger[:SEQuence]:EXTernal[1]:SLOPe
:TRIGger[:SEQuence]:WIF :RFBurst:SLOPe?
Wide IF Trigger Slope Query	
Function	
	This command queries the trigger detection mode (rising/falling).
	Refer to :TRIGger[:SEQuence]:SLOPe?.
Related Command	
	This command has the same function as the following commands.
	:TRIGger[:SEQuence]:SLOPe?
	:TRIGger[:SEQuence]:VIDeo:SLOPe? :TRIGger[:SEQuence]:EXTernal[1]:SLOPe?
:TRIGger[:SEQuence]]:WIF :RFBurst:DELay <time></time>
Wide IF Trigger Delay	
Function	
	This command sets the delay from trigger input to start of waveform capturing.
	Refer to :TRIGger[:SEQuence]:DELay.
Related Command	
	This command has the same function as the following commands.

:TRIGger[:SEQuence]:DELay :TRIGger[:SEQuence]:VIDeo:DELay

:TRIGger[:SEQuence]:WIF|:RFBurst:DELay?

Wide IF Trigger Delay Query

Function	
	This command queries the delay from trigger input to start of waveform capturing.
	Refer to :TRIGger[:SEQuence]:DELay?.
Related Command	
	This command has the same function as the following commands.
	:TRIGger[:SEQuence]:DELay?
	:TRIGger[:SEQuence]:VIDeo:DELay?
	:TRIGger[:SEQuence]:EXTernal[1]:DELay?

:TRIGger[:SEQuence]:EXTernal[1]:SLOPe POSitive|NEGative

External Trigger Slope

Function

This command sets the trigger detection mode (rising/falling). Refer to :TRIGger[:SEQuence]:SLOPe.

Related Command

This command has the same function as the following commands. :TRIGger[:SEQuence]:SLOPe :TRIGger[:SEQuence]:VIDeo:SLOPe :TRIGger[:SEQuence]:WIF|RFBurst:SLOPe

:TRIGger[:SEQuence]:EXTernal[1]:SLOPe?

External Trigger Slope Query

Function		
	This command queries the trigger detection method.	
	Refer to :TRIGger[:SEQuence]:SLOPe?	
Related Command		
	This command has the same function as the following commands.	
	:TRIGger[:SEQuence]:SLOPe?	
	:TRIGger[:SEQuence]:VIDeo:SLOPe?	
	:TRIGger[:SEQuence]:WIF RFBurst:SLOPe?	

:TRIGger[:SEQuence]:EXTernal[1]:DELay <time>

External Trigger Delay

Function		
	This command sets the delay from trigger input to start of waveform	
	capturing.	
	Refer to :TRIGger[:SEQuence]:DELay.	
Related Command		
	This command has the same function as the following commands.	
	:TRIGger[:SEQuence]:DELay	
	:TRIGger[:SEQuence]:VIDeo:DELay	
	:TRIGger[:SEQuence]:WIF RFBurst:DELay	

:TRIGger[:SEQuence]:EXTernal[1]:DELay?

External Trigger Delay Query

Function

T UTICUOT	
	This command queries the delay from trigger input to start of waveform capturing.
	Refer to :TRIGger[:SEQuence]:DELay?.
Related Command	
	This command has the same function as the following commands.
	:TRIGger[:SEQuence]:DELay?
	:TRIGger[:SEQuence]:VIDeo:DELay?
	:TRIGger[:SEQuence]:WIF RFBurst:DELay?

:TRIGger[:SEQuence]:HOLDoff <time>

Trigger Hold

Function		
	This command sets the fixed amount of time trigger input is disabled	
	between the first trigger input and the next trigger input.	
Command		
	:TRIGger[:SEQuence]:HOLDoff <time></time>	
Parameter		
	<time></time>	Specified 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 μ s
Details		
	This command is not available for MS269x Series.	
	When this function is used to change a value, the Trigger Hold (ON/OFF)	
	function is set to ON.	
	This command is not available for video trigger.	
Example of Use		
	To set the amount of time trigger input is disabled to 100 ms.	
	TRIG:HOLD 100ms	

:TRIGger[:SEQuence]:HOLDoff?

Trigger Hold Query

Function		
	This command queries	the fixed amount of time trigger input is disabled
	between the first trigge	er input and the next trigger input.
Query		
	TRIGger[:SEQuence]	:HOLDoff?
Response		
	<time></time>	
Parameter		
	<time></time>	Specified time
	Range	0 to 1 s
	Resolution	10 ns
	Suffix code	None. Value is returned in s units.
	Default	100 μ s
Details		
	This command is not a	vailable for MS269x Series.
Example of Use		
	To query the amount of	f time trigger input is disabled.
	TRIG:HOLD?	
	> 0.02000000	

:TRIGger[:SEQuence]:HOLDoff:STATe OFF|ON|0|1

Trigger Hold On/Off

Function		
	This command sets the	e function for disabling trigger input between the
	first trigger input and	the next trigger input for a fixed amount of time to
	On or Off.	
Command		
	:TRIGger[:SEQuence	e]:HOLDoff:STATe <switch></switch>
Parameter		
	<switch></switch>	Trigger Hold On/Off
	ON 1	Trigger Hold is On.
	OFF 0	Trigger Hold is Off.
Details		
	This command is not a	vailable for MS269x Series.
	When this function is s	set to On, the Trigger (On/Off) function is
	automatically set to Or	n.
	This command is not a	vailable for video trigger.
Example of Lise		
	T	
	-	isabling trigger input for a fixed amount of time to
	TRIG:HOLD:STAT ON	
	<switch> ON 1 OFF 0 This command is not a When this function is s automatically set to On This command is not a</switch>	Trigger Hold On/Off Trigger Hold is On. Trigger Hold is Off. vailable for MS269x Series. set to On, the Trigger (On/Off) function is n.

:TRIGger[:SEQuence]:HOLDoff:STATe?

Trigger Hold On/Off Query

Function		
	This command queries	whether the function for disabling trigger input
	between the first trigg	er input and the next trigger input for a fixed
	amount of time is On o	r Off.
Query		
	:TRIGger[:SEQuence	e]:HOLDoff:STATe?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Trigger Hold On/Off
	1	Trigger Hold is On.
	0	Trigger Hold is Off.
Details		
	This command is not a	vailable for MS269x Series.
Example of Use		
	To query the setting fo	r disabling trigger input for a fixed amount of
	time.	
	:TRIG:HOLD:STAT?	
	> 1	

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SCPI Device Message Details

:TRIGger[:SEQuence]:FRAMe:PERiod <time>

Frame Trigger Period

Function		
	This command sets the	e period for frame trigger generation.
Command		
	:TRIGger[:SEQuence	e]:FRAMe:PERiod <time></time>
Parameter		
	<time></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 a	vailable for MS269x Series.
Example of Use		
	To set the frame trigge	r period to 10 ms.
	TRIG:FRAM:PER 10MS	5
:TRIGger[:SEQuence]	1:FRAMe:PFRiod?	
Frame Trigger Period Query	1	
Flame mgger Fenou Query		
Function		
T directori	This command quarias	the period for frame trigger generation.
	This command queries	the period for frame trigger generation.
Query		
	:TRIGger[:SEQuence	e]:FRAMe:PERiod?
Response		
	<time></time>	
Parameter		
	<time></time>	Delay time until the gate starts
	Range	1 µs to 1 s
	Resolution	10 ns

Details

Example of Use

To query the frame trigger period. TRIG:FRAM:PER? > 0.02000000

This command is not available for MS269x Series.

None. Value is returned in s units.

Suffix code

:TRIGger[:SEQuence]:FRAMe:SYNC EXTernal[1]|IMMediate|Off|WIF|RFBurst

Frame Sync Source

Function		
	This command selects	the synchronization signal source for starting a
	frame trigger.	
Command		
	:TRIGger[:SEQuence	e]:FRAMe:SYNC <sync></sync>
Parameter		
	<sync></sync>	Sync signal source
	EXTernal[1]	External input (Default)
	IMMediate Off	Free run
	WIF RFBurst	Wideband IF detection (Wide IF Video)
Details		
	This command is not a	vailable for MS269x Series.
Example of Use		
	To set the frame-trigge	r synchronization source to the Wide IF Video
	trigger.	
	TRIG:FRAM:SYNC WIE	7

:TRIGger[:SEQuence]:FRAMe:SYNC?

Frame Sync Source Query

Function		
	This command queries	the synchronization signal source for starting a
	frame trigger.	
Query		
	:TRIGger[:SEQuence	e]:FRAMe:SYNC?
Response		
	<sync></sync>	
Parameter		
	<sync></sync>	Sync signal source
	EXT	External input (Default)
	IMM	Free run
	WIF	Wideband IF detection (Wide IF Video)
Details		
	This command is not a	vailable for MS269x Series.
Example of Use		
	To query the frame-trig	gger synchronization source.
	TRIG:FRAM:SYNC?	
	> WIF	

:TRIGger[:SEQuence]:FRAMe:OFFSet <time>

Frame Sync Offset

Function		e offset time between when the signal source for gger is input and when the frame trigger is
Command	:TRIGger[:SEQuence	e]:FRAMe:OFFSet <time></time>
Parameter	-	
	<time></time>	Specified 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 a	vailable for MS269x Series.
Example of Use		
	To set the offset time for	or generating a frame trigger to 100 ms.
	TRIG:FRAM:OFFS 100	Dms

:TRIGger[:SEQuence]:FRAMe:OFFSet?

Frame Sync Offset Query Function

> This command queries the offset time between when the signal source for generating a frame trigger is input and when the frame trigger is generated.

Query

:TRIGger[:SEQuence]:FRAMe:OFFSet?

Response

<time>

Parameter

<time> Range Resolution Suffix code Offset time 0 to 1 s 10 ns None. Value is returned in s units.

Example of Use

To query the offset time for generating a frame trigger. TRIG:FRAM:OFFS? > 0.02000000

2.4 Capture Setting

Table 2.4-1 lists device messages for setting capture.

Function	Device Message
	:INITiate:CONTinuous OFF ON 0 1
Continuous Measurement	:INITiate:CONTinuous?
	:INITiate:MODE:CONTinuous
Single Measurement	:INITiate:MODE:SINGle
Initiate	:INITiate[:IMMediate]
Timo Ponco	:MMEMory:STORe:IQData:MODE FULL ATIMe MANual
Time Range	:MMEMory:STORe:IQData:MODE?
Start Time	:MMEMory:STORe:IQData:STARt <time></time>
Start 11me	:MMEMory:STORe:IQData:STARt?
Stant Carriela	:MMEMory:STORe:IQData:STARt:SAMPle <sample></sample>
Start Sample	:MMEMory:STORe:IQData:STARt:SAMPle?
Time I an atl	:MMEMory:STORe:IQData:LENGth <time></time>
Time Length	:MMEMory:STORe:IQData:LENGth?
Sample I anoth	:MMEMory:STORe:IQData:LENGth?
Sample Length	:MMEMory:STORe:IQData:LENGth:SAMPle <sample></sample>
Save Captured Data	:MMEMory:STORe:IQData <filename>,<device></device></filename>
Cancel Execute Save Captured Data	:MMEMory:STORe:IQData:CANCel
Output Rate for	:MMEMory:STORe:IQData:RATE <freq></freq>
Save Captured Data	:MMEMory:STORe:IQData:RATE?
Save Wave Data	:MMEMory:STORe:TRACe TRACe1 ALL[, <filename>[,<device>]]</device></filename>
Sweep Time	[:SENSe]:SWEep:TIME:AUTO ON OFF 1 0
Auto/Manual	[:SENSe]:SWEep:TIME:AUTO?
О	[:SENSe]:SWEep:TIME <time></time>
Sweep Time	[:SENSe]:SWEep:TIME?

Table 2.4-1 Devi	ce messages for setting capt	ure
------------------	------------------------------	-----

:INITiate:CONTinuous OFF|ON|0|1

Continuous Measurement

Function		
	This command switche	es the capture mode between Single and
	Continuous.	
Command		
	:INITiate:CONTinue	ous <switch></switch>
Parameter		
	<switch></switch>	Capture mode
	0 OFF	Single measurement
	1 ON	Continuous measurement (Default value)
Details		
	This command is set to	o Continuous and starts the capture, when it is set
	to On.	
	This command is set to	o Single and does not start the capture, when it is
	set to Off.	
	This command is not a	vailable while the Replay function is being
	executed.	
Example of Use		
	To execute Continuous	s measurement.
	INIT:CONT ON	

:INITiate:CONTinuous?

Continuous Measurement Query

Function		
	This command queries	s the capture mode.
Query		
	:INITiate:CONTinuo	ous?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Capture mode
	0	Single measurement
	1	Continuous measurement
Example of Use		
	To query the capture n	node.
	INIT:CONT?	
	> 0	

:INITiate:MODE:SINGle

Single Measurement

Function	
	This command starts the single measurement.
Command	
	:INITiate:MODE:SINGle
Details	
	For querying the measurement value, such as a marker value, after this command has been executed, use *WAI commands to perform synchronized control.
	This command is not available while the Replay function is being
Example of Use	This command is not available while the Replay function is being executed.
Example of Use	
Example of Use	executed.
Example of Use	executed. To execute the single measurement and query the results.
Example of Use	executed. To execute the single measurement and query the results. INIT:MODE:SING

:INITiate:MODE:CONTinuous

Continuous Measurement

Function	
Command	This command starts continuous measurement.
	:INITiate:MODE:CONTinuous
Details	Note that this command does not support synchronized control in Continuous mode.
	This command is not available while the Replay function is being executed.
Example of Use	To execute continuous measurement. INIT:MODE:CONT
:INITiate[:IMMediate]	
Function	This command starts a measurement in the presently set capture mode.
Command	
Details	:INITiate:[IMMediate]
	For querying the measurement value, such as a marker value, after this command has been executed, use *WAI commands to perform synchronized control.
	Note that this command does not support synchronized control in Continuous mode.
	This command is not available while the Replay function is being executed.
Example of Use	
	To start a measurement in the presently set capture mode and query the results.
	*WAI CALC:MARK:Y?

:MMEMory:STORe:IQData:MODE FULL|ATIMe|MANual Time Range

Function This command sets the range of IQ data to be saved when executing Save Captured Data. Command :MMEMory:STORe:IQData:MODE <mode> Parameter <mode> Range over which IQ data is saved. FULL Full range (Default) ATIMe Range set in Analysis Time. MANual User-specified range Details ATIMe and MANual cannot be set when Terminal is set to RF and when Capture Time Length is set to 0 s. Also, ATIMe cannot be set when Analysis Time Length is set to 0. ATIMe and MANual cannot be set when Terminal is set to DigRF and when Capture Sample Length is set to 0 s. Furthermore, ATIMe cannot be set when Analysis Sample Length is set to 0. Example of Use To set the range to FULL, in order to save IQ data over the full range. MMEM:STOR:IQD:MODE FULL

:MMEMory:STORe:IQData:MODE?

Time Range Query

Function		
	This command querie	es the set range of IQ data to be saved when
	executing Save Captur	ed Data.
Query		
	:MMEMory:STORe:IQI	Data:MODE?
Response		
	<mode></mode>	
Parameter		
	<mode></mode>	Range over which IQ data is saved.
	FULL	Full range
	ATIM	Range set in Analysis Time.
	MAN	User-specified range
Example of Use		
	To query the range ove	er which IQ data is saved.
	MMEM:STOR:IQD:MODE	3.5
	> FULL	

SCPI Device Message Details

:MMEMory:STORe:IQData:STARt <time>

Start Time

Function				
	This command sets the start position of IQ data to be saved when			
	executing Save Captur	red Data with Time Range set to MANual.		
Command				
	:MMEMory:STORe:IQI	Data:STARt <time></time>		
Parameter				
	<time></time>	Start position		
	(When the Replay func	etion is not executed)		
	Range	0 to Capture Time Length – Time Length		
	Resolution	Time Resolution		
	Default value	0		
	(When the Replay func	etion is executed)		
	Range	Start time of analyzable IQ data		
	Resolution	Time Resolution		
	Suffix code	S is used when omitted.		
Details				
	This command is not a	vailable in the following cases:		
	• When Time Range is set to FULL or ATIMe.			
	• When Time Range is set to Manual and when Time Length is set to			
	the upper limit.			
	• When Terminal is set to DigRF 3G (only for MS269x Series).			
Example of Use				
	To set the start time to	o 12 ms.		
	MMEM:STOR:IQD:STAN	R 12MS		

:MMEMory:STORe:IQData:STARt?

Start Time Query

Function		
	This command querie	s the start position IQ data to be saved when
	executing Save Captur	ed Data with Time Range set to MANual.
Query		
	:MMEMory:STORe:IQI	Data:STARt?
Response		
	<time></time>	
Parameter		
	<time></time>	Start position
	(When the Replay func	tion is not executed)
	Range	0 to Capture Time Length – Time Length
	Resolution	Time Resolution
	-9999999999999 is	returned when no measurement is performed or
	an error occurs.	
	(When the Replay func	tion is executed)
	Range	Start time of analyzable IQ data
	Resolution	Time Resolution
		No suffix code. Value is returned in S units.
	-9999999999999 is	returned when no measurement is performed or
	an error occurs.	
Example of Use		
	To query the start time	2.
	MMEM:STOR:IQD:STAF	λ?
	> 0.01200000	

:MMEMory:STORe:IQData:STARt:SAMPle <sample>

Start Sample

Function			
	This command uses th	ne number of samples to set the start position of IQ	
	data to be saved when executing Save Captured Data with Time Range		
	set to MANual.		
Command		-	
	:MMEMory:STORe:IQ	Data:STARt:SAMPle <sample></sample>	
Parameter			
	<sample></sample>	Start position	
	Range	0 to Capture Sample Length – Sample Length	
	Resolution	Time Resolution	
	Default value	0	
	Suffix code	None	
Details			
	This command is not a	vailable in the following cases:	
	• When Time Range i	s set to FULL or ATIMe.	
	• When Time Range is set to Manual and when Time Length is set to		
	the upper limit.		
	• When Terminal is F	RF.	
Example of Use			
	To set the start time to) 15360000 sample.	
	MMEM:STOR:IQD:STA	-	

:MMEMory:STORe:IQData:STARt:SAMPle?

Start Sample Query

Function		
	This command uses the	e number of samples to query the start position of
	IQ data to be saved	when executing Save Captured Data with Time
	Range set to MANual.	
Query		
	:MMEMory:STORe:IQD	Data:STARt:SAMPle?
Response		
	<sample></sample>	
Parameter		
	<sample></sample>	Start position
	Range	0 to Capture Sample Length – Sample Length
	Resolution	Time Resolution
		Value is returned without a suffix code.
	-9999999999999 is	s returned when no measurement is performed or
	an error occurs.	
Example of Use		
	To query the start time	
	MMEM:STOR:IQD:STAR	R:SAMP?
	> 15360000	

:MMEMory:STORe:IQData:LENGth <time>

Time Length

Function			
	This command sets the time length of IQ data to be saved when executing Save Captured Data with Time Range set to MANual.		
Command			
	:MMEMory:STORe:IQI	Data:LENGth <time></time>	0
Parameter			Ĉ
	<time></time>	Time length	Ĕ
	Range	Time Resolution to Capture Time Length – Start	Der
		Time	7ic
	Resolution	Time Resolution	e
	Default value	Capture Time Length – Start Time	SCPI Device Message Details
	Suffix code	NS, US, MS, S S is used when omitted.	sag
		b is used when onitied.	ge]
Details			Der
	This command is not a	vailable in the following cases:	tail
	• When Time Range is set to FULL or ATIMe.		
	• When Time Range is set to Manual and when Start Time is set to the		
	upper limit value.		
	• When Terminal is se	et to DigRF 3G (only for MS269x Series).	
Example of Use			
	To set the time length to 12 ms.		
	MMEM:STOR:IQD:LENC	G 12MS	

:MMEMory:STORe:IQData:LENGth?

Time Length Query

Function		
	-	s the time length of IQ data to be saved when ed Data with Time Range set to MANual.
Query		
	:MMEMory:STORe:IQI	Data:LENGth?
Response		
	<time></time>	
Parameter		
	<time></time>	Time length
	Range	Time Resolution to Capture Time Length –
	C	Start Time
	Resolution	Time Resolution
		No suffix code. Value is returned in S units.
	-9999999999999 is	returned when no measurement is performed or
	an error occurs.	
Example of Use		
	To query the time leng	th.
	MMEM:STOR:IQD:LENC	3?
	> 0.01200000	

:MMEMory:STORe:IQData:LENGth:SAMPle <sample>

Sample Length

Function			
		he sample length of IQ data to be saved when red Data with Time Range set to MANual.	2
Command			
	:MMEMory:STORe:IQI	Data:LENGth:SAMPle <sample></sample>	S
Parameter			Ĝ
	<sample></sample>	Sample length	H
	Range	Time Resolution to Capture Time Length – Start Time	SCPI Device Message Details
	Resolution	Time Resolution	e N
	Default value	Capture Sample Length – Start Sample	ſes
Details			sa
	This command is not a	vailable in the following cases:	ge
	• When Time Range i	s set to FULL or ATIMe.	De
	• When Time Range i upper limit.	is set to Manual and when Start Time is set to the	tails
	• When Terminal is R	F.	
Example of Use			
	To set the sample leng	th to 15360000.	
	MMEM:STOR:IQD:LENG	G:SAMP 15360000	

:MMEMory:STORe:IQData:LENGth:SAMPle?

Sample Length Query

Function			
	This command queries the sample length of IQ data to be saved when executing Save Captured Data with Time Range set to MANual.		
Query			
	:MMEMory:STORe:IQD	Data:LENGth:SAMPle?	
Response			
	<sample></sample>		
Parameter			
	<sample></sample>	Sample length	
	Range	Time Resolution to Capture Time Length – Start	
		Time	
	Resolution	Time Resolution	
	-9999999999999 is	s returned when no measurement is performed or	
	an error occurs.		
Example of Use			
	To query the sample le	ngth.	
	MMEM:STOR:IQD:LENG	S:SAMP?	
	> 15360000		

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SCPI Device Message Details

:MMEMory:STORe:IQData <filename>,<device>

Save Captured Data

Function			
	This command saves the captured waveform data into a file.		
Command			
	:MMEMory:STORe:IQD	ata <filename>,<device></device></filename>	
Parameter			
	<filename></filename>	File name to be saved	
		Specifies any character string enclosed by double	
		quotation marks or single quotation marks.	
	<device></device>	Drive name to be saved	
		Drive name, such as A, B, D and E.	
Details			
	This function can be ex	ecuted when a waveform is captured in the	
	following cases:		
	• Measurement starte completed.	d by Single Measurement (SNGLS command) is	
	• Storage Mode is set	to OFF.	
	This function results in	an error if a parameter requires re-capturing of	
	waveform after execution of waveform capturing.		
	Files are saved in the fo	ollowing directory of the specified drive.	
		Signal Analyzer\User Data\Digitized	
	Data\Signal Analyzer		
	Up to 1000 files can be	saved in the folder.	
Example of Use			
	To save a waveform dat	a file "DATA" into drive D:	
	MMEM:STOR:IQD "DAT	A″,D	
:MMEMory:STORe:IQ	Data:CANCel		
Cancel Execute Save Captured			
Function			
	This command stops sa	ving waveform data into a file.	
Command		ving waveform data into a me.	
Command	:MMEMory:STORe:IQD	ata:CANCel	
Example of Use			
	To stop saving waveform	n data into a file.	
	MMEM:STOR:IQD:CANC		
	- <u></u>		

:MMEMory:STORe:IQData:RATE <freq>

Output Rate for Save Captured Data

Function

This command sets the output rate when executing Save Captured Data.

Command

:MMEMory:STORe:IQData:RATE <freq>

Parameter

<freq> Range Resolution Suffix code

Output rate Refer to the table below. Same as above. HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.

Frequency span [Hz]	Minimum [Hz]	Maximum [Hz]	Default value [Hz]	Resolution [Hz]
1000 *2	1000	2000	2000	1
$2500 \ ^{*2}$	2000	5000	5000	1
$5000 *_2$	5000	10000	10000	1
10000 *2	10000	20000	20000	1
$25000 *_{2}$	20000	50000	50000	1
$50000 *_{2}$	50000	100000	100000	10
100000 *2	100000	200000	200000	10
$250000 *_2$	200000	500000	500000	10
$500000 *_2$	500000	1000000	1000000	100
1000000 *2	1000000	2000000	2000000	100
$2500000 *_{2}$	2000000	5000000	5000000	100
$5000000 *_{2}$	5000000	10000000	1000000	1000
10000000 *2	10000000	2000000	2000000	1000
25000000 *1	20000000	5000000	5000000	1000
31250000 *1	20000000	5000000	5000000	1000
50000000 *3	5000000	10000000	10000000	10000
62500000 * ₄	5000000	10000000	10000000	1000
10000000 *5	10000000	20000000	20000000	10000
125000000 *5	10000000	20000000	20000000	10000

For 2690A/91A/92A:

*1, *2: This can be set regardless of option configurations.

- *3: This can be set when the Option 004/104 (Wideband Analysis Hardware) or Option 077/177 (Analysis Bandwidth Extension to 32.5 MHz) is installed.
- *4: This can be set when the Option 077/177 (Analysis Bandwidth Extension to 62.5 MHz) is installed.

*5:	This can be set when the Option 004/104 (Wideband Analysis
	Hardware) or Option 077/177 (Analysis Bandwidth Extension to
	125 MHz) is installed.
For M	S2830A:
*1:	This can be set when the Option 005/105/007/009/109 (Analysis
	Bandwidth Extension to 31.25 MHz) is installed.
*2:	This can be set when the Option 006/106 (Analysis Bandwidth 10
	MHz) is installed.
*3, *4	: This can be set when the Option 077/177 (Analysis Bandwidth
I	Extension to 62.5 MHz) is installed.
*5:]	This can be set when the Option 078/178 (Analysis Bandwidth
I	Extension to 125 MHz) is installed.
Details	
The	default value is returned if the frequency span is changed.
The	setting range is limited by the Frequency Span setting.
The	setting is enabled when Capture Time is set to Manual.
This	s command is not available in the following case:
• V	Vhen Terminal is set for DigRF 3G (only for MS269x Series).
Example of Use	
To s	et the output rate to 30 MHz.
MME	MO:STOR:IOD:RATE 30MHZ

:MMEMory:STORe:IQData:RATE?

Output Rate for Save Captured Data

Function		

This command queries the output rate when executing Save Captured Data.

Query

:MMEMory:STORe:IQData:RATE?

Response

<freq>

Parameter

<frea></frea>	

<freq></freq>	Output rate	
Range	Refer to the table below.	
Resolution	Refer to the table below.	
No suffix code. Value is returned in Hz units.		

Frequency span [Hz]	Minimum [Hz]	Maximum [Hz]	Default value [Hz]	Resolution [Hz]
1000 *2	1000	2000	2000	1
$2500 *_{2}$	2000	5000	5000	1
5000 *2	5000	10000	10000	1
10000 *2	10000	20000	20000	1
25000 *2	20000	50000	50000	1
50000 *2	50000	100000	100000	10
100000 *2	100000	200000	200000	10
$250000 *_2$	200000	500000	500000	10
$500000 *_{2}$	500000	1000000	1000000	100
1000000 *2	1000000	2000000	2000000	100
2500000 *2	2000000	5000000	5000000	100
5000000 *2	5000000	10000000	1000000	1000
10000000 *2	10000000	20000000	2000000	1000
25000000 *1	20000000	5000000	5000000	1000
31250000 *1	20000000	5000000	5000000	1000
50000000 *3	50000000	10000000	10000000	10000
62500000 *4	5000000	10000000	10000000	1000
10000000 *5	10000000	20000000	20000000	10000
125000000 *5	10000000	20000000	20000000	10000

For 2690A/91A/92A:

*1, *2:	This can be set regardless of option configurations.	
*3:	This can be set when the Option 004/104 (Wideband	
	Analysis Hardware) or Option 077/177 (Analysis	
	Bandwidth Extension to 62.5 MHz) is installed.	
*4:	This can be set when the Option 077/177 (Analysis	
	Bandwidth Extension to 62.5 MHz) is installed.	

2.4 Capture Setting

	*5:	This can be set when the Option 004/104 (Wideband	
		Analysis Hardware) or Option 078/178 (Analysis	
		Bandwidth Extension to 125 MHz) is installed.	
	For MS2830A:		
	*1:	This can be set when the Option $005/105/007/009/109$	
		(Analysis Bandwidth Extension to 31.25 MHz) is installed.	
	*2:	This can be set when the Option 006/106 (Analysis Bandwidth 10 MHz) is installed.	
	*3, *4:	This can be set when the Option 077/177 (Analysis Bandwidth Extension 62.5 to MHz) is installed.	
	*5:	This can be set when the Option 078/178 (Analysis Bandwidth Extension to 125 MHz) is installed.	
Details			
	The default value is returned if the frequency span is changed.		
	The setting range is limited by the Frequency Span setting.		
	The setting is enabled when Capture Time is set to Manual.		
Example of Use			
	To query the output rate.		
	MMEMO:STOR:IQD:RATE?		
	> 3000000		

:MMEMory:STORe:TRACe TRACe1|ALL[,<filename>[,<device>]]

Save Wave Data

Function	This command saves the waveform data in .csv file.		
Command	:MMEMory:STORe:TRACe <trace>[,<filename>[,<device>]]</device></filename></trace>		
Parameter			
	<trace> TRACe1 ALL</trace>	Trace to save Trace currently displayed Trace currently displayed	
	<filename></filename>	Name of the file to be saved. Character string within 32 characters enclosed by double quotes ("") or single quotes ('") (excluding extension) The following characters cannot be used: \setminus / : * ? "" ' / < > Automatically named as "WaveData date sequential number.csv" when omitted.	
	<device></device>	Drive name A, B, D, E, F, D drive is used when omitted.	
Details	This function is available when the waveform is captured under the following conditions:		
	• Measurement performed using Single Measurement has finished.		
	When the file name is omitted, consecutive numbers from 0 to 99 are added to files. No more files can be saved if numbers up to 99 are already used.		
	Files are saved to the following directory in the specified drive. \Anritsu Corporation\Signal Analyzer\User Data\Trace Data\Signal Analyzer		
	Up to 100 files can be saved in a folder.		
Example of Use	To save the trace waveform-data file "trace" to the E drive. MMEM:STOR:TRAC TRAC1, "trace", E		

[:SENSe]:SWEep:TIME:AUTO ON|OFF|1|0

Capture Time Auto/Manual

Function	This command selects (Capture Time).	auto or manual setting for waveform capture time
Command		
	[:SENSe]:SWEep:TI	ME:AUTO <switch></switch>
Parameter		
	<switch></switch>	Auto/manual mode for capture time
	ON 1	Auto
	OFF 0	Manual
Details	The minimum waveform capture time (Capture Time) required for measurement is set, when set to Auto. This command is not available while the Replay function is being executed.	
Example of Use		
	To set the waveform capture time automatically. 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?

Capture Time Auto/Manual Query

Function		
	This command queries Auto/Manual setting of waveform capture time	
	(Capture Time).	
Query		
	[:SENSe]:SWEep:TIN	ME:AUTO?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Auto/manual setting of capture time
	1	Automatic
	0	Manual
Related Command		
	This command has the	same function as the following commands.
	[:SENSe]:ACPower:S	SWEep:TIME:AUTO?
	[:SENSe]:CHPower:S	SWEep:TIME:AUTO?
	[:SENSe]:OBWidth:SWEep:TIME:AUTO?	
Details		-
	The minimum waveform capture time (Capture Time) required for	
	measurement is set, when set to Auto.	
	measurement is set, w	
Example of Use		
	To query the setting of	the waveform capture time.
	SWE:TIME:AUTO?	
	> 1	

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SCPI Device Message Details

[:SENSe]:SWEep:TIM Capture Time Length	1E <time></time>		
Function	This command sets wa	veform capture time.	
Command	[:SENSe]:SWEep:TIME <time></time>		
Parameter			
	<time> Range/Resolution</time>	Capture time Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" for datails	
	Suffix code	Analyzer function Operation)" for details. NS, US, MS, S	
		S is used when omitted.	
Details			
	The shortest capture to enabled.	ime length will be set if automatic setting is	
	The automatic mode is time is set.	switched to the manual mode when the capture	
	The setting range and setting.	resolution are limited by the Frequency Span	
	This command is not available in the following cases:		
		elected for DigRF 3G (only for MS269x Series). nction is being executed.	
Example of Use			
	To set waveform captu SWE:TIME 2	re time to 2 seconds:	
Related Command	[:SENSe]:ACPower:S [:SENSe]:CHPower:S [:SENSe]:OBWidth:S	SWEep:TIME	

[:SENSe]:SWEep:TIME?

Capture Time Length Query

Function	This command queries	the waveform capture time.	
Query			
Response	[:SENSe]:SWEep:TIN	4E ?	
Response	<time></time>		
Parameter			
	<time> Range/Resolution</time>	Capture time Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" for details. No suffix code. Value is returned in S units.	
Details			
	The capture time length with which the capture time is the shortest will be set when automatic setting is enabled.		
	The setting method is switched to the manual setting when capture time is set.		
	The setting range and resolution are limited by the Frequency Span setting.		
Example of Use			
	To query the waveform SWE:TIME? > 2.00000000	capture time.	
Related Command	/ 2.00000000		
		same function as the following commands.	
	[:SENSe]:ACPower:S [:SENSe]:CHPower:S	-	
		-	
	[:SENSe]:OBWidth:SWEep:TIME? [:SENSe]:BPOWer :TXPower:SWEep:TIME?		
		±	

2.5 Marker Settings

Table 2.5-1 lists device messages for setting a marker.

Function	Device Message
All Marker Off	:CALCulate:MARKer:AOFF
	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10[:PEAK]:Y?
Marker Query	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10[:PEAK]:Y:DELTa?
Marker Phase Query	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10[:PEAK]:Y:PHASe?
Calculate Phase	:CALCulate:PHASe:STATe ON OFF 1 0
Spectrum	:CALCulate:PHASe:STATe?
Marker to Center Frequency	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10[:SET]:CENTer
Marker to Reference Level	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10[:SET]:RLEVel
Zoom	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:ZOOM
Zoom Out	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:ZOUT
Marker State	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:STATe ON OFF 1 0
Marker State	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:STATe?
Activo Martror	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:ACTive OFF ON 0 1
Active Marker	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:ACTive?
Marker Result	:CALCulate:MARKer:RESult INTegration TOTal DENSity AVERage PEAK PACCuracy
	:CALCulate:MARKer:RESult?
	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:X <freq> <time> <sample> <dist></dist></sample></time></freq>
	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:X?
Marker Frequency	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:X:DELTa <freq></freq>
	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:X:DELTa?
	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:PEAK:X?
Marker Width	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:WIDTh <freq></freq>
	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:WIDTh?
Display Peak to	:CALCulate:MARKer:PTPeak[:STATe] ON OFF 1 0
Peak Value On/Off	:CALCulate:MARKer:PTPeak[:STATe]?
Peak to Peak Value Query	:CALCulate:MARKer:PTPeak:RESult?

Function	Device Message
Marker Mode	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:MODE POSitive NORMal DELTa FIXed OFF
	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:MODE?
	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerence <integer></integer>
Relative To	: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]?
Carrala Zana	:CALCulate:MARKer:COUPle:ZONE[:STATe] OFF ON 0 1
Couple Zone	:CALCulate:MARKer:COUPle:ZONE[:STATe] ?
Zana Wilth There	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:WIDTh:TYPE ZONE SPOT
Zone Width Type	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:WIDTh:TYPE?

Table 2.5-1 Device messages for setting marker(Cont'd)

:CALCulate:MARKer:AOFF

All Marker Off

Function	
	This command sets all markers to Off.
Command	
	:CALCulate:MARKer:AOFF
Example of Use	
	To set all 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[1]|2|3|4|5|6|7|8|9|10[:PEAK]:Y?

Marker Query

Function		
	This command queries the marker value at the marker point of the main	
	trace.	
Query		
	:CALCulate:MARKer	c[n][:PEAK]:Y?
Response		
	<power></power>	
		n, Power vs Time, Spectrogram trace)
	<freq></freq>	
		ey vs Time trace)
	<degree></degree>	
	(At Phase	vs Time)
	<prob> (F GGD)</prob>	
		F trace, when Marker Axis is Probability)
	<pre><prob_result> (Err (CCD))</prob_result></pre>	Etaan - haa Madaa A-'a 'a D'ata'hat'aa)
Deremeter	(For CCD)	F trace, when Marker Axis is Distribution)
Parameter	(For Spectrum)	
	<n></n>	Marker number
	1	Marker 1
	2	Marker 1 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: M	
		requency vs Time, Phase vs Time, Spectrogram
		trace)
	<n></n>	Marker number
	1	Marker 1
	2	Marker 2
	When omitted:	Marker 1
	(For CCDF)	
	<n></n>	Marker number
	1	Marker set in Marker Axis (CCDF)
	When omitted:	Marker set in Marker Axis (CCDF).

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SCPI Device Message Details

	<power></power>	Marker value of the target marker
	(When marker le	vel display units are dB-system units)
		de, in units specified by Scale Unit, 0.001 dB
		rned when no measurement is performed or an error
	has occurred.	filed when no measurement is performed or an error
		vel display units are V-system units)
		e, V units, 0.01 pV resolution
		rned when no measurement is performed or an error
	has occurred.	Theu when no measurement is performed of an error
		vel display units are W-system units)
		e, W units, 0.01 yW resolution
	has occurred.	rned when no measurement is performed or an error
	<freq></freq>	Marker value of the target marker
	No suffix code	
		99 is returned when no measurement is performed
	or an error ha	is occurred.
	<degree></degree>	Marker value of the target marker
	No suffix code	e, degree units, 0.001 degree resolution
	-999999999999	99 is returned if there is no measurement or an
	error.	
	<prob></prob>	Marker position of the target marker
	Returns a val	ue in % units without a suffix code.
	–999.0 is retu	rned when no measurement is performed or an error
	has occurred.	-
	<prob_result></prob_result>	Marker value of the target marker
	Returns a val	ue in % units without a suffix code.
	–999.0 is retu	rned when no measurement is performed or an error
	has occurred.	
Example of Use		
	To query the level of	Marker 2.
	CALC:MARK2:Y?	
	> -20.000	
Related Command		
	This command has th	ne same function as the following commands.
	:CALCulate:ACPow	er:MARKer[1] 2 3 4 5 6 7 8 9 10:Y?
	:CALCulate:CHPow	er:MARKer[1] 2 3 4 5 6 7 8 9 10:Y?
	:CALCulate:OBWid	th:MARKer[1] 2 3 4 5 6 7 8 9 10:Y?
	:CALCulate:BPOWe	r :TXPower: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 Query

Function		
	This command queries	the delta marker value on the main trace.
Query		
	:CALCulate:MARKer[n][:PEAK]:Y:DELTa?
Response		
	<rel_ampl_spe></rel_ampl_spe>	
	(For Spectru	um trace)
	<ratio_spe></ratio_spe>	
	(For Spectru	am trace, when Scale Mode is Linear and Marker
	Result is Pe	ak (Fast) or Peak (Accuracy).)
	<rel_ampl_pvt></rel_ampl_pvt>	
	(For Power	vs Time trace)
	<ratio_pvt></ratio_pvt>	
	(For Power	vs Time trace, when Scale Mode is Linear)
	<freq></freq>	
	(For Freque	ency vs Time trace)
	<degree></degree>	
	(At Phase vs	s Time)
	<prob></prob>	
	(When Trace	e Mode is set to CCDF and Marker Axis is set to
	Probability.	
	<prob_result_gauss< td=""><td>>,<prob_result_ref></prob_result_ref></td></prob_result_gauss<>	>, <prob_result_ref></prob_result_ref>
	(When Trace	e Mode is set to CCDF and Marker Axis is set to
	Distribution	n.
Parameter		
	(For Spectrum trace)	
	<n></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

2.5 Marker Settings

<n></n>	Marker number
1	Markers 1 and 2
When omitted:	Markers 1 and 2
<rel_ampl_spe></rel_ampl_spe>	Ratio between the marker selected by n and the marker specified by Relative To.
	Returns a value in dB units without a suffix code.
	–999.0 is returned when no measurement is
	performed or an error has occurred.
	-999.0 is returned when Marker Mode is set to other than Delta.
<rel_ampl_pvt></rel_ampl_pvt>	Ratio between Marker 2 and Marker 1
	Returns a value in dB units without a suffix
	code.
	–999.0 is returned when no measurement is
	performed or an error has occurred.
<ratio_spe></ratio_spe>	Value of the marker selected by $n \div Value$ of the
	marker specified by Relative To
	–999.0 is returned when no measurement is
	performed or an error has occurred.
	-999.0 is returned when Marker Mode is set to
	other than Delta.
<ratio_pvt></ratio_pvt>	Value of Marker 2 ÷ Value of Marker 1
	–999.0 is returned when no measurement is
	performed or an error has occurred.
<freq></freq>	Frequency of Marker 2 – Frequency of Marker 1
	No suffix code. Value is returned in Hz units. –9999999999999 is returned when no
	measurement is performed or an error has
	occurred.
<degree></degree>	Phase of Marker 2 – Phase of Marker 1
	No suffix code. Value is returned in degree units.
	–99999999999999 is returned if there is no
	measurement or an error.

<n></n>	Marker Number		
1	Marker set in Marker Axis (CCDF)		
When omitted	Marker set in Marker Axis (CCDF)		
<prob></prob>	Marker position of the target marker		
	No suffix code. Value is returned in % units.		
	–999.0 is returned at no measurement or error		
<prob_result_gauss< td=""><td>s></td></prob_result_gauss<>	s>		
	The difference value of the target marker and		
	Gaussian trace is returned.		
	No suffix code. Value is returned in % units.		
	–999.0 is returned at Gaussian trace off, no		
	measurement, or error		
<prob_result_ref></prob_result_ref>	The difference value of the target marker and		
	reference trace is returned.		
	No suffix code. Value is returned in % units.		
	-999.0 returned at reference trace off, no		

Details

This command is available when any one of the following traces is active:

- Spectrum
- Power vs Time
- Frequency vs Time
- Phase vs Time
- CCDF

Example of Use

To query the delta marker value.

CALC:MARK:Y:DELT?

> 0.065

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

Marker Phase Query

Function			
	Returns phase spectru	${}^{\mathbf{m}} \theta_k = \arg C_k \qquad [\mathrm{rad}]$	
	when marker position Fourier coefficient is C_k		
	However, $-\pi < \theta_k \le \lambda$	π_{\cdot}	
Query			
	:CALCulate:MARKer	[n][:PEAK]:Y:PHASe?	
Response			
	<phase></phase>		
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	
	When omitted:	Specifies marker 1	
	<phase></phase>	Marker position phase spectrum	
		No suffix code, rad units, 0.0001 rad resolution	
		–999.0 returned at no measurement or error	

Details	
	-999.0 returned when $ C_k = 0$
	Returns phase spectrum of Zone Center position when Marker Result setting is Integration or Density
	Returns phase spectrum for marker positions in zone when Marker Result is Peak (Fast) or Peak (Accuracy) and Zone Type is Zone
	 This function can be used in the following cases: At Spectrum trace When Marker Mode of target markers is Normal When Storage Mode is Normal When Noise Cancel is Off When using this function, :CALCulate:PHASe:STATe must be set to ON. (For details, refer to:CALCulate:PHASe:STATe.)
	Although multiple Fourier transformations are performed when Analysis Time Length is longer than 0 s, the phase spectrum used for the measurement results is the one for the Fourier transform performed last in the analysis time range. For example, when Analysis Start Time is 1 s and Analysis Time Length is 3 s, the phase spectrum for the Fourier transform performed at 4 s is used for the measurement result.
Example of Use	
	To read phase spectrum at 6 GHz CALC:PHAS:STAT ON INIT:MODE:SING CALC:MARK:X 6GHZ *WAI CALC:MARK:Y:PHAS?
	> 1.4325

:CALCulate:PHASe:STATe ON|OFF|1|0

Calculate Phase Spectrum

Function		
	This command sets ph	ase spectrum calculation On and Off
Command		
	:CALCulate:PHASe:	STATe <switch></switch>
Parameter		
	<switch></switch>	Sets phase spectrum calculation On and Off
	0 0FF	Does not execute phase spectrum calculation (default setting)
	1 ON	Executes phase spectrum calculation
Details		
	<pre>This function does not perform phase spectrum calculation at the Off→ On switching instant. After setting to On, either execute one of the two commands below or read the phase spectrum after performing a single measurement. :INITiate:MODE:SINGle :INITiate:CALCulate The phase spectrum can be read using the following command: :CALCulate:MARKer[n][:PEAK]:Y:PHASe? This function can be set when the Spectrum trace is active.</pre>	
Example of Use	• Spectrum	
p	To read phase spectru CALC:PHAS:STAT ON INIT:MODE:SING CALC:MARK:X 6GHZ *WAI CALC:MARK:Y:PHAS? > 1.4325	

:CALCulate:PHASe:STATe?

Calculate Phase Spectrum Query

Function	This command queries	phase spectrum calculation On and Off
Query	:CALCulate:PHASe:S	STATe?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Phase spectrum calculation On and Off
	0	Does not execute phase spectrum calculation
	1	Executes phase spectrum calculation
Example of Use		
	To query phase spectru CALC: PHAS: STAT?	m calculation On and Off
	> 1	

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

Marker to Center Frequency

Function

This command sets the marker to the center frequency.

Command

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

Parameter

CALCUIACE.MARKET[II][.SEI].CENTE

<n></n>	Marker number
1	Marker1
2	Marker2
3	Marker3
4	Marker4
5	Marker5
6	Marker6
7	Marker7
8	Marker8
9	Marker9
10	Marker10
When omitted:	Marker1

Details

This command is available when the following trace is active:

- Spectrum
- Spectrogram(Unavailable for Marker 3 to 10).

This command is not available while the Replay function is being executed.

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

Parameter

:CALCul	ate:MARKer	[n][:SET]:RLEVel
<n></n>		Marker number
1		Marker1
2		Marker2
3		Marker3
4		Marker4
5		Marker5
6		Marker6
7		Marker7
8		Marker8
9		Marker9
10		Marker10
Whe	en omitted:	Marker1

Details

This command is available when the following trace is active:

- Spectrum
- Spectrogram(Unavailable for Marker 3 to 10).

When Marker Result Type is Density, a value converted into Total Power is set to the reference level.

This command is not available when Marker Mode is set to Off.

Example of Use

To set the marker level to the reference level. CALC:MARK:RLEV

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

Zoom

Function		
	This command expand	ls the trace in the range specified by the marker.
Command		
	:CALCulate:MARKer	[n]:ZOOM
Parameter		
	(For Spectrum trace)	
	<n></n>	Marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
	When omitted:	Marker1
	(At Power vs Time, Fr	equency vs Time, Phase vs Time trace)
	<n></n>	Marker number
	1	Expands between Markers 1 and 2.

1	Expands between Markers 1 and 2.	
When omitted:	Expands between Markers 1 and 2.	

Details

This command reflects the zone range of the active marker to the display frequency range when the main trace is Spectrum. This command can be executed when the target marker is Normal or Delta.

This command reflects the time range of Marker1 and Marker2 to the analysis range when the main trace is Power vs Time, Frequency vs Time, or Phase vs Time. This command can be executed when both Markers 1 and 2 are set to On.

This command is available when any one of the following traces is active:

- Spectrum
- Power vs Time
- Frequency vs Time
- Phase vs Time

This command is available in the following cases:

- The analysis range is minimum (Power vs Time, Frequency vs Time, Phase vs Time).
- The display frequency range is minimum (Spectrum).
- Marker Result is Peak (Fast) or Peak (Normal), and furthermore, Zone Width Type is Spot (Spectrum).
- Either Marker 1 or 2 is set to Off (Power vs Time, Frequency vs Time, Phase vs Time).
- Marker Mode is set to Off or Fixed (Spectrum).

Example of Use

To expand the trace in the specified range of Marker 2. CALC:MARK2:ZOOM

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

Zoom Out

Function				
	This command compresses the display range of the horizontal axis scale			
	to the range specified by the marker.			
Command				
	:CALCulate:MARKer	[n]:ZOUT		
Parameter				
	(For Spectrum trace)			
	<n></n>	Marker number		
	1	Marker1		
	2	Marker2		
	3	Marker3		
	4	Marker4		
	5	Marker5		
	6	Marker6		
	7	Marker7		
	8	Marker8		
	9	Marker9		
	10	Marker10		
	When omitted:	Marker1		
	(For Power vs Time a	nd Frequency vs Time traces)		
	<n></n>	Marker number		
	1	Compresses between Markers 1 and 2.		
	When omitted:	Compresses between Markers 1 and 2.		

Details

This command compresses the display frequency range to the range specified by the zone width of the active marker when the main trace is Spectrum. This command can be executed when the target marker is Normal or Delta.

This command compresses the analysis time range to the range between Markers 1 and 2 when the main trace is Power vs Time or Frequency vs Time. This command can be executed when both Markers 1 and 2 are set to On.

This command is available when any one of the following traces is active:

- Spectrum
- Power vs Time
- Frequency vs Time
- Phase vs Time

This command is not available in the following cases:

- Marker Mode is Off or Fixed (Spectrum).
- Either Marker 1 or 2 is set to Off (Power vs Time, Frequency vs Time, Phase vs Time).
- Marker Result is Peak (Fast), or Peak (Normal), and Zone Width Type is Spot (Spectrum).

Example of Use

To compress the display range of the horizontal scale of Marker 2 to the range specified by the marker. CALC:MARK2:ZOUT

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

Marker State

Function			
Command	This command sets the main trace marker to On/Off.		
Command	:CALCulate:MARKer[n]:MODE <switch></switch>		
Parameter	:CALCUIALE:MARKEI	[II]:MODE <switch></switch>	
Falamelei	<n></n>	Marker number	
	1	Marker1	
	2	Marker2	
	3	Marker3	
	4	Marker4	
	5	Marker5	
	6	Marker6	
	7	Marker7	
	8	Marker8	
	9	Marker9	
	10	Marker10	
	When omitted:	Marker1	
	<switch></switch>	Marker mode	
	ON 1	Sets the marker to Normal (Spectrum).	
		Sets the marker to On (excluding Spectrum).	
	OFF 0	Sets the marker to Off.	
Details			
	This command is available when any one of the following traces is active:		
	• Spectrum		
	• Power vs Time (Unavailable for Markers 3 to 10.)		
	• Frequency vs Time (Unavailable for Markers 3 to 10.)		
	• Phase vs Time (Un	available for Markers 3 to 10.)	
	• CCDF (Unavailable	e for Markers 2 to 10.)	
	• Spectrogram (Unavailable for Marker 2 to 10).		
	This command sets the marker to the active marker if the marker is		
	changed to On (or Normal) when the main trace is Spectrum, Power vs		
	Time, Frequency vs Time, or Phase vs Time.		
	For querying a marker value after this command has been executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set a marker value	by setting Marker 2 to On.	
	CALC:MARK2:STAT C	DN .	
	*WAI		
	CALC:MARK2:Y?		

: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 main trace marker.	
	This command queries	the off off state of the main trace marker.	
Query			
	:CALCulate:MARKer[n]:STATe?		
Response			
	<switch></switch>		
Parameter			
	<n></n>	Marker number	
	1	Marker1	
	2	Marker2	
	3	Marker3	
	4	Marker4	
	5	Marker5	
	6	Marker6	
	7	Marker7	
	8	Marker8	
	9	Marker9	
	10	Marker10	
	When omitted:	Marker1	
	<switch></switch>	Marker mode	
	1	Marker is set to other than Off (Spectrum).	
		Marker is set to On (excluding Spectrum).	
	0	Marker is set to Off.	
Details			
	When a marker is set to On while the active trace is Spectrum, Power vs		
	Time or Freq vs Time, the marker is set to the active marker.		
Example of Use			
	To query the mode of M	Iarker 2.	
	CALC:MARK2:STAT?		
	> 1		

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

Active Marker

Function		
	This command specifi	es active marker of the main trace.
Command		
	:CALCulate:MARKer	[n]:ACTive <switch></switch>
Parameter		
	<n></n>	Marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
	When omitted:	Marker1
	<switch></switch>	Active marker
	ON 1	Sets Marker n to active.
	OFF 0	Sets Marker n to inactive.
Details		
	This command is avai	lable when any one of the following traces is active:
	• Spectrum	
	• Power vs Time (Un	available for Markers 3 to 10.)
	• Frequency vs Time	(Unavailable for Markers 3 to 10.)
	• Phase vs Time (Una	available for Markers 3 to 10.)
	• Spectrogram(Unav	ailable for Markers 3 to 10.)

For Spectrum trace, multiple markers cannot be set to active.

Example of Use

To set Marker 1 to the active marker. CALC:MARK:ACT ON

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

Active Marker Query

Function		
	This command queries	s the active marker of the main trace.
Query		
	:CALCulate:MARKer	[n]:ACTive?
Response		
	<switch></switch>	
Parameter		
	<n></n>	Marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
	When omitted:	Marker1
	<switch></switch>	Active marker
	1	Active marker is set to On.
	0	Active marker is set to Off.
Example of Use		
	To query the active ma	arker.
	CALC:MARK:ACT?	

> 1

:CALCulate:MARKer:RESult INTegation|TOTal|DENSity|AVERage|PEAK|PACCuracy

Marker Result

Function		
	This command sets th	e type of the marker display value of the main
	trace.	
Command		
	:CALCulate:MARKer	:RESult <mode></mode>
Parameter		
	<mode></mode>	Type of marker value
	INTegration	Integral power in zone
	TOTal	Same as above
	DENSity	Power density in zone
	AVERage	Same as above
	PEAK	Peak level in zone
		(emphasis on measurement speed)
	PACCuracy	Peak level in zone (emphasis on level accuracy)
Details		
	This command is avail	lable when the following trace is active:
	• Spectrum	
	• Spectrogram	
	For querying the meas	surement value, such as a marker value, after this
	command has been ex	ecuted, use *WAI commands to perform
	synchronized control.	
Example of Use		
	To set the marker disp	blay value type to the total power in zone band.
	CALC:MARK:RES INT	

:CALCulate:MARKer:RESult?

Marker Result

Function		
	This command queries	the type of the marker display value of the main
	trace.	
Query		
	:CALCulate:MARKer:	:RESult?
Response		
	<mode></mode>	
Parameter		
	<mode></mode>	Type of marker value
	INT	Total power in zone band
	DENS	Power per 1 Hz in zone band
	PEAK	Peak power in zone
		(emphasis on measurement speed)
	PACC	Peak power in zone (emphasis on level accuracy)
Details		
	This command is avail	able when the following traces are active:
	• Spectrum	
	• Spectrogram	
Example of Use		
	To query the marker d	isplay value type.
	CALC:MARK:RESL?	
	> INT	

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

Marker Frequency

Function

This command moves the center marker to the specified frequency (time).

Command

:CALCulate:MARKer[n]:X <freq>

(Spectrum, Spectrogram trace)

:CALCulate:MARKer[n]:X <time>

(Power vs Time, Frequency vs Time, Phase vs Time trace) :CALCulate:MARKer[n]:X <sample>

> (Power vs Time, Frequency vs Time trace, also Terminal is DigRF 3G (only for MS269x Series))

:CALCulate:MARKer[n]:X <dist>

(CCDF trace)

Parameter

(For Spectrum trace)	
<n></n>	Marker number
1	Marker1
2	Marker2
3	Marker3
4	Marker4
5	Marker5
6	Marker6
7	Marker7
8	Marker8
9	Marker9
10	Marker10
When omitted:	Marker1
(For Power vs Time, Fre	equency vs Time, Phase vs Time, and CCDF,
	Spectrogram trace)
<n></n>	Marker number
1	Marker 1 (excluding CCDF)
	Horizontal-axis marker (CCDF)
2	Marker 2 (excluding CCDF)
	Marker 2 cannot be set when the trace is CCDF.
When omitted:	Marker 1 (excluding CCDF)
	Horizontal-axis marker (CCDF)

<freq></freq>	Marker center frequency
Range/Resolution	In the frequency range of trace display
	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
Sum coue	Hz is used when omitted.
<time></time>	Marker position
Range/Resolution	In the time range of trace display
italige/itesolution	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
Suffix code	NS, US, MS, S
	S is used when omitted.
<sample></sample>	Marker position
Range/Resolution	In the time range of trace display
	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
<dist></dist>	Marker position
Range/Resolution	In the power deviation range of trace display
	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
Suffix code	DB

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Details

	For querying the marker value after this command has been executed, use *WAI commands to perform synchronized control.
	Note that this command does not support synchronized control in Continuous mode.
	Settings for Power vs Time Frequency vs Time will be performed in units of samples when Terminal is set to DigRF 3G (only for MS269x Series).
Example of Use	
	To query the marker value by moving the marker center to 100 MHz. CALC:MARK:X 100MHZ
	*WAI
	CALK:MARK:Y?
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?

Marker Frequency Query

Function		
	This command	d queries the center of the marker.
Query		
	:CALCulate:	MARKer[n]:X?
Response		
	<freq></freq>	
		Spectrum, Spectrogram trace)
	<time></time>	
		At Power vs Time, Frequency vs Time, Phase vs Time race)
	<sample></sample>	race)
		Power vs Time, Frequency vs Time trace, also Terminal is
		DigRF 3G (only for MS269x Series))
	<dist></dist>	
		For CCDF trace, when Marker Axis is Distribution)
	<dist resul<="" td=""><td></td></dist>	
	(]	For CCDF trace, when Marker Axis is Probability)
Parameter		
	(For Spectrum	n trace)
	<n></n>	Marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
	When om	
		Time, Frequency vs Time, Phase vs Time, CCDF,
	Spectrogram < <n></n>	Marker number
	1	Marker 1 (on traces other than CCDF)
	-	Marker set in Marker Axis (on CCDF)
	2	Marker 2 (excluding CCDF)
		Marker 2 cannot be set when the trace is CCDF.
	When om:	
		Marker set in Marker Axis (on CCDF)

2.5 Marker Settings

<freq></freq>	Center frequency of marker
Range/Resolution	In the frequency range of trace display
	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
	Value is returned in Hz units, without suffix
	code.
	Hz is used when omitted.
<time></time>	Marker position
Range/Resolution	In the time range of trace display
	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
	Value is returned in a units, without suffix code.
	S is used when omitted.
<sample></sample>	Marker position
Range/Resolution	In the time range of trace display
	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
<dist></dist>	Marker position
Range/Resolution	In the power fluctuation of trace display
	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
	Value is returned in dB units, without suffix
	code.
	dB is used when omitted.
<dist_result></dist_result>	Power fluctuation of marker position
Range/Resolution	In the power fluctuation of trace display
	Refer to the "MS2690A/MS2691A/MS2692A $$
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
	Value is returned in dB units, without suffix

	code.
	dB is used when omitted.
	–999.0 is returned when no measurement is
	performed or an error has occurred.
Details	
	If the marker position is changed during a Spectrum trace, the target
	marker becomes the active marker. In addition, if Marker Mode is Fixed
	or Off, Normal is specified. If the marker position is changed during a Power vs Time, Frequency vs Time, or Phase vs Time trace, the target
	marker is set to On and changed to the active marker. In addition, the marker position is shared among Power vs Time, Frequency vs Time,
	Phase vs Time.
Example of Use	
•	To query the center of the zone marker.
	CALC:MARK:X?
	> 10000000.0
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:

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

Marker Frequency

Function		
	This command moves t	he center of the marker to the frequency specified
	by relative value.	
Command		
	:CALCulate:MARKer[n]:X:DELTa <freq></freq>
Parameter		
	<n> Marker number</n>	
	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 1	
	When omitted, specifie	s marker 1
	<freq></freq>	Relative frequency from the marker specified by
	"Relative To".	
	Range/Resolution	Within the frequency range of trace display
		For details, refer to
		MS2690A/MS2691A/MS2692A Signal Analyzer
		Operation Manual (Signal Analyzer Function
		<i>Operation)</i> or <i>MS2830A Signal Analyzer</i>
		Operation Manual (Signal Analyzer Function
		Operation).
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
Details		
	Available only when Tr Marker Mode is Delta.	ace Mode is Spectrum. Available only when
	Marker Mode is Delta.	
	-	arker value after executing this command, use the
	*WAI command and ex	ecute synchronization control.
	Note that synchronizat	ion control during the Continuous mode is not
	supported.	

Example of Use

To move the center of Marker 1 to the position of Marker 2 - 100 MHz, and query the marker value. CALC:MARK:X:DELT -100MHZ *WAI CALC:MARK:Y:DELT?

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

Marker Frequency Query

This command queries the center of marker in relative value. Query :CALCulate:MARKer[n]:X:DELTa? Response <freq> Parameter Parameter (n> Marker number Specifies marker 1 Specifies marker 2 Specifies marker 3 Specifies marker 4 Specifies marker 4 Specifies marker 5 Specifies marker 6 Specifies marker 7 Specifies marker 8 Specifies marker 8 Specifies marker 9 Specifies marker 10 When omitted, specifies marker 1</freq>
CALCulate:MARKer[n]:X:DELTa? 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 Wetter omitted, specifies marker 1</n></freq>
Response <pre> </pre> <pre> Parameter </pre> <pre> </pre> <pre> </pre> <pre> Parameter </pre> <pre> <!--</td--></pre>
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</n>
Parameter
 <n> Marker number</n> Specifies marker 1 Specifies marker 2 Specifies marker 3 Specifies marker 4 Specifies marker 4 Specifies marker 5 Specifies marker 6 Specifies marker 7 Specifies marker 8 Specifies marker 9 Specifies marker 10 When omitted, specifies marker 1
1Specifies marker 12Specifies marker 23Specifies marker 34Specifies marker 45Specifies marker 56Specifies marker 67Specifies marker 78Specifies marker 89Specifies marker 910Specifies marker 10When omitted, specifies marker 1
2Specifies marker 23Specifies marker 34Specifies marker 45Specifies marker 56Specifies marker 67Specifies marker 78Specifies marker 89Specifies marker 910Specifies marker 10When omitted, specifies marker 1
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
 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
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
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
 7 Specifies marker 7 8 Specifies marker 8 9 Specifies marker 9 10 Specifies marker 10 When omitted, specifies marker 1
 8 Specifies marker 8 9 Specifies marker 9 10 Specifies marker 10 When omitted, specifies marker 1
9 Specifies marker 9 10 Specifies marker 10 When omitted, specifies marker 1 Details
10 Specifies marker 10 When omitted, specifies marker 1 Details
When omitted, specifies marker 1 Details
Details
Available only when Trace Mode is Spectrum. Available only when
Marker Mode is Delta.
Example of Use
To query the center of marker 1 in relative value.
CALC:MARK:X:DELT?
> -10000000.0

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

Marker Frequency Query

Function			
	This command queries the frequency at the marker point. When Marker		
	Mode is Delta, this command queries the frequency difference between		
	the delta marker and the marker specified by Relative To.		
Quant			
Query	:CALCulate:MARKer	[n] · DF1K · V2	
Response	.CALCUIACE.MARNEI	[II] · FEAR · A:	
Response	<freq></freq>		
Parameter	(1104)		
	<n></n>	Marker number	
	1	Marker1	
	2	Marker2	
	3	Marker3	
	4	Marker4	
	5	Marker5	
	6	Marker6	
	7	Marker7	
	8	Marker8	
	9	Marker9	
	10	Marker10	
	When omitted:	Marker1	
	<freq></freq>	Frequency at marker point	
		No suffix code/Hz units/0.1 Hz resolution	
		–9999999999999 is returned when no	
		measurement is performed or an error has	
		occurred.	
Details			
Details	This command is available when the following traces are active.		
	This command is available when the following traces are active: • Spectrum		
	SpectrumSpectrogram (Unavailable for Marker 3 to 10).		
Example of Use	Speed Stand (only		
	To query the frequenc	y at the marker point of Marker 1.	
	CALC:MARK: PEAK: X?		
	> 1.0		

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

Marker Width

Function

This command sets the zone width of the marker in frequency.

Command

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

Parameter

<n></n>	Marker number	
1	Marker1	
2	Marker2	
3	Marker3	
4	Marker4	
5	Marker5	

3	Marker3
4	Marker4
5	Marker5
6	Marker6
7	Marker7
8	Marker8
9	Marker9
10	Marker10
When omitted:	Marker1
<freq></freq>	Frequency marker width
Resolution	0.1 Hz
Range	Within the frequency range of trace display
	(Limited depending on the zone marker width.)
	Refer to the "MS2690A/MS2691A/MS2692A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" or "MS2830A
	Signal Analyzer Operation Manual (Signal
	Analyzer function Operation)" for details.
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
	Hz is used when omitted.

Details

This command is available when the following traces are set to active:

• Spectrum

• Spectrogram (Unavailable for Marker 3 to 10)

The target marker is set to active when the width of the zone marker is changed. Also, it is set to Normal when Marker Mode is Fixed or Off. For reading out a marker value after this command has been executed, use *WAI commands to perform synchronized control.

Example of Use

To set a marker value by setting the width of the marker 1 to 100 kHz. CALC:MARK:WIDT 100KHZ *WAI CALC:MARK:Y?

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

Marker Width Query

Function			
	This command queries the zone marker width.		
Query			
Quory	:CALCulate:MARKer	[n]:WIDTh?	
Response			
	<freq></freq>		
Parameter			
	<n></n>	Marker number	
	1	Marker1	
	2	Marker2	
	3	Marker3	
	4	Marker4	
	5	Marker5	
	6	Marker6	
	7	Marker7	
	8	Marker8	
	9	Marker9	
	10	Marker10	
	When omitted:	Marker1	
	<freq></freq>	Frequency marker width	
	Resolution	0.1 Hz	
	Range	Within the frequency range of trace display	
		(Limited depending on the zone marker width.)	
		Refer to the "MS2690A/MS2691A/MS2692A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" or "MS2830A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" for details.	
		No suffix code. Value is returned in Hz units.	
Example of Use			

Example of Use

To query the width of the marker 1.

CALC:MARK:WIDT?

> 100000.0

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

Display Peak to Peak Value On/Off

Function			
	This command sets th	This command sets the peak to peak measurement On/Off.	
Command			
Deremeter	:CALCulate:MARKer	:PTPeak[:STATe] <switch></switch>	
Parameter			
	<switch></switch>	Peak to Peak measurement function On/Off	
	ON 1	On	
	OFF 0	Off	
Details			
	This command is available when the following traces are active:Power vs TimeFrequency vs Time		
	On Power vs Time trace, this command can be set only when Scale Mode is set to Linear.		
	For querying the measurement value after this command has been executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set Peak to Peak m CALC:MARK:PTP ON *WAI CALC:MARK:PTP:RES	easurement function to On and query the results.	

:CALCulate:MARKer:PTPeak[:STATe]?

Display Peak to Peak Value On/Off Query

Function			
	This command queries	s the On/Off state of Peak to Peak measurement.	
Query			
	:CALCulate:MARKer	:PTPeak[:STATe]?	
Response			
	<switch></switch>		
Parameter			
	<switch></switch>	Peak to Peak measurement function On/Off	
	1	On	
	0	Off	
Details			
	This command is avail	lable when the following traces are active:	
	• Power vs Time		
	• Frequency vs Time		
Example of Use			
	To query the On/Off st	ate of the Peak to Peak measurement.	
	CALC:MARK:PTP?		
	> 1		

:CALCulate:MARKer:PTPeak:RESult?

Peak to Peak Value Query

Function	This command queries the result of the peak to peak measurement.		
Query			
	:CALCulate:MARKer:	PTPeak:RESult?	
Response	<pos>,<neg>,<p-p>,<avg></avg></p-p></neg></pos>		
Parameter			
	<pos></pos>	Result of peak to peak measurement +Peak value	
		Values in % units will be returned when Terminal is DigRF 3G (only for MS269x Series)	
		and the Input Source is Complex. Values in V units will be returned if it is not set to Complex.	
		(Power vs Time)	
	<neg></neg>	-Peak value	
		Values in % units is returned when Terminal is	
		DigRF 3G (only for MS269x Series) and the	
		Input Source is Complex. Values in V units will	
		be returned if it is not set to Complex. $(\mathbf{p}_{1}, \mathbf{p}_{2}, \mathbf{p}_{3})$	
	$\langle n-n \rangle$	(Power vs Time) {(–Peak) - (+Peak)}/2	
	<p-p></p-p>		
		Returns a value in % units without a suffix code. Values in % units is returned when Terminal is	
		DigRF 3G (only for MS269x Series) and the	
		Input Source is Complex. Values in V units will	
		be returned if it is not set to Complex. (Power vs Time).	
		No suffix code. Value is returned in Hz units.	
		(Frequency vs Time).	
		–9999999999999999999999999999999999999	
		measurement is performed or an error has	
		occurred.	

2.5 Marker Settings

Details

This command is available when the following traces are active:

- Power vs Time
- Frequency vs Time

Example of Use

To query the result of peak to peak measurement. CALC:MARK:PTP:RES?

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

Marker Mode

Function			
Command	This command sets the	e marker mode.	
Command	· CAT Culata · MADKara		
Deremeter	:CALCulate:MARKer	[n]:MODE <mode></mode>	
Parameter	<n></n>	Marker number	
	1	Marker humber Marker1	
	2	Marker1 Marker2	
	3	Marker2 Marker3	
	4	Marker3 Marker4	
	5	Marker5	
	6	Marker6	
	7	Markero Marker7	
	8	Marker 7 Marker 8	
	9	Markero Marker9	
	10	Marker9 Marker10	
	When omitted:	Marker1 Marker1	
	<mode></mode>	Marker 1 Marker mode	
	POSition NORMal	Normal	
	DELTa	Delta	
	FIXed	Fixed	
	OFF	Off	
	Default value	Off (Normal is set only for Marker1)	
	Delault value	On (Norman's set only for Warker I)	
Details			
		able when the following trace is active:	
	• Spectrum		
	For monitor the mont		
		For querying the marker value after this command has been executed,	
Example of Use	use whi commands to	o perform synchronized control.	
LAMPIC OF USC	To grow the marker w	alue by setting the Marker 1 mode to Delta.	
	CALC:MARK:MODE DE		
	*WAI	<u></u>	
	CALC:MARK:Y?		
Related Commands			
	This command has the	e same function as the following commands.	
		r:Marker[1] 2 3 4 5 6 7 8 9 10:MODE	
	• CALCIILATE • CHPOME	r: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></mode>	
Parameter		
	<n></n>	Marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
	When omitted:	Marker1
	<mode></mode>	Marker mode
	NORM	Normal
	DELT	Delta
	FIX	Fixed
	OFF	Off
Details		
	This command is avai	lable when the following trace is active:
	• Spectrum	
Example of Use		
	To query the mode of I	Marker 1
	CALC:MARK:MODE?	
	> DELT	

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

Relative To

Function		
	This command sets the Delta.	e reference marker when Marker Mode is set to
Command		
	:CALCulate:MARKer	[n]:REFerence <integer></integer>
Parameter		
	<n></n>	Target marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
	When omitted:	Marker1
	<integer></integer>	Reference marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
Details		
	This command is available when the following trace is active:	
	• Spectrum	
The setting target marker cannot be set to the reference Example of Use		ker cannot be set to the reference marker.
	To set the reference marker for Marker 2 to Marker 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

е

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

Relative To Query

Function			
	This command queries the reference marker when Marker Mode is set to		
	Delta.		
Query			
	:CALCulate:MARKer	[n]:REFerence?	
Response			
	<integer></integer>		
Parameter			
	<n></n>	Target marker number	
	1	Marker1	
	2	Marker2	
	3	Marker3	
	4	Marker4	
	5	Marker5	
	6	Marker6	
	7	Marker7	
	8	Marker8	
	9	Marker9	
	10	Marker10	
	When omitted:	Marker1	
	<integer></integer>	Reference marker number	
	1	Marker1	
	2	Marker2	
	3	Marker3	
	4	Marker4	
	5	Marker5	
	6	Marker6	
	7	Marker7	
	8	Marker8	
	9	Marker9	
	10	Marker10	
Details			
	This command is avail	lable when the following trace is active:	
	• Spectrum	C C	
Example of Use	.		
, -	To query the reference	e marker of 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:MARKer:TABLe[:STATe] OFF|ON|0|1

Marker List

Function	This command sets the	e marker list display to On/Off.
Command		
	:CALCulate:MARKer:	:TABLe[:STATe] <switch></switch>
Parameter		
	<switch></switch>	Marker list display On/Off
	ON 1	Sets the marker list display to On.
	OFF 0	Sets the marker list display to Off.
	Default value	Off
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use		
	To set the marker list display to On.	
	CALC:MARK:TABL ON	
	CALC:MARK:TABL?	
	> 1	

:CALCulate:MARKer:TABLe[:STATe]? Marker List Query Function This command queries the On/Off state of the marker list display. Query :CALCulate:MARKer:TABLe[:STATe]? Response <switch> Parameter <switch> Marker list display On/Off 1 Marker list display On. 0 Marker list display Off. Details This command is available when the following trace is active: • Spectrum Example of Use To query the On/Off state of the marker list display. CALC:MARK:TABL? > 1 :CALCulate:MARKer:SLINe[:STATe] OFF|ON|0|1 Spot Line Function This command displays or hides the marker line for spot marker. Command :CALCulate:MARKer:SLINe[:STATe] <switch> Parameter <switch> Marker line display $ON \mid 1$ Displays the marker line. OFF | 0 Hides the marker line. Details This command is available when the following trace is active: • Spectrum Example of Use

To display the marker line. CALC:MARK:SLIN ON

:CALCulate:MARKer:SLINe[:STATe]?

Spot Line Query

Function		
	This command queries spot marker.	s the On/Off state of the marker line display for
Query	:CALCulate:MARKer	:SLINe[:STATe]?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Marker line display On/Off
	1	Marker line is displayed.
	0	Marker line is hidden.
Details		
	This function can be s Spectrum 	et when the following trace is active:
Example of Use		
	To query the On/Off s	tate of the marker line display.
	CALC:MARK:SLIN?	
	> 1	

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

Couple Zone

Function	This command enables	s or disables the Zone Width shared setting.
Command		
Parameter	:CALCUIAte:MARKer	:COUPle:ZONE[:STATe] <switch></switch>
	<switch></switch>	Zone Width shared setting On/Off
	ON 1	Sets the shared setting to On.
	OFF 0	Sets the shared setting to Off.
Details	This command is available when the following trace is active: • Spectrum	
Example of Use	When this function is markers.	set to On, the Zone Width setting is shared among
	To enable the sharing of the Zone Width setting. CALC:MARK:COUP:ZONE ON	

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

Couple Zone Query

Function			
	This command queries enabled/disabled.	whether the Zone Width shared setting is	
Query	:CALCulate:MARKer	COUPle:ZONE[:STATe]?	
Response			
	<switch></switch>		
Parameter			
	<switch></switch>	Zone Width shared setting On/Off	
	1	On	
	0	Off	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
E 1 (1)	When this function is markers.	set to On, the Zone Width setting is shared among	
Example of Use	m 1,1,1,1	7 117 1,1 1 1 , 11 1	
	To query whether the Zone Width shared setting is enabled. CALC:MARK:COUP:ZONE?		
	> 1		

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

Zone Width Type

Function	This command sets t	the zone type of the marker.
Command		
	:CALCulate:MARKe	er[n]:WIDTh:TYPE <zone_type></zone_type>
Parameter		
	<n></n>	Marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
	When omitted:	Marker1
	<zone_type></zone_type>	Zone type of marker
	ZONE	Zone marker
	SPOT	Spot marker
Details		
	This command is available when the following trace is active:SpectrumSpectrogram (Unavailable for Marker 3 to 10)	
	This command is available when Marker Result is Peak (Fast) or Pea (Accuracy).	
	For querying the marker value after this command has been executed, use *WAI commands to perform synchronized control.	
Example of Use	To query the marker value by setting the zone type of Marker 1 to zone marker. CALC:MARK:WIDT:TYPE ZONE *WAI CALC:MARK:Y?	

: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 · MARKe	r[n]:WIDTh:TYPE?
Response	.CAlculate.MANNe	
Керрилас	<zone_type></zone_type>	
Parameter		
	<n></n>	Marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
	When omitted:	Marker1
	<zone_type></zone_type>	Zone type of marker
	ZONE	Zone marker
	SPOT	Spot marker
Details		-
	This command is ava • Spectrum	ailable when the following trace is active:
	• Spectrogram (Unavailable for Marker 3 to 10)	
Example of Lise	This command is available when Marker Result is Peak (Fast) or Peak (Accuracy).	
Example of Use	To query the zone type of Marker 1. CALC:MARK:WIDT:TYPE? > ZONE	

2.6 Signal Search Settings

Table 2.6-1 lists device messages for setting 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
Signal Search Resolution	:CALCulate:MARKer:SIGNal:RESolution :EXCursion <rel_ampl> <percent> <freq></freq></percent></rel_ampl>
Resolution	:CALCulate:MARKer:SIGNal:RESolution :EXCursion?
Signal Search	:CALCulate:MARKer:SIGNal:THReshold:STATe ON OFF 1 0
Threshold Level	:CALCulate:MARKer:SIGNal:THReshold:STATe?
Signal Search	:CALCulate:MARKer:SIGNal:THReshold:MODE ABOVe BELow
Mode	:CALCulate:MARKer:SIGNal:THReshold:MODE?
Signal Search	:CALCulate:MARKer:SIGNal:THReshold <ampl> <freq></freq></ampl>
Threshold Level	:CALCulate:MARKer:SIGNal:THReshold?
Dip Search	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:MINimum
Next Dip Search	:CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:MINimum:NEXT
Search Peaks Sort Y	:CALCulate:MARKer:PEAK:SORT:Y
Search Peaks Sort X	:CALCulate:MARKer:PEAK:SORT:X
Search Peaks	:CALCulate:MARKer:PEAK:SORT:COUNt <integer></integer>
Number	:CALCulate:MARKer:PEAK:SORT:COUNt?
Marker Readout Query	:CALCulate:MARKer:READout?

 Table 2.6-1
 Device messages for setting signal search

2

SCPI Device Message Details

:CALCulate: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 main trace		
	and moves the marke	r point.	
Command			
	:CALCulate:MARKer	[n]:MAXimum	
Parameter			
	<n></n>	Marker number	
	1	Marker1	
	2	Marker2	
	3	Marker3	
	4	Marker4	
	5	Marker5	
	6	Marker6	
	7	Marker7	
	8	Marker8	
	9	Marker9	
	10	Marker10	
	When omitted:	Marker1	
Details			
	This command is avai	lable on the following traces:	
	• Spectrum		
	• Power vs Time (Unavailable for Markers 3 to 10.)		
	• Frequency vs Time	(Unavailable for Markers 3 to 10.)	
		ker value after this command has been executed, to perform synchronized control.	
	Note that this comma Continuous mode.	nd does not support synchronized control in	
Example of Use	To query the marker v point. CALC:MARK:MAX *WAI CALC:MARK:Y?	value by moving Marker 1 to the maximum level	

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 feature point of the main trace and moves		
	the marker point to a lower peak point.		
Command			
	:CALCulate:MARKer	[n]:MAXimum:NEXT	
Parameter			
	<n></n>	Marker number	
	1	Marker1	
	2	Marker2	
	3	Marker3	
	4	Marker4	
	5	Marker5	
	6	Marker6	
	7	Marker7	
	8	Marker8	
	9	Marker9	
	10	Marker10	
	When omitted:	Marker1	
Details			
	This command is available on the following traces.		
	• Spectrum		
	• Power vs Time (Unavailable for Markers 3 to 10.)		
	• Frequency vs Time (Unavailable for Markers 3 to 10.)		
	For querying the marker value, after this command has been executed,		
	use *WAI commands to perform synchronized control.		
	Note that this command does not support synchronized control in		
	Continuous mode.		
Example of Use			
	To query the marker	value by moving Marker 1 to the next peak point.	
	CALC:MARK:MAX:NEXT		
	*WAI		
	CALC:MARK:Y?		
Related Command			
	This command has th	e same function as the following command.	
	:CALCulate:ACPowe	er:MARKer[1] 2 3 4 5 6 7 8 9 10:MAXimum:	
	NEXT		

:CALCulate:MARKer:SIGNal:RESolution|:EXCursion <rel_ampl>|<percent>|<freq>

Signal Search Resolution

Function				
	This command sets the search resolution of the search point.			
Command				
Command	:CALCulate:MARKer	:SIGNal:RESolution : EXCursion <rel ampl=""></rel>		
		when Result Mode is Integration or Density; or for		
	Spectrum trace, when	Spectrum trace, when Result Mode is Peak (Fast) or Peak (Accuracy) and		
		le. For Power vs Time trace, when Scale Mode is		
	Log Scale.)			
	:CALCulate:MARKer:SIGNal:RESolution :EXCursion <percent></percent>			
		vhen Result Mode is Peak (Fast) or Peak		
		Mode is Linear Scale. For Power vs Time trace,		
	when Scale Mode is Linear Scale.)			
		:SIGNal:RESolution :EXCursion <freq></freq>		
	(For Frequency vs Tim	ne trace)		
Parameter	<i>·</i> · · · · ·			
	<rel_ampl></rel_ampl>	Search resolution		
	Range	0.01 to 50.00 dB		
	Resolution	0.01		
	Suffix code	DB		
		dB is used when omitted.		
	<percent></percent>	Search resolution		
	Range	0.01 to 50.00%		
	Resolution	0.01		
	Suffix code	None		
	<freq></freq>	Search resolution		
	When Scale Unit is	Hz, Δ Hz.		
	Range	1 to 5000000 Hz		
	Resolution	0.01		
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ		
		Hz is used when omitted.		
Details				
	This command is available when any one of the following traces is active:			

- Spectrum
- Power vs Time
- Frequency vs Time

Example of Use

To set the resolution to 20 dB. CALC:MARK:SIGN:RES 20DB

:CALCulate:MARKer:SIGNal:RESolution|:EXCursion?

Signal Search Resolution Query

Function				
	This command que	ries the search resolution at the search point.		
Query				
	:CALCulate:MARK	er:SIGNal:RESolution :EXCursion?		
Response				
	<rel_ampl></rel_ampl>			
	(For Spectrum trace	e, when Result Mode is Integration or Density; or for		
	Spectrum trace, wh	Spectrum trace, when Result Mode is Peak (Fast) or Peak (Accuracy) and		
	Scale Mode is Log S	Scale Mode is Log Scale. For Power vs Time trace, when Scale Mode is		
	Log Scale.)			
	<percent></percent>			
	(For Spectrum trace	e, when Result Mode is Peak (Fast) or Peak		
	(Accuracy) and Scal	(Accuracy) and Scale Mode is Linear Scale. For Power vs Time trace,		
	when Scale Mode is	when Scale Mode is Linear Scale.)		
	<freq></freq>			
	Frequency vs Time	trace		
Parameter				
	<rel_ampl></rel_ampl>	Search resolution		
	Range	0.01 to 50.00 dB		
	Resolution	0.01		
		No suffix code. Value is returned in dB units.		
	<percent></percent>	Search resolution		
	Range	0.01 to 50.00%		
	Resolution	0.01		
	Suffix code	None		
		No suffix code. Value is returned in % units.		
	<freq></freq>	Search resolution		
	When Scale Un	it is Hz, Δ Hz.		
	Range	1 to 5000000 Hz		
	Resolution	0.01		
		No suffix code. Value is returned in Hz units.		

2.6 Signal Search Settings

Details

This command is available when any one of the following traces is active:

- Spectrum
- Power vs Time
- Frequency vs Time

Example of Use

To query the search resolution.

CALC:MARK:SIGN:RES?

> 20.00

:CALCulate:MARKer:SIGNal:THReshold:STATe ON|OFF|1|0

Signal Search Threshold Level

Function		
	This command sets the	e threshold condition to search for the search point
	in the main trace.	
Command		
	:CALCulate:MARKer	SIGNal:THReshold:STATe <switch></switch>
Parameter		
	<switch></switch>	Threshold when searching for the peak point
	0 OFF	Sets the threshold to Off (Default value)
	1 ON	Sets the threshold to On.
Details		
	This command is available when any one of the following traces is active:	
	• Spectrum	
	• Power vs Time	
	• Frequency vs Time	
	The threshold is set to On, when the search condition (Above/Below) of	
	the threshold is change	ed.
Example of Use		
	To set the threshold to search for the search point to On.	
	CALC:MARK:SIGN:THR:STAT ON	

:CALCulate:MARKer:SIGNal:THReshold:STATe?

Signal Search Threshold Level Query

Function	This command returns search point in the ma	the On/Off state of the threshold to search for the in trace.	
Query			
	:CALCulate:MARKer:	SIGNal:THReshold:STATe?	
Response			
	<switch></switch>		
Parameter			
	<switch></switch>	On/Off of threshold to search for the peak point	
	0	Off	
	1	On	
Details			
	This command is available when any one of the following traces is active:		
	• Spectrum		
	Power vs Time		
	• Frequency vs Time		
	The threshold is set to On, when the search condition (Above/Below) of		
	the threshold is changed.		
Example of Use			
	To query the On/Off st	ate of the threshold to search for the peak point.	
	CALC:MARK:SIGN:THE		
	> 1		

:CALCulate:MARKer:SIGNal:THReshold:MODE ABOVe|BELow

Signal Search Mode

Function			
	This command sets the in the main trace.	threshold condition to search for the search point	
Command			
	:CALCulate:MARKer:SIGNal:THReshold:MODE <mode></mode>		
Parameter			
	<mode></mode>	Search method for threshold	
	ABOVe	Searches for only the upper side of threshold	
		(Default value)	
	BELow	Searches for only the lower side of threshold	
Details			
	This command is available when any one of the following traces is active:		
	• Spectrum		
	• Power vs Time		
	• Frequency vs Time		
	The threshold is set to On, when the search condition (Above/Below) of		
	the threshold is changed.		
Example of Use			
	To set the threshold condition to search for the search point.		
	CALC:MARK:SIGN:THR:MODE ABOV		

:CALCulate:MARKer:SIGNal:THReshold:MODE?

Signal Search Mode Query

Function			
	This command queries the threshold condition to search for the search		
	point in the main trac	e.	
Query			
	:CALCulate:MARKer:SIGNal:THReshold:MODE?		
Response			
	<mode></mode>		
Parameter			
	<mode></mode>	Search method for threshold	
	ABOV	Searches for only the upper side of threshold.	
	BEL	Searches for only the lower side of threshold.	
Details			
	This command is available when any one of the following traces is active:		
	• Spectrum		
	• Power vs Time		
	• Frequency vs Time		
	The threshold is set to On, when the search condition (Above/Below) of		
	the threshold is changed.		
Example of Use			
	To query the search method for the threshold.		
	CALC:MARK:SIGN:THR:MODE?		
	> ABOV		

:CALCulate:MARKer:SIGNal:THReshold <ampl>|<freq>

Signal Search Threshold Level

Function			
	This command se	ts the threshold to s	earch for the peak point.
Command			
	:CALCulate:MAR	RKer:SIGNal:THRe	shold <ampl></ampl>
	(Spect	rum, Power vs Time	e trace)
	:CALCulate:MAF	RKer:SIGNal:THRe	shold <freq></freq>
	(Frequ	uency vs Time trace)	
Parameter			
	<ampl></ampl>	Threshold to	search for the search point
	Range	All widths of	Y-axis
	Resolution	0.01 dB (Wh	en Scale Unit settings are
		dB-system ur	nits, when Spectrum trace and
		Scale Mode a	re Linear Scale, or when Scale Unit
		is V.)	
		0.01 pV (Whe	en scale unit settings are V-system
		units, or whe	n Power vs Time trace and Scale
		Mode are Lin	near)
		0.01 fW (Whe	en scale unit settings are W-system
		units)	
	Suffix code		
		DBM, DM	dBm
		DBMV	dBmV
		DBUV	$dB\mu V$
		DBUVE	dBµV (emf)
		DBUVM	dBµV/m
		V	V
		MV	mV
		UV	μV
		W	W
		MW	mW
		UW	μW
		NW	nW
		PW	pW
		F'W	fW
	Th	ne Scale Unit setting	; applies when omitted.
	dE	3m is used when Spe	ectrum trace and Scale Mode are

V is used for Power vs Time and Linear scale.

	<freq> Range Resolution</freq>	Threshold to search for the search point Range of Vertical Scale of the main trace 1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
Details			
	This command is available when any one of the following traces is active:		
	• Spectrum		
	• Power vs Time		
	• Frequency vs Time		
	The search threshold is set to On, when the threshold for search is		
	changed.		
Example of Use			
	To set the threshold to search for the peak point to -10 dBm.		
	CALC:MARK:SIGN:THR -10DBM		

:CALCulate:MARKer:SIGNal:THReshold?

Signal Search Threshold Level Query

Function	This command queries	s the threshold to search for the peak point.
Query Response	:CALCulate:MARKer:SIGNal:THReshold?	
Response	<ampl></ampl>	
	(For Spect) <freq></freq>	rum, Power vs Time trace)
	<rreq> (For Frequency vs Time trace)</rreq>	
Parameter		
	<ampl></ampl>	Threshold to search for the search point
	Range	All widths of Y-axis
	Resolution	0.01 dB (When Scale Unit settings are
		dB-system units or when Scale Mode is Linear) 0.01 pV (When scale unit settings are
		V-system units)
		0.01 fW (When scale unit settings are
		W-system units)
	Returns a value in units specified by Log Scale Unit without a suffix code. For Linear scale, returns a value in dBm units.	
	<lin_ampl></lin_ampl>	Threshold to search for the search point.
	Range	All widths of Y-axis
	Resolution	0.01 pV
	Returns a value in V units without a suffix code.	
	<freq></freq>	Threshold to search for the search point
	Range	Range of Vertical Scale of main trace
	Resolution	1 Hz ae is returned in Hz units.
Example of Use	no sum code. Van	le is returned in Hz units.
	To query the threshold to search for the peak point.	
	CALC:MARK:SIGN:THR?	
	> -10.00	

:CALCulate:MARKer[1]|2:MINimum

Dip Search

Function			
	This command searches for the minimum level point of the main trace		
	and moves the marker point.		
Command			
Command	:CALCulate:MARKer	[n]:MTNimum	
Parameter			
	<n></n>	Marker number	
	1	Marker 1	
	2	Marker 2	
	When omitted:	Marker 1	
Details			
	This command is avai	lable when the following trace is active:	
	• Frequency vs Time		
	For querying the marker value, after this command has been executed,		
	use *WAI commands to perform synchronized control.		
	Note that this command does not support synchronized control in		
	Continuous mode.		
Example of Use			
	To query the marker	value by moving Marker 1 to the minimum level	
	point.		
	CALC:MARK:MIN		
	*WAI		
	CALC:MARK:Y?		

:CALCulate:MARKer[1]|2:MINimum:NEXT

Next Dip Search

Function			
	This command searches for the characteristics of the main trace and moves the marker point to the peak point at which the marker value of a smaller level than the presently set marker level becomes the smallest.		
Command			
	:CALCulate:MARKer[n]:MINimum:NEXT		
Parameter			
	<n></n>	Marker number	
	1	Marker 1	
	2	Marker 2	
	When omitted:	Marker 1	
Details			
	This command is available when the following trace is active:		
	• Frequency vs Time		
	For querying the marker value, after this command has been executed,		
	use *WAI commands to perform synchronized control.		
	Note that this command does not support synchronized control in		
	Continuous mode.		
Example of Use			
	To query the marker	value by moving Marker 1 to the second smallest	
	peak point.		
	CALC:MARK1:MIN:NE	XT	
	*WAI		
	CALC:MARK:Y?		

:CALCulate:MARKer:PEAK:SORT:Y

Search Peaks Sort Y

Function		
	This command sorts as many markers as the number set in Search Peaks	2
	Number by level on the trace.	2
Command		
Command	:CALCulate:MARKer:PEAK:SORT:Y	S
Details		P
	This command is available on the following trace:	D
	• Spectrum	evi
	This command is not available when Marker Result is Integration or	SCPI Device Message Details
	Density.	Meg
	-	ssa
	For querying the marker value, after this command has been executed,	ge
	use *WAI commands to perform synchronized control.	De
	Note that this command does not support synchronized control in	tail
	Continuous mode.	N
Example of Use		
	To execute Search Peaks Sort Y and query the results.	
	CALC:MARK:PEAK:SORT:Y	
	*WAI	
	CALC:MARK:READ?	

: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 on the trace.
Command	
Command	:CALCulate:MARKer:PEAK:SORT:X
Details	
	This command is available on the following trace:
	• Spectrum
	This command is not available when Marker Result is Integration or
	Density.
	For querying the marker value, after this command has been executed,
	use *WAI commands to perform synchronized control.
	Note that this command does not support synchronized control in
	Continuous mode.
Example of Use	
	To execute Search Peaks Sort X and query the results.
	CALC:MARK:PEAK:SORT:X
	:WAI
	CALC:MARK:READ?

:CALCulate:MARKer:PEAK:SORT:COUNt <integer>

Search Peaks Number

Function		
	This command sets the is executed.	e number of searches when Search Peaks Sort Y/X
Command		
_	:CALCulate:MARKer	:PEAK:SORT:COUNt <integer></integer>
Parameter		
	<integer></integer>	Number of searches
	Range Resolution	1 to 10 1
	Default value	1 10
Details	Default value	10
	This command is avail Spectrum 	able when the following trace is active:
Example of Use		
	To set the number of searches to 5. CALC:MARK:PEAK:SORT:COUN 5	
:CALCulate:MARKer: Search Peaks Number Query Function		Nt?
	Y/X is executed.	
Command	:CALCulate:MARKer:PEAK:SORT:COUNt?	
Parameter		
	<integer></integer>	Number of searches
	Range	1 to 10
	Resolution	1
	Default value	10
Details	771	
	This command is availSpectrum	able when the following trace is active:
Example of Use		
	To query the number of searches. CALC:MARK:PEAK:SORT:COUN? > 5	

:CALCulate:MARKer:READout?

Marker Readout Query

Function	This command queries all marker values.
Query	:CALCulate:MARKer:READout?
Response	<freqs_1>,<power_1>,<freqs_2>,<power_2>,, <freqs_10>,<power_10> (For Spectrum trace)</power_10></freqs_10></power_2></freqs_2></power_1></freqs_1>
	<time_1>, <power_1>, <time_2>, <power_2> (For Power vs Time trace)</power_2></time_2></power_1></time_1>
	<sample_1>, <power_1>, <sample_2>, <power_2> (When Terminal is DigRF 3G (only for MS269x Series)) (For Power vs Time trace)</power_2></sample_2></power_1></sample_1>
	<time_1>, <freqf_1>, <time_2>, <freqf_2> (For Frequency vs Time trace)</freqf_2></time_2></freqf_1></time_1>
	<time_1>, <phase_1>, <time_2>, <phase_2> (At Phase vs Time)</phase_2></time_2></phase_1></time_1>
	<sample_1>, <freqf_1>, <sample_2>, <freqf_2> (When Terminal is DigRF 3G (only for MS269x Series)) (For Frequency vs Time trace)</freqf_2></sample_2></freqf_1></sample_1>
	<dist>, <prob> (For CCDF trace)</prob></dist>
Parameter	<freqs_n> Frequency of Marker n No suffix code/Hz units/0.1 Hz resolution -99999999999999999 is returned when no measurement is performed, an error has occurred, or marker is Off.</freqs_n>
	<pre><power_n> Level of Marker n (When marker level display units are dB-system units) No suffix code/Units specified by Scale Unit/0.001 dB resolution -999.0 is returned when no measurement is performed, an error has occurred, or marker is Off. (When marker level display units are V-system units) No suffix code/V units/0.01 pV resolution -999.0 is returned when no measurement is performed, an error</power_n></pre>

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	 has occurred, or marker is Off. (When marker level display units are W-system units) No suffix code/W units/0.01 yW resolution -999.0 is returned when no measurement is performed, an error has occurred, or marker is Off. When marker level display units are X-multiple-system units) No suffix code/0.0001 resolution. For no magnification, 1 is returned. -999.0 is returned when no measurement is performed, an error
	has occurred, or marker is Off.
	<pre><phase_n> Position of Marker n No suffix code, degree units, 0.01 Hz resolution -999.0 is returned when no measurement is performed, an error has occurred, or marker is set to Off.</phase_n></pre>
	<time_n> Time of Marker n No suffix code/ s units/1 ns resolution -999999999999999999999999999999999999</time_n>
	<freqf_f> Frequency of Marker n No suffix code/Hz units, 0.01/Hz resolution –999999999999999999999999999999999999</freqf_f>
	<dist> Position of Marker n No suffix code/dB units/0.01 dB resolution -999999999999999999999999999999999999</dist>
	<pre><prob> Probability of Marker n No suffix code/% units/0.0001% resolution -999.0 is returned when no measurement is performed, an error has occurred, or marker is Off.</prob></pre>
Example of Use	
	To query all marker values (Spectrum). CALC:MARK:READ? > 1000000.0,-15.321,1100000.0,-23.000, 1200000.0,-15.321,1300000.0,-12.680, 1400000.0,-5.622,1500000.0,-65.056, 1600000.0,-26.534,1700000.0,-34.264, 1800000.0,-35.644,-99999999999,-999.0

2.7 Trace Settings

Table 2.7-1 lists device messages for setting a trace.

Function	Device Message	
Change Trace	:TRACe:MODE SPECtrum PVTime FVTime PHASe CCDF SPGRam NONE	
	:TRACe:MODE?	
Analysis Time	:CALCulate:ATIMe:AUTO OFF ON 0 1	
Auto/Manual	:CALCulate:ATIMe:AUTO?	
Analysis Time	:CALCulate:ATIMe:LENGth <time></time>	
Length	:CALCulate:ATIMe:LENGth?	
	:CALCulate:ATIMe:STARt <time></time>	
Analysis Start Time	:CALCulate:ATIMe:STARt?	
	:CALCulate:ATIMe:GMODe OFF ON 0 1	
Gate Mode On/Off	:CALCulate:ATIMe:GMODe?	
D : 1	:CALCulate:ATIMe:GMODe:PERiod <time></time>	
Period	:CALCulate:ATIMe:GMODe:PERiod?	
	:CALCulate:ATIMe:GMODe:RANGe:STATe	
Range State	ON OFF 1 0, ON OFF 1 0, ON OFF 1 0,	
5	:CALCulate:ATIMe:GMODe:RANGe: STATe?	
	:CALCulate:ATIMe:GMODe:RANGe:STARt	
Range Start Time	<time_1>,<time_2>,<time_3></time_3></time_2></time_1>	
	:CALCulate:ATIMe:GMODe:RANGe: STARt?	
Deners Oten Time	:CALCulate:ATIMe:GMODe:RANGe:STOP <time_1>,<time_2>,<time_3></time_3></time_2></time_1>	
Range Stop Time	:CALCulate:ATIMe:GMODe:RANGe: STOP?	
Calculate	:INITiate:CALCulate	
Trace Point Query	[:SENSe]:SWEep:POINts?	
Measurement Count Query	:TRACe:SWEep:COUNt?	
	:DISPlay[:WINDow]:TRACe:X[:SCALe]:CENTer <freq></freq>	
Zoom Center	:DISPlay[:WINDow]:TRACe:X[:SCALe]:CENTer?	
Zoom	:DISPlay[:WINDow]:TRACe:X[:SCALe]:WIDTh <freq></freq>	
Width/Vertical Scale Width	:DISPlay[:WINDow]:TRACe:X[:SCALe]:WIDTh?	
	[:SENSe]:BANDwidth :BWIDth[:RESolution] <bandwidth></bandwidth>	
Resolution	[:SENSe]:BANDwidth :BWIDth[:RESolution]?	
Bandwidth	:CALCulate:BANDwidth :BWIDth[:RESolution] <bandwidth></bandwidth>	
	:CALCulate:BANDwidth :BWIDth[:RESolution]?	

Table 2.7-1 D	Device messages	for setting a trace
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Function	Device Message
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
Auto/Manual	:CALCulate:BANDwidth :BWIDth[:RESolution]:AUTO?
	[:SENSe]:DETector[:FUNCtion]
	NORMal POSitive NEGative SAMPle AVERage
Detection Mode	[:SENSe]:DETector[:FUNCtion]?
Detection Mode	:CALCulate:DETector[:FUNCtion]
	NORMal POSitive NEGative SAMPle AVERage
	:CALCulate:DETector[:FUNCtion]?
Storage Mode	:TRACe:STORage:MODE OFF MAXHold LAVerage MINHold
	:TRACe:STORage:MODE?
Storage Count	[:SENSe]:AVERage:COUNt <integer></integer>
Storage count	[:SENSe]:AVERage:COUNt?
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmic]
Log Scale Range	<rel_ampl></rel_ampl>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmic]?
Linear Scale Range	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision:LINear <percent></percent>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision:LINear?
Log Scale Line	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINE[:LOGarithmic] <line></line>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:LINE[:LOGarithmic]?
Smoothing	:CALCulate:SMOothing[:STATe] OFF ON 0 1
Shioothing	:CALCulate:SMOothing[:STATe]?
Smoothing Time	:CALCulate:SMOothing:LENGth <time></time>
Length	:CALCulate:SMOothing:LENGth?
Eilten Truce	:CALCulate:FILTer:TYPE OFF RECT GAUSsian NYQuist RNYQuist
Filter Type	:CALCulate:FILTer:TYPE?
	:CALCulate:FILTer:ALPHa <real></real>
Rolloff Factor	:CALCulate:FILTer:ALPHa?
	:CALCulate:FILTer:BANDwidth <bandwidth></bandwidth>
Filter Bandwidth	:CALCulate:FILTer:BANDwidth?
Filter Frequency	:CALCulate:FILTer:FOFFset <freq></freq>
Offset	:CALCulate:FILTer:FOFFset?

 Table 2.7-1
 Device messages for setting a trace (Cont'd)

Function	Device Message
Filter Auto/Manual	:CALCulate:FILTer:BANDwidth:AUTO ON OFF 1 0
	:CALCulate:FILTer:BANDwidth:AUTO?
Zoom	:DISPlay[:WINDow]:TRACe:Y[:SCALe]:RANGe D2 D5 D10 D25
Width/Vertical Scale Width	:DISPlay[:WINDow]:TRACe:Y[:SCALe]:RANGe?
Maximum Frequency Range Query	:DISPlay[:WINDow]:TRACe:Y[:SCALe]:WIDTh?
Frequency Scale	:UNIT:FREQuency HZ DHZ
Unit	:UNIT:FREQuency?
	:CALCulate:CCDF :PSTatistic:METHod CCDF APD
Measure Method	:CALCulate:CCDF :PSTatistic:METHod?
	:CALCulate:CCDF :PSTatistic:THReshold:STATe ON OFF 1 0
Threshold On/Off	:CALCulate:CCDF :PSTatistic:THReshold:STATe?
Threshold	:CALCulate:CCDF :PSTatistic:THReshold <ampl></ampl>
Inresnota	:CALCulate:CCDF :PSTatistic:THReshold?
CCDF Meas Mode	:CALCulate:CCDF :PSTatistic:MODE TIME COUNt
CCDF meas mode	:CALCulate:CCDF :PSTatistic:MODE?
Data Count	[:SENSe]:CCDF :PSTatistic:COUNts <sample></sample>
Data Count	[:SENSe]:CCDF :PSTatistic:COUNts?
Store Reference Trace	:CALCulate:CCDF :PSTatistic:STORe:REFerence
	[:SENSe]:CCDF :PSTatistic:RTRace[:STATe] ON OFF 1 0
Reference Trace	[:SENSe]:CCDF :PSTatistic:RTRace[:STATe]?
	[:SENSe]:CCDF :PSTatistic:GAUSsian[:STATe] ON OFF 1 0
Gaussian Trace	[:SENSe]:CCDF :PSTatistic:GAUSsian[:STATe]?
Marker Query	:CALCulate:MARKer[1][:PEAK]:X:DELTa?

 Table 2.7-1
 Device messages for setting a trace (Cont'd)

Function	Device Message
Power Distribution Scale	:DISPlay:WINDow[1]:TRACe:X[:SCALe]:PDIVision <rel_ampl></rel_ampl>
	:DISPlay:WINDow[1]:TRACe:X[:SCALe]:PDIVision?
ъл I А :	:CALCulate:MARKer:AXIS PROB DSTRbt
Marker Axis	:CALCulate:MARKer:AXIS?
Marker Query	:CALCulate:MARKer[1][:PEAK]:X:DELTa?
Reset Result Every	[:SENSe]:CCDF :PSTatistic:ERESet[:STATe] ON OFF 1 0
Capture	[:SENSe]:CCDF :PSTatistic:ERESet[:STATe]?
CCDF Configure	:CONFigure:CCDF :PSTatistic
CCDF Initiate	:INITiate:CCDF :PSTatistic
CCDF Fetch	:FETCh:CCDF :PSTatistic[n]?
CCDF Read	:READ:CCDF :PSTatistic[n]?
CCDF Measure	:MEASure: CCDF :PSTatistic [n]?
Marker Frequency	:CALCulate:MARKer[1]:Y <prob></prob>
Storage Stop	:TRACe:STORage:STOP
CCDF Trigger	:TRIGger:CCDF :PSTatistic[:SEQuence]:SOURce EXTernal[1] IMMediate WIF RFBurst VIDeo SG BBIF
Source	:TRIGger:CCDF :PSTatistic[:SEQuence]:SOURce?
Query Trace Data	:TRACE[:DATA]?[<start.[,<length>]]</start.[,<length>
Query Negative Trace Data	:TRACE[:DATA]:NEGative?[<start.[,<length>]]</start.[,<length>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision:RANGe <rel_ampl></rel_ampl>
Level Full Scale	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision:RANGe?
Time Marker	:CALCulate:TMARker[1] 2:X <time></time>
Position	:CALCulate:TMARker[1] 2:X?
Couple Time	:CALCulate:TMARker:COUPle:ZONE[:STATe] OFF ON 0 1
Marker 1 and 2	:CALCulate:TMARker:COUPle:ZONE[:STATe]?
Analyze with Spectrum Trace	:CALCulate:ANALyze:SPECtrum
Return To Spectrogram	:CALCulate:ANALyze:SPGRam
Time Marker Peak Query	:CALCulate:TMARker[1] 2:PEAK:X?

 Table 2.7-1
 Device messages for setting a trace (Cont'd)

Function	Device Message
Phase Offset	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:OFFSet <real></real>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:OFFSet?
Phase Mode	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:MODE <mode></mode>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:MODE?
Scale Division	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:PDIVision <real></real>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:PDIVision?
Phase Reference	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence <time></time>
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence?
Phase Reference	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence:MODE <mode></mode>
Mode	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence:MODE?

 Table 2.7-1
 Device messages for setting a trace (Cont'd)

:TRACe:MODE SPECtrum|PVTime|FVTime|PHASe|CCDF|SPGRam|NONE Change Trace

Function				
	This command sets the	e main trace type.	2	
Command				
	:TRACe:MODE <trace< td=""><td></td><td>07</td></trace<>		07	
Parameter			SCPI Device Message Details	
	<trace></trace>	Trace type	ID	
	SPECtrum	Spectrum	ev.	
	PVTime	Power vs Time	ice	
	FVTime	Frequency vs Time	M	
	PHASe	Phase vs Time	SSS	
	CCDF	CCDF	ag	
	SPGRam	Spectrogram	Ð	
Details)et:	
	Spectrogram is disabled when Scale Mode is set to Linear.			
	When Terminal is set for DigRF 3G (only for MS269x Series), the CCDF			
	and Spectrogram can not be set.			
Example of Use				
	To set trace type to Spe	ectrum.		
	TRAC:MODE SPEC			

:TRACe:MODE?		
Change Trace Query		
Change Trace Query		
Function		
FUNCTION	This source of a	manias the main trace time
Common and	This command q	ueries the main trace type.
Command		
	:TRACe:MODE?	
Response		
	<trace></trace>	
Parameter		
	<trace></trace>	Trace type
	SPEC	Spectrum
	PVT	Power vs Time
	FVT	Frequency vs Time
	PHAS	Phase vs Time
	CCDF	CCDF
	SPGR	Spectrogram
Example of Use		speerogram
	To query the mai	in trace type
	TRAC:MODE?	in the type.
	> SPEC	
		011
	e:AUTO OFF ON	U[I
Analysis Time Auto/Manu	ual	
Function		
		selects auto/manual mode for the analysis time of the
	main trace.	
Command		
	:CALCulate:AT	IMe:AUTO <switch></switch>
Parameter		
	<switch></switch>	Auto/manual mode for analysis time
	ON 1	Auto
	OFF 0	Manual
Dataila		
Details		
		22690A/MS2691A/MS2692A Signal Analyzer Operation
	-	Analyzer function Operation)" or "MS2830A Signal
		tion Manual (Signal Analyzer function Operation)" for
	automatic setting	g operation.

Examp	le of	Use

To set the analysis time of the main trace manually. CALC:ATIM:AUTO OFF

:CALCulate:ATIMe:AUTO?

<switch>

<switch>

1

0

:CALCulate:ATIMe:AUTO?

Analysis	Time Auto/Manual	Query
----------	------------------	-------

Εı.	Inction
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This command queries the auto/manual mode for the analysis time of the main trace.

Auto/manual mode for analysis time

Query

Response

Parameter

ameter

Details

Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" for automatic setting.

Example of Use

To query the setting of analysis time of the main trace. CALC:ATIM:AUTO? > 0

Automatic

Manual

:CALCulate:ATIMe:LENGth <time>

Analysis Time Length

This command sets the	e analysis time length for the main trace.	
:CALCulate:ATIMe:I	LENGth <time></time>	
<time></time>	Time Analysis time length	
Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A $$	
	Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A	
	Signal Analyzer Operation Manual (Signal	
	Analyzer function Operation)" for details.	
Suffix code	NS, US, MS, S	
This command is not a	vailable in the following cases:	
• This command cannot be set when the analysis start time (Analysis		
Start Time) is set to the maximum value.		
• When Terminal is se	elected for DigRF 3G (only for MS269x Series).	
To set the analysis time length for the main trace to 12 ms. CALC:ATIM:LENG 12MS		
	<pre>:CALCulate:ATIMe:I <time> Range/Resolution Suffix code This command is not a • This command cam Start Time) is set to • When Terminal is set To set the analysis tim</time></pre>	

:CALCulate:ATIMe:LENGth?

Analysis Time Length Query

Function	This command queries	the analysis time length for the main trace.	
Query Response	:CALCulate:ATIMe:LENGth?		
	<time></time>		
Parameter	<time> Range/Resolution</time>	Analysis time length Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" for details. No suffix code. Value is returned in S units.	
Example of Use	To query the analysis t CALC:ATIM:LENG? > 0.01200000	ime length for the main trace.	

:CALCulate:ATIMe:ST Analysis Start Time	ARt <time></time>	
Function	This command sets the	analysis start time for the main trace.
Command		
	:CALCulate:ATIMe:STARt <time></time>	
Parameter	<time> Range/Resolution Suffix code</time>	Analysis time length Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" for details. NS, US, MS, S S is used when omitted.
Details	• This command can (Analysis Time Leng	vailable in the following cases: mot be used when the analysis time length th) is set to the maximum value. lected DigRF 3G (only for MS269x Series).
Example of Use	To set the analysis start time to 12 ms. CALC:ATIM:STAR 12MS	

:CALCulate:ATIMe:STARt?

Analysis Start Time Query

Function			
	This command queries the analysis start time for the main trace.		
2			
Query			
_	:CALCulate:ATIMe:S	STARt?	
Response			
	<time></time>		
	Parameter		
Parameter			
	<time></time>	Analyzia time longth	
		Analysis time length	
	Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" or "MS2830A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" for details.	
		Returns a value in s units without a suffix code.	
Example of Use			
	To query the analysis s	tart time.	
	CALC:ATIM:STAR?		
	> 0.01200000		

:CALCulate:ATIMe:GMODe OFF|ON|0|1

Gate Mode On/Off

Function		
		is CCDF, this command selects whether or not to r analysis of only the specified section in the
Command		
	CALCulate:ATIMe:	GMODe <switch></switch>
Parameter		
	<switch></switch>	Gate Mode Status
	ON 1	Uses gate mode
	OFF 0	Does not use gate mode
Details		
	This command is ava	ilable when the CCDF trace is active.
Example of Use		
	To set the CCDF gate	e mode to On:
	CALC:ATIM:GMOD O	Ν
:CALCulate:ATIMe:GN Gate Mode On/Off Query	MODe?	
Function		is CCDF, this command selects whether or not to de for analysis of only the specified section in the
Command		
	CALCulate:ATIMe:	GMODe?
Response		
	<switch></switch>	Gate Mode Status
	1	Uses gate mode
	0	Does not use gate mode
Details		
	This command is ava	ilable when the CCDF trace is active.
Example of Use		
	To query the CCDF g	ate mode settings:
	CALC:ATIM:GMOD?	
	> 1	

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SCPI Device Message Details

:CALCulate:ATIMe:GMODe:PERiod <time> Period Function When GateMode is On, this command sets the Period setting for each range. Command :CALCulate:ATIMe:GMODe:PERiod <time> Parameter <time> Range setting cycle Range/Resolution Same as Analysis Time Length Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" for automatic setting operation. Suffix code: NS, US, MS, S Details This command is available when the CCDF trace is active. This function can be set when Gate Mode is On. Example of Use To set the CCDF gate mode span to 10 ms: CALC:ATIM:GMOD:PER 10MS

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:CALCulate:ATIMe:GMODe:PERiod?

Period Query

Function			
	When GateMode is On, this command queries the Period setting for each		
	range.		
Query			
	:CALCulate:ATIMe:C	GMODe:PERiod?	
Response			
	<time></time>	Range setting cycle	
	Range/Resolution	Same as Analysis Time Length	
		Refer to the "MS2690A/MS2691A/MS2692A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" or "MS2830A	
		Signal Analyzer Operation Manual (Signal Analyzer function Operation)" for automatic	
		setting operation.	
	No suffix co	ode. Value is returned in s units.	
Details			
	This command is available when the CCDF trace is active.		
Example of Use			
·	To query the CCDF ga	te mode setting span:	
	CALC:ATIM:GMOD:PEF	R?	
	> 0.01000000		

:CALCulate:ATIMe:GMODe:RANGe:STATe ON|OFF|1|0,ON|OFF|1|0,ON|OFF|1|0,

Range State

Function	This command sets ea	ch range On/Off.	
Command	:CALCulate:ATIMe:	GMODe:RANGe:STA	Te <switch n=""></switch>
Parameter			
	<switch_n></switch_n>	Range n On/Off	
	ON 1	Sets range to On	
	OFF 0	Sets range to Off	
	Default		
		Range1	On
		Range2 to 3	Off
Details			
	This function cannot set all segments to Off.		
	This command is available when the CCDF trace is active and when		
	Gate Mode is On.		
Example of Use			
	To set the range On/Off: CALC:ATIM:GMOD:RANG:STAT ON,ON,OFF		

:CALCulate:ATIMe:GMODe:RANGe: STATe?

Range State Query

Function	This command queries	the range for setting parameter.
Query	:CALCulate:ATIMe:GMODe:RANGe:STATe?	
Response		
	<switch_n></switch_n>	Range On/Off
	1	On
	0	Off
Details		
	This command is availa	able when the CCDF trace is active.
Example of Use		
	To query the range On/ CALC:ATIM:GMOD:RAN > 1,1,0	

:CALCulate:ATIMe:GMODe:RANGe:STARt <time_1>,<time_2>,<time_3>

Range Start Time

Function	This command sets the	e start time for each range.	
Command	:CALCulate:ATIMe:0	GMODe:RANGe:STARt <time_n></time_n>	
Parameter			
	<time_n></time_n>	Start time for each range	
	Range	0 to (Range setting period (Period)—Resolution)	
	Resolution	Same as Analysis Time Length	
		Refer to the "MS2690A/MS2691A/MS2692A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer Function Operation)" for details.	
	Suffix code	NS, US, MS, S	
		s is used when omitted.	
	Default	Range1 to 3 0	
Details			
	This command is available when the CCDF trace is active and when		
	Gate Mode is On.		
Example of Use			
	To set the start time for each range:		
	CALC:ATIM:GMOD:RAN	NG:STAR 0,0.006,0.01	

:CALCulate:ATIMe:GMODe:RANGe: STARt?

Range Start Time Query

Function	This command queries the start time for each range.	
Query	:CALC:ATIM:GMOD:RANG:STAR?	
Response	<time_n></time_n>	Start time for each range No suffix code. Value is returned in s units.
Details	This command is available when the CCDF trace is active.	
Example of Use		
	To query the start time for each range: :CALC:ATIM:GMOD:RANG:STAR? > 0.000000000,0.006000000,0.010000000	

:CALCulate:ATIMe:GMODe:RANGe:STOP <time_1>,<time_2>,<time_3> Range Stop Time

Function			
Function	This command set the s	top time for each 1	range.
Command			
	:CALCulate:ATIMe:G	MODe:RANGe:STO	P <time_n></time_n>
Parameter			
	<time_n></time_n>	Stop time for eac	h range
	Range	Resolution to Ran	nge setting period (Period)
	Resolution	Same as Analysis	s Time Length
		Refer to the "MS	2690A/MS2691A/MS2692A
		Signal Analyzer (Operation Manual (Signal
		Analyzer Functio	on Operation)" for details.
	Default	Range1 to 3	Range setting period (Period)
Details		-	
	This command is avail	lable when the C	CDF trace is active and when
	Gate Mode is On.		
Example of Use			
·	To set the stop time for	each range:	
	CALC:ATIM:GMOD:RAN	-	.01,0.011

:CALCulate:ATIMe:GMODe:RANGe: STOP?

Range Stop Time Query

Function	This command queries	the stop time for each range.
Query	:CALC:ATIM:GMOD:RANG:STOP?	
Response		
	<time_n></time_n>	Stop time for each range
		No suffix code. Value is returned in s units.
Details	This command is available when the CCDF trace is active.	
Example of Use		
	To query the stop time	for each range:
	:CALC:ATIM:GMOD:RANG:STOP?	
	> 0.00100000,0.000	500000,0.01000000

:INITiate:CALCulate Calculate Function This command executes waveform analysis without capturing and is used to re-analyze the same captured waveform with different parameters. Command :INITiate:CALCulate Details This function can be executed only when the waveform capture time (Capture Time) is set to Manual. When no waveform has been captured, or when a parameter that requires re-capturing of the waveform is changed, this function executes both waveform capturing and analysis. Other commands or queries are received while this function is being executed. If a command that requires re-capturing of a waveform or re-calculation of a trace is received, however, this function is paused during execution of such a command. For querying the measurement value, such as a marker value, after this command has been executed, use *WAI commands to perform synchronized control. Note that this command does not support synchronized control in

Continuous mode.

Example of Use

To execute waveform analysis.

TRAC:MODE SPEC	Displays Spectrum trace
SWE:TIME:AUTO OFF	Sets the waveform capture time
	manually
SWE:TIME 100MS	Sets the waveform capture time to 100 ms
INIT:MODE:SING	Obtains IQ data
*WAI	Waits until end of query
CALC:ATIM:LENG 10MS	Sets the analysis time length to 10 ms
CALC:ATIM:STAR OS	Sets the analysis start time to 0 s
CONF: ACP	Sets ACP measurement to ON
INIT:CALC	Starts analysis
*WAI	Waits until end of analysis
FETC:ACP?	Queries ACP measurement result
CALC:ATIM:LENG 10MS	Sets the analysis time length to 10 ms
CALC:ATIM:STAR 90MS	Sets the analysis start time to 90 ms
INIT:CALC	Starts analysis
*WAI	Waits until end of analysis
FETC:ACP?	Obtains ACP measurement result.

[:SENSe]:SWEep:POINts? Trace Point Query			
Function			
	This command queri	es the number of data points of the main trace.	
Query			
	[:SENSe]:SWEep:P	OINts?	
Response			
	<integer></integer>		
Parameter			
	<n></n>	The number of trace points	
	1	The number of time axis trace points	
	2	The number of frequency axis trace points	
	<integer></integer>	Number of trace data points	
Details			
	This command is available when any one of the following traces is set to		
	active:		
	• Spectrum		
	• Power vs Time		
	• Frequency vs Time		
	• Phase vs Time		
	• Spectrogram		
Example of Use			
	To query the number of the data points of the main trace. SWE:POIN?		
	> 1281		
Related Command			
	This command has the same function as the following commands.		
	[:SENSe]:ACPower:SWEep:POINts?		
	[:SENSe]:CHPower:SWEep:POINts?		
	[:SENSe]:OBWidth	:SWEep:POINts?	

:TRACe:SWEep:COUNt?

Measurement Count Query

Function			
	This command queries the current storage count of the main trace.		
Query			
	:TRACe:SWEep:COUN	t?	
Response		-	
	<integer></integer>		
Parameter			
	<integer></integer>	Storage count	
	Range	0 to 9999	
	Resolution	1	
Details			
	This command is avail	able when any one of the following traces is active:	
	• Spectrum		
	• Power vs Time		
	• Frequency vs Time		
	• Spectrogram		
	This command is not available when Storage Mode on the main trace is		
	set to Off.		
Example of Use			
	To query the current s	torage count of the main trace.	
	TRAC:SWE:COUN?		
	> 10		

:DISPlay[:WINDow]:TRACe:X[:SCALe]:CENTer <freq>

Zoom Center

Function		
	This command sets the scale.	e center frequency of the display frequency axis
Command		
	:DISPlay[:WINDow]:	TRACe:X[:SCALe]:CENTer <freq></freq>
Parameter		
	<freq></freq>	Scale center frequency
	Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" or "MS2830A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" for details.
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use		
	To set the center freque DISP:TRAC:X:CENT 2	ency of the display frequency axis scale to 20 kHz.

:DISPlay[:WINDow]:TRACe:X[:SCALe]:CENTer?

Zoom Center Query

Function		
	This command queries scale.	the center frequency of the display frequency axis
Query		
	:DISPlay[:WINDow]:	TRACe:X[:SCALe]:CENTer?
Response		
	<freq></freq>	
Parameter		
	<freq></freq>	Scale center frequency
	Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" or "MS2830A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" for details.
Dataila		No suffix code. Value is returned in Hz units.
Details	(T) 1 · · · · 1	
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use	m 1 4	
	To query the center frequency of the display frequency axis scale.	
	DISP:TRAC:X:CENT?	
	> 20000.0	

:DISPlay[:WINDow]:TRACe:X[:SCALe]:WIDTh <freq>

Zoom Width/Vertical Scale Width

Function		
	This command sets the scale.	e frequency width of the display frequency axis
Command		
	:DISPlay[:WINDow]:	:TRACe:X[:SCALe]:WIDTh <freq></freq>
Parameter		
	<freq></freq>	Scale frequency width
	Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A $$
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" or "MS2830A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" for details.
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use		
	To set the frequency wi	idth of the display frequency axis scale to 31.25
	MHz.	
	DISP:TRAC:X:WIDT 3	31.25MHZ

:DISPlay[:WINDow]:TRACe:X[:SCALe]:WIDTh?

Zoom Width/Vertical Scale Width Query

Function		
This con scale.	nmand queries the frequency width of the display frequency axis	
Query		
:DISP1a	ay[:WINDow]:TRACe:X[:SCALe]:WIDTh?	
Response		
<freq></freq>		
Parameter		
<freq></freq>	Scale frequency width	
Ran	ge/Resolution Refer to the "MS2690A/MS2691A/MS2692A	
	Signal Analyzer Operation Manual (Signal	
	Analyzer function Operation)" or "MS2830A	
	Signal Analyzer Operation Manual (Signal	
	Analyzer function Operation)" for details.	
	No suffix code. Value is returned in Hz units.	
Details		
	This command is available when the following trace is active:	
• Spect	rum	
Example of Use		
	To query the frequency width of the display frequency axis scale.	
	RAC:X:WIDT?	
> 31250	0000.0	

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

Resolution Bandwidth

Function			
	This command sets th	e resolution bandwidth (RBW).	
Command			
	[:SENSe]:BANDwidt	h :BWIDth[:RESolution] <bandwidth></bandwidth>	
Parameter			
	<bandwidth></bandwidth>	Resolution bandwidth (RBW)	
	Range/Resolution	1 Hz to 10 MHz (1-3 Sequence)	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
Details			
	This command is avaiSpectrum	lable when either of the following traces is active:	
	• Spectrogram		
		his function is limited according to the frequency	
	span setting. Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or		
	"MS2830A Signal Analyzer Operation Manual (Signal Analyzer function		
	Operation)" for details		
Example of Use	operation, for actain		
	To set the RBW to 300) kHz.	
	BAND 300KHZ		
Related Command			
	This command has the	e same function as the following commands.	
	:CALCulate:BANDwi	dth :BWIDth[:RESolution]	
	[:SENSe]:ACPower:	BANDwidth[:RESolution]	
	:CALCulate:ACPowe	r:BANDwidth[:RESolution]	
	[:SENSe]:CHPower:	BANDwidth[:RESolution]	
	:CALCulate:CHPowe	r:BANDwidth[:RESolution]	
	[:SENSe]:OBWidth:	BANDwidth[:RESolution]	
	:CALCulate:OBWidt	h:BANDwidth[:RESolution]	
	[:SENSe]:BPOWer :	TXPower:BANDwidth[:RESolution]	
	:CALCulate:BPOWer	:TXPower:BANDwidth[:RESolution]	

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

Resolution Bandwidth Query

Function			
	This command queries the resolution bandwidth (RBW).		
Query			
	[:SENSe]:BANDwidth :BWIDth[:RESolution]?		
Response			
	<bandwidth></bandwidth>		
Parameter			
	<bandwidth></bandwidth>	Resolution bandwidth (RBW)	
	Range/Resolution	1 Hz to 10 MHz (1-3 Sequence)	
-		No suffix code. Value is returned in Hz units.	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	• Spectrogram		
	The setting range of this function is limited according to the frequency span setting. Refer to the "MS2690A/MS2691A/MS2692A Signal		
	Analyzer Operation Manual (Signal Analyzer function Operation)" or		
	"MS2830A Signal Analyzer Operation Manual (Signal Analyzer function		
	Operation)" for details	5.	
Example of Use			
	To query the RBW.		
	BAND?		
	> 300000		
Related Command			
	This command has the same function as the following commands.		
	:CALCulate:BANDwi	dth :BWIDth[:RESolution]?	
	[:SENSe]:ACPower:	BANDwidth[:RESolution]?	
	:CALCulate:ACPowe	r:BANDwidth[:RESolution]?	
	[:SENSe]:CHPower:	BANDwidth[:RESolution]?	
	:CALCulate:CHPowe	r:BANDwidth[:RESolution]?	
	[:SENSe]:OBWidth:	BANDwidth[:RESolution]?	
	:CALCulate:OBWidt	h:BANDwidth[:RESolution]?	
	[:SENSe]:BPOWer :	TXPower:BANDwidth[:RESolution]?	
	:CALCulate:BPOWer	<pre> :TXPower:BANDwidth[:RESolution]?</pre>	

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

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

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

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

Resolution Bandwidth Auto/Manual

Function		
	This command enables (RBW) setting function	s/disables the automatic resolution bandwidth n.
Command		
	[:SENSe]:BANDwidt	h :BWIDth[:RESolution]:AUTO <switch></switch>
Parameter		
	<switch></switch>	Automatic resolution bandwidth setting function On/Off
	0 OFF	Disables the automatic resolution bandwidth
		setting function.
	1 ON	Enables the automatic resolution bandwidth
		setting function (Default value).
Details		
	This command is avail	lable when either of the following trace is active:
	• Spectrum	
	• Spectrogram	
Example of Use		
	To enable the automat BAND: AUTO ON	ic resolution bandwidth setting function.
Related Command		
	This command has the	e same function as the following commands.
		dth :BWIDth[:RESolution]:AUTO
		BANDwidth[:RESolution]:AUTO
	:CALCulate:ACPowe	r:BANDwidth[:RESolution]:AUTO
		BANDwidth[:RESolution]:AUTO
		r:BANDwidth[:RESolution]:AUTO[:SENSe]:0
	BWidth:BANDwidth[
		h:BANDwidth[:RESolution]:AUTO

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

Resolution Bandwidth Auto/Manual Query

Function		
	This command queries bandwidth (RBW) sett	s the On/Off state of the automatic resolution ting function.
Query		
	[:SENSe]:BANDwidt	h :BWIDth[:RESolution]:AUTO?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Automatic resolution bandwidth setting function On/Off
	0	Disables the automatic resolution bandwidth setting function.
	1	Enables the automatic resolution bandwidth
		setting function.
Details		
	This command is availactive:	lable when the either of the following trace is
	• Spectrum	
	• Spectrogram	
Example of Use		
		tate of the automatic resolution bandwidth setting
	function. BAND:AUTO?	
	> 1	
Related Command		
		e same function as the following commands. dth :BWIDth[:RESolution]:AUTO?
	[:SENSe]:ACPower:	BANDwidth[:RESolution]:AUTO?
	:CALCulate:ACPowe	r:BANDwidth[:RESolution]:AUTO?
	[:SENSe]:CHPower:	BANDwidth[:RESolution]:AUTO?
	:CALCulate:CHPowe	r:BANDwidth[:RESolution]:AUTO?
	[:SENSe]:OBWidth:	BANDwidth[:RESolution]:AUTO?
	:CALCulate:OBWidt	h:BANDwidth[:RESolution]:AUTO?
	 Spectrogram To query the On/Off st function. BAND: AUTO? 1 This command has the :CALCulate: BANDwi [:SENSe]: ACPower: :CALCulate: ACPower [:SENSe]: CHPower: :CALCulate: CHPower [:SENSe]: OBWidth: 	dth :BWIDth[:RESolution]:AUTO? BANDwidth[:RESolution]:AUTO? r:BANDwidth[:RESolution]:AUTO? BANDwidth[:RESolution]:AUTO? r:BANDwidth[:RESolution]:AUTO? BANDwidth[:RESolution]:AUTO?

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

[:SENSe]:DETector[:FUNCtion] NORMal|POSitive|NEGative|SAMPle|AVERage

Detection Mode

Function			
	This command selects the detection mode for waveform pattern.		
Command			
	[:SENSe]:DETector	[:FUNCtion] <mode></mode>	
Parameter			
	<mode></mode>	Detection mode	
	NORMal	Simultaneous detection for positive and negative	
		peaks	
	POSitive	Positive peak detection	
	NEGative	Negative peak detection	
	SAMPle	Sample detection	
	AVERage	Average value detection	
	Default value	AVERage (Spectrum or Power vs Time trace)	
		NORMal (Frequency vs Time trace)	
		SAMPle (Phase vs Time trace)	
		Positive (For Spectrogram trace)	
Details			
	This command is available on the following traces:		
	• Spectrum (NORMal cannot be selected.)		
	• Power vs Time		
	• Frequency vs Time		
	• Phase vs Time (NORMal cannot be selected.)		
	• Spectrogram (NORMal cannot be selected.)		
	Sample detection is av	ailable only for Phase vs Time.	
Example of Use			
	To set the detection mode to the positive peak.		
	DET POS		
Related Command			
	This command has the same function as the following commands.		
	:CALCulate:DETect		
		DETector[:FUNCtion]	
		r:DETector[:FUNCtion]	
	[:SENSe]:CHPower:DETector[:FUNCtion]		
		r:DETector[:FUNCtion]	
		DETector[:FUNCtion]	
	:CALCulate:OBWidt	h:DETector[:FUNCtion]	

[:SENSe]:DETector[:FUNCtion]?

Detection Mode Query

Function				
	This command queries the detection mode for waveform pattern.			
Query				
	[:SENSe]:DETector	[:FUNCtion]?		
Response				
_ /	<det></det>			
Parameter				
	<det></det>	Detection mode selection		
	NORM	Simultaneous detection for positive and negative		
		peaks		
	POS	Positive peak detection		
	NEG	Negative peak detection		
	SAMP	Sample detection		
	AVER	Average value detection		
Details				
	This command is available on the following traces:			
	• Spectrum, Spectrogram (NROM cannot be selected.)			
	Power vs Time			
	• Frequency vs Time			
Example of Use				
	To query the detection mode.			
	DET?			
	> POS			
Related Command				
	This command has the same function as the following commands.			
	:CALCulate:DETector[:FUNCtion]?			
	[:SENSe]:ACPower:DETector[:FUNCtion]?			
	:CALCulate:ACPower:DETector[:FUNCtion]?			
	[:SENSe]:CHPower:DETector[:FUNCtion]?			
	:CALCulate:CHPowe	er:DETector[:FUNCtion]?		
	[:SENSe]:OBWidth:DETector[:FUNCtion]?			
	:CALCulate:OBWidth:DETector[:FUNCtion]?			

:CALCulate:DETector[:FUNCtion] NORMal|POSitive|NEGative|SAMPle|AVERage

Detection Mode

Function	
	This command selects the detection mode for 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]
	:CALCulate:ACPower:DETector[:FUNCtion]
	[:SENSe]:CHPower:DETector[:FUNCtion]
	:CALCulate:CHPower:DETector[:FUNCtion]
	[:SENSe]:OBWidth:DETector[:FUNCtion]
	:CALCulate:OBWidth:DETector[:FUNCtion]

:CALCulate:DETector[:FUNCtion]?

Detection Mode Query

Function	
	This command queries the detection mode for 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]?
	:CALCulate:ACPower:DETector[:FUNCtion]?
	[:SENSe]:CHPower:DETector[:FUNCtion]?
	:CALCulate:CHPower:DETector[:FUNCtion]?
	[:SENSe]:OBWidth:DETector[:FUNCtion]?
	:CALCulate:OBWidth:DETector[:FUNCtion]?

:TRACe:STORage:MODE OFF|MAXHold|LAVerage|MINHold

Storage Mode

Function			
	This command sets the storage mode for active trace data.		
Command			
	:TRACe:STORage:MC	DE <mode></mode>	
Parameter			
	<mode></mode>	Storage mode	
	OFF	Does not store data (Default value)	
	MAXHold	Stores the maximum value.	
	LAVerage	Stores the average value.	
	MINHold	Stores the minimum value.	
Details			
	Storage mode is fixed to Off and cannot be set, when Capture Time is set		
	to Manual.		
	This command is available when any one of the following traces is active:		
	• Spectrum		
	• Power vs Time		
	• Frequency vs Time (LAVerage cannot be selected.)		
	• Spectrogram		
	This command is not available while the Replay function is being		
	executed.		
Example of Use			
	To set the storage mod	de to Max Hold.	
	TRAC:STOR:MODE MA	XH	

:TRACe:STORage:MODE?

Storage Mode Query

Function			
	This command queries	s the storage mode for active trace data.	
Command			
	:TRACe:STORage:MO	DE <mode></mode>	
Response			
	<mode></mode>		
Parameter			
	<mode></mode>	Storage mode	
	OFF	Does not store data.	
	MAXH	Stores the maximum value.	
	LAV	Stores the average value	
	MINH	Stores the minimum value.	
Details			
	This command is avai	lable when any one of the following traces is active:	
	• Spectrum		
	• Power vs Time		
	• Frequency vs Time (LAVerage cannot be selected.)		
	• Spectrogram		
Example of Use			
	To query the storage r	mode.	
	TRAC:STOR:MODE?		
	> LAV		

[:SENSe]:AVERage:COUNt <integer> Storage Count</integer>			
Function	This command sets the storage count.		
Command	[:SENSe]:AVERage:COUNt <integer></integer>		
Parameter			
	<integer></integer>	Storage count	
	Range	2 to 9999	
	Default value	10	
Details			
	This command is avai	lable when any one of the following traces is active:	
	• Spectrum		
	• Power vs Time		
	• Frequency vs Time		
	• Spectrogram		
	This command is not available while the Replay function is being executed.		
Example of Use			
	To set the storage cour AVER:COUN 110	nt to 110.	
Related Command			
	This command has the [:SENSe]:ACPower: [:SENSe]:CHPower:	-	
	[:SENSe]:OBWidth:	-	
		TXPower:ACPower:AVERage:COUNt	
	[

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SCPI Device Message Details

[:SENSe]:AVERage:C Storage Count Query	COUNt?	
Function	This command queries	s the storage count.
Query	[:SENSe]:AVERage:	COUNt?
Response	<integer></integer>	
Parameter		
	<integer></integer>	Storage count
	Range	2 to 9999
Details		
	This function can be se	et when any one of the following traces is active:
	• Spectrum	
	Power vs Time	
	• Frequency vs Time	
	 Spectrogram 	
Example of Use	_	
	To query the storage count.	
	AVER: COUN?	
	> 110	
Related Command		
		e same function as the following commands.
	[:SENSe]:ACPower:	-
	[:SENSe]:CHPower:	-
	[:SENSe]:OBWidth:	-
	[:SENSe]:BPOWer :	TXPower:ACPower:AVERage:COUNt?

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

Function		
	This command sets the	e Y-axis scale range when Scale Mode is set to Log.
Command		
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi
	c] <rel_ampl></rel_ampl>	
Parameter		
	<rel_ampl></rel_ampl>	Y axis scale range
	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
Details		
	This command is available when either of the following traces is active:Spectrum	
	Power vs Time	
Example of Use		
	To set the Y-axis scale range to 0.5 dB/div.	
	DISP:WIND:TRAC: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:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL e]:PDIVision	

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

Log Scale Range Query

Function	This command queries	s the Y-axis scale range when Scale Mode is set to
	Log.	
Query		
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi
	c]?	
Response		
	<rel_ampl></rel_ampl>	
Parameter		X7 · 1
	<rel_ampl> 0.1</rel_ampl>	Y axis scale range 0.1 dB/div
	0.2	0.1 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
Details		
	This command is available when either of the following traces is active:	
	• Spectrum	
	• Power vs Time	
Example of Use		
	To query the scale range.	
	DISP:WIND:TRAC:PDIV?	
	> 0.5	
Related Command	m 1, 11, 1	
	This command has the same function as the following commands.	
	:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi sion?	
	<pre>SIGN? :DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi</pre>	
	:DISPIAy:CHPOWer:VIEW[I]:WINDOw[I]:TRACe:Y[:SCALe]:PDIVI sion?	
		VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
	sion?	
	:DISPlay:BPOWer :	TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
	e]:PDIVision?	

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

Linear Scale Range

Function		
	This command sets the	e Y-axis scale range when Scale Mode is set to
	Linear.	
Command		
Command]:TRACe:Y[:SCALe]:PDIVision:LINear
].INACe.I[.SCADE].IDIVISION.DINEAL
_ /	<percent></percent>	
Parameter		
	<percent></percent>	Y axis scale range
	1	1%/div
	2	2%/div
	5	5%/div
	10	10%/div
	Default value	10%/div
Details		
	This command is available when either of the following traces is active:	
	• Spectrum	
	• Power vs Time	
Example of Use		
	To set the Y-axis scale	range to 10%/div.
	DISP:WIND:TRAC:Y:PDIV:LIN 10	

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

Linear Scale Range Query

Function		
	This command queries the Y-axis scale range when Scale Mode is set to	
	Linear.	
Query		
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision:LINear?
Response		
	<percent></percent>	
Parameter		
	<percent></percent>	Y-axis scale range
	1	1%/div
	2	2%/div
	5	5%/div
	10	10%/div
	Default value	10%/div
Details		
	This command is avail	able when either of the following traces is active:
	• Spectrum	
	• Power vs Time	
Example of Use		
	To query the Y-axis scale range.	
	DISP:WIND:TRAC:PDIV:LIN?	
	> 10	

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

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]:LINE[:LOGarithmic]
	<line></line>	
Parameter		
	<line></line>	Number of Y-axis scale segments
	10	10 segments (Default value)
	12	12 segments
Details		
	This command is available only in Log scale mode.	
	This command is available when either of the following traces is active:	
	• Spectrum	
	• Power vs Time	
Example of Use		
	To divide the Y-axis scale in Log scale mode.	
	DISP:WIND:TRAC:Y:	LINE 12

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

Log Scale Line Query

Function		
	This command queries mode.	the number of Y-axis scale segments in Log scale
Query		
	:DISPlay:WINDow[1]	:TRACe:Y[:SCALe]:LINE[:LOGarithmic]?
Response		
	<line></line>	
Parameter		
	<line></line>	Number of Y-axis scale segments
	10	10 segments
	12	12 segments
Details		
	This command is avail	able only in Log scale mode.
	This command is available when either of the following traces is active:	
	• Spectrum	
	• Power vs Time	
Example of Use		
		f Y-axis scale segments in Log scale mode.
	DISP:WIND:TRAC:Y:	LINE?
	> 12	

:CALCulate:SMOothing[:STATe] OFF|ON|0|1

Smoothing

Function	m l.'	
Command	This command sets the main trace smoothing On/Off.	
Parameter	:CALCulate:SMOoth	ing[:STATe] <switch></switch>
	<switch></switch>	Smoothing ON/OFF
	ON 1	On
Details	OFF 0	Off
	This command is availPower vs TimeFrequency vs Time	able when either of the following traces is active.
Example of Use	To execute the main trace smoothing. CALC:SMO ON	
:CALCulate:SMOothin	ng[:STATe]?	
Function		
Query	This command queries	s the On/Off state of the main trace smoothing.
Quory	:CALCulate:SMOothing[:STATe]?	
Response	<switch></switch>	
Parameter	<swilch></swilch>	
	<switch></switch>	Smoothing ON/OFF
	1 0	On Off
Details	0	
	This command is available when either of the following traces is active:Power vs TimeFrequency vs Time	
Example of Use		
	To query the On/Off state of the active trace smoothing. CALC: SMO?	
	> 1	

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:CALCulate:SMOothing:LENGth <time>

Smoothing Time Length

Function		
	This command sets the	e main trace smoothing time length.
Command		
	:CALCulate:SMOoth	ing:LENGth <time></time>
Parameter		
	<time></time>	Smoothing time length
	Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" or "MS2830A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" for details.
	Suffix code	NS,US,MS,S
		S is used when omitted.
Details		
	This command is avail	able when either of the following traces is active
	• Power vs Time	
	• Frequency vs Time	
	This command is not a	vailable in the following cases:
	• When Terminal is se	elected for DigRF 3G (only for MS269x Series).
Example of Use		
	To set the smoothing ti	me length to 20 µs.
	CALC:SMO:LENG 2005	5

:CALCulate:SMOothing:LENGth?

Smoothing Time Length Query

Function		
	This command queries	the main trace smoothing time length.
Query		
	:CALCulate:SMOothi	ing:LENGth?
Response		
	<time></time>	
Parameter		
	<time></time>	Smoothing time length
	Range/Resolution	Refer to the "MS2690A/MS2691A/MS2692A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" or "MS2830A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" for details.
		Returns a value in s units without a suffix code.
Details		
	This command is availa	able when either of the following traces is active:
	• Power vs Time	
	• Frequency vs Time	
Example of Use		
	To query the active trac	ce smoothing time length.
	CALC:SMO:LENG?	
	> 0.00002000	

:CALCulate:FILTer:TYPE OFF|RECT|GAUSsian|NYQuist|RNYQuist Filter Type

Function			
	This command selects filter type for the main trace.		
Command			
	:CALCulate:FILTer:	TYPE <filter></filter>	
Parameter			
	<filter></filter>	Filter type	
	OFF	No filtering	
	RECT	Rectangle filter	
	GAUSsian	Gauss filter	
	NYQuist	Nyquist filter	
	RNYQuist	Root Nyquist filter	
Details			
	This command is available when either of the following traces is active:		
	• Power vs Time		
	• CCDF (Only RECT or OFF can be selected)		
	Fixed to Off when the frequency span is set to 1 kHz.		
Example of Use			
·	To set the filter type to Nyquist.		
	CALC:FILT:TYPE NYQ		

:CALCulate:FILTer:TYPE?

Filter Type Query

Function			
	This command queries filter type for the main trace.		
Query			
	:CALCulate:FILTer	:TYPE?	
Response			
	<filter></filter>		
Parameter			
	<filter></filter>	Filter type	
	OFF	No filtering	
	RECT	Rectangle filter	
	GAUS	Gauss filter	
	NYQ	Nyquist filter	
	RNYQ	Root Nyquist filter	
Details			
	This command is avail	able when either of the following traces is active:	
	• Power vs Time		
	• CCDF (Only RECT or OFF can be selected)		
	Fixed to Off when the frequency span is set to 1 kHz.		
Example of Use			
	To query the filter type	е.	
	CALC:FILT:TYPE?		
	> NYQ		

:CALCulate:FILTer:ALPHa <real>

Rolloff Factor		
Function		
	This command sets the	e filter rolloff factor.
Command		
	:CALCulate:FILTer	:ALPHa <real></real>
Parameter		
	<real></real>	Filter rolloff factor
	Range	0.01 to 1.00
	Resolution	0.01
	Suffix code	None
Details	This command is available when the following trace is set to activ • Power vs Time	
	This command is avail	able when Filter Type
	(cf. :CALCulate:FILTer:TYPE) is set to either of the following:	
	• Nyquist	
	• Root Nyquist	
Example of Use		
	To set the filter rolloff factor to 0.22.	
	CALC:FILT:ALPH 0.	22

:CALCulate:FILTer:ALPHa?

Rolloff Factor Query

Function		
	This command queries the filter rolloff factor.	
Command		
	:CALCulate:FILTer:	:ALPHa?
Response		
	<real></real>	
Parameter		
	<real></real>	Filter rolloff factor
	Range	0.01 to 1.00
	Resolution	0.01
	Suffix code	None
Details		
	This command is avail	able set when the following trace is set to active:
	• Power vs Time	
	This command is available, when Filter Type	
	(cf. :CALCulate:FILTer:TYPE) is set to either of the following:	
	• Nyquist	
	Root Nyquist	
Example of Use		
	To query the filter rollo	off factor.
	CALC:FILT:ALPH?	
	> 0.22	

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:CALCulate:FILTer:BANDwidth <bandwidth>

Filter Bandwidth

Function			
	This command sets the filter bandwidth of the main trace.		
Command			
	:CALCulate:FILTer:	BANDwidth <bandwidth></bandwidth>	
Parameter			
	<bandwidth></bandwidth>	Filter bandwidth	
	Range/Resolution	Limited by settings for Frequency Span and Filter Type.	
		Refer to the "MS2690A/MS2691A/MS2692A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" or "MS2830A	
		Signal Analyzer Operation Manual (Signal	
		Analyzer function Operation)" for details.	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
Details			
	This command is availa	ble when any one of the following traces is active:	
	• Power vs Time		
	• Frequency vs Time		
	• CCDF		
	This command is available when the filter type for the active trace is set		
	to one of the following:		
	• Rect		
	• Gauss		
	• Nyquist		
	• Root Nyquist		
	The setting range is lim settings.	nited by the Frequency Span and Filter Type	
Example of Lise			
Example of Use	To set the filter bandwidth of the main trace to 1 MHz. CALC:FILT:BAND 1MHZ		

:CALCulate:FILTer:BANDwidth?

Filter Bandwidth Query

Function		
Quart	This command queries	the filter bandwidth of the main trace.
Query	:CALCulate:FILTer:BANDwidth?	
Response		
	<bandwidth></bandwidth>	
Parameter		
	<bandwidth></bandwidth>	Filter bandwidth
	Range/Resolution	Limited by settings for Frequency Span and Filter Type.
		Refer to the "MS2690A/MS2691A/MS2692A
		Signal Analyzer Operation Manual (Signal
		Analyzer Function Operation)" for details. No suffix code. Value is returned in Hz units.
Details		No sum code. Value is returned in 112 diffs.
	This command is available	able when any one of the following traces is active:
	• Power vs Time	
	• Frequency vs Time	
	• CCDF	
	This command is avail	able when the filter type for the active trace is set
	to one of the following:	
	• Rect	
	• Gauss	
	 Nyquist Boot Nyquist 	
	• Root Nyquist	
		nited by the Frequency Span and Filter Type
	settings.	
Example of Use		
		dwidth of the main trace.
	CALC:FILT:BAND?	
	> 1000000	

:CALCulate:FILTer:FOFFset <freq>

Filter Frequency Offset

Function			
	This command sets th	ne frequency offset of the main trace.	
Command			
	:CALCulate:FILTer	r:FOFFset <freq></freq>	
Parameter			
	<freq></freq>	Channel width	
	Range	$-1 \times$ frequency span to Frequency span Hz	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
Details			
	This command is ava	ilable when either of the following traces is active:	
	• Power vs Time		
	• CCDF		
	This command is ava	ilable when the filter type for the active trace is one	
	of the following:	<i></i>	
	• Rect		
	• Gauss		
	 Nyquist 		
	Root Nyquist		
Example of Use	• Hoot Hyquist		
	To set the filter frequ	ency offset of the main trace to 30 kHz.	
	CALC:FILT:FOFF 30		
	0		

Filter Frequency Offset Query

This command querie	es the frequency offset of the main trace.
:CALCulate:FILTer	r:FOFFset <freq></freq>
	-
<freq></freq>	
<freq></freq>	Channel width
Range	$-1 \times$ frequency to Frequency span Hz
Resolution	1 Hz
	No suffix code. Value is returned in Hz units.
This command is avai	ilable when either of the following traces is active:
• Power vs Time	
• CCDF	
This command is avai	ilable when the filter type for the active trace is one
• Rect	
• Gauss	
• Nyquist	
~ -	
To query the frequence	y offset of the main trace.
CALC:FILT:FOFF?	
> 30000	
	:CALCulate:FILTer <freq> <freq> Range Resolution This command is ava: Power vs Time CCDF This command is ava: of the following: Rect Gauss Nyquist Root Nyquist To query the frequence CALC:FILT:FOFF?</freq></freq>

Chapter 2 SCPI Device Message Details

:CALCulate:FILTer:BANDwidth:AUTO ON|OFF|1|0

Filter Auto/Manual

Function	This command switche bandwidth.	s between auto and manual mode for filter
Command		
Parameter	:CALCulate:FILTer:	BANDwidth:AUTO <switch></switch>
	<switch> ON 1 OFF 0</switch>	Auto/manual filter bandwidth setting Sets filter bandwidth automatically. Sets filter bandwidth manually.
Details	This command is avail	able when the following trace is active:
	 Frequency vs Time 	able when the following trace is active.
Example of Use		
	To set filter bandwidth automatically. CALC:FILT:BAND:AUTO ON	
:CALCulate:FILTer:BA Filter Auto/Manual Query	NDwidth:AUTO?	
Function	This command queries	the state of the filter bandwidth.
Query	:CALCulate:FILTer:BANDwidth:AUTO?	
Response	<switch></switch>	
Parameter	SWICCII/	
	<switch> 1</switch>	Auto/manual filter bandwidth Auto
Detaila	0	Manual
Details	This command is available when the following trace is active:Frequency vs Time	
Example of Use		
	To query the filter band CALC:FILT:BAND:AUT > 1	

:DISPlay[:WINDow]:TRACe:Y[:SCALe]:RANGe D2|D5|D10|D25

Zoom Width/Vertical Scale Width

Function	This command sets the scale.	e frequency width of the display frequency axis
Command		
	:DISPlay[:WINDow]	:TRACe:Y[:SCALe]:RANGe <scale></scale>
Parameter		
	<scale></scale>	Scale frequency width
	D2	Frequency bandwidth/2
	D5	Frequency bandwidth/5
	D10	Frequency bandwidth /10
	D25	Frequency bandwidth /25
Details		
	This command is avail	able when the following trace is active:
	• Frequency vs Time	
Example of Use		
	To set the scale frequence DISP:TRAC:Y:RANG	-

:DISPlay[:WINDow]:TRACe:Y[:SCALe]:RANGe?

Zoom Width/Vertical Scale Width Query

Function		
	This command queries scale.	the frequency width of the display frequency axis
Query		
	:DISPlay[:WINDow]	:TRACe:Y[:SCALe]:RANGe?
Response		
	<scale></scale>	
Parameter		
	<scale></scale>	Scale frequency width
	D2	Frequency bandwidth /2
	D5	Frequency bandwidth /5
	D10	Frequency bandwidth /10
	D25	Frequency bandwidth /25
Details		
	This command is available when the following trace is active:	
	• Frequency vs Time	
Example of Use		
	To query the scale freq	uency width.
	<pre>DISP:TRAC:Y:RANG?</pre>	
	> D10	

:DISPlay[:WINDow]:TRACe:Y[:SCALe]:WIDTh?

Maximum Frequency Range Query

Function		
	This command queries range.	the maximum value of the frequency display
Query		
Deserves	:DISPlay[:WINDow]:	TRACe:Y[:SCALe]:WIDTh?
Response	<freq></freq>	
	No suffix code. Valu	ue is returned in Hz units.
Details		
	This command is availateFrequency vs Time	able when the following trace is active:
Example of Use		
	To query the maximum DISP:TRAC:Y:WIDT?	a value of the frequency display range.
	> 6250000.00	
:UNIT:FREQuency HZ		
Frequency Scale Unit	-1-2.1-	
Function		
	This command sets the	e display unit system of the frequency axis.
Command		
_	:UNIT:FREQuency <u< td=""><td>unit></td></u<>	unit>
Parameter	<unit></unit>	Display unit system of the frequency axis
	ΗZ	Hz
Detaile	DHZ	Δ^{Hz}
Details	This command is availa	able when the following trace is active:
	• Frequency vs Time	
Example of Use		
	To set the display unit system to Hz. UNIT:FREQ HZ	
	-	

:UNIT:FREQuency?

Frequency Scale Unit Query

Function	This command	queries the display unit system of the frequency axis.
		queries the display unit system of the nequency axis.
Query		
_	:UNIT:FREQue	ncy?
Response	2	
Parameter	<unit></unit>	
Falamelei	<unit></unit>	Display unit system of the frequency axis
	HZ	Hz
	DHZ	ΔHz
Details		
	This command i	s available when the following trace is active:
	• Frequency vs	Time
Evenuela of the		
Example of Use	To quomy the dia	nlay unit austom
	To query the display unit system. UNIT:FREQ?	
	> HZ	
:CALCulate:CCDF :PS	STatistic [.] MFT	
Measure Method		
Function		
	This command s	selects the measurement method for CCDF trace.
Command		
	:CALCulate:CCDF :PSTatistic:METHod <mode></mode>	
Parameter		
	<mode></mode>	Measurement method for CCDF trace
	APD	APD Measurement
	CCDF	CCDF Measurement
Details		
	This command is available when the following trace is active:CCDF	
	• CCDF	

Example of Use

To set the APD measurement mode. CALC:CCDF:METH APD

:CALCulate:CCDF|:PSTatistic:METHod?

Measure Method Query

Function		
	This command queries	s the measurement method for CCDF trace.
Query		
	:CALCulate:CCDF :	PSTatistic:METHod?
Response		
	<mode></mode>	
Parameter		
	<mode></mode>	Measurement method for CCDF trace
	APD	APD measurement
	CCDF	CCDF measurement
Details		
	This command is avai	lable when the following trace is active:
	• CCDF	
Example of Use		
	To query the measure	ment method.
	CALC:CCDF:METH?	
	> APD	

:CALCulate:CCDF|:PSTatistic:THReshold:STATe ON|OFF|1|0 CCDF Threshold On/Off

Function			
	This command sets On/Off the minimum level setting for the CCDF measurement. When set to On, signals having a level less than the value specified by Threshold are excluded from the measurement target.		
Command			
	:CALCulate:CCDF :PSTatistic:THReshold:STATe <switch></switch>		
Parameter			
	<switch></switch>	Threshold On/Off	
	ON 1	Sets Threshold to On	
	OFF 0	Set Threshold to Off	
Details			
	This command is available when the CCDF trace is active.		
	This command is not available when Terminal is selected DigRF 3G (only		
	for MS269x Series).		
Example of Use			
	To set Threshold to On:		
	CALC:CCDF:THR:STAT ON		

Chapter 2 SCPI Device Message Details

:CALCulate:CCDF|:PSTatistic:THReshold:STATe?

CCDF Threshold On/Off

Function			
	This command queries On/Off the minimum level setting for the CCDF		
	measurement.		
Query			
	:CALCulate:CCDF :PSTatistic:THReshold:STATe?		
Response			
	<switch></switch>	Threshold On/Off	
	1	Sets Threshold to On	
	0	Sets Threshold to Off	
Details			
	This command is available when the CCDF trace is active.		
	This command is not available in the following case when Terminal is		
	selected DigRF 3G (only for MS269x Series).		
Example of Use			
	To query the threshold On/Off.		
	CALC:CCDF:THR:STAT?		
	> ON		

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SCPI Device Message Details

:CALCulate:CCDF|:PSTatistic:THReshold <ampl>

CCDF Threshold

Function		
	This command sets the minimum level of the input signal for the CCDF	
	measurement.	
Command		
	:CALCulate:CCDF :	PSTatistic:THReshold <ampl></ampl>
Parameter		
	<ampl></ampl>	Minimum level of input signal
	Range	–170 to reference level (Reference Level)dBm
		When the reference level offset value is On, it is
		added to the range.
	Resolution	0.01 dB
	Suffix code	DBM,DM
		dB is used when omitted.
Details		
	This command is available when the CCDF trace is active.	
	This command is not available in the case when Terminal is selected	
	DigRF 3G (only for MS	S269x Series).
Example of Use		
	To set the minimum le	evel to -20 dBm:
	CALC:CCDF:THR -20	1

:CALCulate:CCDF|:PSTatistic:THReshold?

CCDF Threshold Query

Function		
	This command queries the minimum level of the input signal for the	
	CCDF measurement.	
Query		
	:CALCulate:CCDF :	PSTatistic:THReshold?
Response		
	<ampl></ampl>	
Parameter		
	<ampl></ampl>	Minimum level of input signal
	Range	–170 to reference level (Reference Level)dBm
		When the reference level offset value is On, it is
		added to the range.
	Resolution	0.01 dB
	Suffix code	None
		Value is returned in dBm unit.
Details		
	This command is available when the CCDF trace is active.	
	This command is not available in the case when Terminal is selected	
	DigRF 3G (only for MS	S269x Series).
Example of Lice		
Example of Use	To an over the minimum	lowal.
	To query the minimum CALC:CCDF:THR?	l level.
	> -20.00	
	20.00	

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SCPI Device Message Details

:CALCulate:CCDF|:PSTatistic:MODE TIME|COUNt

CCDF Meas Mode

Function	This command sets the specified method of the measurement target for the CCDF trace.		
Command	:CALCulate:CCDF :PSTatistic:MODE <mode></mode>		
Parameter			
	<mode> Specified method for CCDF trace to be measured</mode>		
	TIME Analyses Range data specified at Time Length		
	COUNT Measures until specified data count reached		
Details			
	This command is available when the CCDF trace is active.		
	This command is not available in the case when Terminal is selected		
	DigRF 3G (only for MS269x Series).		
	This function can be set when Capture Time is Auto.		
Example of Use			
	To set specified CCDF trace measurement method to data count.		
	:CALC:CCDF:MODE COUN		

:CALCulate:CCDF|:PSTatistic:MODE?

CCDF Meas Mode Query

Function	This command queries for the CCDF trace.	s the specified method of the measurement target
	for the copr trace.	
Command		
	:CALCulate:CCDF :	PSTatistic:MODE?
Response		
	<mode></mode>	Specified method for CCDF trace to be measured
	TIME	Analyses Range data specified at Time Length
	COUN	Measures until specified data count reached
Details		
	This command is avail	able when the CCDF trace is active.
	This command is not available in the case when Terminal is selected	
	DigRF 3G (only for MS	S269x Series).
Example of Use		
	To query specified CCI	OF trace measurement method to data count.
	:CALC:CCDF:MODE?	
	> COUN	

:CCDF|:PSTatistic:COUNts <sample>

Data Count

Function			
	This command specifies the measurement target data count of the CCDF		
	trace.		2
Command			
	[:SENSe]:CCDF :PST	Tatistic:COUNts <sample></sample>	Ø
Parameter			SCPI Device Message
	<sample></sample>	Data count for measurement target	De
	Range	100 to 200000000	ŶŢ.
	Resolution	1 sample	ĕ₽
	Default	10000000	Me
Details			ssa
	This command is available when the CCDF trace is active.		
	This command is not a	vailable in the case when Terminal is selected	Details
	DigRF 3G (only for MS	269x Series).	ta
	This function can be set when Capture Time is Auto.		lls
Example of Use			
	To set the measurement CCDF:COUN 500000	nt target data count of the CCDF trace to 5000000:	

:CCDF|:PSTatistic:COUNts?

Data Count

Function		
	This command queries	the measurement target data count of the CCDF
	trace.	
Command		
	[:SENSe]:CCDF :PS	Tatistic:COUNts?
Response		
Response	<sample></sample>	Measurement target data count
Details		
	This command is available when the CCDF trace is active.	
	This command is not a	vailable in the case when Terminal is selected
	DigRF 3G (only for MS	269x Series).
Example of Use		
	To query the measurer	nent target data count of the CCDF trace:
	CCDF:COUN?	
	> 500000	

:CALCulate:CCDF|:PSTatistic:STORe:REFerence

Store Reference Trace

Function	
	This command records the current CCDF/APD waveform data in the
	internal memory as user-defined reference trace data.
Command	
	:CALCulate:CCDF :PSTatistic:STORe:REFerence
Details	
	This function can be set when the CCDF trace is active.
Example of Use	
	To record the current measurement result in the reference data.
	CALC:CCDF:STOR:REF

[:SENSe]:CCDF|:PSTatistic:RTRace[:STATe] ON|OFF|1|0

Reference Trace

Function		
	This command sets w	hether to show or hide the reference trace data
	recorded by the user	during CCDF measurement.
Command		
	[:SENSe]:CCDF :PS	STatistic:RTRace[:STATe] <switch></switch>
Parameter		
	<switch></switch>	
	ON 1	Displays the reference trace data.
	OFF 0	Does not display the reference trace data.
Details		
	This function can be set when the CCDF trace is active.	
	However, this function cannot be set when Measure Method is APD.	
	Nothing can be set when no reference trace data is recorded.	
Example of Use	-	
	To display the referen	nce trace data.
	CCDF:RTR ON	

[:SENSe]:CCDF|:PSTatistic:RTRace[:STATe]?

Reference Trace Query

Function		
	This command queries the display status of reference trace data during	
	CCDF measurement.	
Query		
	[:SENSe]:CCDF :PST	<pre>Tatistic:RTRace[:STATe]?</pre>
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Reference trace setting
	1	Displays the reference trace data.
	0	Does not display the reference trace data.
Example of Use		
	To query the display se	etting for a reference trace.
	CCDF:RTR?	
	> 0	

[:SENSe]:CCDF|:PSTatistic:GAUSsian[:STATe] ON|OFF|1|0

Function			
	This command sets whether to show or hide the Gaussian trace data		
	during CCDF measu	rement.	
Command	5		
	[:SENSe]:CCDF :PSTatistic:GAUSsian[:STATe] <switch></switch>		
Parameter			
	<switch></switch>		
	ON 1	Displays Gaussian trace data.	
	OFF 0	Does not display Gaussian trace data.	
Details		1 0	
	This function can be set when the CCDF trace is active.		
	However, this function cannot be set when Measure Method is APD.		
Example of Use			
	To display Gaussian trace data.		
	CCDF:GAUS ON		

[:SENSe]:CCDF|:PSTatistic:GAUSsian[:STATe]?

Gaussian Trace Query

Function			
	This command queries the display status of Gaussian trace data during		
	CCDF measurement.		
Query			
	[:SENSe]:CCDF :PS	Tatistic:GAUSsian[:STATe]?	
Response			
	<switch></switch>		
Parameter			
	<switch></switch>	Gaussian trace setting	
	1	Displays Gaussian trace	
	0	Does not display Gaussian trace	
Example of Use			
	To query the display s	etting for a Gaussian trace.	
	CCDF:GAUS?		
	> 0		

:CALCulate:MARKer[1][:PEAK]:X:DELTa?

Marker Query

Function		
	This command qu	eries the CCDF trace Gaussian trace or reference trace
	delta value.	
Query		
	:CALCulate:MAR	Ker[n][:PEAK]:X:DELTa?
Response		
	<dist></dist>	
	(When the CCDF	trace and marker axis are set to Distribution)
	<dist_result_g< td=""><td>auss>,<dist_result_ref></dist_result_ref></td></dist_result_g<>	auss>, <dist_result_ref></dist_result_ref>
	(When the CCDF	trace and marker axis are set to probability)
Parameter		
	<n></n>	Marker number
	1	Targets marker specified by Marker Axis (CCDF) (CCDF)
	When omitted	Targets marker specified by Marker Axis (CCDF) (CCDF)
	<dist></dist>	Marker position
	Range/Resolution	Within trace display power deviation range
		Refer to the "MS2690A/MS2691A/MS2692A Signal
		Analyzer Operation Manual (Signal Analyzer

	Function Operation)" for details.
Suffix code	None. Value is returned in dB unit.
<dist_result_gaus< td=""><td>Delta value from Gaussian trace of marker position</td></dist_result_gaus<>	Delta value from Gaussian trace of marker position
Range/Resolution	Within trace display power deviation range Refer to the "MS2690A/MS2691A/MS2692A Signal
Suffix code	Analyzer Operation Manual (Signal Analyzer Function Operation)" for details. None. Value is returned in dB unit. Returns "–999.0" at Gaussian trace Off/Unmeasured/Error.
<dist_result_ref></dist_result_ref>	 Difference from the reference trace at the marker position
Range/Resolution	Within trace display power deviation range Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" for details.
Suffix code	None. Value is returned in dB unit. Returns "–999.0" at reference trace Off/Unmeasured/Error.
This function can b	a set when the CCDE trace is active

Details

This function can be set when the CCDF trace is active. Example of Use To query delta marker value: CALC:MARK:X:DELT? > 0.065

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SCPI Device Message Details

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

Power Distribution Scale

Function		
	This command sets pov	ver distribution axis scale.
Command		
	:DISPlay:WINDow[1]	:TRACe:X[:SCALe]:PDIVision <rel_ampl></rel_ampl>
Parameter		
	<rel_ampl></rel_ampl>	Power distribution axis scale
	5	5 dB
	10	10 dB
	20	20 dB
	50	50 dB
Details		
	This command is available when the CCDF trace is active.	
Example of Use		
	To set the power distribution axis scale to 10 dB:	
	DISP:WIND:TRAC:X:PDIV 10	

:DISPlay:WINDow[1]:TRACe:X[:SCALe]:PDIVision?

Power Distribution Scale Query

Function		
	This command queries	the power distribution axis scale.
Query		
	:DISPlay:WINDow[1]	:TRACe:X[:SCALe]:PDIVision?
Response		
	<rel_ampl></rel_ampl>	
Parameter		
	<rel_ampl></rel_ampl>	Power distribution axis scale
	5	5 dB
	10	10 dB
	20	20 dB
	50	50 dB
Details		
	This command is avail	able set when the CCDF trace is active.
Example of Use		
	To query the power dis	tribution axis scale.
	DISP:WIND:TRAC:X:	PDIV?
	> 10	

:CALCulate:MARKer:AXIS PROB|DSTRbt

Marker Axis

э.
is)
)

:CALCulate:MARKer:AXIS?

Marker Axis Query

Function		
	This command queries	the marker movement axis for the main trace.
Query		
	:CALCulate:MARKer	AXIS?
Response		
	<mode></mode>	
Parameter		
	<mode></mode>	Marker movement axis
	PROB	Probability distribution direction (vertical axis)
	DSTR	Power distribution direction (horizontal axis)
Details		
	This command is avail	able when the CCDF trace is set to active.
Example of Use		
	To query the marker m	novement axis.
	CALC:MARK:AXIS?	
	> PROB	

:CALCulate:MARKer[1][:PEAK]:X:DELTa?

Marker Query

Function			
	This command queries the difference value for a Gaussian trace or		
	reference trace of a	reference trace of a CCDF trace.	
Query			
	:CALCulate:MAR	Ker[n][:PEAK]:X:DELTa?	
Response			
	<dist></dist>		
		e is set to CCDF and Marker Axis is set to Distribution.	
		auss>, <dist_result_ref></dist_result_ref>	
	(When Trace Mode	e is set to CCDF and Marker Axis is set to Probability.	
Parameter			
	<n></n>	Marker Number	
	1	Marker set in Marker Axis (CCDF)	
	When omitted	Marker set in Marker Axis (CCDF)	
	<dist></dist>	Marker position	
	Range/Resolution	Within the trace-display power deviation range	
		For details, refer to "MS2690A/MS2691A/MS2692A	
		Signal Analyzer Operation Manual (Signal Analyzer	
		Function Operation)" or "MS2830A Signal Analyzer	
		Operation Manual (Signal Analyzer Function	
		Operation)".	
	Suffix code	None. Value is returned in dB units.	
	<dist_result_g< td=""><td>auss> Difference from the Gaussian trace at the</td></dist_result_g<>	auss> Difference from the Gaussian trace at the	
	marker position		
	Range/Resolution	Within the trace-display power deviation range	
		For details, refer to "MS2690A/MS2691A/MS2692A	
		Signal Analyzer Operation Manual (Signal Analyzer	
		Function Operation)" or "MS2830A Signal Analyzer	
		Operation Manual (Signal Analyzer Function	
		Operation)".	
	Suffix code	None. Value is returned in dB units.	
		–999.0 is returned at Gaussian trace off, no	
		measurement, or error	
	<dist_result_r< td=""><td>ef> Difference from the reference trace at the</td></dist_result_r<>	ef> Difference from the reference trace at the	
		marker position	
		*	

	Range/Resolution	Within the trace-display power deviation range For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)".
Dataila	Suffix code	None. Value is returned in dB units. –999.0 returned at reference trace off, no measurement, or error
Details Example of Use	This function can l	be set when the CCDF trace is active.
•	To query the delta CALC:MARK:X:DE > 0.065	

[:SENSe]:CCDF|:PSTatistic:ERESet[:STATe] ON|OFF|1|0

Reset Result Every Capture

Function		
	This command sets wh	nether to reset the result after each CCDF
	measurement.	
Command		
	[:SENSe]:CCDF :PS	<pre>Iatistic:ERESet[:STATe] <switch></switch></pre>
Parameter		
	<switch></switch>	
	ON 1	Resets the result after each measurement
	OFF 0	Does not reset the result after each
		measurement
Details		
	This command is avail	able when the CCDF trace is active.
	This command is not a	vailable while the Replay function is being
	executed.	
Example of Use		
	To set to reset the resu	llt after each measurement.
	CCDF:ERES ON	

[:SENSe]:CCDF|:PSTatistic:ERESet[:STATe]?

Reset Result Every Capture Query

Function		
	This command queries	whether to reset the result after each CCDF
	measurement.	
Query		
	[:SENSe]:CCDF :PST	<pre>latistic:ERESet[:STATe]?</pre>
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	
	1	Resets the result after each measurement.
	0	Does not reset the result after each
		measurement
Details		
	This function can be se	t when the following trace is active:
	• CCDF	
Example of Use		
	To query whether to res	set the result after each measurement.
	CCDF:ERES?	
	> 1	
:CONFigure:CCDF :P	STatistic	

CCDF Configure

Function	This command switches the trace mode to CCDF.
Command	
	:CONFigure:CCDF :PSTatistic
Details	No moosurroment is conformed
	No measurement is performed.
	This command is not available in the following cases:
	• When Terminal is selected DigRF 3G (only for MS269x Series).
Example of Use	
	To switch to CCDF trace.
	CONF:CCDF

:INITiate:CCDF|:PSTatistic

CCDF Initiate

Function	This command performs CCDF measurement once.
Command	:INITiate:CCDF :PSTatistic
Details	When this function is executed, CCDF trace is set to On and single measurement is executed.
	This command is not available in the following cases:
Example of Use	• When Terminal is selected for DigRF 3G (only for MS269x Series).
	To perform the single CCDF measurement. INIT:CCDF

:FETCh:CCDF|:PSTatistic[n]?

CCDF Fetch

Function	
	This command queries the result for CCDF measurement.
Query	
	:FETCh:CCDF :PSTatistic[n]?
Response	
	When Result Mode is "A".
	<mean_power>,<peak_power_dbm>,<crest></crest></peak_power_dbm></mean_power>
	(n = 1 or when omitted)
	<rel_ampl_1>,<rel_ampl_2>,<rel_ampl_3>,<rel_ampl_4>,</rel_ampl_4></rel_ampl_3></rel_ampl_2></rel_ampl_1>
	<rel_ampl_5>,<rel_ampl_6></rel_ampl_6></rel_ampl_5>
	(n = 2)
	<percent_1>,<percent_2>,<percent_3>,<percent_4>,</percent_4></percent_3></percent_2></percent_1>
	<pre><percent_5></percent_5></pre>
	(n = 3)
	[Measure method is CCDF]
	<meas_per_1>,<meas_per_2>,< meas_per_5001></meas_per_2></meas_per_1>
	[Measure method is APD]
	<meas_per_1>,<meas_per_2>,< meas_per_10001></meas_per_2></meas_per_1>
	(n=4)
	<gauss_per_1>,<gauss_per_2>,<guass_per_5001></guass_per_5001></gauss_per_2></gauss_per_1>
	(n=5)
	[Measure method is CCDF]
	<ref_per_1>,<ref_per_2>,<ref_per_5001></ref_per_5001></ref_per_2></ref_per_1>
	[Measure method is APD]
	<ref_per_1>,<ref_per_2>,<ref_per_10001></ref_per_10001></ref_per_2></ref_per_1>
	(n=6)
	<count></count>
	(n=7)
	<mean_power_range_1>,<peak_power_dbm_range_1>,</peak_power_dbm_range_1></mean_power_range_1>
	<crest_range_1></crest_range_1>
	(n=8)
	<rel_ampl_ range_1_1="">,<rel_ampl_ range_1_2="">,</rel_ampl_></rel_ampl_>
	<rel_ampl_ range_1_3="">,<rel_ampl_ range_1_4="">,</rel_ampl_></rel_ampl_>
	<rel_ampl_ range_1_5="">,<rel_ampl_ range_1_6=""></rel_ampl_></rel_ampl_>
	(n=9)
	<percent_range_1_1>,<percent_range_1_2>,</percent_range_1_2></percent_range_1_1>
	<percent_range_1_3>,<percent_ range_1_4="">,</percent_></percent_range_1_3>
	<percent_ range_1_5=""></percent_>
	(n=10)

```
[Measure Method is CCDF]
<meas_per_ range_1_1>,<meas_per_ range_1_2>,...
<meas_per_ range_1 5001>
[Measure Method is APD]
<meas_per_ range_1_1>,<meas_per_ range_1_2>,...
<meas_per_ range_1_10001>
                  (n=11)
[Measure Method is CCDF]
<ref per range 1 1>,<ref per range 1 2>,...
<ref per range 1 5001>
[Measure Method is APD]
<ref per range 1 1>,<ref per range 1 2>,...
<ref_per_range_1_10001>
                  (n=13)
<count range 1>
                   (n=14)
<mean power range 2>, <peak power dbm range 2>,
<crest range 2>
                  (n=15)
<rel ampl range 2 1>,<rel ampl range 2 2>,
<rel_ampl_range_2_3>,<rel_ampl_range_2_4>,
<rel_ampl_range_2_5>,<rel_ampl_range_2_6>
                  (n=16)
<percent_range_2_1>,<percent_range_2_2>,
<percent range 2 3>,<percent range 2 4>,
<percent range 2 5>
                  (n=17)
[Measure Method is CCDF]
<meas per range 2 1>,<meas per range 2 2>,...
<meas_per_range_2_5001>
[Measure Method is APD]
<meas_per_range_2_1>, <meas_per_range_2_2>, ... <meas_per_
   range 2 10001>
                  (n=18)
[Measure Method is CCDF]
<ref_per_range_2_1>,<ref_per_range_2_2>,...
<ref per range 2 5001>
[Measure Method is APD]
<ref_per_range_2_1>,<ref_per_range_2_2>,...
<ref_per_range_2_10001>
                  (n=20)
<count range 2>
                   (n=21)
```

```
<mean power range 3>, <peak power dbm range 3>,
 <crest range 3>
                    (n=22)
 <rel ampl range 3 1>,<rel ampl range 3 2>,
 <rel_ampl_range_3_3>,<rel_ampl_range_3_4>,
 <rel_ampl_range_3_5>,<rel_ampl_range_3_6>
                    (n=23)
 <percent_range_3_1>,<percent_range_3_2>,
 <percent range 3 3>,<percent range 3 4>,
 <percent_range_3_5>
                    (n=24)
 [Measure Method is CCDF]
 <meas_per_range_3_1>,<meas_per_range_3_2>,...
 <meas_per_range_3_5001>
 [Measure Method is APD]
 <meas_per_range_3_1>,<meas_per_range_3_2>,...
 <meas per range 3 10001>
                    (n=25)
 [Measure Method is CCDF]
 <ref per range 3 1>,<ref per range 3 2>,...
 <ref per range 3 5001>
 [Measure Method is APD]
 <ref per range 3 1>,<ref per range 3 2>,...
 <ref per range 3 10001>
                    (n=27)
 <count range 3>
                    (n=28)
When Result Mode is "B".
 <mean power>,<mean power prob>,<rel ampl 1>,
 <rel_ampl_2>,<rel_ampl_3>,<rel_ampl_4>,<rel_ampl_5>,
 <rel ampl 6>, <crest>, <count>
                    (n = 1 \text{ or when omitted})
 [Measure method is CCDF]
 <meas per 1>,<meas per 2>,...< meas per 5001>
 [Measure method is APD]
 <meas per 1>,<meas per 2>,...< meas per 10001>
                    (n=2)
 <gauss_per_1>,<gauss_per_2>,...<guass_per_5001>
                    (n=3)
 [Measure method is CCDF]
 <ref_per_1>, <ref_per_2>, ... <ref_per_5001>
 [APD]
 <ref_per_1>,<ref_per_2>,...<ref_per_10001>
                    (n=4)
```

Parameter	<mean_power> <peak_power dbm=""></peak_power></mean_power>	Measurement result type Average power Maximum power Returns a value in dBm units without a suffix code. –999.0 is returned when no measurement is performed or an error has occurred.
	<pre><percent_n></percent_n></pre>	 Each of them indicates its probability distribution in each power fluctuation, below. 1, 2, 3, 4, 5 dB (When Horizontal Scale is set to 5 dB) 2, 4, 6, 8, 10 dB (When Horizontal Scale is set to 10 dB) 4, 8, 12, 16, 20 dB (When Horizontal Scale is set to 20 dB) 10, 20, 30, 40, 50 dB (When Horizontal Scale is set to 50 dB) Returns a value in % units without a suffix code. -999.0 is returned when no measurement is performed or an error has occurred.
	<meas_per_n></meas_per_n>	Each value indicates the power deviation of the measured value in the probability distributions below. • -50.00,-49.99,,49.99, 50.00 dB (APD) • 00.00, 00.01,,49.99, 50.00 dB (CCDF) A percentage value without a suffix code that has a resolution of 0.0001% is returned. -999.0 is returned at no measurement or error
	<guauss_percent_n></guauss_percent_n>	Each value indicates the power deviation of the Gaussian trace in the probability distributions below. • -50.00, -49.99,,49.99, 50.00 dB (This is for APD. "-999.0" is returned for all values.)) • 00.00, 00.01,,49.99, 50.00 dB (CCDF) A percentage value without a suffix code that has a resolution of 0.0001% is returned. -999.0 returned at no measurement or error

<ref_percent_n></ref_percent_n>	reference below. • -50.00 • 00.00 code that returne	lue indicates the power deviation of the ce trace in the probability distributions 0, -49.99,,49.99, 50.00 dB (APD) , 00.01,,49.99, 50.00 dB (CCDF) A percentage value without a suffix at has a resolution of 0.0001% is d. returned at no measurement or error
<mean_power_prob></mean_power_prob>	Probabi Returns —999.0 i	lity distribution of average power a value in % units without a suffix code. s returned when no measurement is ed or an error has occurred.
<rel_ampl_n></rel_ampl_n>	each pr	them indicates its power fluctuation in obability distribution, below. 0.1, 0.01, 0.001, 0.0001%
<crest></crest>	–999.0 i	ctor x code. Value is returned in dB units. s returned when no measurement is ed or an error has occurred.
<count></count>	No suffi –999.0 is	r of data samples x code s returned when no measurement is ed or an error has occurred.
<mean_power_range_< td=""><td>m></td><td>Displays Range m average power. Enabled when Gate Mode = On with Range m On. Returns "-999.0" at Unmeasured/Error/disabled.</td></mean_power_range_<>	m>	Displays Range m average power. Enabled when Gate Mode = On with Range m On. Returns "-999.0" at Unmeasured/Error/disabled.
	ode d when G	Displays Range m max. power. No suffix code; returns dBm value. ate Mode = On with Range m On. ' at Unmeasured/Error/Disabled.

```
<percent range m n>
                               Displays probability distribution for
                                each of following Range m measured
                                power deviation.
                                • 1, 2, 3, 4, 5 dB
                                (For 5 dB Horizontal Scale setting)
                                • 2, 4, 6, 8, 10 dB
                                (For 10 dB Horizontal Scale setting)
                                • 4, 8, 12, 16, 20 dB
                                (For 20 dB Horizontal Scale setting)
                                • 10, 20, 30, 40, 50 dB
                                (For 50 dB Horizontal Scale setting)
              Suffix code:
                                No suffix code; returns % units and
              0.0001% resolution.
              Enabled when Gate Mode = On with Range m On.
              Returns "-999.0" at Unmeasured/Error/Disabled.
                                Displays probability distribution for
<meas_per_range_m _n>
                                each of following Range m measured
                                power deviation.
                                •-50.00, -49.99, ...,49.99,50.00 dB
                                (For APD)
                                • 00.00,00.01, ...,49.99,50.00 dB
                                (For CCDF)
             Suffix code
                                No suffix code; returns % units and
             0.0001% resolution.
             Enabled when Gate Mode = On with Range m On.
             Returns "-999.0" at Unmeasured/Error/Disabled.
<ref_per_range_m _n>
                                Displays probability distribution for
                                each of following Range m reference
                                trace power deviation.
                                • -50.00, -49.99, ..., 49.99, 50.00 dB
                                (For APD)
                                • 00.00, 00.01, ..., 49.99, 50.00 dB
                                (For CCDF)
             Suffix code
                                No suffix code; returns % units and
             0.0001% resolution.
              Enabled when Gate Mode = On with Range m On.
             Returns "-999.0" at Unmeasured/Error/Disabled.
<mean_power_prob_range_m> Range m average power probability
                                distribution
              Suffix code
                                No suffix code; returns % units.
              Enabled when Gate Mode = On with Range m On.
             Returns "-999.0" at Unmeasured/Error/Disabled.
```

	<rel_ampl_range_m _n=""></rel_ampl_range_m>	Displays power deviation for each of following Range m probability distribution
	Freehled rokers ()	• 10, 1, 0.1, 0.01, 0.001, 0.0001%
		ate Mode = On with Range m On. at Unmeasured/Error/Disabled.
Details	Returns -999.0	at Onmeasured/Error/Disabled.
	performed last. This function do function is used to output the m when the measurement has alre	arement result of the CCDF measurement bes not accompany any capture, thus this easurement result in a different type, eady completed. a re-measurement with redoing capture.
	Return values in this function v (cf. :SYSTem:COMPatible:MOD	ary depending on the compatibility mode. E)
	This command is available when • CCDF	n the following trace is active:
Example of Use		
	To query the measurement resumed. FETC:CCDF? > -10.43,7.00,-5.00	lt for CCDF measurement (n = 1, A

:READ:CCDF|:PSTatistic[n]?

CCDF Read

Function

This command performs CCDF measurement and queries the result. This command has the same function as the following commands executed in this order: :INITiate:CCDF|:PSTatistic :FETCh:CCDF|:PSTatistic[n]?

:MEASure: CCDF|:PSTatistic [n]?

CCDF Measure

Function

This command performs CCDF measurement and outputs the result.

This command has the same function as the following commands executed in this order: :CONFigure:CCDF|:PSTatistic :INITiate:CCDF|:PSTatistic :FETCh:CCDF|:PSTatistic[n]?

:CALCulate:MARKer[1]:Y <prob>

Marker Frequency

Function		
	This command moves the center of the marker to the specified probability.	
	1 0	
Command		
	:CALCulate:MARKer	[n]:Y <prob></prob>
Parameter		
	<dist></dist>	Marker position
	Range/Resolution	In the probability distribution range of trace display
		Refer to the "MS2690A/MS2691A/MS2692A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" or "MS2830A
		Signal Analyzer Operation Manual (Signal
		Analyzer function Operation)" for details.
		No suffix code. Unit: %
Details		
	When the marker position has changed, the target marker will be set to	
	On and change into act into Probability.	tive marker. For CCDF, Marker Axis will change
Example of Use		
	To move the marker to	1%.
	CALC:MARK:Y 1	

:TRACe:STORage:STOP

Storage Stop

Function	
	This command stops capturing the waveform which is in execution. It
	functions when Storage Mode of the main trace is Lin Average, Max.
	Hold, or Min Hold.
Command	
	:TRACe:STORage:STOP
Details	
	This command is not available while the Replay function is being
	executed.
Example of Use	
	To stop capturing the waveform.
	TRAC:STOR:STOP

:TRIGger:CCDF|:PSTatistic[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF

CCDF Trigger Source

Function	
	This command sets the trigger source type.
	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:BPOWer :TXPower[:SEQuence]:SOURce

:TRIGger:CCDF|:PSTatistic[:SEQuence]:SOURce?

CCDF 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:BPOWer :TXPower[:SEQuence]:SOURce?

:TRACe[:DATA]? [<start>[,<length>]]

Query Trace Data

Parameter This command queries the trace data. Query TRACe[:DATA]? [<start>[,<length>]] Response ,<data_2>, If REAL, 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)", in this order. In the case of the binary data (ASCII 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 Signal Analyzer Operation Manual (Mainframe Remote Control)". Example: To query 1,001 points of trace data when FORMat[:DATA] is REAL, 32. > #44004<bytes data="" of=""> The number 4 following # indicates that four characters that indicate the binary data length follow. "4004" indicates that "this is followed by 4004 bytes of binary data." Parameter </bytes></data_2></length></start>	Function			
<pre>:TRACe[:DATA]? [<start>[,<length>]] Response</length></start></pre>		This command queries f	the trace data.	
Response <data_l>, <data_2>, If REAL, 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 terminator is attached (refer to "1.7.2 SCPI response message tormainator is attached (refer to "1.7.2 SCPI response message tormainator is attached (refer to "1.7.2 SCPI response message tormainator is attached (refer to "1.7.2 SCPI response message tormainator is attached (refer to "1.7.2 SCPI response message tormainator is attached (refer to "1.7.2 SCPI response message tormainator is attached (refer to "1.7.2 SCPI response message tormainator is attached (refer to "1.7.2 SCPI response message tormation Manual (Mainframe Remote Control)". Example: To query 1,001 points of trace data when FORMat [:DATA] is REAL, 32. > #44004 > #44004 bytes of data> The number 4 following # indicates that four characters that indicate the binary data." Parameter estart> Starting point to read out Range 0 to Number of trace points – 1 Resolution 1 When omitted: 0 (length> Query length Range 1 to Number of trace points – <start> For Spectrum trace, the maximum number is 5121. Starts Kesolution <</start></data_2></data_l>	Query			
<pre><data_1>,<data_2>, If REAL, 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 Signal Analyzer Operation Manual (Mainframe Remote Control)". Example: To query 1,001 points of trace data when FORMat[:DATA] is REAL, 32. > #44004<4004 bytes of data> The number 4 following # indicates that four characters that indicate the binary data length follow. "4004" indicates that "this is followed by 4004 bytes of binary data." Parameter </data_2></data_1></pre>		:TRACe[:DATA]? [<s< td=""><td>tart>[,<length>]]</length></td></s<>	tart>[, <length>]]</length>	
Parameter If REAL, 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 Signal Analyzer Operation Manual (Mainframe Remote Control)". Example: To query 1,001 points of trace data when FORMat [:DATA] is REAL, 32. # #44004<4004 bytes of data> The number 4 following # indicates that four characters that indicate the binary data." Parameter <start> Starting point to read out Range Range 0 to Number of trace points – 1 Resolution Mange 1 to Number of trace points – <start> For Spectrum trace, the maximum number is 5121. Resolution 1 When omitted: 1 When omitted: 1 When omitted: 1</start></start>	Response			
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Parameter <start> Start> Start Start Start> Start> Start Start> Start Start Start Start Start Start Start Start</start>		If REAL, 32 is set for FORMat[:DATA], the output of "# (ASCII format)" is		
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 Signal Analyzer Operation Manual (Mainframe Remote Control)". Example: To query 1,001 points of trace data when FORMat[:DATA] is REAL, 32. > #44004<4004 bytes of data> The number 4 following # indicates that four characters that indicate the binary data length follow. "4004" indicates that "this is followed by 4004 bytes of binary data." Parameter <start> Starting point to read out Range 0 to Number of trace points – 1 Resolution 1 When omitted: 0 <length> Query length Range 1 to Number of trace points – <start> For Spectrum trace, the maximum number is 5121. 5122 or more is set, 5121 is automatically set.</start></length></start>				
<pre>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 Signal Analyzer Operation Manual (Mainframe Remote Control)". Example: To query 1,001 points of trace data when FORMat[:DATA] is REAL, 32. > #44004<4004 bytes of data> The number 4 following # indicates that four characters that indicate the binary data length follow. "4004" indicates that "this is followed by 4004 bytes of binary data." Parameter </pre> Start> Starting point to read out Range 0 to Number of trace points – 1 Resolution 1 When omitted: 0 (length> Query length Range 1 to Number of trace points – <start> For Spectrum trace, the maximum number is 5121. Resolution 1 When omitted: Number of trace points – <start> If 5122 or more is set, 5121 is automatically set.</start></start>				
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Start> Starting point to read out Range 0 to Number of trace points - 1 Resolution 1 When omitted: 0 <length> Query length Range 1 to Number of trace points - <start> For Spectrum trace, the maximum number is 5121. Resolution 1 When omitted: Number of trace points - <start> For Spectrum trace, the maximum number is 5121. For Spectrum trace, the maximum number is 5121. Resolution 1 When omitted: Number of trace points - <start> If 5122 or more is set, 5121 is automatically set.</start></start></start></length>		bytes of binary data."		
Range0 to Number of trace points – 1Resolution1When omitted:0 <length>Query lengthRange1 to Number of trace points – <start>For Spectrum trace, the maximum number is 5121.5121.Resolution1When omitted:Number of trace points – <start>If 5122 or more is set, 5121 is automatically set.</start></start></length>	Parameter			
Resolution1When omitted:0 <length>Query lengthRange1 to Number of trace points - <start> For Spectrum trace, the maximum number is 5121.Resolution1When omitted:Number of trace points - <start> If 5122 or more is set, 5121 is automatically set.</start></start></length>		<start></start>	Starting point to read out	
When omitted:0 <length>Query lengthRange1 to Number of trace points - <start> For Spectrum trace, the maximum number is 5121.Resolution1When omitted:Number of trace points - <start> If 5122 or more is set, 5121 is automatically set.</start></start></length>		-	0 to Number of trace points -1	
<pre><length> Query length Range 1 to Number of trace points - <start> For Spectrum trace, the maximum number is 5121. Resolution 1 When omitted: Number of trace points - <start> If 5122 or more is set, 5121 is automatically set.</start></start></length></pre>			1	
Range1 to Number of trace points - <start> For Spectrum trace, the maximum number is 5121.Resolution1When omitted:Number of trace points - <start> If 5122 or more is set, 5121 is automatically set.</start></start>				
For Spectrum trace, the maximum number is 5121. Resolution 1 When omitted: Number of trace points – <start> If 5122 or more is set, 5121 is automatically set.</start>				
5121. Resolution 1 When omitted: Number of trace points – <start> If 5122 or more is set, 5121 is automatically set.</start>		Range		
Resolution1When omitted:Number of trace points - <start>If 5122 or more is set, 5121 is automatically set.</start>			-	
When omitted:Number of trace points - <start>If 5122 or more is set, 5121 is automatically set.</start>		Resolution		
If 5122 or more is set, 5121 is automatically set.				
			-	
		<data_n></data_n>		

Resolution	(In Log scale)
	0.001 dBm
	(In Linear scale)
	{ Voltage (V) / Reference level (V) } \times 10000
Reference lev	
	–999.0 is returned when no measurement is performed or an error has occurred.
Data range	 Returns a value in the range of Start Freq to Stop Freq for Spectrum trace. Returns a value in the range of Analysis Start Time to Analysis Start Time + Analysis Time Length for Power vs Time trace. Divides a trace into the number of trace points and returns a value in the range of Start to Length for Spectrogram. For the coordinates (frequency, time), the (Start Frequency, 0 seconds) position is point 0, and, for subsequent points, the time coordinate is fixed and the trace point position increases along the frequency axis. When the frequency, the time coordinate increases by one point and the trace point position again increases along the frequency axis.
For Frequenc	ey vs Time trace
Resolution	0.01 Hz resolution/Hz units
	Center frequency is 0.00.
	–9999999999999 is returned when no
	measurement is performed or an error has occurred.
Data range	Returns a value in the range of Analysis Start Time to Analysis Start Time + Analysis Time Length.
For Phase vs	Time trace
Resolution	0.01 degree resolutionUnit: degree –999.0 is returned if there is no measurement or an error.
Data range	Returns a value within the range of Analysis Start Time to Analysis Start Time + Analysis Time Length.

	For CCDF trace Resolution	0.0001% resolution/Hz units –999.0 is returned when no measurement is performed or an error has occurred.
	Data range	Returns a value in the range of –50 to 50 dB in APD.
		Returns a value in the range of 0 to 50 dB in CCDF.
Details		
	For Power vs Time or I	Frequency vs Time, when Detection is set to
		eads out the trace data of Positive detection. In the data of the set Detection.
	This command is not a	vailable when Trace Mode is set to No Trace.
Example of Use		
	To query the trace data	ι.
	TRAC?	
	> -20000, -20231, -2	21233,

:TRACe[:DATA]:NEGative? [<start>[,<length>]]

Query Negative Trace Data

Function	m. ·		
	This command queries the trace data.		
Query	:TRACe[:DATA]:NEGative? [<start>[,<length>]]</length></start>		
Response	<data_1>,<data_2>,</data_2></data_1>	••••	
Parameter			
	<start> Range Resolution When omitted:</start>	Starting point to read out 0 to Number of trace points – 1 1 0	
	<length> Range Resolution When omitted:</length>	Query length 1 to Number of trace points – <start> 1 Number of trace points – <start></start></start>	
	<data_n></data_n>	Trace data	
	For Power vs Time tra	ce	
	Resolution	 (In Log scale) 0.001 dBm (In Linear scale) { Voltage value (V) / Reference level (V) } × 10000 Reference level is 10000. -999.0 is returned when no measurement is performed or an error has occurred. 	
	Data range	Returns a value in the range of Analysis Start Time to Analysis Start Time + Analysis Time Length.	
	For Frequency vs Time trace		
	Resolution	0.01 Hz Center frequency is 0.00. –9999999999999 is returned when no measurement is performed or an error has occurred.	
	Data range	Returns a value in the range of Analysis Start Time to Analysis Start Time + Analysis Time Length.	

	For Phase vs Time trace		
	Resolution	0.01 degree resolution Unit: degree	
		-999.0 is returned if there is no measurement or	
		an error.	
	Data range	Returns a value within the range of Analysis	
		Start Time to Analysis Start Time + Analysis	
		Time Length.	
Details			
	For Power vs Time or Frequency vs Time, when Detection is set to		
	Positive & Negative, this command queries the trace data of Negative		
	detection. In other cases, this command queries the data of the set		
	Detection.		
	This command is available when either of the following traces is active:		
	Power vs Time		
	• Frequency vs Time		
	• Phase vs Time		
Example of Use			
	To query the trace data		
	TRAC:NEG?		
	> -20000, -20231, -2	1233,	

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

Level Full Scale

Function			
	This command sets the level-axis scale range.		
Command			
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision:RANGe		
	<rel_ampl></rel_ampl>		
Parameter			
	<rel_ampl></rel_ampl>	Y-axis scale	
	Resolution	10 dB	
	Data Range	10 to 150 dB	
	Default value	100 dB	
Details			
	This command is available in the following trace:		
	• Spectrogram		
Example of Use			
	To set the scale range of the level axis to 50 dB.		
	DISP:WIND:TRAC:Y:PDIV:RANG 50		

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

Level Full Scale Query

Function	This command queries the level-axis scale range.	
Query		
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision:RANGe?	
Response		
	<rel_ampl></rel_ampl>	
Parameter		
	<rel_ampl></rel_ampl>	Y-axis scale
	Resolution	10 dB
	Data Range	10 to 150 dB
	Default value:	100 dB
Details		
	This command is available in the following trace:	
	• Spectrogram	
Example of Use		
	To query the level-axis range.	
	DISP:WIND:TRAC:Y:PDIV:RANG?	
	> 50	

:CALCulate:TMARker[1]|2:X <time>

Time Marker Position

Function			
	This command moves Time Marker to the specified time.		
Command			
	:CALCulate:TMARker	[n]:X <time></time>	
Parameter			
	<n></n>	Marker number	
	1	Marker 1	
	2	Marker 2	
	When omitted:	Marker 1	
	<time></time>	Marker position	
	(When Marker Type is Spot, or when Marker Type is Zone and whether the state of the		
	Couple Time 1 and 2 is Off)		
	Range	Analysis Start Time to Analysis Start Time +	
		Analysis Time Length	
	Default value	Analysis Start Time	
	(When Marker Type is Zone or when Couple Time 1 and 2 is On)		
	Range	Bigger one of Analysis Start Time and (Marker1	
		– Marker2 +Analysis Start Time) to smaller one	
		of Analysis Start Time+Analysis Time Length	
		and Analysis Start Time+Analysis Time	
		Length–(Marker 2– Marker 1)	
	Default value Suffix code	Analysis Start Time + Analysis Time Length/2 NS, US, MS, S	
	Sum toue	S is used when omitted.	
Details		S is used when onitited.	
	This command is quailable in the following trace:		
	This command is available in the following trace:		
	• Spectrogram Marker 2 cannot be set when Marker Type is set to Spet		
Example of Use	Marker 2 cannot be set when Marker Type is set to Spot.		
Evanible of Ose	To move the center of Time Marker 1 to 100 ms. CALC: TMAR: X 100MS		
	01110.1Fm1(.// 100M0		

:CALCulate:TMARker[1]|2:X?

Time Marker Position Query

Function			
	This command queries the time of Time Marker.		
Command			
_	:CALCulate:TMARke	r[n]:X?	
Response			
_	<time></time>		
Parameter			
	<n></n>	Marker number	
	1	Marker 1	
	2	Marker 2	
	When omitted:	Marker 1	
	<time></time>	Marker position	
	(When Marker Type is Spot or when Marker Type is Zone and when		
	Couple Time 1 and 2 is Off)		
	Range	Analysis Start Time to Analysis Start Time +	
		Analysis Time Length	
	Default value	Analysis Start Time	
	(When Marker Type is Zone and when Couple Time 1 and 2 is On.)		
	Range	Bigger one of Analysis Start Time and (Marker1	
		– Marker2 +Analysis Start Time) to smaller one	
		of Analysis Start Time+Analysis Time Length	
		and Analysis Start Time+Analysis Time	
		Length– (Marker 2– Marker 1)	
	Default value	Analysis Start Time + Analysis Time Length/2	
	Suffix code	NS, US, MS, S	
		S is used when omitted.	
Details			
	This command is available in the following trace:		
	• Spectrogram		
Example of Use			
	To query Time Marker 1.		
	CALC:TMAR:X?		
	> 0.10		

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

Couple Time Marker 1 and 2

Function			
	This command enable	s/disables sharing of the Time Marker setting.	
Command			
	:CALCulate:TMARker:COUPle:ZONE[:STATe] <switch></switch>		
Parameter			
	<switch></switch>	Shared setting of Time Marker On/Off	
	ON 1	Sets the shared setting to On.	
	OFF 0	Sets the shared setting to Off.	
Details			
	This command is available when the following trace is active:		
	• Spectrogram,		
	This command is not available when Marker Type is Spot.		
	Setting to On makes Time Marker 1 and Time Marker 2 move together.		
Example of Use			
	To set the shared setti	ing of Time Marker to On.	
	CALC:TMAR:COUP:ZO	NE ON	

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

Couple Time Marker 1 and 2 Query

Function		
	This command queries enabled.	s whether sharing of the Time Marker setting is
Query		
	:CALCulate:TMARker:COUPle:ZONE[:STATe]?	
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Time Marker setting sharing On/Off
	1	On
	0	Off
Details		
	This command is available when the following trace is active:	
	• Spectrogram	
Example of Use		
	To query the On/Off state of the shared setting of Time Marker.	
	CALC:TMAR:COUP:ZONE?	
	> 1	

:CALCulate:ANALyze:SPECtrum

Analyze with Spectrum Trace

Function	
	This command analyzes the range selected in Time 1 and Time 2 by
	using Spectrum trace.
Command	
	:CALCulate:ANALyze:SPECtrum
Details	
	This command is available when the following trace is active:
	• Spectrogram
	This command is not available when Marker is set to Off.
Example of Use	
	CALC:ANAL:SPEC

:CALCulate:ANALyze:SPGRam

Return To Spectrogram

Function	
	This command is used to return to Spectrogram trace from Spectrum
	trace.
Command	
	:CALCulate:ANALyze:SPGRam
Details	
	If you return to Spectrogram by using this command after you moved on
	to Spectrum by using the Analyze with Spectrum Trace command, the
	same analysis length as in Spectrum is set in Spectrogram.
	This command can be set only after the Analyze with Spectrum Trace command has been used. This command cannot be set, if you change the
	parameter to set the analysis length after you returned to Spectrum.
	Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation
	Manual (Signal Analyzer function Operation)" or "MS2830A Signal
	Analyzer Operation Manual (Signal Analyzer function Operation)" for details.
	This command is not available in the following case:
	• When Terminal is set for DigRF 3G (only for MS269x Series).
Example of Use	
	To return to Spectrogram trace. CALC:ANAL:SPGR

:CALCulate:TMARker[1]|2:PEAK:X?

Time Marker Peak Query

This command queries the time of the peak at Time Marker.		
:CALCulate:TMARker[n]:PEAK:X?		
<time></time>		
<n></n>	Marker number	
1	Marker 1	
2	Marker 2	
When omitted: Marker 1		
(When Marker Type is Spot, or when Marker Type is Zone and when		
Couple Time 1 and 2 are Off)		
Range	Analysis Start Time to Analysis Start Time +	
	Analysis Time Length	
(When Marker Type is 2	Zone and when Couple Time 1 and 2 are On)	
Range	The greater value of Analysis Start Time and	
	(Marker1 – Marker2 + Analysis Start Time) to	
	the smaller value of Analysis Start	
	Time+Analysis Time Length and Analysis Start	
	Time+Analysis Time Length– (Marker 2–	
	Marker 1)	
	No suffix code. Value is returned in s units.	
This command is available when the following trace is active:		
• Spectrogram		
This command is availa	ble when Marker Result is Peak.	
To query the time of the	e peat at Time Marker.	
CALC:TMAR:PEAK:X?		
> 0.10000000		
	<pre>:CALCulate:TMARker <time> <n> 1 2 When omitted: Mark (When Marker Type is Couple Time 1 and 2 ar Range (When Marker Type is Range (When Marker Type is Range This command is availated • Spectrogram This command is availated This command is availated • Spectrogram</n></time></pre>	

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Chapter 2 SCPI Device Message Details

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

Phase Offset

Function			
	This command adds the Offset value to the measurement waveform in		
	Phase vs Time measurement.		
Command			
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:OFFSet <real></real>		
Parameter			
	<real></real>		
	Range	–100 M to +100 M	
	Unit	degree	
	Default	0	
Example of Use			
	To set 15 degrees	s as Phase Offset.	
	DISP:WIND:TRA	C:Y:PHAS:OFFS 15	
:DISPlay:WINDow[1]:	TRACe:YI:SC	ALe]:PHASe:OFFSet?	
Phase Offset Query			
Thate chief duciy			
Function			
	This command o	ueries the Offset value to be added to the measurement	
	waveform in Phase vs Time measurement.		
Command			
Command	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:OFFSet?		
5			
Response			
Response	<real></real>		
	<real></real>		
Parameter	<real></real>		
	<real></real>		
	<real> Range</real>	-100M to +100M	
	<real> Range Unit</real>	–100M to +100M degree	
Parameter	<real> Range</real>	-100M to +100M	
	<real> Range Unit Default</real>	-100M to +100M degree 0	
Parameter	<real> Range Unit Default To set 15 degrees</real>	–100M to +100M degree	
Parameter	<real> Range Unit Default To set 15 degrees</real>	-100M to +100M degree 0 s as Phase Offset.	

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:MODE <mode>

Phase Mode

Function			
	This command sets whether the phase is displayed with limitation by		
	± 180 degrees or without the limitation in Phase vs Time measurement.		
Command			
Command	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:MODE <mode></mode>		
Parameter	• 2 2 2 2 2 4 7 • • • 2 1 4		
	<mode></mode>		
	WRAP	Displays with the limitation by ± 180 degrees.	
	UNWRap Default	Displays without the limitation.	
Evenuela of Llas	Delault	WRAP	
Example of Use			
	To set WRAP as Phase Mode.		
	DISP:WIND:TRA	AC:Y:PHAS:MODE WRAP	
:DISPlay:WINDow[1]:	TRACe:YI:SC	CALe]:PHASe:MODE?	
Phase Mode Query		-)	
Thate were query			
Function			
	This command sets whether the phase is displayed with limitation by		
	± 180 degrees or without the limitation in Phase vs Time measurement.		
Quert	± 160 degrees or	without the limitation in Flase vs Time measurement.	
Query			
	:DISPIAY:WINI	Dow[1]:TRACe:Y[:SCALe]:PHASe:MODE?	
Parameter			
	<mode></mode>		
	WRAP	Displays with the limitation by ±180 degrees.	
	WRAP UNWR	Displays with the limitation by ±180 degrees. Displays without the limitation.	
Example of Use	UNWR	Displays without the limitation.	
Example of Use	UNWR Default	Displays without the limitation.	
Example of Use	UNWR Default To query the val	Displays without the limitation. WRAP	

> WRAP

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

Scale Division

Function			
	This command sets the value of degree/DIV of the graph in Phase vs		
	Time measurement.		
Command			
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:PDIVision <real></real>		
Parameter			
	<real></real>		
	Range	0.01 to +200G	
	Unit	deg/Div	
	Default	36.00	
Example of Use			
	To set 180 as deg	g./Div.	
	DISP:WIND:TRA	C:Y:PHAS:PDIV 180	
:DISPlay:WINDow[1]:	TRACe:Y[:SC	ALe]:PHASe:PDIVision?	
Scale Division Query	-	-	
Function			
	This command o	ueries the value of degree/DIV of the graph in Phase vs	
	Time measurement.		
Command			
	:DISPlay:WIND	<pre>Dow[1]:TRACe:Y[:SCALe]:PHASe:PDIVision?</pre>	
Response			
•	<real></real>		
Parameter			
	<real></real>		
	Range	0.01 to +200G	
	Unit	deg/Div	
	Default	36.00	
Example of Use			
-	To query the set	value of deg./Div.	
	DISP:WIND:TRAC:Y:PHAS:PDIV?		

> 180

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence <time>

Phase Reference

Function		
	This command	sets the reference time value for Phase vs. Time
	measurement.	
Command		
	:DISPlay:WIND	<pre>Dow[1]:TRACe:Y[:SCALe]:PHASe:REFerence <time></time></pre>
Parameter		
	<real></real>	
	Range	0 to 2000
	Unit	S
	Suffix code	NS, US, MS, S
	s is used whe	en the suffix code is omitted.
	Default	0
Example of Use		
	To set 10 s as Ph	ase Reference.
	DISP:WIND:TRA	AC:Y:PHAS:REF 10

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence?

Phase Reference Query

Function		
	This command	queries the reference time value for Phase vs. Time
	measurement.	
Query		
	:DISPlay:WIND	<pre>Dow[1]:TRACe:Y[:SCALe]:PHASe:REFerence?</pre>
Parameter		
	<real></real>	
	Range	0 to 2000
	Unit	s
	Default	0
Example of Use		
	To query the value of Phase Reference.	
	DISP:WIND:TRAC:Y:PHAS:REF?	
	> 10	

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:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence:MODE <switch> Phase Reference Mode

Function		
	This command sets wh	ether to use the Reference value in Phase vs Time
	measurement.	
Command		
	:DISPlay:WINDow[1]	:TRACe:Y[:SCALe]:PHASe:REFerence:MIDE
	<switch></switch>	
Parameter		
	<switch></switch>	
	OFF 0	Do not use
	ON 1	Use (Default)
Example of Use		
	To set the Phase Ref M	Iode to ON.
	DISP:WIND:TRAC:Y:	PHAS:REF:MODE ON

:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PHASe:REFerence:MODE? Phase Reference Mode Query

Function			
	This command queries	s whether to use the Reference value in Phase vs	
	Time measurement.		
Query			
	:DISPlay:WINDow[1]	:TRACe:Y[:SCALe]:PHASe:REFerence:MODE?	
Parameter			
	<switch></switch>		
	0	Do not use	
	1	Use	
Example of Use			
	To query the value of Phase Reference.		
	DISP:WIND:TRAC:Y:PHAS:REF:MODE?		
	> 1		

2.8 Measure Common Function Settings

Table 2.8-1 lists device messages for common setting of the Measure function.

Function	Device Message
Select Standard	[:SENSe]:RADio:STANdard[:SELect] OFF WCDMADN WCDMAUP MWIMAX 3GLTE_DL 3GLTE_UL ETC_DSRC TDSCDMA XGPHS CDMA2KFWD EVDOFWD 3GLTE_TDD_DL 3GLTE_TDD_UL ISDBTMM
Measurement Off	[:SENSe]:RADio:STANdard[:SELect]? :CONFigure:SANalyzer
Current Measurement Query	:CONFigure?
Load Standard	[:SENSe]:RADio:STANdard:LOAD <function>[,<pattern>]</pattern></function>
Parameter	[:SENSe]:RADio:STANdard:LOAD? <function></function>
Low Phase Noise Performance Status Query	[:SENSe]:FREQuency:SYNThesis:LPHase:STATe?

Table 2.8-1	Device messages for common setting of Measure function
	Derlee meeergee ier eenmen eetting er mereere interetien

[: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

Select Standard

Function This command selects a type of the parameter setting of the Measure function using the communication standard. Command [:SENSe]:RADio:STANdard[:SELect] <standard> Parameter <standard> Communication standard OFF Off 3GPP W-CDMA Downlink WCDMADN 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 Details This command is not available in the following case: • When Terminal is set for DigRF 3G (only for MS269x Series). • When using MS2830A, Option 005/105/007/009/109 is not installed. Example of Use To select the parameter conforming to 3GPP W-CDMA Uplink standard. 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></standard>	
Parameter		
	<standard></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
Details		
	This command is not av	vailable in the following case:
	• When using MS2830	A, Option 005/105/007/009/109 is not installed.
Example of Use		, - <u>F</u>
	To query the setting of the communication standard.	
	RAD:STAN?	
	> WCDMAUP	

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:CONFigure:SANalyzer

Measurement Off

Function	This command disables currently running measurement function. No operation is made if no measurement function is running.	
Command		
	:CONFigure:SANaly	zer
Example of Use	To disable the current	y running measurement function.
:CONFigure? Current Measurement Query		
Function	This command queries	the names of the current Measure function.
Query		
-	:CONFigure?	
Response		
Demonster	<mode></mode>	
Parameter	<mode></mode>	Measure function
	ACP	ACP measurement
	BPOW	
	OBW	Burst Average Power measurement OBW measurement
	CHP	Channel Power measurement
	AM	
	FM	AM Depth measurement FM Deviation measurement
	SAN	Off
Example of Use	SAN	Oli
Example of Ose	To guary the surrout)	Logging function
	To query the current N CONF?	leasure fulletion.
	> ACP	
	> ACI	

[:SENSe]:RADio:STANdard:LOAD <function>[,<pattern>]

Load Standard Parameter

Function		
	This command selects t	the parameter of Measure.
	The selectable paramet	ters vary depending on the setting of Standard.
Command		
	[:SENSe]:RADio:STA	Ndard:LOAD <function>[,<pattern>]</pattern></function>
Parameter		
	<function></function>	Measure function
	ADJ	ACP measurement
	BRSTAVGPWR	Burst Average Power measurement
	OBW	OBW measurement
	CHPWR	Channel Power measurement
	When Standard is set t	o W-CDMA Uplink (ACP measurement):
	<pattern></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 measurement):	
	<pattern></pattern>	Parameter to be set
	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 t	o W-CDMA Uplink (OBW measurement):
	<pattern></pattern>	Parameter to be set
	UPLINK	3GPP W-CDMA Uplink
	When omitted:	3GPP W-CDMA Uplink
	When Standard is set t	o W-CDMA Uplink (Channel Power
	measurement):	
	<pattern></pattern>	Parameter to be set
	UPLINK	3GPP W-CDMA Uplink, Mean Power
		measurement
	MEAN	3GPP W-CDMA Uplink, Mean Power
	RRCFILTER	measurement 3GPP W-CDMA Uplink, RRC Filtered Power
		measurement
	When omitted:	3GPP W-CDMA Uplink, Mean Power
		measurement

2

When Standard is set	t to W-CDMA Downlink (ACP measurement):
<pattern></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)
When omitted:	3GPP W-CDMA Downlink, ACP
	measurement(Single Carrier)
When Standard is set measurement):	t to W-CDMA Downlink (Burst Average Power
<pattern></pattern>	Parameter to be set
MEAN	3GPP W-CDMA Downlink, Mean Power
	measurement
RRCFILTER	3GPP W-CDMA Downlink, RRC Filtered Pow
	measurement
When omitted:	3GPP W-CDMA Downlink, Mean Power
	measurement
Whon Standard is sot	t to W-CDMA Downlink (OBW measurement):
<pre><pattern></pattern></pre>	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink
When omitted:	3GPP W-CDMA Downlink
	t to W-CDMA Downlink (Channel Power
measurement):	
<pattern></pattern>	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink, Mean Power
	measurement
MEAN	3GPP W-CDMA Downlink, Mean Power
	measurement
	3GPP W-CDMA Downlink, RRC Filtered Pow
RRCFILTER	
	measurement
When omitted:	
	measurement
	measurement 3GPP W-CDMA Downlink, Mean Power measurement
When omitted:	measurement 3GPP W-CDMA Downlink, Mean Power measurement t to Mobile WiMAX Parameter to be set
When omitted: When Standard is set	measurement 3GPP W-CDMA Downlink, Mean Power measurement t to Mobile WiMAX
When omitted: When Standard is set <pattern></pattern>	measurement 3GPP W-CDMA Downlink, Mean Power measurement t to Mobile WiMAX Parameter to be set

When Standard is set to LTE Uplink/Downlink (ACP measurement)

<pattern></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)
When omitted:	5 MHz BW (UTRA 5 MHz)

When Standard is set to LTE TDD Downlink (ACP measurement)

<pattern></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_UTRA5MHZ	5 MHz BW (UTRA 5 MHz)
5MBW_EUTRA5MHZ	5 MHz BW (E-UTRA 5 MHz)
When omitted:	5 MHz BW (E-UTRA 5 MHz)

When Standard is set to LTE TDD Uplink (ACP measurement)

<pattern></pattern>	Parameter to be set
1M4BW_UTRA1M6HZ	1.4MHz BW (UTRA 1.6 MHz)
1M4BW_EUTRA1M4HZ	1.4MHz BW (E-UTRA 1.4 MHz)
3MBW_UTRA1M6HZ	3MHz BW (UTRA 1.6 MHz)
3MBW_EUTRA3MHZ	3MHz BW (UTRA 1.6 MHz)
5MBW_EUTRA5MHZ	5MHz BW (E-UTRA 5 MHz)
When omitted:	5MHz BW (E-UTRA 5 MHz)

When Standard is set to LTE Uplink/Downlink, LTE TDD Uplink/Downlink (OBW measurement)

<pattern></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, LTE TDD Uplink/Downlink (Channel Power			
measurement)			
<pattern></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, LTE TDD Uplink/Downlink (Burst Average Power

measurement)

<pattern></pattern>	Parameter to be set
MEAN_1M4BW	Mean Power 1.4 Hz 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 ETC_DSRC (Applies to all but Burst Average

Power measurement)

<pattern></pattern>	Parameter to be set
PI4DQPSK	$\pi/4DQPSK$
ASK	ASK
When omitted:	$\pi/4DQPSK$

measurement)	
<pattern></pattern>	Parameter to be set
MEAN	Mean Power
When omitted:	Mean Power
When Standard is set	to TD-SCDMA (ACP measurement)
<pattern></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></pattern>	Parameter to be set
TDD128M	3GPP TDD 1.28 Mcps Option
When omitted:	3GPP TDD 1.28 Mcps Option
<pattern></pattern>	Parameter to be set
<pattern> MEAN</pattern>	Parameter to be set 5 ms Subframe
	5 ms Subframe
MEAN When omitted:	5 ms Subframe (Power measurement of 1 subframe)
MEAN When omitted: When Standard is set	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe
MEAN When omitted: When Standard is set	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement)
MEAN When omitted: When Standard is set <pattern></pattern>	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set
MEAN When omitted: When Standard is set <pattern> 10MBW</pattern>	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW
MEAN When omitted: When Standard is set <pattern> 10MBW 20MBW When omitted:</pattern>	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW 20 MHz BW
MEAN When omitted: When Standard is set <pattern> 10MBW 20MBW When omitted:</pattern>	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW 20 MHz BW 10 MHz BW
MEAN When omitted: When Standard is set <pattern> 10MBW 20MBW When omitted: When Standard is set</pattern>	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW 20 MHz BW 10 MHz BW
MEAN When omitted: When Standard is set <pattern> 10MBW 20MBW When omitted: When Standard is set <pattern></pattern></pattern>	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW 20 MHz BW 10 MHz BW to XG-PHS (CHP measurement) Parameter to be set
MEAN When omitted: When Standard is set <pattern> 10MBW 20MBW When omitted: When Standard is set <pattern> MEAN_10MBW</pattern></pattern>	 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW 20 MHz BW 10 MHz BW to XG-PHS (CHP measurement) Parameter to be set Mean Power 10 MHz BW
MEAN When omitted: When Standard is set <pattern> 10MBW 20MBW When omitted: When Standard is set <pattern> MEAN_10MBW MEAN_20MBW When omitted:</pattern></pattern>	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW 20 MHz BW 10 MHz BW 10 MHz BW
MEAN When omitted: When Standard is set <pattern> 10MBW 20MBW When omitted: When Standard is set <pattern> MEAN_10MBW MEAN_20MBW When omitted:</pattern></pattern>	 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW 20 MHz BW 10 MHz BW to XG-PHS (CHP measurement) Parameter to be set Mean Power 10 MHz BW Mean Power 20 MHz BW Mean Power 10 MHz BW
MEAN When omitted: When Standard is set <pattern> 10MBW 20MBW When omitted: When Standard is set <pattern> MEAN_10MBW MEAN_20MBW When omitted: When Standard is set</pattern></pattern>	5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10 MHz BW 20 MHz BW 10 MHz BW 10 MHz BW to XG-PHS (CHP measurement) Parameter to be set Mean Power 10 MHz BW Mean Power 20 MHz BW Mean Power 10 MHz BW

	When Standard is set to EV-DO Forward Link (ACP, Channel Power,			
	OBW setting)			
	<pattern></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 (Burst Average Power			
	measurement)			
	<pattern></pattern>	Parameter to be set		
	EVDOFWDACTIVE	Active Slot		
	EVDOFWDIDLE	Idle Slot		
	When omitted:	Active Slot		
	When Standard is set	to ISDB-Tmm (Channel Power measurement)		
	<pattern></pattern>	Parameter to be set		
	MEAN_14M2BW	14.2 MHz BW		
	MEAN_5M6BW	5.6 MHz BW (ISDB-T)		
	When omitted:	14.2 MHz BW		
	When Standard is set to ISDB-Tmm (OBW measurement)			
	<pre><pattern> Parameter to be set</pattern></pre>			
	14M2BW	14.2 MHz BW		
	5M6BW	5.6 MHz BW (ISDB-T)		
	When omitted:	14.2 MHz BW		
Details				
	This function is not av	ailable under the following conditions:		
	• Standard setting is set to Off.			
	• When using MS2830A, Option 005/105/007/009/109 is not installed.			
Example of Use				
	To set the ACP measur	cement parameters conforming 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></function>
Response	
,	<pattern></pattern>
Parameter	
	Refer to [:SENSe]:RADio:STANdard:LOAD
	<function>[,<pattern>]</pattern></function>
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

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

Low Phase Noise Performance 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></status>	State of Low Phase Noise function	
Parameter			
	<status></status>	State of Low Phase Noise function	
	1	Lowers Phase Noise	
	0	Does not lower Phase Noise	
Detail			
	This command is avail	able only for MS2830A.	
	This function is available only when Option 062 or 066 is installed.		
	The low phase noise performance is improved when the Low Phase Noise		
		and the center frequency is less than 3.7 GHz.	
	(The low phase noise performance is improved when the Frequency Band Mode is Spurious and the center frequency is less than 3.5 GHz.)		
	Mode is Spurious and the center frequency is less than 5.5 GHz./		
	Whether the Low Phase Noise option can be used or not is read from the		
	current setting parameters by this function.		
Example of Use			
	To query the state of Low Phase Noise function with the current		
	measurement conditions.		
	FREQ:SYNT:LPH:STA	Γ??	
	> 1		

2.9 Adjacent Channel Power Measurement Settings

Table 2.9-1 lists device messages for Adjacent Channel Power measurement.

Function	Device Message		
	[:SENSe]:ACPower[:STATe] ON OFF 1 0		
Measure Adjacent	[:SENSe]:ACPower[:STATe]?		
Channel Power	:CALCulate:ACPower[:STATe] ON OFF 1 0		
	:CALCulate:ACPower[:STATe]?		
	[:SENSe]:ACPower:CARRier[1]:RCARrier <integer></integer>		
Adjacent Channel Power Reference	[:SENSe]:ACPower:CARRier[1]:RCARrier?		
Power Reference Carrier Select	:CALCulate:ACPower:CARRier[1]:RCARrier <integer></integer>		
	:CALCulate:ACPower:CARRier[1]:RCARrier?		
	[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod		
	STOTal CTOTal BSIDes CSELect		
Adjacent Channel	[:SENSe]:ACPower:CARRier[1]:RCARrier:METHod?		
Power Reference	:CALCulate:ACPower:CARRier[1]:RCARrier:METHod		
	STOTAL CTOTAL BSIDes CSELect		
	:CALCulate:ACPower:CARRier[1]:RCARrier:METHod?		
Adjacent Channel	[:SENSe]:ACPower:CORRection:NOISe[:AUTO] ON OFF 1 0		
Power Noise	[:SENSe]:ACPower:CORRection:NOISe[:AUTO]?		
Cancel	:CALCulate:ACPower:CORRection:NOISe[:AUTO] ON OFF 1 0		
	:CALCulate:ACPower:CORRection:NOISe[:AUTO]?		
Adjacent Channel	[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration] bandwidth>		
Power Offset	[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration]?		
Channel	:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration] <bandwidth></bandwidth>		
Bandwidth	:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration]?		
	[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]		
	<pre><bandwidth></bandwidth></pre>		
Adjacent Channel	[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?		
Power Carrier Bandwidth	:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]		
Danuwiutii	<bandwidth></bandwidth>		
	:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]?		
Adjacent Channel Power In Band Center	[:SENSe]:ACPower:CARRier[1]:RCFRequency <freq></freq>		
	[:SENSe]:ACPower:CARRier[1]:RCFRequency?		
	:CALCulate:ACPower:CARRier[1]:RCFRequency <freq></freq>		
	:CALCulate:ACPower:CARRier[1]:RCFRequency?		

Table 2.9-1	Device	messages	for Adjacent	Channel Power
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Chapter 2 SCPI Device Message Details

T dbie 2.5-1	
Function	Device Message
Adjacent Channel Power Carrier Number	[:SENSe]:ACPower:CARRier[1]:COUNt <integer></integer>
	[:SENSe]:ACPower:CARRier[1]:COUNt?
	:CALCulate: ACPower:CARRier[1]:COUNt <integer></integer>
Tramber	:CALCulate: ACPower:CARRier[1]:COUNt?
	[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh <bandwidth></bandwidth>
Adjacent Channel Power Carrier	[:SENSe]:ACPower:CARRier[1]:LIST:WIDTh?
Spacing	:CALCulate:ACPower:CARRier[1]:LIST:WIDTh <bandwidth></bandwidth>
Spacing	:CALCulate: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	[:SENSe]:ACPower:OFFSet[1]:LIST:STATe?
Power Offset	:CALCulate:ACPower:OFFSet[1]:LIST:STATe
	ON OFF 1 0,ON OFF 1 0,ON OFF 1 0
	:CALCulate:ACPower:OFFSet[1]:LIST:STATe?
	[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]
Adjacent Channel	<freq>,<freq>,<freq></freq></freq></freq>
Power Offset	[:SENSe]:ACPower:OFFSet[1]:LIST[:FREQuency]?
Frequency	:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency]
1	<freq>,<freq></freq></freq>
	:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency]?
	[:SENSe]:ACPower:CARRier[1]:LIST:METHod IBW RRC RC
	[:SENSe]:ACPower:CARRier[1]:LIST:METHod?
	:CALCulate:ACPower:CARRier[1]:LIST:METHod IBW RRC RC
Adjacent Channel	:CALCulate:ACPower:CARRier[1]:LIST:METHod?
Power Filter Type	[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE RECT NYQuist RNYQuist
	[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?
	:CALCulate:ACPower:CARRier[1]:FILTer:TYPERECT NYQuist RNYQuist
	:CALCulate:ACPower:CARRier[1]: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
Adjacent Channel	:CALCulate:ACPower:FILTer[:RRC][:STATe]?
Power Offset Filter Type	[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE RECT NYQuist RNYQuist
туће	[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?
	:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE RECT NYQuist RNYQuist
	:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE?

 Table 2.9-1
 Device messages for Adjacent Channel Power measurement (Cont'd)

2.9 Adjacent Channel Power Measurement Settings

Table 2.9-1	Device messages for Adjacent Channel Power measurement (Cont'd)
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Function	Device Message	
Adjacent Channel	DISPlay:ACPower:RESult:TYPE CARRier OFFSet	
Power Result Type	DISPlay:ACPower:RESult:TYPE?	
	[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real></real>	
Adjacent Channel	[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?	
Power Rolloff Ratio	:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real></real>	
	:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa?	
Adjacent Channel	[:SENSe]:ACPower:FILTer[:RRC]:ALPHa <real></real>	
Power Offset	[:SENSe]:ACPower:FILTer[:RRC]:ALPHa?	
Rolloff	:CALCulate:ACPower:FILTer[:RRC]:ALPHa <real></real>	
Ratio	: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]?	
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	
Zone Marker	:CALCulate:ACPower:MARKer[1] 2 3 4 5 6 7 8 9 10:X <freq> <time> <sample> <dist></dist></sample></time></freq>	
Frequency (Time)	:CALCulate:ACPower:MARKer[1] 2 3 4 5 6 7 8 9 10:X?	
Marker Level Query	:CALCulate:ACPower:MARKer[1] 2 3 4 5 6 7 8 9 10:Y?	
T:41 - Tratan	:DISPlay:ACPower:ANNotation:TITLe:DATA <string></string>	
Title Entry	:DISPlay:ACPower:ANNotation:TITLe:DATA?	
Log Scale Range	:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl></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></real>	
	:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel?	
Trigger Source	:TRIGger:ACPower[:SEQuence]:SOURce	
Trigger Source	EXTernal[1] IMMediate WIF RFBurst VIDeo SG BBIF	

Chapter 2 SCPI Device Message Details

	Device messages for Adjacent Channel Power measurement (Cont d)
Function	Device Message
Amore an Count	[:SENSe]:ACPower:AVERage:COUNt <integer></integer>
Average Count	[:SENSe]:ACPower:AVERage:COUNt?
	[:SENSe]:ACPower:AVERage[:STATe] ON OFF 1 0
Storage Mode	[:SENSe]:ACPower:AVERage[:STATe]?
	[:SENSe]:ACPower:BANDwidth[:RESolution] <freq></freq>
Resolution	[:SENSe]:ACPower:BANDwidth[:RESolution]?
Bandwidth	:CALCulate:ACPower:BANDwidth[:RESolution] <freq></freq>
	:CALCulate:ACPower:BANDwidth[:RESolution]?
	[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO ON OFF 1 0
Resolution	[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO?
Bandwidth Auto/Manual	:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO ON OFF 1 0
Autonnanuai	:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO?
	[:SENSe]:ACPower:DETector[:FUNCtion]
	NORMal POSitive NEGative AVERage
Detection Mode	[:SENSe]:ACPower:DETector[:FUNCtion]?
Detection mode	:CALCulate:ACPower:DETector[:FUNCtion]
	NORMal POSitive NEGative AVERage
	:CALCulate:ACPower:DETector[:FUNCtion]?
Span Frequency	[:SENSe]:ACPower:FREQuency:SPAN <freq></freq>
1 1 0	[:SENSe]:ACPower:FREQuency:SPAN?
Trace Point Query	[:SENSe]:ACPower:SWEep:POINts?
Sweep Time	[:SENSe]:ACPower:SWEep:TIME <time></time>
Sweep Time	[:SENSe]:ACPower:SWEep:TIME?
Sweep Time	[:SENSe]:ACPower:SWEep:TIME:AUTO OFF ON 0 1
Auto/Manual	[:SENSe]:ACPower:SWEep:TIME:AUTO?
	:CALCulate:ACPower:MARKer[1] 2 3 4 5 6 7 8 9 10:MODE
Marker Mode	NORMal POSition DELTa FIXed OFF
	:CALCulate:ACPower: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:REFerence
Relative To	<pre><integer> .Chicklate.hCDever.MADKer[1]:2:2:4:5:6:7:8:0:10.DEEeropee2</integer></pre>
	:CALCulate:ACPower:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerence?

 Table 2.9-1
 Device messages for Adjacent Channel Power measurement (Cont'd)

2

[:SENSe]:ACPower[:STATe] ON|OFF|1|0

Measure Adjacent Channel Power

Function			
	This command sets Adjacent Channel Power measurement On/Off.		
Command			
	[:SENSe]:ACPower[:STATe] <switch></switch>		
Parameter			
	<switch></switch>	ACP measurement On/Off	
	ON 1	Sets ACP measurement to On.	
	OFF 0	Sets ACP measurement to Off (Default value)	
Details			
	This command is avai	lable when the following trace is active;	
	• Spectrum		
	For reading out a measurement result after this command has been		
	executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To execute ACP measu	arement and query the results.	
	ACP ON		
	*WAI		
	FETC:ACP?		
Related Command			
	This command has the	e same function as the following command.	
	:CALCulate:ACPowe	r[:STATe]	
:CALCulate:ACPower	f:STATel ONIOFF	1110	
		1.1-	

Measure Adjacent Channel Power

Function	
	This command sets Adjacent Channel Power measurement On/Off.
	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 setting for Adjacent Channel Power	
	measurement.	
Command		
	[:SENSe]:ACPower[:STATe]?
Parameter		
	<switch></switch>	ACP measurement On/Off
	1	On
	0	Off
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use		
	To query the setting of ACP measurement.	
	ACP?	
	> 1	
Related Command		
	This command has the	same function as the following command.
	:CALCulate:ACPower[:STATe]?	

2

: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 commond has the come function as the following commond

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:C	ARRier[1]:RCARrier <integer></integer>	
Parameter			
	<integer></integer>	Reference carrier number	
	Range	1 to Carrier Number	
	Resolution	1	
	Unit	None	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	For reading out a measurement result after this command has been		
	executed, use *WAI con	nmands to perform synchronized control.	
Example of Use			
	To set the reference car	rier number of ACP measurement to 2 and query	
	the results.		
	ACP:CARR:RCAR 2		
	*WAI		
	FETC:ACP?		
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 measu	rement.	
Query			
	[:SENSe]:ACPower:	CARRier[1]:RCARrier?	
Response			
	<integer></integer>		
Parameter			
	<integer></integer>	Reference carrier number	
	Range	1 to Carrier Number	
	Resolution	1	
	Unit	None	
	Default value	1	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To set the reference carrier number for Adjacent Channel Power		
	measurement to 2.		
	ACP:CARR1:RCAR?		
	> 2		
Related Command			
	This command has the	e 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 th Channel Power measu	e reference of the relative level display for Adjacent arement.
Command		
Parameter	[:SENSe]:ACPower:	CARRier[1]:RCARrier:METHod <method></method>
Falanielei	<method></method>	Reference method for the relative level display of ACP measurement
	STOTal	Sets the integral power on the whole screen to the reference (Span Total method)
	CTOTal	Sets the total value of all carrier power (Carrier Total method) (Default value)
	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	Sets the carrier selected in Carrier Select to the reference.
Details	This command is avai • Spectrum	lable when the following trace is active:
	-	surement result after this command has been ommands to perform synchronized control.
Example of Use		
	To set Carrier Total m results. ACP:CARR:RCAR:MET *WAI FETC:ACP?	nethod to ACP measurement method and query the
Related Command		e same function as the following command. r: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			
Deremeter	<method></method>		
Parameter	<method></method>	Reference method for the relative level display of	
		ACP measurement	
	STOT	Sets the integral power on the whole screen to	
		the reference (Span Total method)	
	CTOT	Sets the total value of all carrier power (Carrier	
		Total method) (Default value)	
	BSID	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).	
	CSEL	Sets the carrier selected in Carrier Select to the	
		reference.	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To query ACP measurement method.		
	ACP:CARR:RCAR:METH?		
	> CTOT		
Related Command			
		e same function as the following command.	
	:CALCUIAte:ACPowe	r:CARRier[1]:RCARrier:METHod?	

2

: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 wh	nether to enable the noise-canceling function.
Command		
	[:SENSe]:ACPower:	CORRection:NOISe[:AUTO] <switch></switch>
Parameter		
	<switch></switch>	Noise-canceling function on/off
	ON 1	Enables the noise-canceling function.
	OFF 0	Disables the noise-canceling function. (Default value)
Details		
	Fixed to Off and canno	ot be set in the following cases:
	• ACP is Off	
	• Standard is Off	
	• The Standard Paramot set in Load Star	meter which enables the noise-canceling function is
		Detection, Sweep Time, VBW (when Detection is
		d VBW Mode (when VBW is not set to Off and
		ot set to RMS)has been changed from Standard
	Parameter.	C
	• Scale Mode is Linea	ar.
	The setting is disabled	l while the Replay function is being executed.
Example of Use		
	To disable the noise-ca	inceling function.
	ACP:CORR:NOIS OFF	
Related Command		
		e same function as the following command. r: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 querie	s whether the noise-canceling function is enabled.		
Query				
Deserves	[:SENSe]:ACPOwer:	CORRection:NOISe[:AUTO]?		
Response				
Parameter	<switch></switch>			
Falameter	<switch></switch>	Noisseren seling function on laff		
	1	Noise-canceling function on/off		
		Noise-canceling function is enabled.		
	0	Noise-canceling function is disabled.		
Details				
	The noise-canceling function is disabled in the following cases:			
	• ACP is Off.			
	• Standard is Off.			
	• The Standard Parameter which enables the noise-canceling function is not set in Load Standard Parameter.			
	 Any of Span, RBW, Detection, Sweep Time, VBW (when Detection is 			
	• Any of Span, KBW, Detection, Sweep Time, VBW (when Detection is not set to RMS), and VBW Mode (when VBW is not set to Off and			
		not set to RMS)has been changed from Standard		
	Parameter.			
	• Scale Mode is Line	ar.		
Example of Use				
	To query whether the noise-canceling function is enabled.			
	ACP:CORR:NOIS?			
	> 0			
Related Command				
	This command has th	e same function as the following command.		
	:CALCulate:ACPowe	er:CORRection:NOISe[:AUTO]?		

2

:CALCulate:ACPower:CORRection:NOISe[:AUTO]?

Adjacent Channel Power Noise Cancel Query

Function				
	This command queries whether the noise-canceling function is enabled.			
	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] <bandwidth></bandwidth>				
Adjacent Channel Power Offs	et Channel Bandwidth			
Function				

		Offset Channel bandwidth for Adjacent Channel		
	Power measurement.			
Command				
	[:SENSe]:ACPower	:OFFSet[1]:BANDwidth[:INTegration]		
	<bandwidth></bandwidth>			
Parameter				
	<bandwidth></bandwidth>	Offset Channel bandwidth		
	Range	1 Hz to 125 MHz		
	Resolution	1 Hz		
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ		
	Sullix code			
		Hz is used when omitted.		
	Default value	3.84 MHz		
Details				
	This command is ava	This command is available when the following trace is active:		
	• Spectrum			
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.			
Example of Use				
	To set Offset Channel bandwidth to 3.84 MHz and query the results.			
	ACP:OFFS:BAND 3.84MHZ			
	*WAI			
	FETC:ACP?			
Related Command	1110.1101.			
	This command has the	as some function as the following command		
	This command has the same function as the following command. :CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration]			

:CALCulate:ACPower:OFFSet[1]:BANDwidth[:INTegration] <bandwidth>

Adjacent Channel Power Offset Channel Bandwidth

Function			
	This command sets 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 Offset Channel bandwidth for Adjacent Channel		
	Power measurement.		
-			
Query			
	[:SENSe]:ACPower:OFFSet[1]:BANDwidth[:INTegration]?		
Response			
	<bandwidth></bandwidth>		
Parameter			
	<bandwidth></bandwidth>	Offset Channel bandwidth	
	Range	1 Hz to 125 MHz	
	Resolution	1 Hz	
		No suffix code. Value is returned in Hz units.	
Details			
	This command is available when the following trace is set to active:		
	• Spectrum		
Example of Lice			
Example of Use			
	To query 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 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] <bandwidth>

Adjacent Channel Power Carrier Bandwidth

Function			
	This command sets the measurement bandwidth of the carrier for		
	Adjacent Channel Power measurement.		
Command			
Commanu	[•SENSe]•ACPower•	CARRier[1]:LIST:BANDwidth[:INTegration]	
	<pre><bandwidth></bandwidth></pre>		
Parameter			
	<bandwidth></bandwidth>	Inband channel bandwidth	
	Range	1 to 125 MHz	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default value	3.84 MHz	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	m 1 · · · ·		
	This command is not available when ACP Reference is set to the		
	following:		
	• Span Total		
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.		
Example of Use	executed, use war co	miniands to perform synchronized control.	
	To set the Inband channel bandwidth to 3.84 MHz and query the results.		
	ACP:CARR:LIST:BAND 3.84MHZ		
	*WAI		
	FETC:ACP?		
Related Command			
	This command has the	e same function as the following command.	
	:CALCulate:ACPowe	er:CARRier[1]:LIST:BANDwidth[:INTegratio	
	n]		

:CALCulate:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]

<bandwidth>

Adjacent Channel Power Carrier Bandwidth

Function

This command sets the measurement bandwidth of the carrier for Adjacent Channel Power measurement. Refer to [:SENSe]:ACPower:OFFSet[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 queries the measurement bandwidth of the carrier for		
	Adjacent Channel Power measurement.		
Query			
	[:SENSe]:ACPower:	CARRier[1]:LIST:BANDwidth[:INTegration]	
	?		
Response			
Deverseter	<bandwidth></bandwidth>		
Parameter	<bandwidth></bandwidth>	Inband channel bandwidth	
	Range	1 Hz to 125 MHz	
	Resolution	1 Hz	
	No suffix code. Value i	is returned in Hz units.	
Details			
		lable when the following trace is active:	
	• Spectrum		
	This command is not available when ACP Reference is set to the		
	following:		
	• Span Total		
Example of Use			
	To query the Inband channel bandwidth.		
	ACP:CARR:LIST:BAND?		
	> 3840000		
Related Command			
		e 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 queries the measurement bandwidth of the carrier for
	Adjacent Channel Power measurement.
	Refer to [:SENSe]:ACPower:OFFSet[1]:LIST:BANDwidth
	[:INTegration]?.
Related Command	
	This command has the same function as the following command.
	[:SENSe]:ACPower:CARRier[1]:LIST:BANDwidth[:INTegration]
	?

2

[: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></freq>	
Parameter			
	<freq></freq>	In Band center frequency	
	Range	$125 \mathrm{~MHz}$ centered at the center frequency	
		(Center Frequency) of waveform capture	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default value	Center Frequency	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	For reading out a measurement result after this command has been		
	executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To get the Ly Devel conten frequency to 2.84 Mile and success the recults		
	To set the In Band center frequency to 3.84 MHz and query the results. ACP:CARR:RCFR 3.84MHZ		
	*WAI		
	FETC:ACP?		
Related Command			
	This command has the	e same function as the following command.	
	:CALCulate:ACPowe:	r:CARRier[1]:RCFRequency	

:CALCulate:ACPower:CARRier[1]:RCFRequency <freq>

Adjacent Channel Power In Band Center

Function	
	This command sets the Inband 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></freq>		
Parameter			
	<freq></freq>	In Band center frequency	
	Range	125 MHz centered at the center frequency (Center Frequency) of waveform capture	
	Resolution	1 Hz	
	No suffix code. Valu	ie is returned in Hz units.	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To query the In Band center frequency.		
	ACP:CARR:RCFR?		
	> 3840000		
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	5
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></integer>	
Parameter			
	<integer></integer>	Carrier Number	
	Range	1 to 12	
	Resolution	1	
	Suffix code	None	
	Default value	1	
Details			
	This command is avail	able when the following trace is active:	
	• Spectrum		
	This command is not available when ACP Reference is set to th following: • Span Total		
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set the carrier number to 12 and query the results. ACP:CARR:COUN 12 *WAI FETC:ACP?		
Related Command			
	This command has the same function as the following command. :CALCulate:ACPower:CARRier[1]:COUNt		

: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

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></integer>		
Parameter			
	<integer></integer>	Carrier Number	
	Range	1 to 12	
	Resolution	1	
	Suffix code	None	
Details			
	This command is avail	able when the following trace is active:	
	• Spectrum		
	This command is not available when ACP Reference is set to the		
	following:		
	 Span Total 		
	- opan iotai		
Example of Use			
	To query the carrier number.		
	ACP:CARR:COUN?		
	> 12		
Related Command			
	This command has the	e 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 <bandwidth>

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 <bandwidth></bandwidth>		
Parameter			
	<bandwidth></bandwidth>	Frequency interval among carriers	
	Range	0 to 125 MHz	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default value	$5 \mathrm{~MHz}$	
Details			
	This command is avai	lable when the following trace is active:	
	• Spectrum		
	This command is not available when ACP Reference is set to the following:Span Total		
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set the frequency interval among carriers to 12.3 MHz and query the results. ACP:CARR:LIST:WIDT 12300000 *WAI FETC:ACP?		
Related Command			
	This command has th	e same function as the following command.	
	:CALCulate:ACPowe	er:CARRier[1]:LIST:WIDTh	

:CALCulate:ACPower:CARRier[1]:LIST:WIDTh <bandwidth>

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 Pow	ver measurement.	
Query			
	[:SENSe]:ACPower:	CARRier[1]:LIST:WIDTh?	
Response			
	<bandwidth></bandwidth>		
Parameter			
	<bandwidth></bandwidth>	Frequency interval among carriers	
	Range	0 to 125 MHz	
	Resolution	1 Hz	
		No suffix code. Value is returned in Hz units.	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	This command is not available when ACP Reference is set to the		
	following:		
	• Span Total		
Example of Line	-		
Example of Use	To success the free success		
	To query the frequency interval among carriers. ACP:CARR:LIST:WIDT?		
	> 12300000	1:	
Related Command	> 12300000		
Related Command	m l.:		
		e same function as the following command. r:CARRier[1]:LIST:WIDTh?	
	.CALCUIALE.ACPOWE	T.CAUVIET[1].TIDI.MIDIN:	

:CALCulate: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. 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 the offset channel On/Off for Adjacent Channel Power measurement.	
Command		
	[:SENSe]:ACPower:	OFFSet[1]:LIST:STATe
	<switch_1>,<switch< td=""><td>h_2>,<switch_3></switch_3></td></switch<></switch_1>	h_2>, <switch_3></switch_3>
Parameter		
	<switch_n></switch_n>	Measurement channel offset_n On/Off
	ON 1	Measures the offset channel n.
	OFF 0	Does not measure the offset channel n.
	Default value	
	switch_1	On
	switch_2	On
	switch_3	Off
Details		
	This command is available when the following trace is set to active:	
	• Spectrum	
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.	

	Exam	ple	of	Use
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To set the offset channel and query the results. ACP:OFFS:LIST:STAT ON,ON,ON *WAI FETC:ACP?

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 the 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 measu	rement.
Query	[•GENGo]•ACDowor•(OFFSet[1]:LIST:STATe?
Bosponso	[.SENSe].Acrower.	JESec[1]. LIST. STATE:
Response	<switch 1="">,<switch< td=""><td>h 2 / cowitch 3</td></switch<></switch>	h 2 / cowitch 3
Parameter		1_2/, \Switch_3/
Farameter	<switch_n></switch_n>	Measurement channel n On/Off
	1	Measures the offset channel n.
	0	Does not measure the offset channel n.
Details	0	Does not measure the onset channel h.
Details	This command is available when the following trace is active:	
	Spectrum	able when the following trace is active.
	• Spectrum	
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	e same function as the following command.
	:CALCulate:ACPowe:	r:OFFSet[1]:LIST:STATe?

:CALCulate:ACPower:OFFSet[1]:LIST:STATe?

Adjacent Channel Power Offset Query

Function	
	This command queries the 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[:FREQuency] <freq>,<freq>,<freq>

Adjacent Channel Power Offset Frequency

Function			
	This command sets the offset frequency of the offset channel for Adjacent		
	Channel Power measu	rement.	
O a martin an d			
Command			
		OFFSet[1]:LIST[:FREQuency]	
Deremeter	<freq_1>,<freq_2>,</freq_2></freq_1>	, 	
Parameter	(from n)		
	<freq_n></freq_n>	Offset frequency for offset channel n	
	Range	-125 to 125 MHz	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default value		
	freq_1	5 MHz	
	freq_2	10 MHz	
	freq_3	15 MHz	
Details			
		able when the following trace is active:	
	• Spectrum		
	For reading out a measurement result after this command has been		
	executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set the offset frequency of Offset Channel and query the results.		
	ACP:OFFS:LIST 30KHZ,50KHZ,50KHZ		
	*WAI		
	FETC:ACP?		
Related Command			
	This command has the	same function as the following command.	
		r:OFFSet[1]:LIST[:FREQuency]	
	, CITECATACE , ACTOWE.		

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:CALCulate:ACPower:OFFSet[1]:LIST[:FREQuency] <freq>,<freq>

Adjacent Channel Power Offset Frequency

Function	
	This command sets 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:OFFSet[1]:LIST[:FREQuency]?

Adjacent Channel Power Offset Frequency Query

Function	This command queries Adjacent Channel Pow	s the offset frequency of the offset channel for ver measurement.
Query		
Response	[:SENSe]:ACPower:	OFFSet[1]:LIST[:FREQuency]?
	<freq_1>,<freq_2></freq_2></freq_1>	<pre>,<freq_3></freq_3></pre>
Parameter		
	<freq_n></freq_n>	Offset frequency for offset channel n
	Range	-125 to 125 MHz
	Resolution	1 Hz
	No suffix code. Value is returned in Hz units.	
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use		
	To query the offset frequency of Offset Channel.	
	ACP:OFFS:LIST?	
	> 30000,50000,500	00
Related Command		
		e same function as the following command. r: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 th	ne filter type of carriers for Adjacent Channel Power	
	measurement.		
Command			
	[:SENSe]:ACPower:	:CARRier[1]:LIST:METHod <mode></mode>	
Parameter			
	<mode></mode>	Measurement method of carrier	
	IBW	Rectangle filter	
	RRC	Root Nyquist filter (Default value)	
	RC	Nyquist filter	
Details			
	This command is ava	ilable when the following trace is active:	
	• Spectrum		
		available when ACP Reference is set to the	
	following:		
	• Span Total		
	For reading out a mo	agurement regult often this command has been	
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.		
	executed, use WAI G	ominands to perform synchronized control.	
Example of Use			
	To set the measureme	ent method of carriers for ACP measurement to Root	
	Nyquist and query th	e results.	
	ACP:CARR:LIST:ME	TH RRC	
	*WAI		
	FETC:ACP?		

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Related Command

This command has the same function as the following commands. :CALCulate:ACPower:CARRier[1]:LIST:METHod [:SENSe]:ACPower:CARRier[1]:FILTer:TYPE :CALCulate:ACPower:CARRier[1]:FILTer:TYPE

:CALCulate:ACPower:CARRier[1]:LIST:METHod IBW|RRC|RC

Adjacent Channel Power Filter Type

Function

	This command sets filter type of carriers for Adjacent Channel Power
	measurement.
	Refer to [:SENSe]:ACPower:CARRier[1]:LIST:METHod.
Related Command	
	This command has the same function as the following commands.
	[:SENSe]:ACPower:CARRier[1]:LIST:METHod
	[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE
	:CALCulate:ACPower:CARRier[1]:FILTer:TYPE

2.9	Adjacent	Channel	Power	Measurement	t Settings
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[:SENSe]:ACPower:CARRier[1]:LIST:METHod?

Adjacent Channel Power Filter Type Query

Function			
	This command queries the filter type of carriers for Adjacent Channel		
	Power measurement.		
Query			
	[:SENSe]:ACPower:	CARRier[1]:LIST:METHod?	
Response			
	<mode></mode>		
Parameter			
	<mode></mode>	Measurement method of carrier	
	IBW	Rectangle filter	
	RRC	Root Nyquist filter	
	RC	Nyquist filter	
Details			
	This command is avai	lable when the following trace is active:	
	• Spectrum		
	This command is not available when ACP Reference is set to the		
	following:		
	• Span Total		
Example of Use			
	To guary the maggine	mont method of corriers for ACP measurement	
	To query the measurement method of carriers for ACP measurement. ACP:CARR:LIST:METH?		
	> RRC		
Related Command			
	This command has the same function as the following commands.		
	:CALCulate:ACPower:CARRier[1]:LIST:METHod?		
	[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?		
	:CALCulate:ACPower:CARRier[1]:FILTer:TYPE?		

:CALCulate:ACPower:CARRier[1]:LIST:METHod?

Adjacent Channel Power Filter Type Query

This command queries the filter type of carriers for Adjacent Channel
Power measurement.
Refer to [:SENSe]:ACPower:CARRier[1]:LIST:METHod?.
This command has the same function as the following commands.
[:SENSe]:ACPower:CARRier[1]:LIST:METHod?
[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?
:CALCulate:ACPower:CARRier[1]:FILTer:TYPE?

[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE RECT|NYQuist|RNYQuist

Adjacent Channel Power Filter Type

Function			
	This command sets the filter type of carriers for Adjacent Channel Power		
	measurement.		
Command			
	[:SENSe]:ACPower:	CARRier[1]:FILTer:TYPE <filter></filter>	
Parameter			
	<filter></filter>	Filter type	
	RECT	Rectangle filter	
	NYQuist	Nyquist filter	
	RNYQuist	Root Nyquist filter (Default value)	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	This command is not available when ACP Reference is set to the		
	following:		
	• Span Total		
	For reading out a mea	asurement result after this command has been	
	-	ommands to perform synchronized control.	
	excented, dec mil et	similarias to perform synometrized control.	

2.9 A	Adjacent	Channel	Power	Measurement	Settings
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Example of Use	
	To set filter type of carriers for ACP measurement to Nyquist and query
	the results.
	ACP:CARR:FILT:TYPE NYQ
	*WAI
	FETC:ACP?
Related Command	
	This command has the same function as the following commands.
	[:SENSe]:ACPower:CARRier[1]:LIST:METHod
	:CALCulate:ACPower:CARRier[1]:LIST:METHod
	:CALCulate:ACPower:CARRier[1]:FILTer:TYPE
·CAL Culate: ACPower	·CARRier[1]·EII Ter:TYPE RECTINYOuistIRNYOuist

:CALCulate:ACPower:CARRier[1]:FILTer:TYPE RECT|NYQuist|RNYQuist

Adjacent Channel Power Filter Type

Function	
	This command sets filter type of carriers for Adjacent Channel Power measurement.
	Refer to [:SENSe]:ACPower:CARRier[1]:FILTer:TYPE.
Related Command	
	This command has the same function as the following commands.
	[:SENSe]:ACPower:CARRier[1]:LIST:METHod
	:CALCulate:ACPower:CARRier[1]:LIST:METHod
	[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE

[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?

Adjacent Channel Power Filter Type Query

Function			
	This command queries filter type of carriers for Adjacent Channel Power		
	measurement.		
Command			
	[:SENSe]:ACPower:	CARRier[1]:FILTer:TYPE?	
Response			
	<filter></filter>		
Parameter			
	<filter></filter>	Filter type	
	RECT	Rectangle filter	
	NYQ	Nyquist filter	
	RNYQ	Root Nyquist filter (Default value)	
Details			
		able when the following trace is active:	
	• Spectrum		
	This command is not available when ACP Reference is set to the		
	following:		
	• Span Total		
	. I		
Example of Use			
	To query filter type of carriers for ACP measurement.		
	ACP:CARR:FILT:TYPE?		
	> NYQ		
Related Command			
	This command has the same function as the following commands.		
	[:SENSe]:ACPower:CARRier[1]:LIST:METHod?		
	:CALCulate:ACPower:CARRier[1]:LIST:METHod?		
	: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 carriers for Adjacent Channel Power measurement.
	Refer to [:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?.
Related Command	
	This command has the same function as the following commands.
	[:SENSe]:ACPower:CARRier[1]:LIST:METHod?
	:CALCulate:ACPower:CARRier[1]:LIST:METHod?
	[:SENSe]:ACPower:CARRier[1]:FILTer:TYPE?

[:SENSe]:ACPower:FILTer[:RRC][:STATe] OFF|ON|0|1

Adjacent Channel Power Offset Filter Type

Function			
	This command se	ets filter type of the offset channel for Adjacent Channel	
	Power measurem	ient.	
Command			
	[:SENSe]:ACPo	wer:FILTer[:RRC][:STATe] <switch></switch>	
Parameter			
	<switch></switch>	Filter type	
	OFF 0	Rectangle filter	
	ON 1	Root Nyquist filter	
Details			
	This command is	available when the following trace is active:	
	• Spectrum		
	For reading out a	measurement result after this command has been	
	executed, use *WAI commands to perform synchronized control.		
	,	1	
Example of Use			
	To set filter type	of the offset channel for ACP measurement to Root	
	Nyquist and query the results.		
	ACP:FILT ON		
	*WAI		
	FETC:ACP?		
Related Command			
	This command h	as the same function as the following commands.	
	:CALCulate:ACPower:FILTer[:RRC][:STATe]		
	[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE		
	:CALCulate:AC	Power:OFFSet[1]:FILTer:TYPE	
		2-338	
		2 000	

: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 commands.
	[:SENSe]:ACPower:FILTer[:RRC][:STATe]
	[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE
	:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE

[:SENSe]: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.		
Query			
	[:SENSe]:ACPower:	<pre>FILTer[:RRC][:STATe]?</pre>	
Response			
	<switch></switch>		
Parameter			
	<switch></switch>	Filter type	
	0	Rectangle filter, Nyquist filter	
	1	Root Nyquist filter	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To quory filtor type of	the offset channel for ACP measurement	
	To query filter type of the offset channel for ACP measurement. ACP:FILT?		
	> 1		
Related Command			
	This command has the same function as the following commands.		
	:CALCulate:ACPower:FILTer[:RRC][:STATe]?		
	[:SENSe]:ACPower:	OFFSet[1]:FILTer:TYPE?	
	:CALCulate:ACPowe	r:OFFSet[1]:FILTer:TYPE?	

: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 commands.
	[:SENSe]:ACPower:FILTer[:RRC][:STATe]?
	[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?
	:CALCulate:ACPower:OFFSet[1]:FILTer:TYPE?

[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE RECT|NYQuist|RNYQuist

Adjacent Channel Power Offset Filter Type

Function			
	This command sets filter type of the offset channel for Adjacent Channel		
	Power measurement.		
Command			
	[:SENSe]:ACPower:	OFFSet[1]:FILTer:TYPE <mode></mode>	
Parameter			
	<mode></mode>	Filter type	
	RECT	Rectangle filter	
	NYQuist	Nyquist filter	
	RNYQuist	Root Nyquist filter (Default value)	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set filter type of the offset channel for ACP measurement to Nyquist		
	and query the results.		
	ACP:OFFS:FILT:TYP	E NYQ	
	*WAI		
	FETC:ACP?		

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Related Command

This command has the same function as the following commands. [:SENSe]:ACPower:FILTer[:RRC][:STATe] :CALCulate:ACPower:FILTer[:RRC][:STATe] :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 channel for Adjacent Channel
	Power measurement.
	Refer to [:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE.
Deleted Orman and	
Related Command	
	This command has the same function as the following commands.
	[:SENSe]:ACPower:FILTer[:RRC][:STATe]
	:CALCulate:ACPower:FILTer[:RRC][:STATe]
	[: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 channel for Adjacent		
	Channel Power measurement.		
Query			
	[:SENSe]:ACPower:(DFFSet[1]:FILTer:TYPE?	
Response			
	<mode></mode>		
Parameter			
	<mode></mode>	Filter type	
	RECT	Rectangle filter	
	NYQ	Nyquist filter	
	RNYQ	Root Nyquist filter (Default value)	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To query filter type of the offset channel for ACP measurement.		
	ACP:OFFS:FILT:TYPE?		
	> NYQ		
Related Command			
	This command has the same function as the following commands.		
	[:SENSe]:ACPower:FILTer[:RRC][:STATe]?		
	:CALCulate:ACPower	r:FILTer[:RRC][:STATe]?	
	[:SENSe]:ACPower:(DFFSet[1]:FILTer:TYPE?	
	: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 channel for Adjacent
	Channel Power measurement.
	Refer to [:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?.
Related Command	
	This command has the same function as the following commands.
	[:SENSe]:ACPower:FILTer[:RRC][:STATe]?
	:CALCulate:ACPower:FILTer[:RRC][:STATe]?
	[:SENSe]:ACPower:OFFSet[1]:FILTer:TYPE?

:DISPlay:ACPower:RESult:TYPE CARRier|OFFSet

Adjacent Channel Power Result Type

Function			
	This command switches the result display type for Adjacent Channel		
	Power measurement.		
Command			
	:DISPlay:ACPower:H	RESult:TYPE <mode></mode>	
Parameter			
	<mode></mode>	Filter type	
	CARRier	Sets the result display for ACP measurement to	
		Carrier Power.	
	OFFSet	Sets the result display for ACP measurement to	
		Offset Channel Power.	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To set the result displa	y type to Carrier Power.	
	DISP:ACP:RES:TYPE CARR		

:DISPlay:ACPower:RESult:TYPE?

Adjacent Channel Power Result Type Query

Function			
	This command queries the result display type for Adjacent Channel		
	Power measurement.		2
Command			
	:DISPlay:ACPower:	RESult:TYPE?	07
Response			Ĝ
	<mode></mode>		Ĕ
Parameter			Der
	<mode></mode>	Filter type	vic
	CARR	Sets the result display for ACP measurement to	e N
		Carrier Power.	les
	OFFS	Sets the result display for ACP measurement to	sa
		Offset Ch Power.	e.
Details			De
	<pre><mode> <mode> <mode> Filter type CARR Sets the result display for ACP measurement to Carrier Power. OFFS Sets the result display for ACP measurement to Offset Ch Power. This command is available when the following trace is active: Snoatrum</mode></mode></mode></pre>		
	• Spectrum		
Example of Use			
	To query the result dis	splay type.	
	ACP:RES:TYPE?		
	> CARR		

[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real>

Adjacent Channel Power Rolloff Ratio

Command Comman
Command [:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real> Parameter <pre></pre></real>
[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa <real> Parameter <real> <real> Filter rolloff ratio Range 0.01 to 1.00 Resolution 0.01 Suffix code None Default value 0.22 Details This command is available when the following trace is active: • Spectrum This command is available when the filter type (ACP Reference Filter Type) of the reference channel for ACP measurement is set to either of</real></real></real>
Parameter <real> Filter rolloff ratio Range 0.01 to 1.00 Resolution 0.01 Suffix code None Default value 0.22 Details This command is available when the following trace is active: • Spectrum This command is available when the filter type (ACP Reference Filter Type) of the reference channel for ACP measurement is set to either of</real>
Second
Second
Range0.01 to 1.00Resolution0.01Suffix codeNoneDefault value0.22This command is avail-te when the following trace is active:SpectrumThis command is avail-te when the filter type (ACP Reference Filter Type) of the reference to ACP measurement is set to either of
Resolution 0.01 Suffix code None Default value 0.22 Details This command is available when the following trace is active: • Spectrum This command is available when the filter type (ACP Reference Filter Type) of the reference channel for ACP measurement is set to either of
Suffix code Default valueNone 0.22DetailsThis command is avail-be when the following trace is active: • SpectrumThis command is avail-be when the filter type (ACP Reference Filter Type) of the reference be when the filter type (ACP Reference Filter of the reference be when the filter type (ACP Reference Filter of the reference be when the filter type (ACP Reference Filter of the reference be when the filter type (ACP Reference filter of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference be when the filter type (ACP Reference filter filter type) of the reference filter filter type) of the reference be when
Default value 0.22 Details This command is available when the following trace is active: • Spectrum This command is available when the filter type (ACP Reference Filter Type) of the reference channel for ACP measurement is set to either of
Details This command is available when the following trace is active: • Spectrum This command is available when the filter type (ACP Reference Filter Type) of the reference channel for ACP measurement is set to either of
 This command is available when the following trace is active: Spectrum This command is available when the filter type (ACP Reference Filter Type) of the reference channel for ACP measurement is set to either of
• Spectrum This command is available when the filter type (ACP Reference Filter Type) of the reference channel for ACP measurement is set to either of
This command is available when the filter type (ACP Reference Filter Type) of the reference channel for ACP measurement is set to either of
Type) of the reference channel for ACP measurement is set to either of
the following:
• Nyquist
Root Nyquist
This command is not available when ACP Reference is set to the
following:
• Span Total
For reading out a measurement result after this command has been
executed, use *WAI commands to perform synchronized control.
Example of Use
To set the rolloff ratio of the reference channel filter for ACP
measurement to 0.22 and query the results.
ACP:CARR:FILT:ALPH 0.22
*WAI
FETC:ACP?
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 reference channel filter for ACP
	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

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[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?

Adjacent Channel Power Rolloff Ratio Query

Function			
	This command queries the rolloff ratio of the reference channel filter for		
	Adjacent Channel Pow	ver measurement.	
Query			
	[:SENSe]:ACPower:CARRier[1]:LIST:FILTer:ALPHa?		
_			
Response			
–	<real></real>		
Parameter			
	<real></real>	Filter Rolloff ratio	
	Range	0.01 to 1.00	
	Resolution	0.01	
	Suffix code	None	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	This command is available when the filter type (ACP Offset Filter Type)		
	of the reference channel for ACP measurement is set to either of the		
	following:		
	• Nyquist		
	Root Nyquist		
	This command is not available when ACP Reference is set to the		
	following:		
	• Span Total		
Example of Use			
	To query the rolloff ratio of the reference channel filter for ACP		
	measurement.		
	ACP:CARR:FILT:ALPH?		
	> 0.22		
Related Command			
	This command has the	e same function as the following command.	
		r:CARRier[1]:LIST:FILTer:ALPHa?	

:CALCulate:ACPower:CARRier[1]:LIST:FILTer:ALPHa?

Adjacent Channel Power Rolloff Ratio Query

Function	
	This command queries the rolloff ratio of the reference channel filter 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 offset channel filter for		
	Adjacent Channel Power measurement.		
Command			
	[:SENSe]:ACPower:FILTer[:RRC]:ALPHa <real></real>		
Parameter			
	<real></real>	Filter rolloff ratio	
	Range	0.01 to 1.00	
	Resolution	0.01	
	Suffix code	None	
Details			
	This command is available when the following trace is active:Spectrum		
		available when the filter type (ACP Offset Filter channel for ACP measurement is set to either of	
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control. To set the rolloff ratio of the offset channel filter for ACP measurement to 0.22 and query the results. ACP:FILT:ALPH 0.22 *WAI FETC:ACP?		
Example of Use			

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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 offset channel filter 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 queries	s the rolloff ratio of the offset channel filter for
	Adjacent Channel Pov	ver measurement.
Command		
	[:SENSe]:ACPower:	<pre>FILTer[:RRC]:ALPHa?</pre>
Response		
	<real></real>	
Parameter		
	<real></real>	Filter rolloff ratio
	Range	0.01 to 1.00
	Resolution	0.01
	Suffix code	None
Details		
		lable when the following trace is active:
	• Spectrum	
		lable when the filter type (ACP Offset Filter Type)
		el for ACP measurement is set to either of the
	following:	
	• Nyquist	
	• Root Nyquist	
Example of Use		
	1 0	tio of the filter for ACP measurement.
	ACP:FILT:ALPH?	
	> 0.22	
Related Command	m1. 11 1	
		e same function as the following command.
	:CALCULATE:ACPowe	r:FILTer[:RRC]:ALPHa?

:CALCulate:ACPower:FILTer[:RRC]:ALPHa?

Adjacent Channel Power Offset Rolloff Ratio Query

Function	
	This command queries the rolloff ratio of the offset channel filter 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?
Related Command	This command has the same function as the following command.

:CONFigure:ACP

Adjacent Channel Power Configure

Function	
	This command sets Adjacent Channel Power measurement to On.
Command	
	:CONFigure:ACP
Details	
	No measurement is performed.
	Spectrum is set, if this command is executed when the trace is set to
	other than Spectrum.
	Log is set, if this command is executed when Scale Mode is set to Linear.
	For reading out a measurement result after this command has been
	executed, use *WAI commands to perform synchronized control.
Example of Use	
	To set ACP measurement to On and query the results.
	CONF:ACP
	*WAI
	FETC:ACP?

:INITiate:ACP

Adjacent Channel Power Initiate

Function	
	This command performs an Adjacent Channel Power measurement.
Command	
	:INITiate:ACP
Details	
	When this function is executed, ACP measurement is set to On and a measurement is performed.
	Spectrum is set, if this command is executed when the trace is set to other than Spectrum.
	Log is set, if this command is executed when Scale Mode is set to Linear.
	For reading out a measurement result after this command has been
	executed, use *WAI commands to perform synchronized control.
Example of Use	
	To perform an APC measurement and query the results.
	INIT:ACP
	IAW*
	FETC:ACP?

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:FETCh:ACP[n]?

Adjacent Channel Power Read Fetch

Function	
	This command queries the measurement result for Adjacent Channel
	Power measurement.
Query	
	:FETCh:ACP[n]?
Response	
	When RESult Mode is A.
	For ACP measurement (ACP Result Type is OFFSet)
	Two values of ref_carrier_a are output when ACP Reference is
	BSIDes.
	<ref_carrier_a> (,<ref_carrier_a>),</ref_carrier_a></ref_carrier_a>
	<lower_offset_1_rel>,<lower_offset_1_abs>,</lower_offset_1_abs></lower_offset_1_rel>
	<upper_offset_1_rel>,<upper_offset_1_abs>,</upper_offset_1_abs></upper_offset_1_rel>
	<lower_offset_2_rel>,<lower_offset_2_abs>,</lower_offset_2_abs></lower_offset_2_rel>
	<upper_offset_2_rel>,<upper_offset_2_abs>,</upper_offset_2_abs></upper_offset_2_rel>
	<lower_offset_3_rel>,<lower_offset_3_abs>,</lower_offset_3_abs></lower_offset_3_rel>
	<upper_offset_3_rel>,<upper_offset_3_abs></upper_offset_3_abs></upper_offset_3_rel>
	(n = 1 or when omitted)
	ACP measurement (ACP Result Type is CARRier)
	<integration_abs>,<total_carrier_a>,<power_1>,</power_1></total_carrier_a></integration_abs>
	<power_2>,<power_3>,<power_4>,<power_5>,</power_5></power_4></power_3></power_2>
	<power_6>,<power_7>,<power_8>,<power_9>,</power_9></power_8></power_7></power_6>
	<power_10>,<power_11>,<power_12></power_12></power_11></power_10>
	(n = 1 or when omitted)
	When RESult Mode is B.
	If Carrier Number is 1 and only Offset-1 is On.
	<ref_carrier_b>,<lower_offset_1_rel>,</lower_offset_1_rel></ref_carrier_b>
	<upper_offset_1_rel></upper_offset_1_rel>
	In other cases,
	0.0, <total b="" carrier="">,0.0,<ref b="" carrier="">,</ref></total>
	<pre></pre>
	<pre></pre>
	<pre><lower 2="" offset="" rel="">,<lower 2="" abs="" offset="">,</lower></lower></pre>
	<pre><upper 2="" offset="" rel="">,<upper 2="" abs="" offset="">,</upper></upper></pre>
	<pre><lower 3="" offset="" rel="">,<lower 3="" abs="" offset="">,</lower></lower></pre>
	<pre><upper 3="" offset="" rel="">,<upper 3="" abs="" offset=""></upper></upper></pre>
	(n = 1 or when omitted, and the 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>, <upper_offset_3_abs>,
        <upper_offset_3_rel>, <upper_offset_3_abs>
        (n = 1 or when omitted, and 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>,<upper_offset_2_abs>,
        <upper_offset_2_rel>,<upper_offset_2_abs>,
        <upper_offset_3_rel>,<upper_offset_3_abs>,
        <upper_offset_3_rel>,<upper_offset_3_abs>,
        <upper_offset_3_rel>,<upper_offset_3_abs>
        (n = 2)
```

Parameter

<lower_offset_n_rel></lower_offset_n_rel>	Relative power of the lower side of	
	Offset-n	
<upper_offset_n_rel></upper_offset_n_rel>	Relative power of the upper side of	
	Offset-n	
No suffix code, in dB units, resolution: 0.01 dB		
-999.0	is returned when no measurement is	
performed or an error has occurred.		
<ref_carrier_b></ref_carrier_b>	Power of reference carrier	
<ref_carrier_lower></ref_carrier_lower>	Power of carrier on the left edge	
<ref_carrier_upper></ref_carrier_upper>	Power of carrier on the right edge	
<total_carrier_b></total_carrier_b>	Total power of all carriers	
<channel_n_rel></channel_n_rel>	Relative power of carrier n in relation	
	to carrier m	
	Note: m is a value calculated by	
	rounding up Carrier Number ÷ 2.	
<lower_offset_n_abs></lower_offset_n_abs>	Absolute power of the lower side of	
	Offset-n	

	-999.0	Absolute power of the upper side of Offset-n fix code, in dBm units, resolution: 0.01 dB is returned when no measurement is ned or an error has occurred. Absolute value of the integral power on the whole screen
	<total_carrier_a></total_carrier_a>	Total power of all carriers
	<ref_carrier_a></ref_carrier_a>	Power of reference carrier
	<power_n></power_n>	Absolute value of the power of carrier
	NT CO	-n
		x code, in Log Scale units
		Bm units for V, W units for W) s returned when no measurement is
		ed or an error has occurred.
Details	perform	led of all error has occurred.
	performed last. This function do function is used to output the m when the measurement has alre	n re-measurement with redoing capture.
Example of Use		It for ACD measurement
	To query the measurement resu FETC:ACP?	in for ACF measurement.
	> -75.76,-0.035,-75.80,-0	0.004,-75.77,-1.400,-77.16, 9.0,-999.0,-999.0

:READ:ACP[n]?

Adjacent Channel Power Read

Function

This command performs a measurement for Adjacent Channel Power and outputs the measurement result.

This command has the same function as the following commands executed in this order:

- :INITiate:ACP
- :FETCh:ACP[n]?

This command is available when the following trace is active:

• Spectrum

:MEASure:ACP[n]?

Adjacent Channel Power Measure

Function

This command performs ACP measurement and queries the measurement result. This command has the same function as the following commands executed in this order: :CONFigure:ACP :INITiate:ACP :FETCh:ACP[n]?

:CALCulate:ACPower:MARKer:AOFF

All Marker Off

Function	
	This command sets all markers to Off.
	Refer to :CALCulate:MARKer:AOFF.
Related Command	
	This command has the same function as the following commands.
	:CALCulate:MARKer:AOFF
	:CALCulate:CHPower:MARKer:AOFF
	:CALCulate:OBWidth:MARKer:AOFF
	:CALCulate:BPOWer :TXPower:MARKer:AOFF

2

: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 main 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 feature point of the main trace and moves
	the marker point to the peak point at a smaller level 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:X

<freq>|<time>|<sample>|<dist>

Zone Marker Frequency (Time)

	This command moves the center of the zone marker to the set 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: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:
	Х

: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:Y?

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: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?

: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:CHPowe:ANNotation:TITLe:DATA
	:DISPlay:OBWidth:ANNotation:TITLe:DATA
	:DISPlay:BPOWer :TXPowe: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:CHPowe:ANNotation:TITLe:DATA?
	:DISPlay:OBWidth:ANNotation:TITLe:DATA?
	:DISPlay:BPOWer :TXPowe: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 range when Scale Mode is set to Log.
	Refer to: DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
	[:LOGarithmic].
Related Command	
	This command has the same function as the following commands.
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi
	c]
	: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:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision ?

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]:PDIVision
	[:LOGarithmic]?.
Related Command	
	This command has the same function as the following commands.
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi
	c]?
	: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: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]:RLEVe
	1
	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1
	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
	e]: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]:RLEVe
	1?
	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1?
	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
	e]:RLEVel?

:TRIGger:ACPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF

Trigger Source

Function	
	This command selects the trigger source type.
	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:BPOWer :TXPower[:SEQuence]:SOURce
	TRIGger:CCDF :PSTatistic[:SEQuence]:SOURce

:TRIGger:ACPower[:SEQuence]:SOURce?

Trigger Source Query

Function	
	This command queries the trigger source type.
	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:BPOWer :TXPower[:SEQuence]:SOURce?
	TRIGger:CCDF :PSTatistic[: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]:BPOWer :TXPower:ACPower: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]:BPOWer :TXPower:ACPower:AVERage:COUNt?

[:SENSe]:ACPower:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function		
	This command sets the	e storage mode.
Command		
	[:SENSe]:ACPower:	AVERage[:STATe] <switch></switch>
Parameter		
	<switch></switch>	Setting of Storage Mode
	ON 1	Sets Storage Mode to Average.
	OFF 0	Sets Storage Mode to Off (Default value)
Example of Use		
	To set Storage Mode to	o Off.
	ACP:AVER OFF	
Related Command		
	This command has the	e same function as the following commands.
	:TRACe:STORage:MO	DE
	[:SENSe]:CHPower:	AVERage[:STATe]
	[:SENSe]:OBWidth:	AVERage[:STATe]
	[:SENSe]:BPOWer :	TXPower:AVERage[:STATe]

[:SENSe]:ACPower:AVERage[:STATe]?

Storage Mode Query

Function		
	This command queries	the storage mode.
Query		
	[:SENSe]:ACPower:	AVERage[:STATe]?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Storage Mode Setting
	1	Average
	0	Other than Average
Example of Use		
	To query the setting of	Storage Mode.
	ACP:AVER?	
	> 0	
Related Command		
	This command has the	same function as the following commands.
	:TRACe:STORage:MO	DE?
	[:SENSe]:CHPower:	AVERage[:STATe]?
	[:SENSe]:OBWidth:	AVERage[:STATe]?
	[:SENSe]:BPOWer :	<pre>IXPower:AVERage[:STATe]?</pre>

[: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]
	:CALCulate:BANDwidth :BWIDth[:RESolution]
	:CALCulate:ACPower:BANDwidth[:RESolution]
	[:SENSe]:CHPower:BANDwidth[:RESolution]
	:CALCulate:CHPower:BANDwidth[:RESolution]
	[:SENSe]:OBWidth:BANDwidth[:RESolution]
	:CALCulate:OBWidth:BANDwidth[:RESolution]
	[:SENSe]:BPOWer :TXPower: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]
	:CALCulate:BANDwidth :BWIDth[:RESolution]
	[:SENSe]:ACPower:BANDwidth[:RESolution]
	[:SENSe]:CHPower:BANDwidth[:RESolution]
	:CALCulate:CHPower:BANDwidth[:RESolution]
	[:SENSe]:OBWidth:BANDwidth[:RESolution]
	:CALCulate:OBWidth:BANDwidth[:RESolution]
	[:SENSe]:BPOWer :TXPower: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]?
	:CALCulate:BANDwidth :BWIDth[:RESolution]?
	:CALCulate:ACPower:BANDwidth[:RESolution]?
	[:SENSe]:CHPower:BANDwidth[:RESolution]?
	:CALCulate:CHPower:BANDwidth[:RESolution]?
	[:SENSe]:OBWidth:BANDwidth[:RESolution]?
	:CALCulate:OBWidth:BANDwidth[:RESolution]?
	[:SENSe]:BPOWer :TXPower: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]?
	:CALCulate:BANDwidth :BWIDth[:RESolution]?
	[:SENSe]:ACPower:BANDwidth[:RESolution]?
	[:SENSe]:CHPower:BANDwidth[:RESolution]?
	:CALCulate:CHPower:BANDwidth[:RESolution]?
	[:SENSe]:OBWidth:BANDwidth[:RESolution]?
	:CALCulate:OBWidth:BANDwidth[:RESolution]?
	[:SENSe]:BPOWer :TXPower: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
	:CALCulate:BANDwidth :BWIDth[:RESolution]:AUTO
	:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
	[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
	:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO[:SENSe]:O
	BWidth:BANDwidth[:RESolution]:AUTO
	:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO

:CALCulate: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
	:CALCulate:BANDwidth :BWIDth[:RESolution]:AUTO
	[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
	[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
	:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO[:SENSe]:O
	BWidth:BANDwidth[:RESolution]:AUTO
	:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO

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

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

[:SENSe]:ACPower:DETector[:FUNCtion] NORMal|POSitive|NEGative|AVERage

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]
	:CALCulate:DETector[:FUNCtion]
	:CALCulate:ACPower:DETector[:FUNCtion]
	[:SENSe]:CHPower:DETector[:FUNCtion]
	:CALCulate:CHPower:DETector[:FUNCtion]
	[:SENSe]:OBWidth:DETector[:FUNCtion]
	:CALCulate:OBWidth:DETector[:FUNCtion]

:CALCulate:ACPower:DETector[:FUNCtion] NORMal|POSitive|NEGative|AVERage

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]
	:CALCulate:DETector[:FUNCtion]
	[:SENSe]:ACPower:DETector[:FUNCtion]
	[:SENSe]:CHPower:DETector[:FUNCtion]

:CALCulate:CHPower:DETector[:FUNCtion] :CALCulate:CHPower:DETector[:FUNCtion] [:SENSe]:OBWidth:DETector[:FUNCtion] :CALCulate:OBWidth:DETector[:FUNCtion]

[:SENSe]:ACPower:DETector[:FUNCtion]?

Detection Mode Query

This command selects the detection mode of the waveform pattern.
Refer to [:SENSe]:DETector[:FUNCtion]?.
This command has the same function as the following commands.
[:SENSe]:DETector[:FUNCtion]?
:CALCulate:DETector[:FUNCtion]?
:CALCulate:ACPower:DETector[:FUNCtion]?
[:SENSe]:CHPower:DETector[:FUNCtion]?
:CALCulate:CHPower:DETector[:FUNCtion]?
[:SENSe]:OBWidth:DETector[:FUNCtion]?
:CALCulate:OBWidth:DETector[:FUNCtion]?

:CALCulate:ACPower:DETector[:FUNCtion]?

Detection Mode Query

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]?
	:CALCulate:DETector[:FUNCtion]?
	[:SENSe]:ACPower:DETector[:FUNCtion]?
	[:SENSe]:CHPower:DETector[:FUNCtion]?
	:CALCulate:CHPower:DETector[:FUNCtion]?
	[:SENSe]:OBWidth: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.
	This command has the same function as the following commands. [:SENSe]:FREQuency:SPAN

[:SENSe]:ACPower:FREQuency:SPAN?

Span Frequency Query

This command queries the span frequency.
Refer to [:SENSe]:FREQuency:SPAN?
This command has the same function as the following commands.
[:SENSe]:FREQuency:SPAN?
[:SENSe]:CHPower:FREQuency:SPAN?
[:SENSe]:OBWidth:FREQuency:SPAN?

[: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]:CHPower:SWEep:TIME? [:SENSe]:OBWidth:SWEep:TIME?

[:SENSe]:ACPower:SWEep:TIME:AUTO OFF|ON|0|1

Sweep Time Auto/Manual

Function	
	This command enables/disables automatic setting for the waveform
	capture 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

[:SENSe]:ACPower:SWEep:TIME:AUTO?

Sweep Time Auto/Manual Query

Function

	This command queries whether automatic setting is enabled for the waveform capture 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: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: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:ACPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence <integer> Relative To

Function	
	This command sets the reference marker when Marker Mode is set to
	Delta.
	Refer to :CALCulate:MARKer[1] $ 2 3 4 5 6 7 8 9 10$:REFerence
	<integer>.</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:REFerenc
	e
	:CALCulate:OBWidth:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerenc
	е

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

Function	
	This command queries the reference marker when Marker Mode is set to
	Delta.
	Refer to :CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerence
	?.
Deleted commond	
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:REFerenc
	e?
	:CALCulate:OBWidth:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerenc
	e?

2.10 Channel Power Measurement Settings

Table 2.10-1 lists 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]?		
<u> </u>	[:SENSe]:CHPower:FREQuency:CENTer <freq></freq>		
Channel Power Channel Center	[:SENSe]:CHPower:FREQuency:CENTer?		
Channel Center Frequency	:CALCulate:CHPower:FREQuency:CENTer <freq></freq>		
I I OQUEITOY	:CALCulate:CHPower:FREQuency:CENTer?		
~	[:SENSe]:CHPower:BANDwidth:INTegration <freq></freq>		
Channel Power Channel	[:SENSe]:CHPower:BANDwidth:INTegration?		
Channel Bandwidth	:CALCulate:CHPower:BANDwidth:INTegration <freq></freq>		
	:CALCulate:CHPower:BANDwidth:INTegration?		
	[:SENSe]:CHPower:FILTer:TYPE RECT NYQuist RNYQuist		
	[:SENSe]:CHPower:FILTer:TYPE?		
	:CALCulate:CHPower:FILTer:TYPE RECT NYQuist RNYQuist		
Channel Power	:CALCulate:CHPower:FILTer:TYPE?		
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]?		
	[:SENSe]:CHPower:FILTer[:RRC]:ALPHa <real></real>		
Channel Power	[:SENSe]:CHPower:FILTer[:RRC]:ALPHa?		
Rolloff Ratio	:CALCulate:CHPower:FILTer[:RRC]:ALPHa <real></real>		
	:CALCulate:CHPower:FILTer[:RRC]:ALPHa?		
Channel Power Configure	:CONFigure:CHPower		
Channel Power Initiate	:INITiate:CHPower		
	:FETCh:CHPower[n]?		
Channel Power Fetch	:FETCh:CHPower:CHPower?		
	:FETCh:CHPower:DENSity?		

Table 2.10-1 Device messages for Channel Power measurement

Function	Device Message
Channel Power Read	:READ:CHPower[n]?
	:READ:CHPower:CHPower?
	:READ:CHPower:DENSity?
	:MEASure:CHPower[n]?
Channel Power Measure	:MEASure:CHPower:CHPower?
Measure	: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
Zone Marker	:CALCulate:CHPower:MARKer[1] 2 3 4 5 6 7 8 9 10:X <freq> <time> <sample> <dist></dist></sample></time></freq>
Frequency (Time)	:CALCulate:CHPower:MARKer[1] 2 3 4 5 6 7 8 9 10:X?
Marker Level Query	:CALCulate:CHPower:MARKer[1] 2 3 4 5 6 7 8 9 10:Y?
	:DISPlay:CHPower:ANNotation:TITLe:DATA <string></string>
Title Entry	:DISPlay:CHPower:ANNotation:TITLe:DATA?
Log Scale Range	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl></rel_ampl>
0 0	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision?
Reference Level	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real></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
	:TRIGger:CHPower[:SEQuence]:SOURce?
Average Count	[:SENSe]:CHPower:AVERage:COUNt <integer></integer>
0	[:SENSe]:CHPower:AVERage:COUNt?
Storage Mode	[:SENSe]:CHPower:AVERage[:STATe] ON OFF 1 0
	[:SENSe]:CHPower:AVERage[:STATe]?
	[:SENSe]:CHPower:BANDwidth[:RESolution] <freq></freq>
Resolution Bandwidth	[:SENSe]:CHPower:BANDwidth[:RESolution]?
	:CALCulate:CHPower:BANDwidth[:RESolution] <freq></freq>
	:CALCulate:CHPower:BANDwidth[:RESolution]?
Resolution	[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO ON OFF 1 0
Bandwidth	[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO?
Auto/Manual	:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO ON OFF 1 0
	:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO?

 Table 2.10-1
 Device messages for Channel Power measurement (Cont'd)

Function	Device Message		
	[:SENSe]:CHPower:DETector[:FUNCtion] NORMal POSitive NEGative AVERage		
Detection Mode	[:SENSe]:CHPower:DETector[:FUNCtion]?		
Detection Mode	:CALCulate:CHPower:DETector[:FUNCtion]		
	NORMal POSitive NEGative AVERage		
	:CALCulate:CHPower:DETector[:FUNCtion]?		
Caron Energy energy	[:SENSe]:CHPower:FREQuency:SPAN <freq></freq>		
Span Frequency	[:SENSe]:CHPower:FREQuency:SPAN?		
Trace Point Query	[:SENSe]:CHPower:SWEep:POINts?		
Sweep Time	[:SENSe]:CHPower:SWEep:TIME <time></time>		
	[:SENSe]:CHPower:SWEep:TIME?		
Sweep Time	[:SENSe]:CHPower:SWEep:TIME:AUTO OFF ON 0 1		
Auto/Manual	[:SENSe]:CHPower:SWEep:TIME:AUTO?		
	:CALCulate:CHPower:MARKer[1] 2 3 4 5 6 7 8 9 10:MODE		
Marker Mode	NORMal POSition DELTa FIXed OFF		
	:CALCulate:CHPower: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:REFerence		
Relative To	<integer></integer>		
	:CALCulate:CHPower:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerence?		

 Table 2.10-1
 Device messages for Channel Power measurement (Cont'd)

[:SENSe]:CHPower[:STATe] ON|OFF|1|0

Measure Channel Power

Function			
	This command executes Channel Power measurement.		
Command			
	[:SENSe]:CHPower[[:SENSe]:CHPower[:STATe] <switch></switch>	
Parameter			
	<switch></switch>	CHP measurement On/Off	
	ON 1	Sets CHP measurement On.	
	OFF 0	Sets CHP measurement Off (Default value).	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	For reading out a measurement result after this command has been		
	executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set CHP measurement to On and query the results.		
	CHP ON		
	*WAI		
	FETC:CHP?		
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 setting of Channel Power measurement.	
Command		
	[:SENSe]:CHPower	[:STATe]?
Parameter		
	<switch></switch>	CHP measurement On/Off
	1	On
	0	Off
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use		
	To query the setting of 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 setting of Channel Power measurement.

 Refer to [:SENSe]:CHPower[:STATe]?.

 Related Command

 This command has the same function as the following command.

 [:SENSe]:CHPower[:STATe]?

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

Channel Power Channel Center Frequency

Function			
	This command sets the center frequency for Channel Power		
	measurement.		
Command			
Parameter	[:SENSe]:CHPOWer:	FREQuency:CENTer <freq></freq>	
Parameter	<freq></freq>	Channel center frequency	
	Range	125 MHz centered at the center frequency	
	nange	(Center Frequency) of waveform capture	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default value	Center frequency of waveform capture (Center	
		Frequency)	
		1	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	For reading out a measurement result after this command has been		
	executed, use *WAI commands to perform synchronized control.		
	executed, dee min ee		
Example of Use			
	To set the center frequency of Channel Power to 10 MHz and query the		
	results.		
	CHP:FREQ:CENT 10MHZ		
	*WAI		
	FETC:CHP?		
Related Command			
NEIALEU CUMINAIIU	This command has the	a same function as the following command	
	This command has the same function as the following command. :CALCulate:CHPower:FREQuency:CENTer		
	• CILICULUCC • CIII OWE	T. TIME ACTION CONTOL	

: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]:CHPowe	r:FREQuency:CENTer?	
Response			
	<freq></freq>		
Parameter			
	<freq></freq>	Channel center frequency	
	Range	$125\ \mathrm{MHz}$ centered at the center frequency (Center	
		Frequency) of waveform capture	
	Resolution	1 Hz	
	No suffix code. Valu	e is returned in Hz units.	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To query the center frequency of Channel Power.		
	CHP:FREQ:CENT?		
	> 1000000		
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			
Command			
Parameter	[:SENSe]:CHPower:BANDwidth:INTegration <freq></freq>		
	<freq> Channel bandwidth</freq>		
	Range	1 Hz to 125 MHz	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default value	3.84 MHz	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	For reading out a measurement result after this command has been		
	executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set the channel bandwidth to 1 MHz and query the results.		
	CHP:FREQ:BAND 1MHZ		
	*WAI		
	FETC:CHP?		
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></freq>		
Parameter			
	<freq></freq>	Channel bandwidth	
	Range	1 Hz to 125 MHz	
	Resolution	1 Hz	
		No suffix code. Value is returned in Hz units.	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To query the channel bandwidth.		
	CHP:FREQ:BAND?		
	> 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			
D	[:SENSe]:CHPower:FILTer:TYPE <filter></filter>		
Parameter			
	<filter></filter>	Filter type	
	RECT	Rectangle filter	
	NYQuist	Nyquist filter	
	RNYQuist	Root Nyquist filter (Default value)	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	1		
	For reading out a measurement result after this command has been		
	executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set the filter type to Nyquist and query the results.		
	CHP:FILT:TYPE NYQ		
	*WAI		
	FETC:CHP?		
Related Command			
	This command has the same function as the following commands.		
	:CALCulate:CHPower:FILTer:TYPE		
	[:SENSe]:CHPower:FILTer[:RRC][:STATe]		
	:CALCulate:CHPower:FILTer[:RRC][:STATe]		
	:CALCulate:CHPowe	r:FILTer[:RRC][:STATe]	

:CALCulate:CHPower:FILTer:TYPE RECT|NYQuist|RNYQuist

Channel Power Filter Type

This command sets filter type for channel power measurement.
Refer to [:SENSe]:CHPower:FILTer:TYPE.
This command has the same function as the following commands.
[:SENSe]:CHPower:FILTer:TYPE
[:SENSe]:CHPower:FILTer[:RRC][:STATe]
:CALCulate:CHPower:FILTer[:RRC][:STATe]

[:SENSe]:CHPower:FILTer:TYPE?

Channel Power Filter Type Query

Function		
	This command queries	s filter type for Channel Power measurement.
Query		
	[:SENSe]:CHPower:	FILTer:TYPE?
Response		
	<filter></filter>	
Parameter		
	<filter></filter>	Filter type
	RECT	Rectangle filter
	NYQ	Nyquist filter
	RNYQ	Root Nyquist filter (Default value)
Details		
	This command is available when the following trace is active:	
	This command is avai	lable when the following trace is active:
	This command is avai • Spectrum	lable when the following trace is active:
Example of Use		lable when the following trace is active:
Example of Use	• Spectrum	
Example of Use		
Example of Use	• Spectrum To query the filter typ CHP:FILT:TYPE?	
	• Spectrum To query the filter typ	
Example of Use Related Command	 Spectrum To query the filter typ CHP:FILT:TYPE? > NYQ 	e.
	 Spectrum To query the filter typ CHP:FILT:TYPE? > NYQ This command has the 	e. e same function as the following commands.
	 Spectrum To query the filter typ CHP:FILT:TYPE? NYQ This command has the :CALCulate:CHPower 	e. e same function as the following commands. r:FILTer:TYPE?
	 Spectrum To query the filter typ CHP:FILT:TYPE? > NYQ This command has the :CALCulate:CHPowe [:SENSe]:CHPower: 	e. e same function as the following commands.

: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:TYPE?
	[:SENSe]:CHPower:FILTer[:RRC][:STATe]?

[: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:H	FILTer[:RRC][:STATe] <filter></filter>
Parameter		
	<filter></filter>	Filter type
	0 OFF	Rectangle filter
	1 ON	Root Nyquist filter (Default value)
Details		
	This command is avail	able when the following trace is active:
	• Spectrum	
	0	surement result after this command has been nmands to perform synchronized control.
Example of Use		
	To set the filter type to Root Nyquist and query the results. CHP:FILT 1	
	*WAI	
	FETC:CHP?	
Related Command		
	This command has the	same function as the following commands.
	[:SENSe]:CHPower:H	FILTer:TYPE
	:CALCulate:CHPower	r:FILTer:TYPE
	:CALCulate:CHPower	r:FILTer[:RRC][:STATe]

2

: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
	:CALCulate:CHPower:FILTer:TYPE
	[:SENSe]:CHPower:FILTer[:RRC][:STATe]

[:SENSe]:CHPower:FILTer[:RRC][:STATe]?

Channel Power Filter Type Query

Function		
	This command queries	s the filter type for Channel Power measurement.
Query	[.SENSo].CUDoworv	FILTer[:RRC][:STATe]?
Response	[.SENSe].CHrOwer.	FILIEI[.KC][.SIKIE]:
	<filter></filter>	
Parameter		
	<filter></filter>	Filter type
	0	Rectangle filter, Nyquist filter
	1	Root Nyquist filter (Default value)
Details		
	This command is avail	able when the following trace is active:
	• Spectrum	
Example of Use		
-	To query the filter type	2.
	CHP:FILT?	
	> 1	
Related Command		
	This command has the	e same function as the following commands.
	[:SENSe]:CHPower:FILTer:TYPE?	
	:CALCulate:CHPowe:	r:FILTer:TYPE?
	:CALCulate:CHPowe:	r: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?
	:CALCulate:CHPower:FILTer:TYPE?

[:SENSe]:CHPower:FILTer[:RRC]:ALPHa <real>

Channel Power Rolloff Ratio

Function			
	This command sets the	rolloff ratio for Channel Power measurement.	
Command			
	[:SENSe]:CHPower:F	ILTer[:RRC]:ALPHa <real></real>	
Parameter			
	<real></real>	Filter rolloff ratio	
	Range	0.01 to 1.00	
	Resolution	0.01	
	Suffix code	None	
	Default value	0.22	
Details			
	This command is availa	able when the following trace is active:	
	• Spectrum		
	This command is availa	able when the filter type (Channel Power Filter	
	Type) is set to either of the following:		
	• Nyquist		
	• Root Nyquist		
	For reading out a measurement result after this command has been		
	executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set the filter rolloff ratio to 0.22 and query the results.		
	CHP:FILT:ALPH 0.22		
	*WAI		
	FETC:CHP?		
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 que	eries the rolloff ratio for Channel Power measurement.	
Query			
	[:SENSe]:CHPow	er:FILTer[:RRC]:ALPHa?	
Response			
	<real></real>		
Parameter			
	<real></real>	Filter rolloff ratio	
	Range	0.01 to 1.00	
	Resolution	0.01	
	Suffix code	None	
	Default value	0.22	
Details			
	This command is a	available when the following trace is active:	
	• Spectrum	_	
	This command is a	This command is available when the filter type (Channel Power Filter	
	Type) is set to the	Type) is set to the following:	
	• Nyquist	• Nyquist	
	• Root Nyquist		
Example of Use			
	To query the filter rolloff ratio.		
	CHP:FILT:ALPH?		
	> 0.22		
Related Command			
	This command has	This command has the same function as the following command.	
	:CALCulate:CHP	ower:FILTer[:RRC]:ALPHa?	

2

:CALCulate:CHPower:FILTer[:RRC]:ALPHa?

Channel Power Rolloff Ratio Query

Function	
Related Command	This command queries the rolloff ratio for Channel Power measurement. Refer to [:SENSe]:CHPower:FILTer[:RRC]:ALPHa?.
	This command has the same function as the following command. [:SENSe]:CHPower:FILTer[:RRC]:ALPHa?
:CONFigure:CHPower Channel Power Configure	r
Function	This command sets Channel Power measurement to On.
Command	
Details	:CONFigure:CHPower
	No measurement is performed.
	Spectrum is set if this command is executed when the trace is set to other than Spectrum.
	Log is set if this command is executed when Scale Mode is set to Linear.
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.
Example of Use	
	To set Channel Power measurement to On and query the results. CONF:CHP *WAI
	FETC:CHP?

:INITiate:CHPower

Channel Power Initiate

Function	
	This command performs a Channel Power measurement.
Command	
	:INITiate:CHPower
Details	
	When this command is executed, Channel Power measurement is set to
	On and the measurement is performed.
	Spectrum is set if this command is executed when the trace is set to
	other than Spectrum.
	Log is set if this command is executed when Scale Mode is set to Linear.
	For reading out a measurement result after this command has been
	executed, use *WAI commands to perform synchronized control.
Example of Use	
	To perform Channel Power measurement and query the results.
	INIT:CHP
	*WAI
	FETC:CHP?

2

:FETCh:CHPower[n]?

Channel Power Fetch

Function	mi · · · ·	
Query	This command queries the results of Channel Power measurement.	
	:FETCh:CHPower[n]	?
Response	<power>,<density></density></power>	
		n = 1 or when omitted
Parameter		
	<power></power>	Power aggregate in the band specified in
		Channel bandwidth.
		When Scale Mode is Log:
		Log Scale Unit units (Note: dBm units for V, W units for W)
		Value without a suffix code is returned.
		–999.0 is returned when no measurement is performed.
	<density></density>	Power density in the bandwidth specified for
		Channel bandwidth
		When Scale Mode is Log:
		Log Scale Unit units (Note: dBm units for V, W units for W)
		Returns a value without a suffix code.
		-99.0 is returned when no measurement is
		performed.
Details		performen.
Details	This command queries	the measurement result of Channel Power
	-	ed last. This function does not accompany any
		ction is used to output the measurement result in a
		ne measurement has already completed.
		o perform re-measurement with redoing capture.
Example of Use		
•	To query the measurer	nent result of the total power and the power
	density.	
	FETC:CHP?	
	> -8.00,-50.00	

:FETCh:CHPower:CHPower?

Channel Power Fetch Channel Power

Function		
	This command queries	the power aggregate in the band for Channel
	Power measurement.	
Query		
	:FETCh:CHPower:CHI	Power?
Response		
	<power></power>	
Parameter		
	<power></power>	Power aggregate in the band specified in
		Channel bandwidth.
		When Scale Mode is Log:
		Log Scale Unit units (Note: dBm units for V, W units for W)
		Value without a suffix code is returned.
		–999.0 is returned when no measurement is
		performed.
Details		
	This command queries	the measurement result of Channel Power
	measurement perform	ed lastly. This function does not accompany any
	capture, thus this func	tion is used to output the measurement result in a
	different type, when th	e measurement has already completed.
	Use READ command t	o perform re-measurement with redoing capture.
Example of Use		
	To query the power ag FETC:CHP:CHP?	gregate.
	> -8.00	

:FETCh:CHPower:DENSity?

Channel Power Fetch Density

Function		
	This command queries measurement.	s the power density in the band for Channel Power
Query		
5	:FETCh:CHPower:DE	NSity?
Response	<density></density>	
Parameter	(densicy)	
	<density></density>	Power density in the band specified in Channel bandwidth When Scale Mode is Log:
		Log Scale Unit units (Note: dBm units for V, W units for W)
		Value without a suffix code is returned. –999.0 is returned when no measurement is performed.
Details		portormou.
	measurement perform capture, thus this fun- different type, when t	s the measurement result of Channel Power ned lastly. This function does not accompany any ction is used to output the measurement result in a he measurement has already completed. to perform re-measurement with redoing capture.
Example of Use		
	To query the power de FETC:CHP:DENS? > -8.00	ensity.
:READ:CHPower[n]? Channel Power Read		
Function		
	This command perform measurement result.	ms Channel Power measurement and queries the
	This command has the executed in this order :INITiate:CHPower :FETCh:CHPower[n]	

:READ:CHPower:CHPower?

Channel Power Read Channel Power

Function

This command performs Channel Power measurement and queries the power aggregate in the band.

This command functions the same as when the following commands are executed in this order: :INITiate:CHPower :FETCh:CHPower:CHPower?

:READ:CHPower:DENSity?

Channel Power Read Density

Function

This command performs Channel Power measurement and queries the power density in the band.

This command has the same function as the following commands executed in this order: :INITiate:CHPower :FETCh:CHPower:DENSity?

:MEASure:CHPower[n]?

Channel Power Measure

Function

This command performs Channel Power measurement and queries the measurement result.

This command has the same function as the following commands executed in this order: :CONFigure:CHPower :INITiate:CHPower :FETCh:CHPower[n]?

:MEASure:CHPower:CHPower?

Channel Power Measure Channel Power

Function

This command performs Channel Power measurement and queries the power aggregate in the band.

This command has the same function as the following commands executed in this order: :CONFigure:CHPower :INITiate:CHPower :FETCh:CHPower:CHPower?

:MEASure:CHPower:DENSity?

Channel Power Measure Density

Function

This command performs a measurement at Channel Power and outputs the power density in the band.

This command has the same function as the following commands executed in this order: :CONFigure:CHPower :INITiate:CHPower :FETCh:CHPower:DENSity?

:CALCulate:CHPower:MARKer:AOFF

All Marker Off

Function	
	This command sets all 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

2

: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 main 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:X

<freq>|<time>|<sample>|<dist>

Zone Marker Frequency (Time)

Function	
	This command moves the frequency (time) which specifies 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?

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:Y?

Marker Level Query

Function

Related Command

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?. 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:

:DISPlay:CHPower:ANNotation:TITLe:DATA <string>

Y?

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:ACPowe:ANNotation:TITLe:DATA
	:DISPlay:OBWidth:ANNotation:TITLe:DATA
	:DISPlay:BPOWer :TXPowe:ANNotation:TITLe:DATA

2

:DISPlay:CHPower: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:ACPowe:ANNotation:TITLe:DATA?
	:DISPlay:OBWidth:ANNotation:TITLe:DATA?
	:DISPlay:BPOWer :TXPowe:ANNotation:TITLe:DATA?

:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl> Log Scale Range

Log Scale Many

Function	
	This command sets the Y-axis scale range when Scale Mode is set to Log.
	Refer to :DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
	[:LOGarithmic].
Related Command	
	This command has the same function as the following commands.
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi
	c]
	:DISPlay:ACPower: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:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision ?

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]:PDIVision
	[:LOGarithmic]?.
Related Command	
	This command has the same function as the following commands.
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi
	c]?
	:DISPlay:ACPower: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:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVel <real> ł

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]:RLEVe
	1
	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1
	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
	e]:RLEVel

2

: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]:RLEVe
	1?
	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1?
	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
	e]:RLEVel?

:TRIGger:CHPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF

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:BPOWer :TXPower[:SEQuence]:SOURce
	TRIGger:CCDF :PSTatistic[: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:BPOWer :TXPower[:SEQuence]:SOURce?
	TRIGger:CCDF :PSTatistic[: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]:BPOWer :TXPower:ACPower: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]:BPOWer :TXPower:ACPower:AVERage:COUNt?

[:SENSe]:CHPower:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function	
	This command sets the storage method.
	Refer to [:SENSe]:ACPower:AVERage[:STATe].
Related Command	
	This command has the same function as the following commands.
	:TRACe:STORage:MODE
	[:SENSe]:ACPower:AVERage[:STATe]
	[:SENSe]:OBWidth:AVERage[:STATe]
	[:SENSe]:BPOWer :TXPower:AVERage[:STATe]

[:SENSe]:CHPower:AVERage[:STATe]?

Storage Mode Query

Function

	This command queries the storage method.
	Refer to [:SENSe]:ACPower:AVERage[:STATe]?
Related Command	
	This command has the same function as the following commands.
	:TRACe:STORage:MODE?
	[:SENSe]:ACPower:AVERage[:STATe]
	[:SENSe]:OBWidth:AVERage[:STATe]
	[:SENSe]:BPOWer :TXPower: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]
	:CALCulate:BANDwidth :BWIDth[:RESolution]
	[:SENSe]:ACPower:BANDwidth[:RESolution]
	:CALCulate:ACPower:BANDwidth[:RESolution]
	:CALCulate:CHPower:BANDwidth[:RESolution]
	[:SENSe]:OBWidth:BANDwidth[:RESolution]
	:CALCulate:OBWidth:BANDwidth[:RESolution]
	[:SENSe]:BPOWer :TXPower: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]
	:CALCulate:BANDwidth :BWIDth[:RESolution]
	[:SENSe]:ACPower:BANDwidth[:RESolution]
	[:SENSe]:CHPower:BANDwidth[:RESolution]
	:CALCulate:CHPower:BANDwidth[:RESolution]
	[:SENSe]:OBWidth:BANDwidth[:RESolution]
	:CALCulate:OBWidth:BANDwidth[:RESolution]
	[:SENSe]:BPOWer :TXPower: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]?
	:CALCulate:BANDwidth :BWIDth[:RESolution]?
	[:SENSe]:ACPower:BANDwidth[:RESolution]?
	:CALCulate:ACPower:BANDwidth[:RESolution]?
	:CALCulate:CHPower:BANDwidth[:RESolution]?
	[:SENSe]:OBWidth:BANDwidth[:RESolution]?
	:CALCulate:OBWidth:BANDwidth[:RESolution]?
	[:SENSe]:BPOWer :TXPower: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]?
	:CALCulate:BANDwidth :BWIDth[:RESolution]?
	[:SENSe]:ACPower:BANDwidth[:RESolution]?
	:CALCulate:ACPower:BANDwidth[:RESolution]?
	[:SENSe]:CHPower:BANDwidth[:RESolution]?
	[:SENSe]:OBWidth:BANDwidth[:RESolution]?
	:CALCulate:OBWidth:BANDwidth[:RESolution]?
	[:SENSe]:BPOWer :TXPower: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
	:CALCulate:BANDwidth :BWIDth[:RESolution]:AUTO
	[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
	:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
	:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
	[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO
	:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO

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

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

[:SENSe]:CHPower:DETector[:FUNCtion] NORMal|POSitive|NEGative|AVERage

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]
	:CALCulate:DETector[:FUNCtion]
	[:SENSe]:ACPower:DETector[:FUNCtion]
	:CALCulate:ACPower:DETector[:FUNCtion]
	:CALCulate:CHPower:DETector[:FUNCtion]
	[:SENSe]:OBWidth:DETector[:FUNCtion]
	:CALCulate:OBWidth:DETector[:FUNCtion]

:CALCulate:CHPower:DETector[:FUNCtion] NORMal|POSitive|NEGative|AVERage

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]
	:CALCulate:DETector[:FUNCtion]
	[:SENSe]:ACPower:DETector[:FUNCtion]
	:CALCulate:ACPower:DETector[:FUNCtion]
	[:SENSe]:CHPower:DETector[:FUNCtion]
	[:SENSe]:OBWidth:DETector[:FUNCtion]
	:CALCulate:OBWidth:DETector[:FUNCtion]

[:SENSe]:CHPower:DETector[:FUNCtion]?

Detection Mode Query

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]?
	:CALCulate:DETector[:FUNCtion]?
	[:SENSe]:ACPower:DETector[:FUNCtion]?
	:CALCulate:ACPower:DETector[:FUNCtion]?
	:CALCulate:CHPower:DETector[:FUNCtion]?
	[:SENSe]:OBWidth:DETector[:FUNCtion]?
	:CALCulate:OBWidth:DETector[:FUNCtion]?

:CALCulate:CHPower:DETector[:FUNCtion]?

Detection Mode Query

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]?
	:CALCulate:DETector[:FUNCtion]?
	[:SENSe]:ACPower:DETector[:FUNCtion]?
	:CALCulate:ACPower:DETector[:FUNCtion]?
	[:SENSe]:CHPower:DETector[:FUNCtion]?
	[:SENSe]:OBWidth: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.
	This command has the same function as the following commands. [:SENSe]: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.
	This command has the same function as the following commands. [:SENSe]:FREQuency:SPAN?
	C
	[:SENSe]:FREQuency:SPAN?

[: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.
	This command has the same function as the following commands. [:SENSe]: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

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[: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 function.		
	0		
	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]:ACPower:SWEep:TIME:AUTO? [:SENSe]:OBWidth:SWEep:TIME:AUTO?		

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

Function	
	This command sets the reference marker when Marker Mode is set to
	Delta.
	Refer to :CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerence
	<integer>.</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:ACPower: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:CHPower:MARKer[1]|2|3|4|5|6|7|8|9|10:REFerence? Relative To

Function	
	This command queries the reference marker when 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:REFerenc
	e?
	:CALCulate:OBWidth:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerenc
	e?

2.11 Occupied Bandwidth Measurement Settings

Table 2.11-1 lists 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]?	
	[:SENSe]:OBWidth:METHod NPERcent XDB	
ODWAN 1 1	[:SENSe]:OBWidth:METHod?	
OBW Method	:CALCulate:OBWidth:METHod NPERcent XDB	
	:CALCulate:OBWidth:METHod?	
	[:SENSe]:OBWidth:PERCent <percent></percent>	
	[:SENSe]:OBWidth:PERCent?	
OBW N% Ratio	:CALCulate:OBWidth:PERCent <percent></percent>	
	:CALCulate:OBWidth:PERCent?	
	[:SENSe]:OBWidth:XDB <rel_ampl></rel_ampl>	
	[:SENSe]:OBWidth:XDB?	
OBW X dB Value	:CALCulate:OBWidth:XDB <rel ampl=""></rel>	
	:CALCulate:OBWidth:XDB?	
Occupied Bandwidth Configure	:CONFigure:OBWidth	
Occupied Bandwidth Initiate	:INITiate:OBWidth	
Occupied	:FETCh:OBWidth[n]?	
Bandwidth Fetch	:FETCh:OBWidth:FERRor?	
Occupied	:READ:OBWidth[n]?	
Bandwidth Read	:READ:OBWidth:FERRor?	
Occupied	:MEASure:OBWidth[n]?	
Bandwidth Measure	: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	
	:CALCulate:OBWidth:MARKer[1] 2 3 4 5 6 7 8 9 10:X	
Zone Marker Frequency (Time)	<freq> <time> <sample> <dist></dist></sample></time></freq>	
	:CALCulate:OBWidth:MARKer[1] 2 3 4 5 6 7 8 9 10:X?	
Marker Level Query	:CALCulate:OBWidth:MARKer[1] 2 3 4 5 6 7 8 9 10:Y?	
Title Ersterre	:DISPlay:OBWidth:ANNotation:TITLe:DATA <string></string>	
Title Entry	:DISPlay:OBWidth:ANNotation:TITLe:DATA?	

 Table 2.11-1
 Device messages for Occupied Bandwidth measurement

2.11 Occupied Bandwidth Measurement Settings

Function	Device Message
Log Scale Range	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision <rel_ampl></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></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
	:TRIGger:OBWidth[:SEQuence]:SOURce?
	[:SENSe]:OBWidth:AVERage:COUNt <integer></integer>
Average Count	[:SENSe]:OBWidth:AVERage:COUNt?
	[:SENSe]:OBWidth:AVERage[:STATe] ON OFF 1 0
Storage Mode	[:SENSe]:OBWidth:AVERage[:STATe]?
	[:SENSe]:OBWidth:BANDwidth[:RESolution] <freq></freq>
Resolution	[:SENSe]:OBWidth:BANDwidth[:RESolution]?
Bandwidth	:CALCulate:OBWidth:BANDwidth[:RESolution] <freq></freq>
	:CALCulate:OBWidth:BANDwidth[:RESolution]?
	[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO ON OFF 1 0
Resolution	[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO?
Bandwidth Auto/Manual	:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO ON OFF 1 0
Auto/Manual	:CALCulate:OBWidth:BANDwidth[:RESolution]:AUTO?
	[:SENSe]:OBWidth:DETector[:FUNCtion]
	NORMal POSitive NEGative AVERage
Detection Mode	[:SENSe]:OBWidth:DETector[:FUNCtion]?
Detection Mode	:CALCulate:OBWidth:DETector[:FUNCtion] NORMal POSitive NEGative AVERage
	:CALCulate:OBWidth:DETector[:FUNCtion]?
C	[:SENSe]:OBWidth:FREQuency:SPAN <freq></freq>
Span Frequency	[:SENSe]:OBWidth:FREQuency:SPAN?
Trace Point Query	[:SENSe]:OBWidth:SWEep:POINts?
С Т	[:SENSe]:OBWidth:SWEep:TIME <time></time>
Sweep Time	[:SENSe]:OBWidth:SWEep:TIME?
Sweep Time	[:SENSe]:OBWidth:SWEep:TIME:AUTO OFF ON 0 1
Auto/Manual	[:SENSe]:OBWidth:SWEep:TIME:AUTO?
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?
Relative To	:CALCulate:OBWidth:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerence <integer></integer>
	:CALCulate:OBWidth:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerence?

 Table 2.11-1
 Device messages for Occupied Bandwidth measurement (Cont'd)

[:SENSe]:OBWidth[:STATe] ON|OFF|1|0

Measure Occupied Bandwidth

Function			
	This command executes Occupied Bandwidth measurement.		
Command			
	[:SENSe]:OBWidth[:STATe] <switch></switch>		
Parameter			
	<switch></switch>	OBW measurement On/Off	
	ON 1	On	
	OFF 0	Off	
Details			
	This command is available when the following trace is active: • Spectrum		
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.		
Example of Use			
	To set OBW measurement to On and query the result.		
	OBW ON		
	*WAI		
	FETC:OBW?		
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 performs Occupied Bandwidth measurement.		

Rofor to	[:SENSe]:OBWidth[:STATe].
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Related Command

This command has the same function as the following command. [:SENSe]:OBWidth[:STATe]

[:SENSe]:OBWidth[:STATe]?

Measure Occupied Bandwidth Query

Function			
	This command queries the Occupied Bandwidth measurement setting.		
Command			
	[:SENSe]:OBWidth[:STATe]?		
Parameter			
	<switch></switch>	OBW measurement On/Off	
	1	On	
	0	Off	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To query the OBW measurement setting.		
	OBW?		
	> 1		
Related Command	× 1		
	This command has the	e same function as the following command.	
	:CALCulate:OBWidth[:STATe]?		

:CALCulate:OBWidth[:STATe]?

Measure Occupied Bandwidth Query

Function		
	This command queries the Occupied Bandwidth measurement setting.	
	Refer to [:SENSe]:OBWidth[:STATe]?	
Related Command		
	This command has the same function as the following command.	
	[:SENSe]:OBWidth[:STATe]?	

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[:SENSe]:OBWidth:METHod NPERcent|XDB

OBW Method

Function			
	This command sets the measurement method for Occupied Bandwidth		
	measurement.		
Command			
	[:SENSe]:OBWidth:METHod NPERcent XDB		
Parameter			
	<method></method>	Measurement method	
	NPERcent	N% method (Default value)	
	XDB	X dB Down method	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	For reading out a measurement result after this command has been		
	executed, use *WAI con	nmands to perform synchronized control.	
Example of Use			
	To set the measurement method of Occupied Bandwidth measurement to		
	X dB Down method and query the results.		
	OBW:METH XDB		
	*WAI		
	FETC:OBW?		
Related Command			
	This command has the same function as the following command.		
	:CALCulate:OBWidth	n:METHod	
:CALCulate:OBWidth:		ntIXDB	
OBW Method			
-			
Function			
	This command sets the measurement method for Occupied Bandwidth		

This command has the same function as the following command. [:SENSe]:OBWidth:METHod

Refer to [:SENSe]:OBWidth:METHod.

measurement.

[:SENSe]:OBWidth:METHod?

OBW Method Query

Function			
	This command queries the measurement method of Occupied Bandwidth		
	measurement.		
Query			
	[:SENSe]:OBWidth:METHod?		
Response			
	<method></method>		
Parameter			
	<method></method>	Measurement method	
	NPER	N% method	
	XDB	X dB Down method	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Example of Use			
	To query the measurement method of Occupied Bandwidth measurement.		
	OBW:METH?		
	> XDB		
Related Command			
	This command has the same function as the following command.		
	:CALCulate:OBWid	th:METHOd?	

:CALCulate:OBWidth:METHod?

OBW Method Query

Function		
	This command queries the measurement method of Occupied Bandwidth	
	measurement.	
	Refer to [:SENSe]:OBWidth:METHod?	
Related Command		
	This command has the same function as the following command.	
	[:SENSe]:OBWidth:METHod?	

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[:SENSe]:OBWidth:PERCent <percent>

OBW N% Ratio

Function				
	This command sets the condition for Occupied Frequency Bandwidth			
	(N% method).			
Command				
	[:SENSe]:OBWidth:PERCent <percent></percent>			
Parameter				
	<percent></percent>	N%		
	Range	0.01 to 99.99%		
	Resolution	0.01		
	Suffix code	None		
	Default value	99.00%		
Details				
	This command is available when the following trace is active: • Spectrum			
	For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control.			
Example of Use				
	To set to 12.34% and query the results. OBW:PERC 12.34			
	*WAI			
	FETC:OBW?			
Related Command				
	This command has the same function as the following command. :CALCulate:OBWidth:PERCent			
:CALCulate:OBWidth: OBW N% Ratio	PERCent <percer< td=""><td>nt></td></percer<>	nt>		
Function				
	This command sets the (N% method).	e condition for Occupied Frequency Bandwidth		
	D 4			

Refer to [:SENSe]:OBWidth:PERCent.

Related Command

This command has the same function as the following command. [:SENSe]:OBWidth:PERCent

[:SENSe]:OBWidth:PERCent?

OBW N% Ratio Query

Function		
	This command sets the	e condition for Occupied Frequency Bandwidth
	(N% method).	
	Query	
	[:SENSe]:OBWidth:	PERCent?
Response		
-	<percent></percent>	
Parameter		
	<percent></percent>	N%
	Range	0.01 to 99.99%
	Resolution	0.01
		No suffix code. Value is returned in % units.
Details		
	This command is avail	lable when the following trace is active:
	Spectrum	
	• Speetrum	
Example of Use		
	To query the condition OBW:PERC?	of Occupied Frequency Bandwidth (N% method).
	> 12.34	
Related Command		
	This command has the	e same function as the following command.
	:CALCulate:OBWidt	
:CALCulate:OBWidth:	DEDCont?	
	FERGent	
OBW N% Ratio Query		
Function		
	This command queries	s the condition of Occupied Frequency Bandwidth
	(N% method).	
	Refer to [:SENSe]:0	BWidth:PERCent?
Related Command		
	This command has the	e same function as the following command.
	[:SENSe]:OBWidth:	PERCent?

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[:SENSe]:OBWidth:XDB <rel ampl>

OBW X dB Value Function This command sets the condition for Occupied Frequency Bandwidth (N% method). Command [:SENSe]:OBWidth:XDB <rel ampl> Parameter <rel_ampl> X dB 0.01 to 100.00 dB Range Resolution 0.01 dB Suffix code DB dB is used when omitted. Default value 25.00 dB Details This command is available when the following trace is active: • Spectrum For reading out a measurement result after this command has been executed, use *WAI commands to perform synchronized control. Example of Use To set to 12.34 dB and query the results. OBW:XDB 12.34 *WAI FETC:OBW? **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 condition for Occupied Frequency Bandwidth (X dB). Refer to [:SENSe]:OBWidth:XDB. **Related Command** This command has the same function as the following command. [:SENSe]:OBWidth:XDB

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[:SENSe]:OBWidth:XDB?

OBW X dB Value Query

Function		
	This command querie (X dB).	s the condition of Occupied Frequency Bandwidth
Query		
	[:SENSe]:OBWidth:	XDB?
Response		
	<rel_ampl></rel_ampl>	
Parameter		
	<rel_ampl></rel_ampl>	X dB
	Range	0.01 to 100.00 dB
	Resolution	0.01 dB
		Value is returned in dB units.
Deteile	Default value	25.00 dB
Details	This command is avai	lable when the following trace is active:
	 Spectrum 	lable when the following trace is active.
	• Spectrum	
Example of Use		
	To query the condition OBW:XDB?	n of Occupied Frequency Bandwidth (X dB).
	> 12.34	
Related Command		
	This command has the	e same function as the following command.
	:CALCulate:OBWidt	h:XDB?
:CALCulate:OBWidth:	XDB?	
OBW X dB Value Query		
Function		
	This command querie	s the condition of Occupied Frequency Bandwidth
	(X dB).	
	Refer to [:SENSe]:C	BWidth:XDB?
Related Command		
		e same function as the following command.
	[:SENSe]:OBWidth:	XDB?

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:CONFigure:OBWidth

Occupied Bandwidth Configure

Function	
	This command sets OBW measurement to On.
Command	
	:CONFigure:OBWidth
Details	
	No measurement is performed.
	Spectrum is set, if this command is executed when the trace is set to
	other than Spectrum.
	For reading out a measurement result after this command has been
	executed, use *WAI commands to perform synchronized control.
Example of Use	
	To set OBW measurement to On and query the results.
	CONF:OBW
	*WAI
	FETC:OBW?

:INITiate:OBWidth

Occupied Bandwidth Initiate

Function	
	This command performs OBW measurement.
Command	
	:INITiate:OBWidth
Details	
	When this command is executed, OBW measurement is set to On and the
	measurement is performed.
	Spectrum is set, if this command is executed when the trace is set to
	Spectrum.
Example of Use	
	To perform OBW measurement and query the results.
	INIT:OBW
	*WAI
	FETC:OBW?

:FETCh:OBWidth[n]?

Occupied Bandwidth Fetch

Function		
	This command queries	s the measurement result of OBW measurement.
Query		
Response	:FETCh:OBWidth[n]	<i>:</i>
Response	When Result Mode is A	A:
	<pre><obw>,<center>,<s< pre=""></s<></center></obw></pre>	
		(n = 1 or when omitted)
	When Result Mode is	B:
	<obw_nper>,-999.0</obw_nper>	, ,<trace_point>,</trace_point>
	<rbw>,<freq_error< td=""><td>>,<obw_xdb></obw_xdb></td></freq_error<></rbw>	>, <obw_xdb></obw_xdb>
		(n = 1 or when omitted)
Parameter		
		Frequency Span setting value
	<freq error=""></freq>	Center frequency of Occupied Bandwidth
		and difference of center frequency
	<rbw></rbw>	RBW setting value
	<obw></obw>	Occupied bandwidth
	<obw_nper></obw_nper>	Occupied bandwidth (N% method)
		–99999999999999 is returned, when OBW Method
		is X dB.
	<obw_xdb></obw_xdb>	Occupied bandwidth (X dB Down method)
		–9999999999999 is returned, when OBW
		Method is N%.
	<center></center>	Center frequency of Occupied Bandwidth
	<start></start>	Lower side of frequency of Occupied Bandwidth
	<stop></stop>	Upper side of frequency of Occupied Bandwidth
		No suffix code/Hz units/1 Hz resolution
		–9999999999999 is returned when no
		measurement is performed or an error has
		occurred.

<trace_point>

Details	
	This command queries the measurement result of OBW measurement
	performed lastly. This function does not accompany any capture, 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 capture.
	This command is available when the following trace is active: • Spectrum
	Return values of this function vary depending on the compatibility mode. (cf. :SYSTem:RESult:MODE)
Example of Use	
	To query the measurement result of OBW measurement (A mode). FETC:OBW?
	> 30000,100000000,900050000,1000050000

:FETCh:OBWidth:FERRor?

Occupied Bandwidth Fetch

– <i>v</i>		
Function		
	This command queries	s the difference between the center frequency of
	Occupied Bandwidth o	of OBW measurement and the center frequency.
Query		
-	:FETCh:OBWidth:FE	RRor?
Response		
Keeponoe	(frog orror)	
	<freq_error></freq_error>	
Parameter		
	<freq_error></freq_error>	Difference between the center frequency of
		Occupied bandwidth and the center frequency.
		No suffix code, Hz units, 1 Hz resolution
		–9999999999999 is returned when no
		measurement is performed or an error has
		occurred.
Details		
	This command queries	s the measurement result of OBW measurement
	performed lastly. This	function does not accompany any capture, thus
	this function is used to	o output the measurement result in a different type,
	when the measuremer	nt has already completed.
		to perform re-measurement with redoing capture.
Example of Use		o perform re measurement with reading capture.
Example of Ose	T I 1 1.00	
		e between the center frequency of Occupied
	bandwidth of OBW me	easurement and the center frequency.
	FETC:OBW:FERR?	
	> 30000	
:READ:OBWidth[n]?		
Occupied Bandwidth Read		
Function		
	This command perform	ns OBW measurement and outputs the
	measurement result.	1
		e same function as the following commands
	executed in this order:	0
	:INITiate:OBWidth	

:READ:OBWidth:FERRor?

Occupied Bandwidth Read

Function

This command performs OBW measurement and queries the difference between the center frequency of Occupied Bandwidth and the center frequency. This command has the same function as the following commands executed in this order: :INITiate:OBWidth :FETCh:OBWidth:FERRor?

:MEASure:OBWidth[n]?

Occupied Bandwidth Measure

Function

This command performs OBW measurement and outputs the measurement result. This command has the same function as the following commands executed in this order: :CONFigure:OBWidth :INITiate:OBWidth :FETCh:OBWidth[n]?

:MEASure:OBWidth:FERRor?

Occupied Bandwidth Measure

Function

This command performs OBW measurement and outputs the difference between the center frequency of Occupied Bandwidth and the center frequency.

This command has the same function as the following commands executed in this order:

:CONFigure:OBWidth

:INITiate:OBWidth

:FETCh:OBWidth:FERRor?

:CALCulate:OBWidth:MARKer:AOFF

All Marker Off

Function	
	This command sets all 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 main 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

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

<freq>|<time>|<sample>|<dist>

Zone Marker Frequency (Time)

Function	
	This command moves the frequency (time) which specified 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:
	Х

: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:Y?

Marker Level Query

Europetican	
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:BPOWer :TXPower:MARKer[1] 2 3 4 5 6 7 8 9 10:
	Υ?
·DISPlay OBWidth AN	INotation TITL e DATA <string></string>
2	INotation:TITLe:DATA <string></string>
:DISPlay:OBWidth:AN Title Entry	INotation:TITLe:DATA <string></string>
Title Entry	INotation:TITLe:DATA <string></string>
2	
Title Entry	This command registers the title character string.
Title Entry	
Title Entry	This command registers the title character string. Refer to :DISPlay:ANNotation:TITLe:DATA.
Title Entry	This command registers the title character string. Refer to :DISPlay:ANNotation:TITLe:DATA. This command has the same function as the following commands.
Title Entry	This command registers the title character string. Refer to :DISPlay:ANNotation:TITLe:DATA.
Title Entry	This command registers the title character string. Refer to :DISPlay:ANNotation:TITLe:DATA. This command has the same function as the following commands.
Title Entry	This command registers the title character string. Refer to :DISPlay:ANNotation:TITLe:DATA. This command has the same function as the following commands. :DISPlay: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:ACPowe:ANNotation:TITLe:DATA
	:DISPlay:CHPowe:ANNotation:TITLe:DATA
	:DISPlay:BPOWer :TXPowe: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 range when Scale Mode is set to Log. Refer to :DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision [:LOGarithmic].
Related Command	
	<pre>This command has the same function as the following commands. :DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi c] :DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi sion :DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi</pre>
	<pre>:DISPlay:ChPOWer:VIEw[I]:WINDOw[I]:TRACe:I[:SCALe]:PDIVI sion :DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL e]:PDIVision</pre>

:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVision ?

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]:PDIVision
	[:LOGarithmic]?.
Related Command	
	This command has the same function as the following commands.
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi
	c]?
	:DISPlay:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
	sion?
	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVi
	sion?
	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
	e]: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]:RLEVe
	1
	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1
	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
	e]: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]:RLEVe
	1?
	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1?
	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCAL
	e]:RLEVel?

:TRIGger:OBWidth[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF

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:BPOWer :TXPower[:SEQuence]:SOURce
	TRIGger:CCDF :PSTatistic[: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:BPOWer :TXPower[:SEQuence]:SOURce?
	TRIGger:CCDF :PSTatistic[: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]:BPOWer :TXPower:ACPower: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]:BPOWer :TXPower:ACPower:AVERage:COUNt?

[:SENSe]:OBWidth:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function	
	This command sets the storage method.
	Refer to [:SENSe]:ACPower:AVERage[:STATe].
Related Command	
	This command has the same function as the following commands.
	:TRACe:STORage:MODE
	[:SENSe]:ACPower:AVERage[:STATe]
	[:SENSe]:CHPower:AVERage[:STATe]
	[:SENSe]:BPOWer :TXPower:AVERage[:STATe]

[:SENSe]:OBWidth:AVERage[:STATe]?

Storage Mode Query

Function	
	This command queries the storage method.
	Refer to [:SENSe]:ACPower:AVERage[:STATe]?
Related Command	
	This command has the same function as the following commands.
	:TRACe:STORage:MODE?
	[:SENSe]:ACPower:AVERage[:STATe]?
	[:SENSe]:CHPower:AVERage[:STATe]?
	[:SENSe]:BPOWer :TXPower: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.
	[:SENSe]:BANDwidth :BWIDth[:RESolution]
	:CALCulate:BANDwidth :BWIDth[:RESolution]
	[:SENSe]:ACPower:BANDwidth[:RESolution]
	:CALCulate:ACPower:BANDwidth[:RESolution]
	[:SENSe]:CHPower:BANDwidth[:RESolution]
	:CALCulate:CHPower:BANDwidth[:RESolution]
	:CALCulate:OBWidth:BANDwidth[:RESolution]
	[:SENSe]:BPOWer :TXPower: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]
	:CALCulate:BANDwidth :BWIDth[:RESolution]
	[:SENSe]:ACPower:BANDwidth[:RESolution]
	:CALCulate:ACPower:BANDwidth[:RESolution]
	[:SENSe]:CHPower:BANDwidth[:RESolution]
	:CALCulate:CHPower:BANDwidth[:RESolution]
	[:SENSe]:OBWidth:BANDwidth[:RESolution]
	[:SENSe]:BPOWer :TXPower: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.
	[:SENSe]:BANDwidth :BWIDth[:RESolution]?
	:CALCulate:BANDwidth :BWIDth[:RESolution]?
	[:SENSe]:ACPower:BANDwidth[:RESolution]?
	:CALCulate:ACPower:BANDwidth[:RESolution]?
	[:SENSe]:CHPower:BANDwidth[:RESolution]?
	:CALCulate:CHPower:BANDwidth[:RESolution]?
	:CALCulate:OBWidth:BANDwidth[:RESolution]?
	[:SENSe]:BPOWer :TXPower: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.
	[:SENSe]:BANDwidth :BWIDth[:RESolution]?
	:CALCulate:BANDwidth :BWIDth[:RESolution]?
	[:SENSe]:ACPower:BANDwidth[:RESolution]?
	:CALCulate:ACPower:BANDwidth[:RESolution]?
	[:SENSe]:CHPower:BANDwidth[:RESolution]?
	:CALCulate:CHPower:BANDwidth[:RESolution]?
	[:SENSe]:OBWidth:BANDwidth[:RESolution]?
	[:SENSe]:BPOWer :TXPower: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.
	[:SENSe]:BANDwidth :BWIDth[:RESolution]:AUTO
	:CALCulate:BANDwidth :BWIDth[:RESolution]:AUTO
	[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
	:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
	[:SENSe]:CHPower: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).
	Refer to [:SENSe]:BANDwidth :BWIDth[:RESolution]:AUTO.
Related Command	
	This command has the same function as the following commands.
	[:SENSe]:BANDwidth :BWIDth[:RESolution]:AUTO
	:CALCulate:BANDwidth :BWIDth[:RESolution]:AUTO
	[:SENSe]:ACPower:BANDwidth[:RESolution]:AUTO
	:CALCulate:ACPower:BANDwidth[:RESolution]:AUTO
	[:SENSe]:CHPower:BANDwidth[:RESolution]:AUTO
	:CALCulate:CHPower:BANDwidth[:RESolution]:AUTO
	[:SENSe]:OBWidth:BANDwidth[:RESolution]:AUTO

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

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

[:SENSe]:OBWidth:DETector[:FUNCtion] NORMal|POSitive|NEGative|AVERage

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] :CALCulate:DETector[:FUNCtion] [:SENSe]:ACPower:DETector[:FUNCtion] :CALCulate:ACPower:DETector[:FUNCtion] [:SENSe]:CHPower:DETector[:FUNCtion] :CALCulate:CHPower:DETector[:FUNCtion] :CALCulate:OBWidth:DETector[:FUNCtion]

:CALCulate:OBWidth:DETector[:FUNCtion] NORMal|POSitive|NEGative|AVERage

Detection Mode

Function

Related Command

This command selects the detection mode for the waveform pattern. Refer to [:SENSe]:DETector[:FUNCtion].
This command has the same function as the following commands.
[:SENSe]:DETector[:FUNCtion]
:CALCulate:DETector[:FUNCtion]
[:SENSe]:ACPower:DETector[:FUNCtion]
:CALCulate:ACPower:DETector[:FUNCtion]
[:SENSe]:CHPower:DETector[:FUNCtion]
:CALCulate:CHPower:DETector[:FUNCtion]
[:SENSe]:OBWidth:DETector[:FUNCtion]

[:SENSe]:OBWidth:DETector[:FUNCtion]?

Detection Mode Query

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]?
	:CALCulate:DETector[:FUNCtion]?
	[:SENSe]:ACPower:DETector[:FUNCtion]?
	:CALCulate:ACPower:DETector[:FUNCtion]?
	[:SENSe]:CHPower:DETector[:FUNCtion]?
	:CALCulate:CHPower:DETector[:FUNCtion]?
	:CALCulate:OBWidth:DETector[:FUNCtion]?

:CALCulate:OBWidth:DETector[:FUNCtion]?

Detection Mode Query

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]?
	:CALCulate:DETector[:FUNCtion]?
	[:SENSe]:ACPower:DETector[:FUNCtion]?
	:CALCulate:ACPower:DETector[:FUNCtion]?
	[:SENSe]:CHPower:DETector[:FUNCtion]?
	:CALCulate:CHPower:DETector[:FUNCtion]?
	[:SENSe]:OBWidth: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:SWEep:POINts?

Trace Point Query

Function	
	This command queries the number of 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 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]:ACPower:SWEep:TIME:AUTO?
	[:SENSe]:CHPower:SWEep:TIME:AUTO?

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

Marker Mode Query

E?.
8.
DE?
DE?
5

: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 Marker Mode is set to
	Delta.
	Refer to :CALCulate:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerence
	<integer>.</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: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:REFerence? Relative To

Function	
	This command queries the reference marker when 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:REFerenc
	e?
	:CALCulate:CHPower:MARKer[1] 2 3 4 5 6 7 8 9 10:REFerenc
	e?

2.12 Burst Average Power Measurement Settings

Table 2.12-1 lists device messages for Burst Average Power measurement.

Function	Device Message	
	[:SENSe]:BPOWer :TXPower[:STATe] ON OFF 1 0	
Measure Burst	[:SENSe]:BPOWer :TXPower[:STATe]?	
Average Power	:CALCulate:BPOWer :TXPower[:STATe] ON OFF 1 0	
	:CALCulate:BPOWer :TXPower[:STATe]?	
	[:SENSe]:BPOWer :TXPower:CORRection:NOISe[:AUTO] ON OFF 1 0	
	[:SENSe]:BPOWer :TXPower:CORRection:NOISe[:AUTO]?	
Noise Cancel	:CALCulate:BPOWer :TXPower:CORRection:NOISe[:AUTO] ON OFF 1 0	
	:CALCulate:BPOWer :TXPower:CORRection:NOISe[:AUTO]?	
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]?	
T: the Frank and	:DISPlay:BPOWer :TXPower:ANNotation:TITLe:DATA <string></string>	
Title Entry	:DISPlay:BPOWer :TXPower:ANNotation:TITLe:DATA?	
I C I D	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDI Vision <rel_ampl></rel_ampl>	
Log Scale Range	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDI Vision ?	
	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLE Vel <real></real>	
Reference Level	:DISPlay:BPOWer :TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLE Vel?	
	:TRIGger:BPOWer :TXPower[:SEQuence]:SOURce	
Trigger Source	EXTernal[1] IMMediate WIF RFBurst VIDeo SG BBIF	
	:TRIGger:BPOWer :TXPower[:SEQuence]:SOURce?	
Average Count	[:SENSe]:BPOWer :TXPower:AVERage:COUNt <integer></integer>	
Average Count	[:SENSe]:BPOWer :TXPower:AVERage:COUNt?	
Storage Mode	[:SENSe]:BPOWer :TXPower:AVERage[:STATe] ON OFF 1 0	
Storage Mode	[:SENSe]:BPOWer :TXPower:AVERage[:STATe]?	

Table 2.12-1 Device messages for Burst Average Power measurement

2-449

Function	Device Message		
Sweep Time	[:SENSe]:BPOWer :TXPower:SWEep:TIME <time></time>		
	[:SENSe]:BPOWer :TXPower:SWEep:TIME?		
Zone Marker Frequency (Time)	:CALCulate:BPOWer :TXPower:MARKer[1] 2 3 4 5 6 7 8 9 10:X <freq> <time> <sample> <dist></dist></sample></time></freq>		
	:CALCulate:BPOWer :TXPower:MARKer[1] 2 3 4 5 6 7 8 9 10:X?		
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:MAXimu m		
Resolution Bandwidth	[:SENSe]:BPOWer :TXPower:BANDwidth[:RESolution] <freq></freq>		
	[:SENSe]:BPOWer :TXPower:BANDwidth[:RESolution]?		
	:CALCulate:BPOWer :TXPower:BANDwidth[:RESolution] <freq></freq>		
	:CALCulate:BPOWer :TXPower:BANDwidth[:RESolution]?		

Table 2.12-1 Device messages for Burst Average Power measurement (Cont'd)

[: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></switch>	
Parameter			
	<switch></switch>	Sets Burst Average Power measurement On/Off	
	ON 1	Sets Burst Average Power measurement On	
	OFF 0	Sets Burst Average Power measurement Off	
Details			
	This command is available when the following trace is active:		
	• Power vs Time		
Example of Use			
	To set Burst Average Power measurement to On and query the result.		
	BPOW ON		
	*WAI		
	FETC:BPOW?		
Related Command			
	This command has the	e 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 performs 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

This command que	ries the setting of Burst Average Power measurement.
[:SENSe]:BPOWer	:TXPower[:STATe]?
<switch></switch>	Sets Burst Average Power measurement On/Off.
1	On
0	Off
This command is av	vailable when the following trace is active:
• Power vs Time	
To query the Burst	Average Power measurement setting.
BPOW?	
> 1	
This command has	the same function as the following command.
:CALCulate:BPOW	er :TXPower[:STATe]
	<pre>[:SENSe]:BPOWer <switch> 1 0 This command is av • Power vs Time To query the Burst # BPOW? > 1 This command has</switch></pre>

:CALCulate:BPOWer|:TXPower[:STATe]?

Measure Burst Average Power Query

Function	
Related Command	This command queries the Burst Average Power measurement setting. Refer to [:SENSe]:BPOWer :TXPower[:STATe]?
	This command has the same function as the following command. [:SENSe]:BPOWer :TXPower[:STATe]?
[:SENSe]:BPOWer :T	XPower:CORRection:NOISe[:AUTO] ON OFF 1 0
Function	
Command	This command sets whether to enable the noise-canceling function.
	[:SENSe]:BPOWer :TXPower:CORRection:NOISe[:AUTO] <switch></switch>
Parameter	<switch> Noise-canceling function on/off</switch>
	<pre><switch> Noise-canceling function on/off ON 1 Enables the noise-canceling function.</switch></pre>
	OFF 0 Disables the noise canceling function.
Details	
	 The noise-canceling function is fixed to Off in the following cases: Burst Average Power is Off. Standard is Off. The Standard Parameter which can enables 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.
	This command is available when the following trace is active:Power vs Time
	The setting is disabled while the Replay function is being executed.
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	s the noise-canceling function setting.	
Query			
	[:SENSe]:BPOWer :	TXPower:CORRection:NOISe[:AUTO]?	
Response			
	<switch></switch>		
Parameter			
	<switch></switch>	Noise-canceling function on/off	
	1	On	
	0	Off	
Details			
	The noise-canceling fu	nction is fixed to Off in the following cases:	
	• Burst Average Power is Off.		
	• Standard is Off.		
	• The Standard Para not set in Load Star	meter which enables the noise-canceling function is ndard 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 r Parameter.	not set to RMS)has been changed from Standard	
	• Scale Mode is Linea	ar.	
	This command is available when the following trace is active:		
	• Power vs Time		

<i>2.12</i>	Burst Average	Power	Measurement	Settings
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Example of Use			
	To query the noise-canceling function setting. BPOW:CORR:NOIS? > 0		
Related Command	This command has the same function as the following command. :CALCulate:BPOWer :TXPower:CORRection:NOISe[:AUTO]?	2	
:CALCulate:BPOWer	:TXPower:CORRection:NOISe[:AUTO]?	SCPI Device Message Details	
Function		vic	
Related Command	This command queries the setting of the noise-canceling function. Refer to [:SENSe]:BPOWer :TXPower:CORRection:NOISe[:AUTO]?.	e Messa	
	This command has the same function as the following command. [:SENSe]:BPOWer :TXPower:CORRection:NOISe[:AUTO]?	ge Deta	
:CONFigure:BPOWer Burst Average Power Configure	•	ils	
Function			
Command	This command sets Burst Average Power measurement to On.		
	:CONFigure:BPOWer :TXPower		
Details			
	No measurement is performed.		
	Power vs Time is set, if this command is executed when the trace is set to other than Power vs Time.		
	Log is set, if this command is executed when Scale Mode is set to Linear.		
Example of Use			

To set Burst Average Power measurement to On and query the results. CONF:BPOW *WAI FETC:BPOW?

:INITiate:BPOWer|:TXPower

Burst Average Power Initiate

Function	
	This command performs Burst Average Power measurement.
Command	
	:INITiate:BPOWer :TXPower
Details	
	When this command is executed, Burst Average Power measurement is
	set to On and measurement will be performed.
	Power vs Time is set, if this command is executed when the trace is set to
	other than Power vs Time.
	Log is set, if this command is executed when Scale Mode is set to Linear.
	For reading out a measurement result after this command has been
	executed, use *WAI commands to perform synchronized control.
Example of Use	
	To perform Burst Average Power measurement and query the results.
	INIT:BPOW
	*WAI
	FETC:BPOW?

:FETCh:BPOWer|:TXPower[n]?

Burst Average Power Fetch

Function		-
	This command queries	s the result for Burst Average Power measurement.
Query		
	:FETCh:BPOWer :TX	Power[n]?
Response		-
	When RESult Mode is	A:
	<power></power>	
		(n = 1 or when omitted)
	When RESult Mode is	B:
	<sweep_time>,<pow< th=""><th>er>,<power>,<trace_point>,</trace_point></power></th></pow<></sweep_time>	er>, <power>,<trace_point>,</trace_point></power>
	-999.0,-999.0,-99	9.0,-999.0,
	<burst_time>,-999</burst_time>	.0
		(n = 1 or when omitted)
Parameter		
	<sweep_time></sweep_time>	Sweep Time setting value
		Time for each trace point is returned in sample units when Terminal is set to DigRF 3G (only for
		MS269x Series).
	<burst_time></burst_time>	Length of Burst Average Power measurement
		span
		No suffix code, s units, 1 ns resolution
		–999999999999999 is returned when no
		measurement is performed.
	<power></power>	Average power in burst
		When Scale Mode is Log:
		Log Scale Unit units (Note: dBm units for V,
		μW units for W)
		Value without a suffix code is returned.
		-999.0 is returned when no measurement is
		performed.
	<trace_point></trace_point>	Number of trace points
		Value without a suffix code is returned.
		–999.0 is returned when no measurement is
		performed.
		Value is returned in sample units when
		Terminal is set to DigRF 3G (only for MS269x
		Series).

Details	
	This command queries the measurement result of Burst Average Power
	measurement performed lastly. This function does not accompany any
	capture, 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 capture.
Example of Use	
	To query the measurement result of Burst Average Power measurement.
	(n = 1 or when omitted, A mode)
	FETC:BPOW?
	> -66.70

:READ:BPOWer|:TXPower[n]?

Burst Average Power Read

Function

This command performs Burst Average Power measurement and outputs the measurement result. This command has the same function as the following commands

executed in this order:

:INITiate:BPOWer|:TXPower

:FETCh:BPOWer|:TXPower[n]?

:MEASure:BPOWer|:TXPower[n]?

Burst Average Power Measure

Function

This command performs Burst Average Power measurement and outputs the measurement result.

This command has the same function as the following commands executed in this order:

:CONFigure:BPOWer|:TXPower

:INITiate:BPOWer|:TXPower

:FETCh:BPOWer|:TXPower[n]?

2

: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:ACPowe:ANNotation:TITLe:DATA
	:DISPlay:CHPowe:ANNotation:TITLe:DATA
	:DISPlay:OBWidth:ANNotation:TITLe:DATA
:DISPlay:BPOWer :T> Title Entry Query	(Power:ANNotation:TITLe:DATA?
Function	
Function	This command queries the title character string.
Function	This command queries the title character string. Refer to :DISPlay: ANNotation: TITLe: DATA?
Function Related Command	·

:DISPlay:CHPower:ANNotation:TITLe:DATA? :DISPlay:OBWidth:ANNotation:TITLe:DATA?

:DISPlay:BPOWer|:TXPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:PDIVisi on <rel_ampl>

Log Scale Range

Function	
	This command sets the Y-axis scale range when Scale Mode is set to Log.
	Refer to :DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision
	[:LOGarithmic].
Related Command	
	This command has the same function as the following commands.
	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi
	c]
	: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[:SCALe]:PDIVisi on ? 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]:PDIVision
	[:LOGarithmic]?
Related Command	
	<pre>This command has the same function as the following commands. :DISPlay:WINDow[1]:TRACe:Y[:SCALe]:PDIVision[:LOGarithmi c]? :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?</pre>

2

: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:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1
	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1
	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1

: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:ACPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1?
	:DISPlay:CHPower:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1?
	:DISPlay:OBWidth:VIEW[1]:WINDow[1]:TRACe:Y[:SCALe]:RLEVe
	1?

:TRIGger:BPOWer|:TXPower[:SEQuence]:SOURce EXTernal[1]|IMMediate|WIF|RFBurst|VIDeo|SG|BBIF

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:CCDF :PSTatistic[:SEQuence]:SOURce

SCPI Device Message Details

: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:CCDF :PSTatistic[:SEQuence]:SOURce?

[:SENSe]:BPOWer|:TXPower: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]:OBWidth:AVERage:COUNt

[:SENSe]:BPOWer|:TXPower: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]:OBWidth:AVERage:COUNt?

[:SENSe]:BPOWer|:TXPower:AVERage[:STATe] ON|OFF|1|0

Storage Mode

Function	
	This command sets the storage mode.
	Refer to [:SENSe]:ACPower:AVERage[:STATe].
Related Command	
	This command has the same function as the following commands.
	:TRACe:STORage:MODE
	[:SENSe]:ACPower:AVERage[:STATe]
	[:SENSe]:CHPower:AVERage[:STATe]
	[:SENSe]:OBWidth:AVERage[:STATe]

[:SENSe]:BPOWer|:TXPower:AVERage[:STATe]?

Storage Mode Query

Function	
	This command queries the storage mode.
	Refer to [:SENSe]:ACPower:AVERage[:STATe]?
Related Command	
	This command has the same function as the following commands.
	:TRACe:STORage:MODE?
	[:SENSe]:ACPower:AVERage[:STATe]?
	[:SENSe]:CHPower:AVERage[:STATe]?
	[:SENSe]:OBWidth:AVERage[:STATe]?

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[:SENSe]:BPOWer|:TXPower:SWEep:TIME <time>

Sweep Time

Function	
	This command sets the capture 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 capture 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:X <freq>|<time>|<sample>|<dist>

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?

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:Y?

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:AOFF

All Marker Off

Function		
	This command sets all 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	

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: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		

[: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]		
	:CALCulate:BANDwidth :BWIDth[:RESolution]		
	[:SENSe]:ACPower:BANDwidth[:RESolution]		
	:CALCulate:ACPower:BANDwidth[:RESolution]		
	[:SENSe]:CHPower:BANDwidth[:RESolution]		
	:CALCulate:CHPower:BANDwidth[:RESolution]		
	[:SENSe]:OBWidth: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]		
	:CALCulate:BANDwidth :BWIDth[:RESolution]		
	[:SENSe]:ACPower:BANDwidth[:RESolution]		
	:CALCulate:ACPower:BANDwidth[:RESolution]		
	[:SENSe]:CHPower:BANDwidth[:RESolution]		
	:CALCulate:CHPower:BANDwidth[:RESolution]		
	[:SENSe]:OBWidth:BANDwidth[:RESolution]		
	:CALCulate:OBWidth:BANDwidth[:RESolution]		
	[:SENSe]:BPOWer :TXPower: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]?
	:CALCulate:BANDwidth :BWIDth[:RESolution]?
	[:SENSe]:ACPower:BANDwidth[:RESolution]?
	:CALCulate:ACPower:BANDwidth[:RESolution]?
	[:SENSe]:CHPower:BANDwidth[:RESolution]?
	:CALCulate:CHPower:BANDwidth[:RESolution]?
	[:SENSe]:OBWidth: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).	This command queries the resolution bandwidth (RBW).		
Refer to [:SENSe]:BANDwidth :BWIDth[:RESolution]?.			
Related Command			
This command has the same function as the following comman	ıds.		
[:SENSe]:BANDwidth :BWIDth[:RESolution]?			
:CALCulate:BANDwidth :BWIDth[:RESolution]?			
[:SENSe]:ACPower:BANDwidth[:RESolution]?			
:CALCulate:ACPower:BANDwidth[:RESolution]?			
[:SENSe]:CHPower:BANDwidth[:RESolution]?			
:CALCulate:CHPower:BANDwidth[:RESolution]?			
[:SENSe]:OBWidth:BANDwidth[:RESolution]?			
:CALCulate:OBWidth:BANDwidth[:RESolution]?			
[:SENSe]:BPOWer :TXPower:BANDwidth[:RESolution]?			

2.13 AM Depth Measurement Settings

Table 2.13-1 lists device messages for setting the AM Depth measurement.

Function	Device Message
Measure AM	[:SENSe]:AM[:STATe] ON OFF 1 0
Depth	[:SENSe]:AM[:STATe]?
AM Depth Configure	:CONFigure:AM
AM Depth Initiate	:INITiate:AM
AM Depth Fetch	:FETCh:AM?
AM Depth Read	:READ:AM?
AM Depth Measure	:MEASure:AM?

 Table 2.13-1
 Device Messages for setting AM Depth measurement

[:SENSe]:AM[:STATe] ON|OFF|1|0

Measure AM Depth

Function			
	This command executes the AM Depth measurement.		
Command			
	[:SENSe]:AM[:STATe] <switch></switch>		
Parameter			
	<switch></switch>	AM Depth measurement On/Off	
	ON 1	Sets the AM Depth measurement to On.	
	OFF 0	Sets the AM Depth measurement to Off.	
Details			
	This command is available when the following trace is active:		
	Power vs Time		
Example of Use			
	To set the AM Depth measurement to On.		
	AM ON		
[:SENSe]:AM[:STATe]?			

Measure AM Depth Query

Function			
	This command queries the On/Off state of the AM Depth measurement.		
Query			
Posponso	[:SENSe]:AM[:STATe]?		
Response	<switch></switch>		
Parameter			
	<switch></switch>	AM Depth On/Off	
	1	On	
	0	Off	
Example of Use			
	To query the On/Off state of the AM Depth measurement.		
	AM?		
	> 1		

:CONFigure:AM AM Depth Configure Function This command sets the AM Depth measurement to On. Command :CONFigure:AM Details No measurement is performed. When this command is executed, Scale Mode is set to Linear and Detection is set to Pos&Neg, and Peak to Peak Function is set to ON. This command is available when the following is active: • Power vs Time Example of Use To set the AM Depth measurement to On. CONF: AM :INITiate:AM AM Depth Initiate Function This command starts the AM Depth measurement. Command :INITiate:AM Details When this command has been executed, AM Depth measurement is set to On and the measurement starts. Scale Mode is set to Linear and Detection is set to Pos&Neg, and Peak to Peak Function is set to ON. This command is available when the following trace is active: • Power vs Time Example of Use To start the AM Depth measurement. INIT:AM

:FETCh:AM? AM Depth Fetch				
Function	This command querie	es the result of the AM Depth measurement.		
Query	:FETCh:AM?			
Response Parameter	<pos>,<neg>,<p-p></p-p></neg></pos>	<pos>,<neg>,<p-p>,<avg></avg></p-p></neg></pos>		
	Peak to Peak measur <pos> <neg> <p-p></p-p></neg></pos>	ement result +Peak value -Peak value {(-Peak) - (+Peak)}/2 No suffix code. Value is returned in % units. -999999999999999999999999999999999999		
	<avg></avg>	 be returned if it is not set to Complex. Average value No suffix code. Value is returned in V units. -9999999999999 is returned when no measurement is performed or an error occurs. 		
Details	This command is available when the following trace is active: • Power vs Time			
Example of Use	This command queries the result of the Spurious Emission measurement performed lastly. This function does not accompany any sweep, thus this function is used to read out the measurement result in a different type, when the measurement has already completed. Use READ command to perform re-measurement with redoing sweep. To query the result of the AM Depth measurement. FETC:AM?			

:READ:AM?

AM Depth Read

Function

This command performs the AM Depth measurement and queries the result. This command has the same function as the following commands executed in this order: :INITiate:AM :FETCh:AM?

:MEASure:AM?

AM Depth Measure

Function

This command performs the AM Depth measurement and queries the result.

This command has the same function as the following commands executed in this order:

:CONFigure:AM

:INITiate:AM

:FETCh:AM?

2.14 FM deviation Measurement Settings

Table 2.14-1 lists device messages for setting the FM deviation measurement.

Function	Device Message
Measure FM	[:SENSe]:FM[:STATe] ON OFF 1 0
deviation	[:SENSe]:FM[:STATe]?
FM deviation Configure	:CONFigure:FM
FM deviation Initiate	:INITiate:FM
FM deviation Fetch	:FETCh:FM?
FM deviation Read	:READ:FM?
FM deviation Measure	:MEASure:FM?

Table 2.14-1 Device Messages for setting the FM deviation measurement

[:SENSe]:FM[:STATe] ON|OFF|1|0

Measure FM deviation

Function			
	This command execute	es the FM deviation measurement.	
Command			
	[:SENSe]:FM[:STATe] <switch></switch>		
Parameter			
	<switch></switch>	FM deviation measurement On/Off	
	ON 1	Sets FM deviation measurement to On.	
	OFF 0	Sets FM deviation measurement to Off.	
Details			
	This command is available when the following trace is active:		
	• Frequency vs Time		
Example of Use			
	To set the FM deviation FM ON	n measurement to On.	

[:SENSe]:FM[:STATe]?

Measure FM deviation Query

Function		
	This command queries	the On/Off state of the FM deviation
	measurement.	
Query		
	[:SENSe]:FM[:STATe	e]?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	FM deviation measurement On/Off
	1	On
	0	Off
Example of Use		
	To query the On/Off state of the FM deviation measurement.	
	FM?	
	> 1	

:CONFigure:FM

FM deviation Configure

This command sets the FM deviation measurement to On. Command :CONFigure:FM Details No measurement is performed. After this command has been executed, then Scale Unit is set to ΔHz, Detection is set to Pos&Neg, and Peak to Peak Function is set to On. Example of Use INITiate:FM FM deviation Initiate Function
Details :CONFigure:FM No measurement is performed. After this command has been executed, then Scale Unit is set to ΔHz, Detection is set to Pos&Neg, and Peak to Peak Function is set to On. Example of Use To set the FM deviation measurement to On. CONF:FM INITiate:FM FM deviation Initiate
Details No measurement is performed. After this command has been executed, then Scale Unit is set to ΔHz, Detection is set to Pos&Neg, and Peak to Peak Function is set to On. Example of Use To set the FM deviation measurement to On. CONF: FM INITiate:FM M deviation Initiate
No measurement is performed. After this command has been executed, then Scale Unit is set to ΔHz, Detection is set to Pos&Neg, and Peak to Peak Function is set to On. Example of Use To set the FM deviation measurement to On. CONF:FM INITiate:FM M deviation Initiate
Example of Use After this command has been executed, then Scale Unit is set to ΔHz, Detection is set to Pos&Neg, and Peak to Peak Function is set to On. To set the FM deviation measurement to On. CONF:FM INITiate:FM M deviation Initiate
Example of Use Detection is set to Pos&Neg, and Peak to Peak Function is set to On. To set the FM deviation measurement to On. CONF:FM INITiate:FM FM deviation Initiate
Example of Use To set the FM deviation measurement to On. CONF:FM INITiate:FM FM deviation Initiate
To set the FM deviation measurement to On. CONF:FM INITiate:FM FM deviation Initiate
CONF: FM INITiate:FM FM deviation Initiate
INITiate:FM FM deviation Initiate
-M deviation Initiate
-M deviation Initiate
Function
Function
This command starts the FM deviation measurement.
Command
:INITiate:FM
Details
After this command has been executed, then the AM Depth measurement
is set to On and the measurement starts.
Scale Unit is set to Δ Hz and Detection is set to Pos&Neg, and Peak to
Peak function is set to ON.
Example of Use
To start the FM deviation measurement.
INIT:FM

:FETCh:FM?

FM deviation Fetch			
Function	m i · · · ·		
Query	This command queries	the result of the FM deviation measurement.	
Query	:FETCh:FM?		
Response			
	<pos>,<neg>,<p-p>,</p-p></neg></pos>	, <avg></avg>	
Parameter			
		Peak to Peak measurement result	
	<pos></pos>	+Peak value –Peak value	
	<neg> <p-p></p-p></neg>	$\frac{-\text{Peak value}}{(-\text{Peak}) - (+\text{Peak})}/2$	
		Value is returned in Hz units, without suffix	
		code.(Frequency vs Time)	
		–99999999999999 is returned when no	
		measurement is performed or an error occurs.	
	<avg></avg>	Average value	
		Value is returned in Hz units, without suffix	
		code.(Frequency vs Time)	
		–9999999999999 is returned when no	
		measurement is performed or an error occurs.	
Details			
	This command is available when the following trace is active:		
	• Frequency vs Time		
Details			
	This command queries the result of the Spurious Emission measurement		
	performed lastly. This function does not accompany any sweep, thus this		
	function is used to read out the measurement result in a different type,		
	when the measurement has already completed. Use READ command to perform re-measurement with redoing sweep.		
Example of Use		perform re measurement with redoing sweep.	
	To guery the result of t	the FM deviation measurement.	
	FETC:FM?	· · · · · · · · · · · · · · · · · · ·	

:READ:FM?

FM deviation Read

Function

This command performs the FM deviation measurement and queries the result. This command has the same function as the following commands

executed in this order: :INITiate:FM

:FETCh:FM?

:MEASure:FM?

FM deviation Measure

Function

This command performs the FM deviation measurement and queries the result.

This command has the same function as the following commands executed in this order:

:CONFigure:FM :INITiate:FM

:FETCh:FM?

2.15 DigRF 3G Settings

Table 2.15-1 lists device messages for DigRF 3G measurement settings.

Note:

The DigRF 3G is not available only when the MS269x Series Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later; it is not supported by MS 2830A.

Table 2.15-1	Device messages for DigRF 3G measurement settings
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Function	Device Message
Terminal Change	[:SENSe]:FEED RF DIGRF3G
	[:SENSe]:FEED?
	[:SENSe]:DIGRf3g:TARGet WCDMA GSM
Target System	[:SENSe]:DIGRf3g:TARGet?
	[:SENSe]:DIGRf3g:ADRange <volt></volt>
AD Full Range	[:SENSe]:DIGRf3g:ADRange?
L/O Cime	[:SENSe]:DIGRf3g:IQSign SIGNbit TWOComp
I/Q Sign	[:SENSe]:DIGRf3g:IQSign?
Measurement	[:SENSe]:DIGRf3g:MEASch PRIMary DIVersity
Channel	[:SENSe]:DIGRf3g:MEASch?
Capture Sample	[:SENSe]:SWEep:SAMPle <point></point>
Length	[:SENSe]:SWEep:SAMPle?
Analysis Start	:CALCulate:ATIMe:STARt:SAMPle <point></point>
Sample	:CALCulate:ATIMe:STARt:SAMPle?
Analysis Sample	:CALCulate:ATIMe:LENGth:SAMPle <point></point>
Length	:CALCulate:ATIMe:LENGth:SAMPle?
Input Source	:CALCulate:IQData <source/>
Input Source	:CALCulate:IQData?
Result Delay	:CALCulate:TRIGger:DIGRf3g:DELay?
Vertical Scale	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:CVOLtage <voltage></voltage>
Center	:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:CVOLtage?
Smoothing Sample	:CALCulate:SMOothing:LENGth:SAMPLe <sample></sample>
Length	:CALCulate:SMOothing:LENGth:SAMPle?
Marker Unit	:UNIT:TMARker SAMPle SEC
	:UNIT:TMARker?

2

SCPI Device Message Details

Terminal Change Function This command sets Terminal. Command [:SENSe]:FEED <terminal> Parameter <terminal> Terminal RF Sets RF for terminal. DIGRF3G Sets DigRF 3G (only for MS269x Series) for terminal. Details This command is not available while the Replay function is being executed. This command is not available in the following case: • Setting for DigRF 3G (only for MS269x Series) cannot be performed when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later. Example of Use To set RF for Terminal. FEED RF [:SENSe]:FEED? **Terminal Change Query** Function This command queries Terminal. Query [SENSe]:FEED? Response <terminal> Parameter

RF DigRF 3G (only for MS269x Series)

Terminal

Example of Use

[:SENSe]:FEED RF|DIGRF3G

To query Terminal. FEED? > RF

DIGRF3G

<terminal>

RF

[:SENSe]:DIGRf3g:TARGet WCDMA|GSM

Target System

Function			
	This command selects Target System of Input Signals.		
Command	[:SENSe]:DIGRf3g:TARGet <communication></communication>		
Parameter	[.55056].5160139.1		
	<communication></communication>	Target System	
	WCDMA	Sets Target System for W-CDMA	
	GSM	Sets Target System for GSM	
Details			
Details	This command is not available while the Replay function is being executed.		
	This command is not a	vailable in the following case:	
Example of Use		System cannot be performed when the Option Interface Unit is not installed or the software .00 or later.	
	To set W-CDMA for Tab DIGR:TARG WCDMA	rget System of Input signal.	

[:SENSe]:DIGRf3g:TARGet?

Target System Query

Function			
<u> </u>	This command queries	the target system of Input signals.	
Query	[SENSe]:DIGRf3q:TA	ARGet?	
Response			
	<communication></communication>		
Parameter			
	<communication></communication>	Target System	
	WCDMA	W-CDMA	
	GSM	GSM	
Example of Use			
	To query the target system of Input signals.		
	DIGR:TARG?		
	> WCDMA		

[:SENSe]:DIGRf3g:ADRange <volt>

AD Full Range

Function			
	This command sets the coefficient used for the unit conversion of the		
	DigRF 3G (only for MS	\$269x Series) signal to the V unit system.	
Command			
	[:SENSe]:DIGRf3g:A	ADRange <volt></volt>	
Parameter			
	<volt></volt>	Voltage	
	Range	1 mV to 10 V	
	Resolution	0.1 mV	
	Suffix code	MV,V	
		V is used when omitted.	
Details			
	This command is not a executed.	vailable while the Replay function is being	
	This command is not available in the following case:		
	• When the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later.		
Example of Use	To set the coefficient to 10 mV. DIGR:ADR 10MV		

[:SENSe]:DIGRf3g:ADRange?

AD Full Range Query

Function			
	This command queries the coefficient used for the unit conversion of the		
	DigRF 3G (only for MS	269x Series) signal to the V unit system.	
Query			
	[:SENSe]:DIGRf3g:A	ADRange?	
Response			
	<volt></volt>		
Parameter			
	<volt></volt>	Voltage	
	Range	0.001 V to 10 V	
	Resolution	0.0001 V	
	Suffix codes	None	
Example of Use			
	To query the coefficient used for the unit conversion of the ${ m Dig}{ m RF}$ 3G		
	(only for MS269x Series) signal to the V unit system.		
	DIGR:ADR?		

[:SENSe]:DIGRf3g:IQSign SIGNbit|TWOComp

Function This command sets the I/Q Sign. Command [:SENSe]:DIGRf3g:IQSign <i/q sign> Parameter <i/q sign> I/Q Sign SIGNbit Sets to Sign bit + Absolute value TWOComp Sets to two's complement. Details This command is not available while the Replay function is being executed. This command is not available in the following case: • Setting for I/Q Sign cannot be performed when the Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later. Example of Use To set the I/Q Sign to "sign bit + absolute value". DIGR: IQS SIGN

[:SENSe]:DIGRf3g:IQSign?

I/Q Sign Query

Function		
	This command queries the I/Q Sign.	
Query		
	[:SENSe]:DIGRf3g:I	QSign?
Response		
	<i q="" sign=""></i>	
Parameter		
	<i q="" sign=""></i>	I/Q Sign
	SIGN	Sign bit + absolute value
	TWOC	Two's complement
Example of Use		
	To query the I/Q Sign.	
	DIGR: IQS?	
	> SIGN	

[:SENSe]:DIGRf3g:MEASch PRIMary|DIVersity

Measurement Channel

Function			
	This command sets the Logical channel Type of the receiving DigRF 3G		
	(only for MS269x Serie	es) signal.	
Command			
	[:SENSe]:DIGRf3g:	MEASch <channel></channel>	
Parameter			
	<channel></channel>	Measurement Channel	
	PRIMary	Primary	
	DIVersity	Diversity	
Details			
	This command is not available while the Replay function is being executed.		
	This command is not a	available in the following case:	
Example of Use	Option 040/140 B	rement Channel cannot be performed when the aseband Interface Unit is not installed or the Ver.6.00.00 or later.	
	To set Primary for Log DIGR:MEAS PRIM	rical Channel Type.	

[:SENSe]:DIGRf3g:MEASch?

Measurement Channel Query

Function			
	This command queries the Logical channel Type of the receiving DigRF		
	3G (only for MS269x S	eries) signal.	
Query			
	[:SENSe]:DIGRf3g:M	IEASch?	
Response			
	<channel></channel>		
Parameter			
	<channel></channel>	Measurement Channel	
	PRIM	Primary	
	DIV	Diversity	
Example of Use			
	To query the Logical Cl	hannel Type.	
	DIGR:MEAS?		
	> PRIM		

[:SENSe]:SWEep:SAMPle <point>

Capture Sample Length

Function			
	This command sets the waveform capture sample length when Terminal		
	is set to DigRF 3G (on)	ly for MS269x Series).	
Command			
	[:SENSe]:SWEep:SA	MPle <point></point>	
Parameter			
	<point></point>	Number of capture samples	
	Range	100 to 500000000 (W-CDMA)	
		100 to 200000000 (GSM)	
	Resolution	1 sample	
	Default value	100	
Details			
	The shortest capture time length is set when the automatic setting is enabled.		
	The automatic mode is switched to the manual mode when the capture time is set.		
	The setting range and resolution are limited by the Frequency Span setting.		
	This command is not available while the Replay function is being executed.		
	This command is not available in the following case:		
Example of Use	• When Terminal is RF.		
	To set the number of w SWE:SAMP 20000	vaveform capture samples to 20000.	

[:SENSe]:SWEep:SAMPle?

Capture Sample Length Query

Function			
	This command queries the number of waveform capture samples when		
	Terminal is set to DigF	RF 3G (only for MS269x Series).	
Query			
	[:SENSe]:SWEep:SAM	MPle?	
Response			
	<point></point>		
Parameter			
	<point></point>	Capture sample length	
	Range	100 to 500000000 (W-CDMA)	
		100 to 200000000 (GSM)	
	Resolution	1 sample	
	Default value	100	
Example of Use			
	To query waveform cap	oture sample length.	
	SWE:SAMP?		
	> 20000		

:CALCulate:ATIMe:STARt:SAMPle<point>

Analysis Start Sample

Function			
	This command sets the analysis start sample of the main trace with sample numbers when Terminal is set to DigRF 3G (only for MS269x Series).		
Command			
	:CALCulate:ATIMe:S	TARt:SAMPle <point></point>	
Parameter			
	<point></point>	Analysis start sample	
	Range	0 to Capture Time Length – Analysis Time	
		Length	
	Resolution	1 sample	
Details			
	This command is not av executed.	ailable while the Replay function is being	
	This command is not available in the following cases:		
	• When the analysis start sample is maximum.		
	• When RF is set for Terminal .		
Example of Use			
	To set the analysis star	t position to 15360000 sample.	
	CALC:ATIM:STAR:SAMP 15360000		

:CALCulate:ATIMe:STARt:SAMPle?

Analysis Start Sample Query

Function	-	he analysis start position of the main trace with Terminal is set to DigRF 3G (only for MS269x	2
Query	:CALCulate:ATIMe:S	TARt:SAMPle?	SCPI Device Message
Response	<point></point>		Device
Parameter			M
	<point></point>	Analysis start sample	ess
	Range	0 to Capture Time Length – Analysis Time	ag
		Length	
	Resolution	1 sample	Details
Example of Use			ils
	To query the analysis s	tart sample.	
	CALC:ATIM:STAR:SAM	IP?	
	> 15360000		

:CALCulate:ATIMe:LENGth:SAMPle <point>

Analysis Sample Length

Function			
	This command sets the analysis sample length of the main trace when		
	Terminal is set to DigRF 3G (only for MS269x Series).		
Command			
	:CALCulate:ATIMe:I	LENGth:SAMPle <point></point>	
Parameter			
	<point></point>	Analysis sample length	
	Range	0 to Capture Time Length – Analysis Start Time	
	Resolution	1 sample	
Details		-	
	This command is not available while the Replay function is being executed.		
	This command is not available in the following cases:		
	• When the analysis start sample is maximum.		
	• When RF is set for Terminal.		
Example of Use			
	To set the analysis sample length of the main trace to 15360000. CALC:ATIM:LENG:SAMP 15360000		

:CALCulate:ATIMe:LENGth:SAMPle?

Analysis Sample Length Query

Function			
	This command queries the analysis sample length of the main trace when Terminal is set to DigRF 3G (only for MS269x Series).		
Query			
	:CALCulate:ATIMe:I	ENGth:SAMPle?	
Response			
	<point></point>		
Parameter			
	<point></point>	Analysis sample length	
	Range	0 to Capture Time Length - Analysis Start	
		Time	
	Resolution	1 sample	
Example of Use			
	To query the analysis sample length of the main trace		
	CALC:ATIM:LENG:SAMP?		
	> 15360000		

:CALCulate:IQData < Input Source	source>	
Function	This command selects	the Input Source when the data is analyzed.
Command	:CALCulate:IQData <source/>	
Parameter		
	<source/>	Input Source
	COMPlex	Selects a complex data for I and Q phase.
	I	Selects the I phase data.
	Q	Selects the Q phase data.
Details	This command is not a executed.	available while the Replay function is being
	This command is not available in the following cases:	
Evenue of Lice	When Terminal is sWhen the trace is sbe set.	set to RF. Set to Frequency vs Time, neither I nor Q phase can
Example of Use	To select Complex for Input Source. CALC:IQD COMP	

:CALCulate:IQData?

Input Source Query

Function This command queries the Input Source when the data is analyzed. Command :CALCulate:IQData? Parameter <source> **Input Source** COMP I and Q phase Ι I phase Q Q phase Example of Use To query the Input Source. CALC: IQD? :CALCulate:TRIGger:DIGRf3g:DELay? **Result Delay Query** Function This command queries the result of delay time by sample unit. Command :CALCulate:TRIGger:DIGRf3g:DELay? Response <sample> Details When a trigger is used for DigRF 3G (only for MS269x Series), a delay may occur in the results because there is no pre-trigger. The number of samples from the analysis start sample point to the actual trigger point (trigger input + trigger delay) is queried as a delay. This command is not available while the Replay function is being executed. Example of Use To query the delay time by sample unit. CALC:TRIG:DIGR:DEL?

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:DISPlay:WINDow[1]:TRACe:Y[:SCALe]:CVOLtage <voltage>

Vertical Scale Center

Function			
	This command sets the value for center of the vertical scale.		
Command			
Command	:DISPlay:WINDow[1]:TRACe:Y[SCALe]:CVOLtage <voltage></voltage>		
Parameter			
	<voltage></voltage>	Settings scale value	
	Range	–Reference Level to Reference Level	
	Resolution	0.01 pV	
	Suffix codes	PV,NV,UV,MV,V	
		V is used when omitted.	
Details			
	This command is available when the following trace is active.		
	• Power vs Time		
	This command is not a executed.	vailable while the Replay function is being	
	This command is not available in the following cases:		
	• When Terminal is selected RF.		
	• Scale Mode is Log.		
	• Input Source is Complex.		
Example of Use	-	-	
	To set the value for cer	nter of vertical scale to 2 mV	
	DISP:WIND:TRAC:Y:CVOL 2MV		

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

Vertical Scale Center Query

Function	This command queries	the value for center of the vertical scale.
Query	:DISPlay:WINDow[1]:TRACe:Y[SCALe]:CVOLtage?	
Response	.DISTING.WINDOW[1]	. IIACE. I [BEADE] . EVOLTAGE:
	<voltage></voltage>	
Parameter		
	<voltage></voltage>	Settings scale value
	Range	-70.7 V to $70.7 V$
	Resolution	0.01 pV
		No Suffix code
Details		
	–9999999999999 is returned when Terminal is RF, when Scale Mode is	
	Log, or when Input Source is Complex.	
Example of Use		
	To query the value for	center of the vertical scale
	DISP:WIND:TRAC:Y:C	CVOL?
	> 2000000	

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:CALCulate:SMOothing:LENGth:SAMPle<sample>

Smoothing Sample Length

Function			
	This command sets the smoothing sample length of the main trace when		
	Terminal is set to Digl	RF 3G (only for MS269x Series).	
Command			
	:CALCulate:SMOoth	ing:LENGth:SAMPle <sample></sample>	
Parameter			
	<sample></sample>	Smoothing sample length	
	Range	1 to 10000	
	Resolution	1 sample	
Details			
	This command is available when the following trace is active.		
	• Power vs Time		
	• Frequency vs Time		
	This command is not available while the Replay function is being executed.		
Example of Use	This command is not available in the following condition:When Terminal is set to RF.		
To set the smoothing sample length is 500. CALC:SMO:LENG:SAMP 500			

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SCPI Device Message Details

:CALCulate:SMOothing:LENGth:SAMPle?

Smoothing Sample Length Query

Function		
	This command queries the smoothing sample length of the main trace when Terminal is set to DigRF 3G (only for MS269x Series).	
Query		
	:CALCulate:SMOothi	ng:LENGth:SAMPle?
Response		
	<sample></sample>	
Parameter		
	<sample></sample>	Smoothing sample length
	Range	1 to 10000
	Resolution	1 sample
Details		
	This command is availa	able when the following trace is active.
	• Power vs Time	
	• Frequency vs Time	
Example of Use		
	To query the smoothing sample length.	
	CALC:SMO:LENG:SAMP?	
	> 500	

:UNIT:TMARker SAMPle|SECond Marker Unit Function This command sets the units of the marker display value (time) when Terminal is set to DigRF 3G (only for MS269x Series). Command :UNIT:TMARker <Unit> Parameter <unit> Units of marker display value SAMPle Sets Sample for the units of marker display value. SECond Sets second for the units of marker display value. Details This command is not available while the Replay function is being executed. This command is not available in the following case: • When RF is set for Terminal. Example of Use To set the marker display unit to Sample. UNIT: TMAR SAMP :UNIT:TMARker? Marker Unit Query Function This command queries the units of the marker display value when Terminal is set to DigRF 3G (only for MS269x Series). Query :UNIT:TMARker? Response <unit> Parameter <unit> Units of marker display value SAMP Sample SEC Second Example of Use To query the units of the marker display. UNIT: TMAR? > SAMP

2.16 Setting Replay function

Table 2.16-1 lists device messages for setting the Replay function.

Function	Device Message
Stop Replay	:MMEMory:LOAD:IQData:STOP
Execute Replay	:MMEMory:LOAD:IQData <filename>,<device>,<application></application></device></filename>
Replay File Information Query	:MMEMory:LOAD:IQData:INFormation?
Replay Execute Query	:MMEMory:LOAD:IQData:INFormation:STATe?
Replay Filename Query	:MMEMory:LOAD:IQData:INFormation:FILE?
Replay Device Query	:MMEMory:LOAD:IQData:INFormation:DEVice?
Replay Application Query	:MMEMory:LOAD:IQData:INFormation:APPLication?
Replay Start Time Query	:MMEMory:LOAD:IQData:INFormation:STARt?
Replay Time Length Query	:MMEMory:LOAD:IQData:INFormation:LENGth?
Replay Level Over Query	:MMEMory:LOAD:IQData:INFormation:CONDition?
Replay Error Icon Query	:MMEMory:LOAD:IQData:INFormation:ERRor?
Replay Correction Query	:MMEMory:LOAD:IQData:INFormation:CORRection?
Replay External Reference Query	:MMEMory:LOAD:IQData:INFormation:ROSCillator?

:MMEMory:LOAD:IQData:STOP

Stop Replay

Function	
	This command stops the Replay function.
Command	
	:MMEMory:LOAD:IQData:STOP
Details	
	This command is available only when the Replay function is being executed.
Example of Use	
	To stop the Replay function.
	MMEM:LOAD:IQD:STOP

:MMEMory:LOAD:IQData <filename>,<device>,<application>

Execute Replay

Function			
	This command executes the Replay function. By selecting a file name,		
	drive name, and an application, you can select IQ data for which the		
	Replay function is exe	cuted.	
Command			
	:MMEMory:LOAD:IQD	ata <filename>,<device>,<application></application></device></filename>	
Parameter			
	<filename></filename>	Target file name	
		Character string within 128 characters enclosed	
		by double quotes (" ") or single quotes (' ')	
		(excluding extension)	
		The following characters cannot be used:	
		\ / : * ? " " ` / < >	
	<device></device>	Drive name	
		A, B, D, E, F,	
	<application></application>	Application to load IQ data file	
	SIGANA	Signal Analyzer	
	EXTDIG	Extended Digitizing	
Details			
	This command is not available in the following case:		
	• When DigRF 3G (or	nly for MS269x Series) is set for Terminal.	
Example of Use			
	To query the IQ data file "TEST" of the signal analyzer from drive D, and		
	execute the Replay function.		
	MMEM:LOAD:IQD "TEST", D, SIGANA		

:MMEMory:LOAD:IQData:INFormation?

Replay File Information Query

Function			
	This command queries the file information while the Replay function is		
	being executed.		
Query			
	:MMEMory:LOAD:IQD	ata:INFormation?	
Response			
_	<filename>,<start< td=""><td>_time>,<time_length></time_length></td></start<></filename>	_time>, <time_length></time_length>	
Parameter			
	<filename></filename>	File name	
		Character string within 128 characters	
		(excluding extension)	
		*** is returned unless the Replay function is	
		executed.	
	<start_time></start_time>	Start time of analyzable IQ data	
	Resolution	1 ns	
		No suffix code. Value is returned in S units.	
		-9999999999999 is returned unless the Replay	
		function is executed.	
	<time_length></time_length>	Time length of analyzable IQ data	
	Resolution	1 ns	
		No suffix code. Value is returned in S units.	
		–99999999999999 is returned unless the Replay	
		function is executed.	
Example of Use			
	To query the file information while the Replay function is being executed.		
	MMEM:LOAD:IQD:INF?		
	> TEST,-38.838771500,38.838771500		

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:MMEMory:LOAD:IQData:INFormation:STATe?

Replay Execute Query

Function		
	This command queries whether the Replay function is executed.	
Query		
	:MMEMory:LOAD:IQD	ata:INFormation:STATe?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Replay On/off
	1	The Replay function is executed.
	0	The Replay function is not executed.
Example of Use		
	To query whether the Replay function is executed.	
	MMEM:LOAD:IQD:INF:STAT?	
	> 1	

:MMEMory:LOAD:IQData:INFormation:FILE?

Replay Filename Query

Function	This command queries	the name of the file for which the Replay function	
	is executed.		
Query			
	:MMEMory:LOAD:IQDa	ata:INFormation:FILE?	
Response			
	<filename></filename>		
Parameter			
	<filename></filename>	File name	
		Character string within 128 characters	
		(excluding extension)	
		*** is returned unless the Replay function is	
		executed.	
Example of Use			
·	To query the name of the file for which the Replay function is executed. MMEM:LOAD:IQD:INF:FILE?		

:MMEMory:LOAD:IQData:INFormation:DEVice?

Replay Device Query

Function		
	This command queries the name of the drive for which the Replay function is executed.	
Query		
Response	:MMEMory:LOAD:IQDa	ata:INFormation:DEVice?
Parameter	<device></device>	
	<device></device>	Drive name A, B, D, E, F, *** is returned unless the Replay function is executed.
Example of Use	To query the name of the drive for which the Replay function is executed. MMEM:LOAD:IQD:INF:DEV?	
:MMEMory:LOAD:IQE Replay Application Query	Data:INFormation:A	APPLication?
Function		
	This command queries function is executed.	s the name of the application for which the Replay
Query	:MMEMory:LOAD:TOD	ata:INFormation:APPLication?
Response		
Parameter	<application></application>	
	<application> SIGANA EXTDIG</application>	Application to load IQ data file Signal Analyzer Extended Digitizing *** is returned unless the Replay function is executed.
Example of Use	To guery the name of	the application for which the Roplay function is
	To query the name of the application for which the Replay function is executed. MMEM:LOAD:IQD:INF:APPL?	

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SCPI Device Message Details

:MMEMory:LOAD:IQData:INFormation:STARt?

Replay Start Time Query

Function		
	This command querie Replay function.	s the start time of analyzable IQ data for the
Query	Replay function.	
	:MMEMory:LOAD:IQDa	ata:INFormation:STARt?
Response	<start time=""></start>	
Parameter	Start_time>	
	<start_time></start_time>	Start time of analyzable IQ data
	Resolution	1 ns
		No suffix code. Value is returned in S units. -9999999999999 is returned unless the Replay
		function is executed.
Example of Use		
	To query the start time MMEM:LOAD:IQD:INF:	e of analyzable IQ data for the Replay function.
		o mix.
:MMEMory:LOAD:IQD	ata:INFormation:L	ENGth?
Replay Time Length Query		
Function		
Function	This command querie	s the time length of analyzable IQ data for the
	Replay function.	
Query		
Response	:MMEMory:LOAD:IQDa	ata:INFormation:LENGth?
	<time_length></time_length>	
Parameter		
	<time_length> Resolution</time_length>	Time length of analyzable IQ data
	Resolution	1 ns No suffix code. Value is returned in S units.
		-9999999999999 is returned unless the Replay
		bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb
		function is executed.
Example of Use	To query the time leng	1

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SCPI Device Message Details

:MMEMory:LOAD:IQData:INFormation:CONDition?

Replay Level Over Query

Function				
	This command queries whether Level Over is displayed while the Replay			
	function is being execu	function is being executed.		
Query				
_	:MMEMory:LOAD:IQDa	ata:INFormation:CONDition?		
Response				
	<switch> 1</switch>			
	0	Level Over is displayed. Normal		
	0	–999.0 is returned unless the Replay function is		
		executed.		
Example of Use		choolida.		
•	To query whether Lev	el Over is displayed while the Replay function is		
	being executed.			
	MMEM:LOAD:IQD:INF	:COND?		
	> 0			
:MMEMory:LOAD:IQE	Data:INFormation:	ERRor?		
Replay Error Icon Query				
Function	m1 · 1 ·			
	This command queries whether Replay Error Info. icon is displayed while the Replay function is being executed.			
Query	the Replay function is	being executed.		
Query	:MMEMorv:LOAD:IODa	ata:INFormation:ERRor?		
Response	··			
	<switch></switch>			
	1	Replay Error Info. icon is displayed.		
	0	Normal		
		–999.0 is returned unless the Replay function is		
		executed.		
Details				
		b. icon is displayed if the loaded xml file contains		
Example of Lice	error information.			
Example of Use	To guary whathar Par	olay Error Info.icon is displayed while the Replay		
	function is being execu			
	MMEM:LOAD:IQD:INF:			
	> 0			

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:MMEMory:LOAD:IQData:INFormation:CORRection?

Replay Correction Query

Function		
	This command queries executed.	the Correction value when the Replay function is
Query		
	:MMEMory:LOAD:IQDa	ata:INFormation:CORRection?
Response		
	<real></real>	
Parameter		
	<real></real>	Correction level
	Range	–100 to 100 dB
		0.000 is returned when Correction is set to Off.
		–999.0 is returned unless the Replay function is executed.
Example of Use		
	To quory the Correction	n value when the Replay function is executed.
	To query the Correction	n value when the heplay function is executed.

:MMEMory:LOAD:IQData:INFormation:ROSCillator?

MMEM:LOAD:IQD:INF:CORR?

Replay External Reference Query

Function			
	This command queries the frequency reference signal source when the		
	Replay function is executed.		
Query			
	:MMEMory:LOAD:IQD	ata:INFormation:ROSCillator?	
Response			
	<source/>		
Parameter			
	<source/>	Frequency reference signal source	
	INT	Internal reference signal source	
	INTU	Internal reference signal source (Unlock state)	
	EXT	External reference signal source	
	EXTU	External reference signal source (Unlock state)	
		*** is returned unless the Replay function is	
		executed.	
Example of Use			
	To query the frequency reference signal source when the Replay function		
	is executed.		
	MMEM:LOAD:IQD:INF:ROSC?		

2.17 Sub Trace Settings

Table 2.17-1 lists device messages for setting sub traces.

Function	Device Message
Change Sub	:CALCulate:STRace:MODE OFF PVTime SPGRam
Trace	:CALCulate:STRace:MODE?
Sub Trace	:CALCulate:STRace:DETector[:FUNCtion] NORMal POSitive NEGative AVERage
Detection Mode	:CALCulate:STRace:DETector[:FUNCtion]?
Sub Trace Analysis Time	:CALCulate:STRace:ATIMe:AUTO OFF ON 0 1
Analysis Time Auto/Manual	:CALCulate:STRace:ATIMe:AUTO?
Sub Trace Analysis Start	:CALCulate:STRace:ATIMe:STARt <time></time>
Analysis Start Time	:CALCulate:STRace:ATIMe:STARt?
Sub Trace Analysis Start	:CALCulate:STRace:ATIMe:STARt:SAMPle <integer></integer>
Sample	:CALCulate:STRace:ATIMe:STARt:SAMPle?
Sub Trace	:CALCulate:STRace:ATIMe:LENGth <time></time>
Analysis Time Length	:CALCulate:STRace:ATIMe:LENGth?
Sub Trace	:CALCulate:STRace:ATIMe:LENGth:SAMPle <integer></integer>
Analysis Sample Length	:CALCulate:STRace:ATIMe:LENGth:SAMPle?
Sub Trace Log Scale Level Full	:DISPlay:WINDow[1]:STRace:Y[:SCALe]:PDIVision:RANGe:LOGarithmic <rel_ampl></rel_ampl>
Scale	:DISPlay:WINDow[1]:STRace:Y[:SCALe]:PDIVision:RANGe:LOGarithmic?
Sub Trace Linear Scale	:DISPlay:WINDow[1]:STRace:Y[:SCALe]:PDIVision:RANGe:LINear <percent></percent>
Level Full Scale	:DISPlay:WINDow[1]:STRace:Y[:SCALe]:PDIVision:RANGe:LINear?
Sub Trace	:CALCulate:STRace:BANDwidth :BWIDth[:RESolution] <bandwidth></bandwidth>
Resolution Bandwidth	:CALCulate:STRace:BANDwidth :BWIDth[:RESolution]?
Sub Trace Resolution	:CALCulate:STRace:BANDwidth :BWIDth[:RESolution]:AUTO ON OFF 1 0
Bandwidth Auto/Manual	:CALCulate:STRace:BANDwidth :BWIDth[:RESolution]:AUTO?
Sub Trace Result Delay Query	:CALCulate:STRace:TRIGger:DIGRf3g:DELay?

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:CALCulate:STRace:MODE OFF|PVTime|SPGRam

Change Sub Trace

Function			
	This command sets the	e sub-trace type.	
Command			
	:CALCulate:STRace	:MODE <trace></trace>	
Parameter			
	<trace></trace>	Туре	
	OFF	None (Default value)	
	PVTime	Power vs Time	
	SPGRam	Spectrogram	
Details			
	Spectrogram cannot be set when Scale Mode is set to Lin or when		
	Terminal is set to DigRF 3G (only for MS269x Series).		
	This command is not available when Trace Mode is set to No Trace.		
Example of Use			
	To set the sub trace to	Spectrogram.	
	CALC:STR:MODE SPG	R	

:CALCulate:STRace:MODE?

Change Sub Trace Query

Function			
	This command queries the sub-trace type.		
Query			
	:CALCulate:STRace:MODE?		
Response			
	<trace></trace>		
Parameter			
	<trace></trace>	Туре	
	OFF	None	
	PVT	Power vs Time	
	SPGR	Spectrogram	
Example of Use			
	To query the sub-trace	type.	
	CALC:STR:MODE?		
	> SPGR		

:CALCulate:STRace:DETector[:FUNCtion] NORMal|POSitive|NEGative|AVERage

Sub Trace Detection Mode

Function			
	This command sets th sub-trace.	e detection mode for the waveform pattern of the	
Command			
	:CALCulate:STRace	:DETector[:FUNCtion] <mode></mode>	
Parameter			
	<mode></mode>	Detection mode	
	NORMal	Simultaneous detection of positive and negative	
		peaks (unavailable for Spectrogram sub trace)	
	POSitive	Positive peak detection	
	NEGative	Negative peak detection	
	AVERage	Average value detection (Default)	
	Default value	POSitive (in Spectrogram)	
		AVERage (in Power vs Time)	
Details			
	This command is not available when the sub-trace is set to Off.		
Example of Use			
	To set the detection mode to positive peak detection. CALC:STR:DET POS		

:CALCulate:STRace:DETector[:FUNCtion]?

Sub Trace Detection Mode Query

Function		
	This command queries the detection mode for the waveform pattern of	
	the sub-trace.	
Query		
	:CALCulate:STRace:	DETector[:FUNCtion]?
Response		
	<mode></mode>	
Parameter		
	<mode></mode>	Detection mode for sub trace
	NORM	Simultaneous detection of positive and negative
		peaks
	POS	Positive peak detection
	NEG	Negative peak detection
	AVER	Average value detection
Example of Use		
	To query the detection mode.	
	CALC:STR:DET?	
	> POS	

:CALCulate:STRace:ATIMe:AUTO OFF|ON|0|1

Sub Trace Analysis Time Auto/Manual

Function	This command selects automatically or manu	whether to set the analysis time for sub traces ally.	
Command			
	:CALCulate:STRace:ATIMe:AUTO <switch></switch>		
Parameter			
	<switch></switch>	Auto/Manual	
	ON 1	Auto (Default)	
	OFF 0	Manual	
Details			
	This command is not available when the sub-trace is set to Off.		
Example of Use			
	To set the analysis time of the sub-trace to On (Auto). CALC:STR:ATIM:AUTO ON		

:CALCulate:STRace:ATIMe:AUTO?

Sub Trace Analysis Time Auto/Manual Query

Function	This command of automatically or	pueries whether the analysis time for sub traces is set	2
Query	automatically of	indiadaly.	
	:CALCulate:ST	Race:ATIMe:AUTO?	70
Response			SCPI
	<switch></switch>		
Parameter			De
	<switch></switch>	Auto/Manual	Device
	1	Auto	
	0	Manual	Ies
Example of Use			Message
	To query whether the analysis time for sub traces is set automatically or		
	manually.		Detail
	CALC:STR:ATIM	:AUTO?	ils
	× 1		

> 1

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:CALCulate:STRace:ATIMe:STARt <time> Sub Trace Analysis Start Time Function This command sets the analysis start time of the sub-trace. Command :CALCulate:STRace:ATIMe:STARt <time> Parameter <time> Analysis start time Range/Resolution For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)". NS,US,MS,S Suffix codes S is used when omitted. Details This command is not available when the analysis time length (Sub Trace Analysis Time Length) is set to the maximum value. This command is not available in the following cases: • When Terminal is set to DigRF 3G (only for MS269x Series). • When the sub-trace is set to Off. Example of Use To set the analysis start time to 12 ms. CALC:STR:ATIM:STAR 12MS

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SCPI Device Message Details

:CALCulate:STRace:ATIMe:STARt?

Sub Trace Analysis Start Time Query

Function		
Query	This command queries the analysis start time of the sub-trace. :CALCulate:STRace:ATIMe:STARt?	
Query		
Response		-
	<time></time>	
Parameter		
	<time></time>	Analysis start time
	Range/Resolution	For details, refer to
		"MS2690A/MS2691A/MS2692A Signal Analyzer
		Operation Manual (Signal Analyzer function
		Operation)".
		No suffix code. Value is returned in S units.
		–999.0 is returned when no measurement is
		performed or an error occurs.
Example of Use		
	To query the analysis start time.	
	CALC:STR:ATIM:STAR?	
	> 0.01200000	

:CALCulate:STRace:ATIMe:STARt:SAMPle <integer>

Sub Trace Analysis Start Sample

Function	This command uses the number of samples to set the sub trace analysis start position when Terminal is set to DigRF 3G (only for MS269x Series).		
Command			
	:CALCulate:STRace	:ATIMe:STARt:SAMPle <integer></integer>	
Parameter			
	<integer></integer>	Sub trace analysis start position	
	Range	0 to Capture Time Length – Analysis Time	
		Length	
	Resolution	1 sample	
Details			
	This command is not available when the analysis sample length (Sub		
	Trace Analysis Length Sample) is set to the maximum value.		
	This command is not available in the following cases:		
	• When Terminal is RF.		
	• When the sub-trace is set to Off.		
Example of Use			
	To set the analysis start position to 15360000 samples.		

:CALCulate:STRace:ATIMe:STARt:SAMPle?

Sub Trace Analysis Start Sample Query

Function		e number of samples to query the sub trace when Terminal is set to DigRF 3G (only for
Query	:CALCulate:STRace:	ATIMe:STARt:SAMPle?
Response		
	<integer></integer>	
Parameter		
	<integer></integer>	Sub trace analysis start position
	Range	0 to Capture Time Length -Analysis Time
		Length
	Resolution	1 sample
		–999.0 is returned when no measurement is
		performed or an error occurs.
Example of Use		
	To query the analysis start position.	
	CALC:STR:ATIM:STAR:SAMP?	

> 15360000

:CALCulate:STRace:ATIMe:LENGth <time>

Sub Trace Analysis Time Length

Function	This command sets the	e analysis time length of the sub-trace.	
Command	:CALCulate:STRace:ATIMe:LENGth <time></time>		
Parameter			
	<time></time>	Time analysis length	
	Range/Resolution	For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer	
		Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer	
		Operation Manual (Signal Analyzer Function Operation)".	
	Suffix code	NS,US,MS,S	
Details			
	This command is not available when the analysis start time (Sub Trace		
	Analysis Start Time) is set to the maximum value.		
	This command is not available in the following cases:		
	• When Terminal is set to DigRF 3G (only for MS269x Series).		
	• When the sub-trace is set to Off.		
Example of Use			
	-	e length of the sub-trace to 12 ms.	
	CALC:STR:ATIM:LENC	G 12MS	

:CALCulate:STRace:ATIMe:LENGth?

Sub Trace Analysis Time Length Query

Function		
	This command queries	the analysis time length of the sub-trace.
Query		
	:CALCulate:STRace:	ATIMe:LENGth?
Response		
	<time></time>	
Parameter		
	<time></time>	Time analysis length
	Range/Resolution	For details, refer to
		"MS2690A/MS2691A/MS2692A Signal Analyzer
		Operation Manual (Signal Analyzer Function
		Operation)" or "MS2830A Signal Analyzer
		Operation Manual (Signal Analyzer Function
		Operation)".
		No suffix code. Value is returned in S
		units-999.0 is returned when no measurement
		is performed or an error occurs.
Example of Use		
	To query the analysis time length of the sub-trace.	
	CALC:STR:ATIM:LENG?	
	> 0.01200000	

:CALCulate:STRace:ATIMe:LENGth:SAMPle <integer>

Sub Trace Analysis Sample Length

Function			
	This command sets the analysis sample length of the sub-trace when		
	Terminal is set to DigH	RF 3G (only for MS269x Series).	
Command			
	:CALCulate:STRace:	ATIMe:LENGth:SAMPle <integer></integer>	
Parameter			
	<integer></integer>	Analysis sample length	
	Range	0 to Capture Time Length-Analysis Start Time	
	Resolution	1 sample	
Details			
	This command is not available when the analysis start position (Sub		
	Trace Analysis Start Sample) is set to the maximum value.		
	This command is not available in the following cases:		
	• When Terminal is RF.		
	• When the sub-trace is set to Off.		
Example of Use			
	To set the analysis san	pple length of the sub-trace to 15360000.	
	CALC:STR:ATIM:LENG	G:SAMP 15360000	

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:CALCulate:STRace:ATIMe:LENGth:SAMPle?

Sub Trace Analysis Sample Length Query

Function		
	This command queries the analysis sample length of the sub-trace when	
	Terminal is set to DigRF 3G (only for MS269x Series).	
	0	,
Query		
	:CALCulate:STRace	:ATIMe:LENGth:SAMPle?
Response		
	<integer></integer>	
Parameter		
	<integer></integer>	Analysis sample length
	Range	0 to Capture Time Length-Analysis Start Time
	Resolution	1 sample
Example of Use		-
	To query the analysis s	sample length of the sub-trace.
	CALC:STR:ATIM:LENG:SAMP?	
	> 15360000	

: DISPlay: WINDow [1]: STRace: Y [: SCALe]: PDIV ision: RANGe: LOGarithmic

<rel_ampl>

Sub Trace Log Scale Level Full Scale

Function		
	This command sets the level-axis scale range for sub traces in Log scale	
	mode.	
Command		
	:DISPlay:WINDow[1]	:STRace:Y[:SCALe]:PDIVision:RANGe:LOGa
	rithmic <rel_ampl></rel_ampl>	>
Parameter		
	<rel_ampl></rel_ampl>	Y-axis scale
	Resolution	10 dB
	Data Range	10 to 150 dB
	Default value	100 dB
	Suffix code	DB
		DB is used when omitted.
Details		
	This command is not available in the following cases:	
	• When the sub-trace is set to Off.	
	• When Scale Mode is set to Linear and when the sub-trace is set to	
	Power vs Time.	
Example of Use		
	To set the level-axis scale range for sub traces to 50 dB.	
	DISP:WIND:STR:Y:PDIV:RANG:LOG 50	

:DISPlay:WINDow[1]:STRace:Y[:SCALe]:PDIVision:RANGe:LOGarithmic?

Sub Trace Log Scale Level Full Scale Query

Function		
	This command queries scale mode.	the level-axis scale range for sub traces in Log
Query		
	:DISPlay:WINDow[1]	:STRace:Y[:SCALe]:PDIVision:RANGe:LOGa
	rithmic?	
Response		
	<rel_ampl></rel_ampl>	
Parameter		
	<rel_ampl></rel_ampl>	Y-axis scale
	Resolution	10 dB
	Data Range	10 to 150 dB
	Default value	100 dB
	–999.0 is returned when no measurement is performed or an error	
	occurs.	
Example of Use		
	To query the level-axis	scale range for sub traces.
	DISP:WIND:STR:Y:PD	IV:RANG:LOG?
	> 50	

:DISPlay:WINDow[1]:STRace:Y[:SCALe]:PDIVision:RANGe:LINear

<percent>

Sub Trace Linear Scale Level Full Scale

Function	This command sets th scale mode.	e level-axis scale range for sub traces in Linear
	scale mode.	
Command		
	:DISPlay:WINDow[1]:STRace:Y[:SCALe]:PDIVision:RANGe:LINe
	ar <percent></percent>	
Parameter		
	<percent></percent>	Y-axis scale
	10	10 %
	20	20 %
	50	50 %
	100	100 %
	Default value	100 %
		No suffix code
Details		
	This command is not a	available in the following cases:
	• When the sub-trace is set to Off.	
	 When Scale Mode is set to Log and when the sub-trace is set to Power vs Time. 	
	• When the sub-trace is set to Spectrogram.	
Example of Use		
	To set the level-axis so	cale range for sub traces to 50%.
	DISP:WIND:STR:Y:P	_

:DISPlay:WINDow[1]:STRace:Y[:SCALe]:PDIVision:RANGe:LINear?

Sub Trace Linear Scale Level Full Scale Query

Function		
	This command queries scale mode.	the level-axis scale range for sub traces in Linear
Query		
	:DISPlay:WINDow[1]	:STRace:Y[:SCALe]:PDIVision:RANGe:LIN?
Response		
	<percent></percent>	
Parameter		
	<percent></percent>	Y-axis scale
	10	10%
	20	20%
	50	50%
	100	100%
	150	150%
	–999.0 is returned when no measurement is performed or an error	
	occurs.	
Example of Use		
	To query the level-axis scale range for sub traces.	
	DISP:WIND:STR:Y:PDIV:RANG:LIN?	
	> 50	

:CALCulate:STRace:BANDwidth|:BWIDth[:RESolution] <bandwidth>

Sub Trace Resolution Bandwidth

Function			
	This command sets the resolution bandwidth (RBW) of the sub-trace.		
Command			
	:CALCulate:STRace	:BANDwidth :BWIDth[:RESolution]	
	<bandwidth></bandwidth>		
Parameter			
	<bandwidth></bandwidth>	Resolution bandwidth (RBW)	
	Range/Resolution	1 Hz to 10 MHz (1-3 sequence)	
	Suffix code	HZ,KHZ,KZ,MHZ,MZ,GHZ,GZ	
		Hz is used when omitted.	
Details			
	This command is available when the following sub-trace is set to active:		
	• Spectrogram		
	This command is not available when Terminal is set to DigRF 3G (only for MS269x Series).		
	The setting range of this function varies depending on the setting of the frequency span. For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function		
	Operation)".		
Example of Use			
	To set the RBW of the sub-trace to 300 kHz.		
	CALC:STR:BAND 300	KHZ	

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

Sub Trace Resolution Bandwidth Query

Function				
	This command queries the resolution bandwidth (RBW) of the sub-trace.			
Query				
	:CALCulate:STRace:BANDwidth :BWIDth[:RESolution]?			
Response				
	<bandwidth></bandwidth>			
Parameter				
	<bandwidth></bandwidth>	Resolution bandwidth (RBW)		
	Range/Resolution	1 Hz to 10 MHz (1-3 sequence)		
		No suffix code. Value is returned in Hz units.		
		–999.0 is returned when no measurement is		
		performed or an error occurs.		
Example of Use				
	To query the RBW of the sub-trace.			
	CALC:STR:BAND?			
	> 300000			

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

Sub Trace Resolution Bandwidth Auto/Manual

Function			
	This command selects whether to set the resolution bandwidth (RBW) for		
	sub traces automatically or manually.		
Command			
	:CALCulate:STRace:BANDwidth :BWIDth[:RESolution]:AUTO		
	<switch></switch>		
Parameter			
	<switch></switch>	Auto/Manual	
	ON 1	Enables auto mode (Default)	
	OFF 0	Disables auto mode.	
Details			
	This command is available when the following sub-trace is set to active:		
	• Spectrogram		
	This command is not available when Terminal is set to DigRF 3G (only		
	for MS269x Series).		
Example of Use	101 MIC200X CO1105/.		
	$\mathbf{T}_{\mathbf{r}}$, $\mathbf{r}_{\mathbf{r}}$, $\mathbf{h}_{\mathbf{r}}$, $\mathbf{h}_{\mathbf{r}}$, $\mathbf{h}_{\mathbf{r}}$, $\mathbf{h}_{\mathbf{r}}$, $\mathbf{h}_{\mathbf{r}}$		
	To enable the auto mode of RBW.		
	CALC:STR:BAND:AUTO ON		

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

Sub Trace Resolution Bandwidth Auto/Manual

Function	This command queries whether the resolution bandwidth (RBW) for sub traces is set automatically or manually.		
Query	:CALCulate:STRace:BANDwidth :BWIDth[:RESolution]:AUTO?		
Response			
	<switch></switch>		
Parameter			
	<switch></switch>	Auto/Manual	
	1	Auto mode is on.	
	0	Auto mode is off.	
Example of Use			
	To query whether the RBW for sub traces is set automatically or manually. CALC:STR:BAND:AUTO? > 1		

:CALCulate:STRace:TRIGger:DIGRf3g:DELay?

Sub Trace Result Delay Query

Function	
	This command queries the delay time of sub trace results in sample units.
Command	
	:CALCulate:STRace:TRIGger:DIGRf3g:DELay?
Response	
	<sample></sample>
	–999.0 is returned when no measurement is performed or an error occurs.
Details	
	When a trigger is used for DigRF 3G (only for MS269x Series), a delay may occur in the results because there is no pre-trigger. The number of samples from the analysis start sample point to the actual trigger point (trigger input + trigger delay) is queried as a delay.
Example of Use	
	To query the delay time in sample units.
	CALC:STR:TRIG:DIGR:DEL?

2.18 Other Function Settings

Table 2.18-1 lists device messages for other settings.

Function	Device Message			
Measurement Status Query	:STATus:ERRor?			
Erase Warm Up Message	:DISPlay:ANNotation:WUP:ERASe			
Diaplay Title	:DISPlay:ANNotation:TITLe[:STATe] ON OFF 1 0			
Display Title	:DISPlay:ANNotation:TITLe[:STATe]?			
T: 41, D -4	:DISPlay:ANNotation:TITLe:DATA <string></string>			
Title Entry	:DISPlay:ANNotation:TITLe:DATA?			
Adjust Reference Clock	:CALibration:RCLock[:VALue] <integer></integer>			
	:CALibration:RCLock[:VALue]?			
Adjust Reference Clock Preset	:CALibration:RCLock[:VALue]:PRESet			
Pre-selector Auto Tune	:CALibration:YTF			
	:CALibration:YTF?			
Pre-selector Tune	[:SENSe]:POWer[:RF]:PADJust <freq></freq>			
	[:SENSe]:POWer[:RF]:PADJust?			
Captured Data Query	[:SENSe]:DATA?			
Binary Data Byte	:FORMat:BORDer NORMal SWAPped			
Order	:FORMat:BORDer?			
Numeric Data	:FORMat[:DATA] ASCii REAL[, <integer>]</integer>			
Format	:FORMat[:DATA]?			
Micro Wave	[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe] ON OFF 1 0			
Preselector Bypass	[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe]?			

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:STATus:ERRor?

Measurement Status Query

Function				
	This command queries the measurement status.			
Query				
	:STATus:ERRor?			
Response				
	<status></status>			
Parameter				
	<status></status>	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	
		$bit2: 2^2 = 4$	Out of Range	
		bit3 : $2^3 = 8$	(Not used)	
		bit $4 : 2^4 = 16$	(Not used)	
		bit5 : $2^5 = 32$	(Not used)	
		bit6:26 = 64	(Not used)	
		bit7:27 = 128	(Not used)	
		bit8:28 = 256	(Not used)	
		bit9:29 = 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	$0 ext{ to } 255$		
Details				
	0 is returned when terminated normally.			
Example of Use				
	To query the measurement status.			
	STAT:ERR?			
	> 0			

:DISPlay:ANNotation:WUP:ERASe

Erase Warm Up Message

Function	
	This command erases the warm-up message shown shortly after started.
Command	
	:DISPlay:ANNotation:WUP:ERASe
Details	
	This command is not available while the Replay function is being
	executed.
Example of Use	
	To erase the warm-up message.
	DISP:ANN:WUP:ERAS

:DISPlay:ANNotation:TITLe[:STATe] ON|OFF|1|0

Display Title

Function		
	This command sets the	e title display On/Off.
Command		
	:DISPlay:ANNotatio	on:TITLe[:STATe] <switch></switch>
Parameter		
	<switch></switch>	Title display On/Off
	ON 1	Displays the title.
	OFF 0	Hides the title.
Example of Use		
	To display the title.	
	DISP:ANN:TITL ON	

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:DISPlay:ANNotation:TITLe[:STATe]?

Display Title Query

Function		
	This command queries	s the On/Off state of the title display.
Query		
	:DISPlay:ANNotatio	on:TITLe[:STATe]?
Response		
	<switch></switch>	
Parameter		
	<switch></switch>	Title display On/Off
	1	Title is displayed.
	0	Title is hidden.
Example of Use		
	To query the title displ	lay setting.
	DISP:ANN:TITL?	
	> 1	

:DISPlay:ANNotation:TITLe:DATA <string>

Title Entry

Function			
	This comman	d registers the title character string.	
Command			
	:DISPlay:A	NNotation:TITLe:DATA <string></string>	
Parameter			
	<string></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:T	ITL:DATA 'SPECTRUM ANALYZER'	
Related Command			
	This comman	d has the same function as the following commands.	
	:DISPlay:A	CPowe:ANNotation:TITLe:DATA	
	:DISPlay:C	HPowe:ANNotation:TITLe:DATA	
	:DISPlay:O	BWidth:ANNotation:TITLe:DATA	
	:DISPlay:B	POWer :TXPowe:ANNotation:TITLe:DATA	

:DISPlay:ANNotation:TITLe:DATA?

Title Entry Query

Function			
	This comman	d queries the title character string.	
Query			
	:DISPlay:AN	NNotation:TITLe:DATA?	
Response			
	<string></string>		
Parameter			
	<string></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 comman	d has the same function as the following commands.	
	:DISPlay:AC	CPowe:ANNotation:TITLe:DATA?	
	:DISPlay:CHPowe:ANNotation:TITLe:DATA?		
	:DISPlay:OF	BWidth:ANNotation:TITLe:DATA?	
	:DISPlay:BI	POWer :TXPowe:ANNotation:TITLe:DATA?	

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:CALibration:RCLock[:VALue] <integer>

Adjust Reference Clock

Function	This command sets the oscillator (Reference C	e adjustment value of the internal reference signal lock).
Command		
	:CALibration:RCLo	ck[:VALue] <integer></integer>
Parameter		
	<integer></integer>	Adjustment value
	Range	0 to 1023
	Resolution	1
Details		
	This command is executed.	not available while the Replay function is being
Example of Use		
	-	value of the internal reference signal oscillator to
	511.	
	CAL:RCL 511	
:CALibration:RCLock	:VALue]?	
:CALibration:RCLock[:VALue]?	

Adjust Reference Clock Query

Function	This command queries signal oscillator (Refer	the adjustment value of the internal reference ence Clock).
Query		
	:CALibration:RCLoc	ck[:VALue]?
Response		
	<integer></integer>	
Parameter		
	<integer></integer>	Adjustment value
	Range	0 to 1023
	Resolution	1
Example of Use		
	To query the adjustment CAL:RCL? > 511	nt value of the internal reference signal oscillator.

: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
Details	
	This command is not available while the Replay function is being
Example of Use	executed.
	To reset the adjustment value of the internal reference signal oscillator. CAL:RCL:PRES
:CALibration:YTF	
Pre-selector Auto Tune	
Function	
	This command enables automatic setting for the preselector peaking bias value.
Command	
	:CALibration:YTF
Details	
[MS269xA]	This command is not available while the Replay function is being executed.
	This command is not available in the following case:
	• When Terminal is DigRF 3G (only for MS269x Series)
[MS2830A]	This command is not available for MS2830A-040/041/043.
	This command is not available when the Replay function is executed.
Example of Use	
	To enable automatic setting for the preselector peaking bias value. CAL:YTF

:CALibration:YTF?

Pre-selector Auto Tune Query

Function			
	Th	is command queries	whether automatic setting is completed normally
	for	the preselector peak	xing bias value.
Query			
	: C	ALibration:YTF?	
Response			
	<r< th=""><th>esult></th><th></th></r<>	esult>	
Parameter			
	<r< th=""><th>esult></th><th>Normal/Error</th></r<>	esult>	Normal/Error
		0	Normal
		1	Error
Details			
[MS2	-	is command is not av ecuted.	vailable while the Replay function is being
	Th	is command is not av	vailable in the following case:
	•	When Terminal is D	igRF 3G (only for MS269x Series)
[MS2	830A] Th	is command is not av	vailable for MS2830A-040/041/043.
	Th	This command is not available when the Replay function is executed.	
Example of Use			
	pre	eselector peaking bia L:YTF?	matic setting is completed normally for the s value.

2

[:SENSe]:POWer[:RF]:PADJust <freq>

Pre-selector Tune

Function				
		This command sets the Preselector peaking bias value.		
Command		[:SENSe]:POWer[:RF]:PADJust <freq></freq>		
Parameter			•	
		<freq></freq>	Peaking bias value	
		Range	-128 to 127	
		Resolution	1	
		Default value	0	
Details				
	[MS269xA]		vailable in the following cases:	
		• When using the MS		
		• When not using the	-	
			vitched to the preselector band can be set by using	
		Frequency Band Mode		
		• When Terminal is se	et to DigRF 3G (only for MS269x Series).	
		This command is not a	vailable while the Replay function is being	
		executed.		
	[MS2830A]	Automatic setting of th	ne peaking bias value cannot be used under the	
		following conditions:		
		• When using MS283	0A-040/041/043	
		• When YTF is not us	ed	
		When Frequency B	and Mode is Normal and signal frequency is ≤ 6.0	
		GHz.		
		When Frequency B	and Mode is Spurious and signal frequency is ≤ 4.0	
		GHz.		
		This command is not a	vailable when the Replay function is executed.	
Example of Use				
		To set the peaking bias	s value to 100.	
		POW:PADJ 100		

[:SENSe]:POWer[:RF]:PADJust?

Pre-selector Tune Query

Function				
		This command queries the Preselector peaking bias value.		
Query				
Deenenee		[:SENSe]:POWer[:R	F]:PADJust?	
Response		<freq></freq>		
Parameter		(1104)		
		<freq></freq>	Peaking bias value	
		Range	-128 to 127	
		Resolution	1	
Details				
	[MS269xA]		available in the following cases:	
		• When using the MS		
		• When not using the	-	
		Frequency Band Mode	vitched to the preselector band can be set by using	
			et to DigRF 3G (only for MS269x Series).	
		This command is not a executed.	available while the Replay function is being	
	[MS2830A]	executed. Automatic setting of t	available while the Replay function is being he peaking bias value cannot be used under the	
	[MS2830A]	executed.	he peaking bias value cannot be used under the	
	[MS2830A]	executed. Automatic setting of the following conditions:	he peaking bias value cannot be used under the 0A-040/041/043	
	[MS2830A]	executed. Automatic setting of the following conditions: • When using MS283 • When YTF is not us	he peaking bias value cannot be used under the 0A-040/041/043	
	[MS2830A]	 executed. Automatic setting of the following conditions: When using MS283 When YTF is not use When Frequency Berght. 	he peaking bias value cannot be used under the 0A-040/041/043 sed	
	[MS2830A]	 executed. Automatic setting of the following conditions: When using MS283 When YTF is not use When Frequency Be GHz. When Frequency Be GHz. 	he peaking bias value cannot be used under the 0A-040/041/043 sed Cand Mode is Normal and signal frequency is ≤ 6.0	
Example of Use		 executed. Automatic setting of the following conditions: When using MS283 When YTF is not use When Frequency Be GHz. When Frequency Be GHz. 	he peaking bias value cannot be used under the 0A-040/041/043 sed Cand Mode is Normal and signal frequency is ≤ 6.0 and Mode is Spurious and signal frequency is ≤ 4.0	
Example of Use		 executed. Automatic setting of the following conditions: When using MS283 When YTF is not use When Frequency Berther GHz. When Frequency Berther GHz. When Frequency Berther GHz. This command is not a set of the following for the followin	the peaking bias value cannot be used under the 0A-040/041/043 sed and Mode is Normal and signal frequency is ≤ 6.0 and Mode is Spurious and signal frequency is ≤ 4.0 available when the Replay function is executed.	
Example of Use		 executed. Automatic setting of the following conditions: When using MS283 When YTF is not use When Frequency B GHz. When Frequency B GHz. 	the peaking bias value cannot be used under the 0A-040/041/043 sed and Mode is Normal and signal frequency is ≤ 6.0 and Mode is Spurious and signal frequency is ≤ 4.0 available when the Replay function is executed.	
Example of Use		 executed. Automatic setting of the following conditions: When using MS283 When YTF is not use When Frequency Be GHz. When Frequency Be GHz. This command is not as To query the peaking Berns and the following for the peaking Berns and the following for the following for the peaking Berns and the following for the peaking Berns and the following for the following for the following for the peaking Berns and the following for the peaking Berns and the following for the following	the peaking bias value cannot be used under the 0A-040/041/043 sed and Mode is Normal and signal frequency is ≤ 6.0 and Mode is Spurious and signal frequency is ≤ 4.0 available when the Replay function is executed.	

[:SENSe]:DATA?

Captured Data Query

Function	This command queries	the IQ data captured into the waveform memory.	
	-	•	
Query	[:SENSe]:DATA? [<s< td=""><td>tart>[,<length>[,<mode>]]]</mode></length></td></s<>	tart>[, <length>[,<mode>]]]</mode></length>	
Response			
	When ASCii,0 is set <datai_1>,<dataq_1< td=""><td>to :FORMat[:DATA]: >,<datai_2>,<dataq_2>,</dataq_2></datai_2></td></dataq_1<></datai_1>	to :FORMat[:DATA]: >, <datai_2>,<dataq_2>,</dataq_2></datai_2>	
	When REAL, 32 is set to :FORMat[:DATA], "#"(in the Ascii format) is followed by, in the following order, "Character string range which indicates the byte length of the binary data (in the Ascii format)", "Byte length of binary data (in the Ascii format)", and "IQ data string(in the binary format)". Similarly, in the binary format, response message terminator is added. (For details, refer to 1.7.2 SCPI Response Message Mode Mainframe Remote Control).		
	Example: To query the t	two samples when REAL,32 is set	
	to:FORMat[:DATA]:		
	> #216<16 bytes of	data>	
	"2" in #216 indicates that 2 characters with the binary data length follow		
	after this, and "16" in it indicates that 16 Byte binary data follows after		
	it.		
Parameter			
		parameters are set as follows:	
	<start></start>	Query start point (in sample units)	
		Relative value from Analysis Start Time = 0 s Relative value from minimum Analysis Start Time (when Replay function is executed)	
	Range	Starting from 0	
		(Analysis Start Time[s]	
		+ Analysis Time Length[s])	
		\times Sampling Rate[Hz] – 1	
		(When Capture Time is Auto)	
		Starting from 0	
		Capture Time Length[s] \times Sampling Rate[Hz] –	
		1	
		(When Capture Time is Manual)	
	Resolution	1	
	When omitted:	0	

<length></length>	Query length (in sample units)
Range	Starting from 1
5	(Analysis Start Time[s]
	+ Analysis Time Length[s])
	× Sampling Rate[Hz] – <start></start>
	(When Capture Time is Auto)
	Starting from 1
	Capture Time Length[s] × Sampling Rate[Hz] – <start></start>
	(When Capture Time is Manual)
	Up to 200000 can be set.
Resolution	1
When omitted	(Analysis Start Time[s]
when omitted	+ Analysis Time Length[s])
	× Sampling Rate[Hz] – <start></start>
	(When Capture Time is Auto)
	Capture Time Length[s] × Sampling Rate[Hz]
	- <start></start>
	(When Capture Time is Manual) If more than 200000 is set, 200000 is
	automatically set.
<datai_n></datai_n>	I phase data
	No suffix code
	A parameter is read out in the index format of 8 digit effective figure when ASCii,0 is set to :FORMat[:DATA].
	A parameter is read out in the 32 byte single
	precision floating number point format, when REAL,32 is set to :FORMat[:DATA].
<dataq_n></dataq_n>	Q phase data
	No suffix code
	A parameter is read out in the index format of 8 digit effective figure when ASCii,0 is set
	to :FORMat[:DATA].
	A parameter is read out in the 32 byte single precision floating number point format, when REAL,32 is set to :FORMat[:DATA].
<mode></mode>	Sampling rate
SRATe	Acquires the sampling rate data.
ORATe	Acquires re-sampled data for Output Rate. For

Chapter 2 SCPI Device Message Details

When Terminal is Dig set as follows:	gRF 3G (only for MS269x Series), parameters are
<start></start>	Same as when Terminal is RF:
<length></length>	Same as when Terminal is RF:
<datai_n></datai_n>	I phase data No suffix code When ASCii,0 is set for :FORMat[:DATA], it will be output as exponential form of 8 digits of essential figures. When REAL, 32 is set for :FORMat[:DATA], Target System:GSM is output in 16 bit format, and Target System:W-CDMA is output in 8 bit format.
<dataq_n></dataq_n>	Q phase data No suffix code When ASCii,0 is set for :FORMat[:DATA], it will be output as exponential form of 8 digits of essential figures. :When REAL, 32 is set for :FORMat[:DATA], Target System:GSM is output in 16 bit format, and Target System:W-CDMA is output in 8 bit format.

Details

(When Terminal is RF)

The actually captured IQ data range is larger than the range set in Analysis Time, because of the internal analysis such as filter processing. Since IQ data read out by this command is within the range set in Analysis Time, you cannot read out all the IQ data captured by this command. Use the Save Captured Data function in order to read out all of them.

Note that the range of the IQ data read out by this command is different from that of the IQ data saved by the Save Captured Data function. The position at which Analysis Start Time of IQ data saved by Save Capture Data is 0 s is calculated by the following formula:

 $POS = TP - TD \times FS$

Where	
POS	Position at which Analysis Start Time of IQ data
	saved by Save Capture Data is 0 s [sample]
TP	"Trigger Position" value [sample] in XML file X
TD	Trigger Delay setting value [s]
	0 is set when Trigger Switch is Off.
FS	Sampling Rate [Hz]

IQ data can be converted into power by the following formula:

$$P = 10 Log_{10} (I^2 + Q^2)$$

Where

Р	: Power[dBm]
I	: I phase data
Q	: Q phase data

The query function is disabled when Analysis Start Time is set to 0 s, when Analysis Time Length is set to 0 s, and when Capture Time is set to Auto.

The query function is disabled during measurement.

:FORMat[:DATA] and FORMat:BORDer can change the output mode in which this command reads out IQ data.

Sampling Rate can be read out by [:SENSe]:FREQuency:SRATe?.

When all the following conditions are met, this command reads out IQ data most rapidly.

- The terminal is RF.
- :FORMat[:DATA] is set to REAL, 32.
- :FORMat:BORDer is set to SWAPped.

	 (When Terminal is DigRF 3G (only for MS269x Series)) Actual range of IQ data that is captured will be wider than what is set with Analysis Sample Length (or Capture Time Length), due to the internal analysis process, such as filter process, etc. Range of the IQ data that is read with this command is only the range set with Analysis Sample Length (or Capture Time Length), so all the IQ data that was captured with this command cannot be read. To read all the IQ data, use Save Captured Data function. 	
	Beware that the range of IQ data read with this command and range of IQ data saved by the Save Captured Data function is different.	
	It cannot be read when the Analysis Start Sample is 0 s, Analysis Sample Length is 0 s, and Capture Time is Auto.	
	It cannot be queried while measuring.	
	Output format of IQ data by this command can be changed by :FORMat[:DATA] and FORMat:BORDer.	
Example of Use		
	To query two IQ data samples from the Oth sample. (When ASCii, 0 is set to :FORMat[:DATA]) DATA? 0,2	
	<pre>> 2.4358980E-03,-1.9873490E+01, 6.3400291E+00,1.2231689E-03</pre>	

:FORMat:BORDer NORMal|SWAPped

Binary Data Byte Order

Function	This command sets the byte order of the reading data when REAL, 32 is set to :FORMat[:DATA].		
Command	:FORMat:BORDer <border></border>		
Parameter			
	<border> NORMal SWAPped</border>	Byte order Sets the byte order to Big-endian (Default value) Sets the byte order to Little-endian.	
Details			
	This command sets the order in which the data is arranged when data is read out in a binary style. In Big-endian, the data is arranged in the descending order (starting from the most significant value in the sequence), and in Little-endian, the data is arranged in the ascending order (starting from the least significant value in the sequence).		
	(When Terminal is RF) For instance, in Big-endian, "0x01234567" (four-byte data) is arranged in the order of "01 23 45 67", while, in Little-endian, it is arranged in the order of "67 45 23 01".		
	(When Terminal is DigRF 3G (only for MS269x Series)) The 2 byte data of "0x0123" in the Target System:GSM will be arranged in order of "23 01" in Big endian, and "01 23" in Little endian. Arrangement order will not change for Target System:W-CDMA since the data is 8 bits.		
Example of Use	To set the byte order to FORM:BORD SWAP	o the little endian.	

:FORMat:BORDer?

Binary Data Byte Order Query

Function	This command queries is set to :FORMat[:DAT	the byte order of the reading data when REAL, 32	2
Query	:FORMat:BORDer?		SCP
Response	<border></border>		SCPI Device Message Details
Parameter			e M
	<border></border>	Byte order	[es:
	NORM	Byte order is set to Big-endian.	3ag
	SWAP	Byte order is set to Little-endian.	εI
Example of Use			Det
	To query the byte order FORM:BORD? > SWAP	·	ails

:FORMat[:DATA] ASCii|REAL[,<integer>]

Numeric Data Format

Function		
	This command sets the	e IQ data format read out by [:SENSe]:DATA?.
Command		
	:FORMat[:DATA] <fo< td=""><td></td></fo<>	
Parameter		
	It will be following parameters when Terminal is RF:	
	<format></format>	IQ data format
	ASCii	Ascii format (initial value)
	REAL	Binary 32 byte floating point number format
	<length></length>	Secondary setting to the selected format
	0	This can be set only when ASCii is specified for format.
	32	Returns the results in the 32 byte floating point number format.
		Setting is possible only when REAL is specified as the format.
	When omitted:	0 is automatically set when ASCii is specified as
		the format, while 32 is automatically set when REAL is specified as the format.
	It will be following pa	arameters when Terminal is DigRF 3G (only for
	MS269x Series):	
	<format></format>	IQ data format
	ASCii	Ascii format (Default value)
	REAL	Binary 16 bits format (When the Target System is GSM)
		Binary 8 bits format (When the Target System is W-CDMA.)
	<length></length>	Supplementary setting for selected format
		0 is set only when ASCii is specified for format.
	32	
		32 is set only when REAL is specified for format.
	When omitted:	0 is set when ASCii is specified for format.
		32 is set when REAL is specified for format.

Details	
	(When Terminal is RF)
	When REAL is set, IQ data is read out in the 32 byte single precision
	floating point number format specified in IEEE754.
	(When Terminal is DigRF 3G (only for MS269x Series))
	When the REAL is set, IQ data is output in 16 bits for the Target
	System:GSM, and in 8 bits for Target System:W-CDMA.
Example of Use	
	To set the IQ data format to Ascii.
	FORM ASC

:FORMat[:DATA]?

Numeric Data Format Query

Function			
	This command queries the format of the IQ data read out by		
	[:SENSe]:DATA?.		
Query			
	:FORMat[:DATA]?		
Response			
Response	<format>,<length></length></format>		
Parameter			
	When Terminal is RF,	parameters are set as follows:	
	<format></format>	IQ data format	
	ASC	ASCii format (Default value)	
	REAL	Binary 32 byte floating point number format	
	<length></length>	Secondary setting to the selected format	
	0	Returns the results in the effective digit number	
		unique to this instrument.	
	32	Returns the results in the 32 byte floating point	
		number format.	
	When Terminal is RF,	parameters are set as follows:	
	<format></format>	IQ data format	
	ASC	ASCii format (Default value)	
	REAL	Binary 16 bits format (When Target System is	
		GSM)	
		Binary 8 bits format (When Target System is	
		W-CDMA)	
	<length></length>	Supplementary setting for selected format	
	0	Result is sent back in number of significant	
		figures of this instrument.	
	32	Result is returned when the REAL is specified	
		for format.	
Example of Use			
	To query the IQ data f	format.	
	FORM?		
	00		

> REAL,32

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

Micro Wave Preselector Bypass

Function	This command sets the	e Microwave Preselector Bypass.	
Command	[:SENSe]:POWer[:RF]:MW:PRESelector[:STATe] <switch></switch>		
Parameter			
	<switch></switch>	Microwave Preselector Bypass	
	ON 1	Enables bypassing	
	OFF 0	Disables bypassing	
	Default	ON	
Details			
	This function is available only when Option 067/167 is installed for		
	MS269xA.		
	This function is available only when Option 007/067/167 is installed for MS2830A.		
	If Frequency Span is 50 MHz or more, the microwave preselector is		
	bypassed regardless of this setting.		
Example of Use			
	To set the Micro Wave Preselector Bypass to ON. 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></status>	
Parameter		
	<status></status>	Microwave Preselector Bypass
	1	Enables bypassing
	0	Disables bypassing
Details		
	This function is availab MS269xA.	ble only when Option 067/167 is installed for
	This function is available only when Option 007/067/167 is installed for MS2830A.	
	If Frequency Span is 50 MHz or more, the microwave preselector is bypassed regardless of this setting.	
Example of Use		
	To query the Micro Wave Preselector Bypass status. POW:MW:PRES?	
	> 1	

2.19 QUEStionable Status Register

Figure 2.19-1, Table 2.19-1, and Table 2.19-2 show the layer structure of the QUEStionable status register.

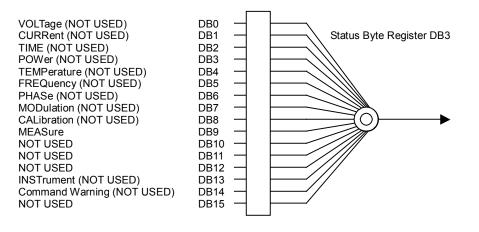
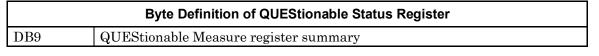


Figure 2.19-1 QUEStionable Status Register





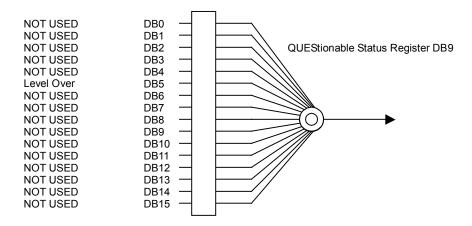




 Table 2.19-2
 QUEStionable Measure Register

Byte Definition of QUEStionable Measure Register		
DB5	Indicates that the level has exceeded its limit.	

Table 2.19-3 lists device messages for the QUEStionable status register.

I able 2.19-3 Device message for QUEStionable Status Register			
Function	Device Message		
Questionable Status Register Event	:STATus:QUEStionable[:EVENt]?		
Questionable Status Register Condition	:STATus:QUEStionable:CONDition?		
Questionable Status Register	:STATus:QUEStionable:ENABle <integer></integer>		
Enable	:STATus:QUEStionable:ENABle?		
Questionable Status Register	:STATus:QUEStionable:NTRansition <integer></integer>		
Negative Transition	:STATus:QUEStionable:NTRansition?		
Questionable Status Register	:STATus:QUEStionable:PTRansition <integer></integer>		
Positive Transition	:STATus:QUEStionable:PTRansition?		
Questionable Measure Register Event	:STATus:QUEStionable:MEASure[:EVENt]?		
Questionable Measure Register Condition	:STATus:QUEStionable:MEASure:CONDition?		
Questionable	:STATus:QUEStionable:MEASure:ENABle <integer></integer>		
Measure Register Enable	:STATus:QUEStionable:MEASure:ENABle?		
Questionable Measure Register Negative Transition	:STATus:QUEStionable:MEASure:NTRansition <integer></integer>		
	:STATus:QUEStionable:MEASure:NTRansition?		
Questionable	:STATus:QUEStionable:MEASure:PTRansition <integer></integer>		
Measure Register Positive Transition	:STATus:QUEStionable:MEASure:PTRansition?		

Table 2.19-3 Device message for QUEStionable Status Register

:STATus:QUEStionable[:EVENt]?

Questionable Status Register Event

Function		
	This command queries register.	the event register of the QUEStionable status
Query		
	:STATus:QUEStional	<pre>ple[:EVENt]?</pre>
Response		
	<integer></integer>	
Parameter		
	<integer></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	s the condition register of the QUEStionable status	
	register.		
Query			
	:STATus:QUEStiona	ble:CONDition?	
Response			
	<integer></integer>		
Parameter			
	<integer></integer>	Total bytes 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		

Chapter 2 SCPI Device Message Details

:STATus:QUEStionable:ENABle <integer>

Questionable Status Register Enable

Function			
	This command sets the event enable register of the QUEStionable status		
	register.		
Command			
	:STATus:QUEStionab	le:ENABle <integer></integer>	
Parameter			
	<integer></integer>	Total bytes of event enable register	
	Resolution	1	
	Range	0 to 65535	
Details			
	This command is availa	ble 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		
2	:STATus:QUEStionab	ole:ENABle?
Response		
·	<integer></integer>	
Parameter	-	
	<integer></integer>	Total bytes of event enable register
	Resolution	1
	Range	0 to 65535
Example of Use	U U	
	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 transition) of the		
	QUEStionable status register.		
Command			
	:STATus:QUEStiona	ble:NTRansition <integer></integer>	
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(negative transition)	
	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 transition) 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 transition) of the	
	QUEStionable status register.		
Query			
	:STATus:QUEStional	ole:NTRansition?	
Response			
	<integer></integer>		
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(negative transition)	
	Resolution	1	
	Range	0 to 65535	
Example of Use			
	To query the transition	n filter (negative transition) of the QUEStionable	
	status register.		
	:STAT:QUES:NTR?		
	> 16		

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:STATus:QUEStionable:PTRansition <integer>

Questionable Status Register Positive Transition

Function			
	This command sets the transition filter (positive transition) of the		
	QUEStionable status r	egister.	
Command			
	:STATus:QUEStionab	ole:PTRansition <integer></integer>	
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(positive transition)	
	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 transition) 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 transition) of the		
	QUEStionable status register.		
Query			
	:STATus:QUEStiona	ble:PTRansition?	
Response			
	<integer></integer>		
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(positive transition)	
	Resolution	1	
	Range	0 to 65535	
Example of Use			
	To query the transition filter (positive transition) 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:QUEStional	ple[:EVENt]?	
Response			
	<integer></integer>		
Parameter			
	<integer></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 Measure		
	register.		
	• CTAT • OILE C 2		
	:STAT:QUES?		
	> 0		

:STATus:QUEStionable:MEASure:CONDition?

Questionable Measure Register Condition

Function			
	This command queries the condition register of the QUEStionable		
	Measure register.		
Query			
	:STATus:QUEStional	ole:CONDition?	
Response			
	<integer></integer>		
Parameter			
	<integer></integer>	Total bytes 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:COND?		
	> 0		

:STATus:QUEStionable:MEASure:ENABle <integer>

Questionable Measure Register Enable

Function			
	This command sets the	e event enable register of the QUEStionable	
	Measure register.		
Command			
	:STATus:QUEStionab	ole:ENABle <integer></integer>	
Parameter			
	<integer></integer>	Total bytes of event enable register	
	Resolution	1	
	Range	0 to 65535	
Details			
	This command is availa	able only in the SCPI mode.	
Example of Use			
	To set the event enable register of the QUEStionable Measure register to		
	16.		
	:STAT:QUES:ENAB 16	5	

:STATus:QUEStionable:MEASure:ENABle?

Questionable Measure Register Enable Query

Function			
	This command queries the event enable register of the QUEStionable		
	Measure register.		
Query			
	:STATus:QUEStiona	ble:ENABle?	
Response			
	<integer></integer>		
Parameter			
	<integer></integer>	Total bytes of event enable register	
	Resolution	1	
	Range	0 to 65535	
Example of Use			
	To query the event ena	able register of the QUEStionable Measure register.	
	:STAT:QUES:ENAB?		
	> 16		

:STATus:QUEStionable:MEASure:NTRansition <integer>

Questionable Measure Register Negative Transition

Function			
	This command sets the transition filter (negative transition) of the		
	QUEStionable Measu	re register.	
Command			
	:STATus:QUEStiona	ble:NTRansition <integer></integer>	
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(negative transition)	
	Resolution	1	
	Range	0 to 65535	
Details			
	This command is avail	lable only in the SCPI mode.	
Example of Use			
	To set the transition f	ilter (negative transition) of the QUEStionable	
	Measure register to 16.		
	:STAT:QUES:NTR 16		

:STATus:QUEStionable:MEASure:NTRansition?

Questionable Measure Register Negative Transition Query

Function		
	This command queries the transition filter (negative transition) of the	
	QUEStionable Measur	re register.
Query		
	:STATus:QUEStional	ble:NTRansition?
Response		
	<integer></integer>	
Parameter		
	<integer></integer>	Total bytes of transition filter
		(negative transition)
	Resolution	1
	Range	0 to 65535
Example of Use		
	To query the transition	n filter (negative transition) of the QUEStionable
	Measure register.	
	:STAT:QUES:NTR?	
	> 16	

:STATus:QUEStionable:MEASure:PTRansition <integer>

Questionable Measure Register Positive Transition

Function		
	This command sets the transition filter (positive transition) of the	
	QUEStionable Measur	e register.
Command		
	:STATus:QUEStional	ole:PTRansition <integer></integer>
Parameter		
	<integer></integer>	Total bytes of transition filter
		(positive transition)
	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 transition) of the QUEStionable	
	Measure register to 16.	
	:STAT:QUES:PTR 16	
:STATus:QUEStionable:MEASure:PTRansition?		
Questionable Measure Register Positive Transition Query		

Function		
	This command queries the transition filter (positive transition) of the	
	QUEStionable Measur	e register.
Query		
	:STATus:QUEStional	ole:PTRansition?
Response		
	<integer></integer>	
Parameter		
	<integer></integer>	Total bytes of transition filter
		(positive transition)
	Resolution	1
	Range	0 to 65535
Example of Use		
	To query the transition	n filter (positive transition) of the QUEStionable
	Measure register.	
	:STAT:QUES:PTR?	
	> 16	

2.20 OPERation Status Register

Figure 2.20-1 and Table 2.20-1 show the layer structure of the OPERation Status Register.

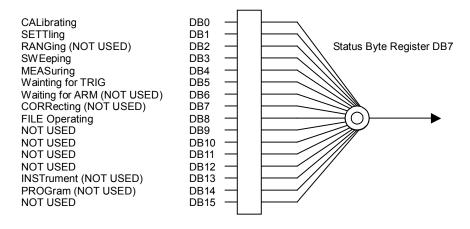


Figure 2.20-1 OPERation Status Register

Table 2.20-1	OPERation Status Register
--------------	----------------------------------

Byte Definition of OPERation Status Register		
DB0	CAL is being executed.	
DB1	Warm-up message is being displayed.	
DB3	During Capturing (Fixed to 1 in Continuous)	
DB4	During analyzing	
DB5	During waiting for trigger.	
DB8	File in operation	

Table 2.20-2 lists device messages for the OPERation Status Register.

Table 2.20-2 Device messages for of Enation of and Register		
Function	Device Message	
Operation Status Register Event	:STATus:OPERation[:EVENt]?	
Operation Status Register Condition	:STATus:OPERation:CONDition?	
Operation	:STATus:OPERation:ENABle <integer></integer>	
Status Register Enable	:STATus:OPERation:ENABle?	
Operation Status Register	:STATus:OPERation:NTRansition <integer></integer>	
Negative Transition	:STATus:OPERation:NTRansition?	
Operation Status Register	:STATus:OPERation:PTRansition <integer></integer>	
Positive Transition	:STATus:OPERation:PTRansition?	

Table 2.20-2 Device messages for OPERation Status Register

: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></integer>	
Parameter		
	<integer></integer>	Total bytes of event register
	Resolution	1
	Range	0 to 65535
Details	0	
	This command is availa	able only in the SCPI mode.
Example of Use		
	To query the contents of 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></integer>	
Parameter		
	<integer></integer>	Total bytes of condition 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 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></integer>
Parameter		
	<integer></integer>	Total bytes 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></integer>		
Parameter			
	<integer></integer>	Total bytes 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 transition) of the		
	OPERation status register.		
Command			
	:STATus:OPERation:NTRansition <integer></integer>		
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(negative transition)	
	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 transition) of the OPERation status to 16.		
	:STAT:OPER:NTR 16		

:STATus:OPERation:NTRansition?

Operation Status Register Negative Transition Query

Function			
	This command queries the transition filter (negative transition) of the		
	OPERation status register.		
Query			
	:STATus:OPERation:NTRansition?		
Response			
	<integer></integer>		
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(negative transition)	
	Resolution	1	
	Range	0 to 65535	
Example of Use			
	To query the transition filter (negative transition) 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 transition) of the		
	OPERation status regi	ister.	
Command			
	:STATus:OPERation:PTRansition <integer></integer>		
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(positive transition)	
	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 transition) 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 transition) of the		
	OPERation status register.		
Query			
-	:STATus:OPERation:PTRansition?		
Response			
	<integer></integer>		
Parameter			
	<integer></integer>	Total bytes of transition filter	
		(positive transition)	
	Resolution	1	
	Range	0 to 65535	
Example of Use			
	To query the transition filter (positive transition) of the OPERation		
	status register.		
	:STAT:OPER:PTR?		
	> 16		

2

2.21 Batch Processing Function Setting

Table 2.21-2 lists messages related to the batch processing function.

Function	Device Message
Measure Power	:MEASure:POWadj?
Adjust	,<length>,<sg_start_level>,<sg_max_level>,<target>,<ran ge> [,<frequency>[,<count>[,<adjust_log>]]]</adjust_log></count></frequency></ran </target></sg_max_level></sg_start_level></length>

:MEASure:POWadj? ,<length>,<sg_start_level>,<sg_max_level>,<target>,<range>[,<frequ ency>[,<count>[,<adjust_log>[,<sg_offset_switch>]]]]

Measure Power Adjust

Function	This command executes power adjustment and captures the results. Power adjustment combines the SG option and power measurement function and sets the output level of the DUT, such as amplifiers, to the specified level.		
Query	:MEASure:POWadj? ,<length>,<sg_start_level>,<sg_max_level>,<target> ,<range>[,<frequency>[,<count>[,<adjust_log>]]]</adjust_log></count></frequency></range></target></sg_max_level></sg_start_level></length>		
Response	<judge>,<sa_input></sa_input></judge>	>, <sg_output>,<count_res>,<time>,<sa_in< td=""></sa_in<></time></count_res></sg_output>	
		<pre>cput_log_n>,<count_log_n></count_log_n></pre>	
Parameter		25000* ² ,50000* ² , 100000* ² ,250000* ² , 500000* ² , 1000000* ² , 2500000* ² , 5000000* ² ,10000000* ² , 25000000* ¹ , 31250000* ¹ ,50000000* ³ * ⁴ , 62500000* ⁴ , 100000000* ³ * ⁵ , 125000000* ³ * ⁵	
	*5: Opt	ion 078/178 When the Analysis Bandwidth Extension to 125 MHz option is installed, the following frequency spans can be set in addition to *1, *2. 100000000, 125000000	

2

	[MS2830A] *1: Option 005/105/007/009/109 When the Analysis Bandwidth Extension to 31.25 MHz option is installed, the following frequency spans can be set in addition to *2. 25000000, 31250000		
*2: Option 006/ When install be set. 1000, 10000			
	*4: Optio	n 077/177	
		When the Analysis Bandwidth Extension to 62.5 MHz option is installed, the following frequency spans can be set in addition to *1, *2. 50000000, 62500000	
		n 078/178 When the Analysis Bandwidth Extension to 125 MHz is installed, the following frequency spans can be set in addition to *1, *2, *3. 100000000, 125000000	
H M		HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ HZ is assumed if the value is omitted. MAXimum, MINimum, and DEFault cannot be used.	
<length></length>		Analysis length	
Range 7		The setting range depends on . Refer to section 2.1.4 Setting Capture Time in the Operation version.	
Suffix code NS		NS, US, MS, S S is assumed if the value is omitted.	
<sg_start_le< td=""><td></td><td>Set the SG output level to be set as the default. When the DUT is inserted, set so that the DUT input level and RF Input do not exceed</td></sg_start_le<>		Set the SG output level to be set as the default. When the DUT is inserted, set so that the DUT input level and RF Input do not exceed	
0	[MS269x. [MS2830.	A] -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) -136.00 dBm to -3.00 dBm (≤25 MHz)	
Resolution 0.01 d		(Option 022) 0.01 dBm	

<sg_max_level></sg_max_level>	Specify the SG max. output level. Set so that the DUT input level and RF Input do not exceed the
Range [MS269 [MS283	0A] -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) -136.00 dBm to -3.00 dBm (≤25 MHz) (Option 022)
Resolution Suffix code	0.01 dBm DBM, DM
<target> Range Resolution Suffix code</target>	Target level at power adjustment –150 dBm to 30 dBm 0.01 dBm DBM, DM
<range> Range Resolution Suffix code</range>	Power adjustment range Power adjustment is evaluated as successful if within this specified range. 0 to 20 dB 0.01 dB DB
<frequency> Range [MS269 [MS283</frequency>	
Resolution Suffix code	0.01 Hz HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ HZ is assumed if the value is omitted. MAXimum, MINimum, and DEFault cannot be used. If omitted, the currently set frequency is used.
<count> Range Resolution Suffix code</count>	Count of power adjustment times 1 to 10 1 None Power adjustment is executed five times if the value is omitted.
<adjust_log> ON 1 OFF 0</adjust_log>	Specifies whether or not to output log at each power adjustment. Outputs log Does not output log
<sg_offset_switch> ON 1 OFF 0</sg_offset_switch>	Specifies whether or not to return level offset setting in SG output level setting range. Returns level offset setting Does not return level offset setting

<judge></judge>	Evaluates power adjustment. Returns 0 for PASS and 1 for FAIL. "–999.0" is returned at Unmeasured.	
<sa_input> Suffix code</sa_input>	DUT Output Level None, dBm units 0.01 dB Resolution	
<sg_output> Suffix code</sg_output>	Level output from SG Output of equipment None, dBm units 0.01 dB Resolution "–999.0" is returned at Unmeasured.	
<count_res></count_res>	Count of power adjustment times	
<time> Suffix code</time>	Time required for power adjustment None, ms units "–999.0" is returned at Unmeasured.	
<sa_input_log_n> Suffix code</sa_input_log_n>	DUT output level at each adjustment Added to response when Log Output On. None, dBm units 0.01 dB Resolution	
<sg_output_log_n></sg_output_log_n>	Level output from SG Output at each adjustment	
Suffix code	Added to response when Log Output On. None, dBm units 0.01 dB Resolution	
<count_log_n></count_log_n>	Count for each adjustment Added to response when Log Output On.	
Not executed when SG option not installed. Not executed during replay. SG setting and measurement are repeated until the target level specified at <target>, <range> is reached within the count specified at <count>. 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 = < target > + Crest Factor - Correction</count></range></target>		
*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 * Attenuator = Reference Level - Mixer Input Level + Pre - Amp Gain * *Mixer Input Level = 0 *Pre-Amp Gain = 20 dB (only at Pre-Amp On) 		
1 ···· • • ···		

Details

	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: $35 \text{ dB} \rightarrow 36 \text{ dB}$).
Example of Use	
	To execute power adjustment under the following conditions:
	Frequency: 2 GHz
	Analysis width: 5 MHz
	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
	MEAS: POW? 5000000, 500US, -30, -5, -10, 0.4, 2000000000, 6, On
	> 0,-9.6,-12.5,3,156,-28,-30,1,-9.5,-12.0,2,-9.6,-12.5,3

2.22 Setting External Mixer

Table 2.22-1 lists the device messages related to External Mixer settings.

Function	Device Message
External Mixer	[:SENSe]:MIXer[:STATe] ON OFF 1 0
Mode	[:SENSe]:MIXer[:STATe]?
External Mixer	[:SENSe]:MIXer[:HARMonic]:BAND VHP EHP A Q U V E W F D G Y J
Band	[:SENSe]:MIXer[:HARMonic]:BAND?
Entone of Minor Dieg	[:SENSe]:MIXer:BIAS <bias></bias>
External Mixer Bias	[:SENSe]:MIXer:BIAS?
External Mixer	[:SENSe]:MIXer:LOSS <power></power>
Conversion Loss	[:SENSe]:MIXer:LOSS?

Table 2.22-1 Device messages for setting External Mixer

[:SENSe]:MIXer[:STATe] ON|OFF|1|0

External Mixer Mode

Function	This command switche	s between Internal and External Mixer.
Command	[:SENSe]:MIXer[:STATe] <switch></switch>	
Parameter		
	<switch></switch>	External mixer switch
	ON 1	Selects External Mixer
	OFF 0	Selects Internal Mixer
	Default	OFF
Details		
	This function is available only when Option 044/045 is installed for MS2830A.	
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></status>	
Parameter		
	<status></status>	External mixer switch
	1	Selects External Mixer
	0	Selects Internal Mixer
Details		
	This function is available only when Option 044/045 is installed for	
	MS2830A.	
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[:HA	ARMonic]:BAND <band></band>		
Parameter				
	<band></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–)		
	А	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 only when Option 044/045 is installed for MS2830A.			
	When using High Performance Waveguide Mixer, set the parameters of the external mixer by using the Spectrum Analyzer function of the mainframe.			
	For details, refer to Section 2.20 "Setting External Mixer" in the <i>MS2690A/MS2691A/MS2692A and MS2830A Signal Analyzer Operation Manual (Spectrum Analyzer Function Remote Control).</i>			

Example of Use

To set the external mixer band to Band U. $\label{eq:mixer} \mbox{Mix:BAND U}$

2

[:SENSe]:MIXer[:HARMonic]:BAND?

External Mixer Band Query

Function	This command queries the current external mixer band.		
	This command querie	s die current externar mixer band.	
Query	[:SENSe]:MIXer[:H	MARMonic]:BAND?	
Response			
	<band></band>		
Parameter			
	<band></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			
Details	This function is evoils	able only when Option 044/045 is installed for	
	MS2830A.	able only when Option 044/045 is instance for	
Example of Use			
	To query the current of	external mixer band.	
	MIX:BAND?		
	> U		

2

SCPI Device Message Details

[:SENSe]:MIXer:BIAS <bias> External Mixer Bias</bias>				
Function	This command sets the	e external mixer's bias current.		
Command	[:SENSe]:MIXer:BIA	AS <bias></bias>		
Parameter				
	<bias></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 only when Option 044/045 is installed for MS2830A.			
	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 mix MIX:BIAS 10MA	xer's bias current to 10 mA.		

[:SENSe]:MIXer:BIAS?

External Mixer Bias Query

Function	This command queries	the current external mixer's bias current.	
Query	[:SENSe]:MIXer:BIAS?		
Response	<bias></bias>		
Parameter	<bias> Range Resolution</bias>	External mixer's bias current 0.1 to 20.0 mA 0.1 mA No suffix code. Value is returned in mA units.	
Details	This function is available only when Option 044/045 is installed for MS2830A. 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 ex MIX:BIAS? > 20.0	xternal mixer's bias current.	

[:SENSe]:MIXer:LOSS <power>

External Mixer Conversion Loss

Function			
	This command sets the	external mixer's conversion loss.	
Command			
	[:SENSe]:MIXer:LOS	S <power></power>	
Parameter			
	<power></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 only when Option 044/045 is installed for MS2830A.		
	A value can be set per e	external mixer band.	
	When using High Performance Waveguide Mixer, set the parameters of the external mixer by using the Spectrum Analyzer function of the mainframe. For details, refer to Section 2.20 "Setting External Mixer" in the		
	MS2690A/MS2691A/MS2692A and MS2830A Signal Analyzer Operation Manual (Spectrum Analyzer Function Remote Control).		
Example of Use			
	To set the external mixer's conversion loss to 10 dB. MIX:LOSS 10DB		

2

[:SENSe]:MIXer:LOSS?

External Mixer Conversion Loss Query

Function	This command queries the external mixer's conversion loss.		
Query	[:SENSe]:MIXer:LOS		
Response	<power></power>		
Parameter	<power> Range Resolution</power>	Conversion Loss of External Mixer 0.00 to 99.99 dB 0.01 dB No suffix code. Value is returned in dB units.	
Details	This function is available only when Option 044/045 is installed for MS2830A. One value is held per external mixer band.		
	the external mixer by mainframe. For details, refer to Sec <i>MS2690A/MS2691A/MS</i>	brmance Waveguide Mixer, set the parameters of using the Spectrum Analyzer function of the tion 2.20 "Setting External Mixer" in the S2692A and MS2830A Signal Analyzer Operation lyzer Function Remote Control).	
Example of Use	To query the current ex MIX:LOSS? > 10.00	ternal mixer's conversion loss.	

Chapter 3 Native Device Message List

This chapter describes remote control commands for executing the signal analyzer function (hereinafter, referred to as "this application") using a list organized by functions. Refer to Chapter 4 "Device Message Details" for detailed specifications for each command. Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for detailed specifications on IEEE488.2 common device messages and application common device messages.

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3.1 IEEE488.2 Common Device Messages

Table 3.1-1 lists IEEE488.2 common device messages available in this application.

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	<pre>byte = bit7: EESB7 bit6: Not used bit5: ESB bit4: MAV bit3: EESB3 bit2: EESB2 (END Event) bit1: EESB1 bit0: EESB0</pre>

Function	Command	Query	Response	Remarks
Status Byte Register		*STB?	byte	<pre>byte = bit7: EESB7 bit6: MSS/RQS bit5: ESB bit4: MAV bit3: EESB3 bit2: EESB2 (END Event) bit1: EESB1 bit0: EESB0</pre>
Standard Event Status Enable Register	*ESE byte	*ESE?	byte	byte = bit7: Power on
Standard Event Status Register		*ESR?	byte	bit6: User request bit5: Command error bit4: Execution error bit3: Device error bit2: Query error bit1: Not used bit0: Operation complete

Table 3.1-1 IEEE488.2 common device messages (Cont'd)

3.2 Application Common Device Messages

Table 3.2-1 lists application common device messages available in this application.

Table 3.2-1	Application comm	on device messages
-------------	------------------	--------------------

Function	Command	Query	Response	Remarks
Application Switch	SYS apl,window	SYS? apl	status,window	<pre>apl: Application name = SIGANA window: Window status = ACT INACT MIN NON status: Application execution status = CURRENT IDLE RUN UNLOAD</pre>
Preset (All Application)	*RST			
Preset (Active Application only)	PRE			
Preset (Active Application only)	INI			
System Restart	REBOOT			
LCD Power	DISPLAY on_off	DISPLAY?	on_off	
Error Display Mode	REMDISP mode	REMDISP?	mode	<pre>mode: Display mode = NORMAL REMAIN REMAIN_LAST</pre>
	SVPRM file device			file: Filename
Save Parameter	SVPRM			device: Drive name = A B D E
Recall Parameter Setting file	RCPRM file, device, apl			file: Filename device: Drive name
	RCPRM file, device			= A B D E apl: Target application = ALL CURR

Function	Command	Query	Response	Remarks
	PRINT file, device			file: Filename
Hard Copy	PRINT			device: Drive name = A B D E
Llard Carry Made	PMOD format	PMOD?	format	format: Specifies file format
Hard Copy Mode	PMOD	PMOD?	BMP	= BMP PNG
END Event Status Enable Register	ESE2 n	ESE2?	byte	byte = Status bit bit7: End of file operation
END Event Status Register		ESR2?	byte	<pre>bit6: Not used bit5: Not used bit4: Not used bit3: Not used bit2: Not used bit1: Not used bit0: End of measurement</pre>
ERROR Event Status Enable Register	ESE3 n	ESE3?	byte	byte = Status bit bit7: Not used
ERROR Event Status Register		ESR3?	Byte	bit6: Not used bit5: Not used bit4: Not used bit3: Not used bit2: Not used bit1: Not used bit0: Not used
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

 Table 3.2-1
 Application common device messages (Cont'd)

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Function	Command	Query	Response	Remarks
Calibration	CAL mode			<pre>mode: Calibration mode = ALL LEVEL LOLEAK_SUPPRESS BAND Asynchronous command</pre>
Micro Wave Preselector Bypass	POW:MW:PRES switch	POW:MW:PRES?	status	<pre>switch = ON OFF 1 0 status = 1 0</pre>

3.3 Frequency/Time Settings

Table 3.3-1 lists device messages for setting frequency and time.

Function	Command	Query	Response	Remarks
Center Frequency	CNF freq	CNF?	freq	
Frequency Step Size	FREQ:CENT:STEP freq	FREQ:CENT:STEP?	freq	
Frequency Span	SPF freq	SPF?	freq	
Start Frequency	STF freq	STF?	freq	
Stop Frequency	SOF freq	SOF?	freq	
Frequency Band Mode	BNDSP mode	BNDSP?	mode	<pre>mode:Frequency = NORMAL SPURIOUS THROUGH</pre>
Sampling Rate		SMPLRATE?	rate	
Capture Time Auto/Manual	ACAP auto_manual	ACAP?	auto_manual	
Capture Time Length	CAPLN time	CAPLN?	time	
Switching Speed	FREQ:SYNT mode	FREQ:SYNT?	mode	<pre>mode : Frequency switching speed = BPH NORM FAST</pre>

Table 3.3-1 Frequency/time setting messages

$\frac{3.4}{8}$ 3.4 Level Settings

Table 3.4-1 lists device messages for setting levels.

Table 3.4-1 Level setting messages

Function	Command	Query	Response	Remarks
Reference Level	RLV level	RLV?	level	
Reference Level Offset Mode	ROFFSET on_off	ROFFSET?	OFF	When set to On, response is level.
Reference Level Offset Mode	ROFFSETMD on_off	ROFFSETMD?	on_off	
Reference Level Offset Value	ROFFSET level	ROFFSET?	level	
Attopuetor	AT att		att	att: Attenuator value
Attenuator	AT AUTO		all	
Attenuator Step Up/Down	AT action			action:Operation = UP DN
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

3.5 Measurement/Trigger Settings

Table 3.5-1 lists device messages for setting measurement/trigger.

Table 3.5-1 Measurement/trigger setting messag	es
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Function	Command	Query	Response	Remarks
Single Measurement	SNGLS			Asynchronous command
Continuous Measurement	CONTS			Asynchronous command
Storage Stop	STOP			
Trigger Switch	TRGS switch	TRGS?	switch	switch: = FREE TRGD
Trigger Source	TRGSOURCE source	TRGSOURCE?	source	source: = VID WIDEVID EXT SG BBIF
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	
Trigger Hold	TRIG:HOLD	TRIG:HOLD?	time	
Trigger Hold On/Off	TRIG:HOLD:STAT	TRIG:HOLD:STAT?	switch	
Frame Trigger Period	TRIG:FRAM:PER	TRIG:FRAM:PER?	time	
Frame Sync Source	TRIG:FRAM:SYNC sync	TRIG:FRAM:SYNC?	sync	sync : = EXT IMM WIF
Frame Sync Offset	TRIG:FRAM:OFFS time	TRIG:FRAM:OFFS?	time	time : time set

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3.6 Common Settings for Each Trace

Table 3.6-1 lists device messages for configuring the settings common to each trace.

Table 3.6-1	Common trace setting message	jes
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Function	Command	Query	Response	Remarks
Change Trace	TRCCHG trace	TRCCHG?	trace	trace: Trace type = SPECTRUM POWERVSTIME FREQVSTIME CCDF SPECTROGRAM
Analysis Time Auto/Manual	AANLY auto_manual	AANLY?	auto_manual	
Analysis Time Length	ANLYLEN time	ANALYLEN?	time	
Analysis Start Time	ANLYST time	ANLYST?	time	
Calculate	CALC			Analyzes main trace.
Measurement Status		MSTAT?	status	status: Status = 0 2 9
Measurement Off	CONF:SAN			
Low Phase Noise Performance Status Query		FREQ:SYNT:LPH:STAT?	status	status : status = 1 0

Chapter 3 Native Device Message List

3.7 Spectrum Trace Settings

Table 3.7-1 lists device messages for setting spectrum trace.

Function	Command	Query	Response	Remarks
Zoom Center	ZMCNT freq	ZMCNT?	freq	
Zoom Width	ZMWDTH freq	ZMWDTH?	freq	
Resolution Bandwidth (RBW)	RB bandwidth	RB?	bandwidth	bandwidth: Resolution bandwidth
	RB AUTO		ballawideli	bandwidth. Resolution bandwidth
Detection Mode	DET mode	DET?	mode	<pre>mode: Detection mode = POS NEG AVG</pre>
Storage Mode	STORAGEMODE mode	STORAGEMODE?	mode	<pre>mode: Storage mode = OFF MAX LINAVG MIN</pre>
Storage Count	STORAGECOUNT count	STORAGECOUNT?	count	count: Storage count
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	<pre>line:Number of scale lines = 10 12</pre>

Table 3.7-1 Spectrum trace setting messages

Table 3.7-1 Spectrum trace setting messages (Cont'd)					
Function	Command	Query	Response	Remarks	
Marker Mode	MKR mode, marker	MKR? Marker	mode	mode: Marker mode	
	MKR mode	MKR?		marker: Marker name	
Active Marker	MKACT marker	MKACT?	marker	marker: Marker name	
Marker Result	MKLTYPE type	MKLTYPE?	type	type: Marker value type	
Marker Frequency	MKZF freq,marker	MKZF? marker	freq	marker: Marker name	
Marker Width (Grid)	MKW width, marker	MKW? marker	width	width: Specifies width marker: Marker name	
Marker Width (Frequency)	MZWF freq,marker	MZWF? marker	freq	marker: Marker name	
Peak Search	MKPK HI				
	МКРК				
Next Peak	MKPK NH				
Signal Search Resolution	MKPX level	MKPX?	level		

Table 3.7-1 Spectrum trace setting messages (Cont'd)

Table 3.7-1 Spectrum trace setting messages (Cont'd)					
Function	Command	Query	Response	Remarks	
Relative To	CALC:MARK:REF marker,integer	CALC:MARK:REF? marker	integer	marker:Marker name	
Marker List	CALC:MARK:TABL switch_com	CALC:MARK:TABL?	switch_res		
Spot Line	CALC:MARK:SLIN switch_com	CALC:MARK:SLIN?	switch_res		
Couple Zone	CALC:MARK:COUP:ZONE switch_com	CALC:MARK:COUP:ZONE?	switch_res		
Zone Width Type	CALC:MARK:WIDT:TYPE marker,type	CALC:MARK:WIDT:TYPE? marker	type	marker: Marker name type:ZONE SPOT	
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		
Query Trace Data		<pre>TRAC? [start[,length]]</pre>	data_1,data_2,		

Table 3.7-1 Spectrum trace setting messages (Cont'd)

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Table 3.7-1 Spectrum trace setting messages (Cont'd)						
Function Command		Query Response		Remarks		
Marker Readout Query		CALC:MARK:READ?	<pre>freqs_1, power_1, freqs_2, power_ 2,, freqs_10, power_10 (in Spectrum) <sample_1>, <freqf_1>, <sample_2>, <freqf_2> (When using MS269x Series, the terminal being set for DigRF 3G) time_1, power_1, time_2, power_2 (i n Power vs Time trace) <sample_1>, <power_1>, <sample_2>, <power_2> (When using MS269x Series, the terminal being set for DigRF 3G and Power vs Time trace) time_1, freqf_1, time_2, freqf_2(i n Frequency vs Time) dist, prob (in CCDF trace) <freqs_1>, <time_1>, <power_1>, < freqs_2>, <time_2>, <power_2> (in Spectrogram trace)</power_2></time_2></power_1></time_1></freqs_1></power_2></sample_2></power_1></sample_1></freqf_2></sample_2></freqf_1></sample_1></pre>			
Marker Frequency	CALC:MARK:X marker, type	CALC:MARK:X? marker	<pre>freq,time,sample,dist,dist_res ult</pre>	<pre>marker : marker name type : freq time sample dist</pre>		
Marker Frequency	CALC:MARK:X:DELT marker, type	CALC:MARK:X:DELT ? marker	freq	marker : marker name type : freq		
Marker Query		CALC:MARK:Y:DELT ? marker	<pre>rel_ampl_spe,ratio_spe,rel_amp l_pvt,ratio_pvt,freq,prob,prob _result_gauss,prob_result_ref</pre>	marker : marker name		

Table 5.7-1 Spectrum trace setting messages (Contru)					
Function	Command	Query	Response	Remarks	
Signal Search Mode	SRCHTH mode	SRCHTH?	mode	Mode : Detection mode = OFF ON ABOVE BELOW	
Signal Search Threshold Level	SRCHTHLVL level	SRCHTHLVL?	level		
Marker to Center Frequency	MKCF				
Marker to Reference Level	MKRL				
Zoom	ZOOM				
Zoom Out	ZOOMOUT				
Trace Point Query		FDPNT?	point		
Measurement Count Query		SWEEPCOUNT?	count		
Marker Level Query		MKL? type	ln	type :Marker n ln:Level of Marker n	
Marker Phase Query		CALC:MARK:Y:PHAS? marker	phase	marker : marker name phase : phase spectrum	
Calculate Phase Spectrum	CALC:PHAS:STAT switch_com	CALC:PHAS:STAT?	switch_res	<pre>switch_com : = ON OFF 1 0 switch_res : = 1 0</pre>	
Marker Phase Query		CALC:MARK:Y:PHAS? marker	phase	marker: Marker name phase: Phase spectrum	
Calculate Phase Spectrum	CALC:PHAS:STAT switch_com	CALC:PHAS:STAT?	switch_res	<pre>switch_com : = ON OFF 1 0 switch_res : = 1 0</pre>	

 Table 3.7-1
 Spectrum trace setting messages (Cont'd)

Table 3.7-2	Spectrum trace (Adjacent Channel Power measurement function) setting message	es
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Function	Command	Query	Response	Remarks
	MEAS ADJ	MEAS?	ADJ	
Measure Adjacent Channel Power	MEAS OFF	MEAS?	OFF	
ACP Reference	MADJMOD mode	MADJMOD?	mode	mode: Measurement method = MOD TOTAL INBAND BOTHSIDE
ACP Channel Bandwidth	ADJCHBW freq	ADJCHBW?	freq	
ACP Carrier Bandwidth	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 Channel Select	ADJCHSLCT ch,on_off	ADJCHSLCT? ch	on_off	
ACP Offset Frequency	ADJCHSP ch, freq	ADJCHSP? ch	freq	
	ADJFILTERTYPE filter	ADJFILTERTYPE?	filter,filter	filter:Filter type
ACP Filter Type	ADJFILTERTYPE filter,target	ADJFILTERTYPE?target	filter	= RECT NYQUIST ROOTNYQUIST target: Target filter = INBAND OFFSET
ACP Power Result Type	ADJPWRTYPE mode	ADJPWRTYPE?	mode	mode: Result display type = CARRIER OFFSET

Function Command		Query	Response	Remarks
	ADJROF ratio	ADJROF?	ratio,ratio	ratio: Filter rolloff ratio
ACP Roll-off Factor	ADJROF ratio,target	ADJROF? target	ratio	target:Target filter = INBAND OFFSET
Select Standard	SELECTSTD standard	SELECTSTD?	standard	standard: Communication method
Load Standard Parameter	LOADSTD ADJ,param	LOADSTD? ADJ		param: Parameter Type
	LOADSTD ADJ	LOADSID? ADJ	param	
Noise Cancel	NOISECANCEL on_off	NOISECANCEL?	on_off	on_off: = ON OFF

Table 3.7-2 Spectrum trace (Adjacent Channel Power measurement function) setting messages (Cont'd)

Function	Command	Query	Response	Remarks
ACP Measurement Result		RES?	<pre>lc,(lc),lr1,la1,ur1, ua1,lr2,la2,ur2,ua2,</pre>	 1c: Reference power absolute value by ACP Reference 1r1: Measurement frequency 1 (Bottom side) power relative value 1a1: 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 1r2: Measurement frequency 2 (Bottom side) power relative value 1a2: Measurement frequency 2 (Bottom
Query		RES? OFFSET	lr3,la3,ur3,ua3	 side) power absolute value ur2: Measurement frequency 2 (Top side) power relative value ua2: Measurement frequency 2 (Top side) power absolute value 1r3: Measurement frequency 3 (Bottom side) power relative value 1a3: Measurement frequency 3 (Bottom side) power absolute value ur3: Measurement frequency 3 (Top side) power relative value ur3: Measurement frequency 3 (Top side) power relative value ua3: Measurement frequency 3 (Top side) power absolute value

Table 3.7-2 Spectrum trace (Adjacent Channel Power measurement function) setting messages (Cont'd)

Function	Command	Query	Response	Remarks
ACP Measurement Result Query		RES? CARRIER	ls,lca,lc1,lc2,lc3,l c4,lc5,lc6,lc7,lc8,l c9,lc10,lc11,lc12	 1s: Measurement span frequency power absolute value 1ca: Measurement carrier total power absolute value 1c1: Measurement carrier-1 power absolute value 1c2: Measurement carrier-2 power absolute value 1c3: Measurement carrier-3 power absolute value 1c4: Measurement carrier-4 power absolute value 1c5: Measurement carrier-5 power absolute value 1c6: Measurement carrier-6 power absolute value 1c6: Measurement carrier-7 power absolute value 1c7: Measurement carrier-7 power absolute value 1c8: Measurement carrier-8 power absolute value 1c9: Measurement carrier-9 power absolute value 1c10: Measurement carrier-10 power absolute value 1c11: Measurement carrier-11 power absolute value 1c12: Measurement carrier-12 power

Table 3.7-2 Spectrum trace (Adjacent Channel Power measurement function) setting messages (Cont'd)

Table 3.7-3 lists device messages for setting Channel Power measurement function of spectrum trace.

Table 3.7-3	Spectrum trace	(Channel Power measurement function) setting messages
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Function	Command	Query	Response	Remarks
Measure Channel Power	MEAS CHPWR	MEAS?	CHPWR	
Measure Channel Power	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 ratio
Select Standard	SELECTSTD standard	SELECTSTD?	standard	standard: Communication method
Load Standard Parameter	LOADSTD CHPWR, param	LOADSTD? CHPWR	param	param: Parameter Type
	LOADSTD CHPWR		param	
Channel Power Measurement Result Query		RES?	power, density	power: Total power in channel band density: Power density in channel band

Table 3.7-4 lists device messages for setting occupied bandwidth measurement function of spectrum trace.

Function	Command	Query	Response	Remarks
Manager Occurring Damakeright	MEAS OBW	MEAS?	OBW	
Measure Occupied Bandwidth	MEAS OFF	MEAS?	OFF	
OBW Measurement Method	MOBW method	MOBW?	method	<pre>method: Measurement method = N XDB</pre>
OBW N% Ratio	OBWN ratio	OBWN?	ratio	
OBW XdB Value	OBWXDB level	OBWXDB?	level	
Select Standard	SELECTSTD standard	SELECTSTD?	standard	standard: Communication method
Load Standard Parameter	LOADSTD OBW, param	LOADSTD? OBW	param	Darami, Danamatan Tuna
Load Standard Parameter	LOADSTD OBW		param	param: Parameter Type
OBW Measurement Result Query		RES?	obw,center,start,sto p	obw: Occupied bandwidth center: Center frequency of occupied band start: Start frequency of occupied band stop: Stop frequency of occupied band

 Table 3.7-4
 Spectrum trace (occupied bandwidth measurement function) setting messages

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Table 3.8-1 lists device messages for setting Power vs Time trace.

Table 3.8-1 Power vs Ti	e trace setting messages
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Function	Command	Query	Response	Remarks
Detection	DET mode	DET?	mode	mode: Detection mode = NRM POS NEG AVG
Smoothing	SMOOTH on_off	SMOOTH?	on_off	
Smoothing Time Length	SMOOTHLN time	SMOOTHLN?	time	
Filter Type	FLTRTYP filter	FLTRTYP?	filter	filter:Filter type = RECT GAUSS NYQUIST ROOTNYQUIST OFF
Roll-off Factor	ROF factor	ROF?	factor	
Filter Bandwidth	FLTRBW bandwidth	FLTRBW?	bandwidth	
Filter Frequency Offset	FLTROFS freq	FLTROFS?	freq	
Storage Mode	STORAGEMODE mode	STORAGEMODE?	mode	mode: Storage mode = OFF MAX LINAVG MIN
Storage Count	STORAGECOUNT count	STORAGECOUNT?	count	count: Storage count

Function	Command	Query	Response	Remarks
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	<pre>line: Number of scale lines = 10 12</pre>
Marker Mode	MKR on_off,marker	MKR? Marker MKR?	on_off	<pre>on_off: On/off of marker marker: Marker name = 1 2</pre>
Active Marker	MKACT marker	MKACT?	marker	marker: Marker name = MKR1 MKR2 BOTH
Marker Position	MKP time, marker	MKP? marker		
	МКРК НІ			
Peak Search	МКРК			
Next Peak	MKPK NH			
Signal Search Resolution	MKPX level	MKPX?	level	
Signal Search Mode	SRCHTH mode	SRCHTH?	mode	<pre>mode: Detection mode = OFF ON ABOVE BELOW</pre>
Signal Search Threshold Level	SRCHTHLVL level	SRCHTHLVL?	level	

Table 3.8-1 Power vs Time trace setting messages (Cont'd)

Zoom

Zoom Out

Time Trace Point Query

Marker Level Query

Measurement Count Query

Peak to Peak Value Query

Query Negative Trace Data

Query Trace Data

Function

Display Peak to Peak Value On/Off

Query	Response	Remarks
PEAKTOPEAK?	on_off	
TDPNT?	point	
SWEEPCOUNT?	count	
MKL?	l ₁ , l ₂ , l ₂₋₁	
MKL? 1	11	1 ₁ : Amplitude value of Marker 1
MKL? 2	12	1 ₂ : Amplitude value of Marker ² 1 ₂ : Ratio between Markers ¹ and ²
MKL? 3	1 ₂₋₁	
PEAKTOPEAKRES?	pos,neg,p-p,avg	
PEAKTOPEAKRES? POS	pos	pos: +Peak value
PEAKTOPEAKRES? NEG	neg	neg: -Peak value
PEAKTOPEAKRES? DELTAAVG	p-p	p-p:Peak to Peak value avg:Average value
PEAKTOPEAKRES? AVG	avg	

data_1,data_2,...

data_1,data_2,...

Table 3.8-1 Power vs

TRAC?

TRAC:NEG?

[start[,length]]

[start[,length]]

Command

PEAKTOPEAK on_off

ZOOM

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___ ____ ___ ___ ____

___ ___

ZOOMOUT

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Table 3.8-2 lists device messages for setting Burst Average Power measurement function of Power vs Time trace.

Function	Command	Query	Response	Remarks
	MEAS BRSTAVGPWR	MEAS?	BRSTAVGPWR	
Measure Burst Average Power	MEAS OFF	MEAS?	OFF	
Load Standard Parameter	LOADSTD BRSTAVGPWR,param	LOADSTD? BRSTAVGPWR	param	param:Parameter Type
	LOADSTD BRSTAVGPWR			on off:
Noise Cancel	NOISECANCEL on_off	NOISECANCEL?	on_off	= ON OFF
Burst Average Power Measurement Result Query		RES?	level	level: Average power within burst

 Table 3.8-2
 Power vs Time trace (Burst Average Power measurement function) setting messages

Function	Command	Query	Response	Remarks
Measure AM Depth	AM switch_com	AM?	tswitch_res	<pre>switch_com : = ON OFF 1 0</pre>
AM Depth Configure	CONF:AM			
AM Depth Initiate	INIT:AM			
AM Depth Fetch		FETC:AM?		
AM Depth Read]	READ:AM?	pos,neg,p-p,avg	
AM Depth Measure		MEAS:AM?		

 Table 3.8-3
 Power vs Time trace (AM Depth Measurement Function) setting messages

3.9 Frequency vs Time Trace Settings

Table 3.9-1 lists device messages for setting Frequency vs Time trace.

Function	Command	Query	Response	Remarks
Detection	DET mode	DET?	mode	mode: Detection mode = NRM POS NEG AVG
Smoothing	SMOOTH on_off	SMOOTH?	on_off	
Smoothing Time Length	SMOOTHLN time	SMOOTHLN?	time	
Filter Bandwidth	FLTRBW bandwidth	FLTRBW?	bandwidth	
Filter Auto/Manual	AFLTR auto_manual	AFLTR?	auto_manual	
Storage Mode	STORAGEMODE mode	STORAGEMODE?	mode	mode: Storage mode = OFF MAX MIN
Storage Count	STORAGECOUNT count	STORAGECOUNT?	count	count: Storage count
Frequency Scale Unit	FUNITS unit	FUNITS?	unit	unit: Frequency scale display unit = HZ DHZ
Marker Mode	MKR on_off,marker	MKR? Marker	on_off	on_off: Marker On/off state marker: Marker name
	MKR on_off	MKR?		$= 1 \mid 2$
Active Marker	MKACT marker	MKACT?	marker	marker: Marker name = MKR1 MKR2 BOTH
	MKP time	MKP?		point: Marker position time
Marker Position	MKP time, marker	MKP? marker	time	<pre>marker: Marker name = 1 2</pre>

Table 3.9-1 Frequency vs Time trace setting messages

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Table 3.9-1	Frequency v	s Time trace	e settina mes	sages (Cont'd)

Function	Command	Query	Response	Remarks
Marker Value in Pos&Neg detection	DETMODE det,marker	DETMODE? Marker	det	det: Detection mode = POS NEG
	DETMODE det	DETMODE?		<pre>marker: Marker name = MKR1 MKR2 BOTH</pre>
Peak Search	MKPK HI			
	МКРК			
Next Peak	MKPK NH			
Dip Search	MKPK LO			
Next Dip	MKPK NL			
Signal Search Resolution	MKPX freq	MKPX?	freq	
Signal Search Mode	SRCHTH mode	SRCHTH?	mode	mode: Detection mode = OFF ON ABOVE BELOW
Signal Search Threshold Frequency Deviation	SRCHTHLVL freq	SRCHTHLVL?	freq	
Display Peak to Peak Value On/Off	PEAKTOPEAK on_off	PEAKTOPEAK?	on_off	
Zoom Width	ZMWDTH scale	ZMWDTH?	scale	scale: Frequency bandwidth = DIVBY2 DIVBY5 DIVBY10 DIVBY25
Zoom	ZOOM			
Zoom Out	ZOOMOUT			
Time Trace Point Query		TDPNT?	point	

Function	Command	Query	Response	Remarks
Maximum Frequency Range Query		ANLYFREQRANGE?	freq	
Measurement Count Query		SWEEPCOUNT?	count	
		MKL?	f ₁ , f ₂ , f ₂₋₁	
Madvar Francisco October		MKL? 1	f ₁	f_1 : Frequency value of Marker 1
Marker Frequency Query		MKL? 2	f ₂	$f_2: Frequency value of Marker 2 f_{2-1}: f_2 - f_1$
		MKL? 3	f ₂₋₁	
		PEAKTOPEAKRES?	pos,neg,p-p,avg	pos: +Peak value neg: -Peak value p-p: Peak to Peak value avg: Average value
		PEAKTOPEAKRES? POS	pos	
Peak to Peak Value Query		PEAKTOPEAKRES? NEG	neg	
reak to reak value Quely		PEAKTOPEAKRES? DELTAAVG	p-p	
		PEAKTOPEAKRES? AVG	avg	
Query Trace Data		<pre>TRAC? [start[,length]]</pre>	data_1,data_2,	
Query Negative Trace Data		<pre>TRAC:NEG? [start[,length]]</pre>	data_1,data_2,	

Table 3.9-1 Frequency vs Time trace setting messages (Cont'd)

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Function	Command	Query	Response	Remarks
Measure FM deviation	FM switch_com	FM?	switch_res	<pre>switch_com : = ON OFF 1 0</pre>
FM deviation Configure	CONF:FM			
FM deviation Initiate	INIT:FM			
FM deviation Fetch		FETC:FM?		
FM deviation Read		READ:FM?	pos,neg,p-p,avg	
FM deviation Measure		MEAS:FM?		

Table 3.9-2 Frequency vs Time trace (FM deviation Measurement Function)setting messages

3.10 CCDF Trace Settings

Table 3.10-1 lists device messages for setting CCDF trace.

Table 3.10-1 CCDF trace setting messages

Function	Command	Query	Response	Remarks
Measure Method	MMETHOD method	MMETHOD?	method	method: Measurement mode = CCDF APD
CCDF Threshold On/Off	CALC:CCDF:THR:STAT switch_com	CALC:CCDF:THR:STAT?	switch_res	<pre>switch_com : = ON OFF 1 0</pre>
CCDF Threshold	CALC:CCDF:THR	CALC:CCDF:THR?		
Level Threshold	THRSHLD level	THRSHLD?	level	
CCDF Measure Mode	CALC:CCDF:MODE mode	CALC:CCDF:MODE?	mode	Mode: specified method for measurement target = TIME COUN
Data Count	CALC:CCDF:COUN sample	CALC:CCDF:COUN?	sample	<pre>sample_com : data count for measurement target</pre>
Gate Mode On/Off	CALC:ATIM:GMOD switch_com	CALC:ATIM:GMOD?	switch_res	Switch : = ON OFF 1 0
Period	CALC:ATIM:GMOD:PER time	CALC:ATIM:GMOD:PER?	time	
Range State	CALC:ATIM:GMOD:RANG: STAT switch_com_1,switch_ com_2,switch_com_3	CALC:ATIM:GMOD:RANG: STAT?	<pre>switch_res_1,switch_ res_2,switch_res_3</pre>	Switch_com_n : Range_n On/Off = ON OFF 1 0
Range Start Time	CALC:ATIM:GMOD:RANG: STAR time_1,time2,time3	CALC:ATIM:GMOD:RANG: STAR?	<pre>time_1,time_2,time_3</pre>	time_n : Range_n start time

ks
stop time
nethod fo: et

Table 3.10-1	CCDF trace setting messages (Cont'd)

Function	Command	Query	Response	Remarks
Range Stop Time	CALC:ATIM:GMOD:RANG: STOP time_1,time_2,time_3	CALC:ATIM:GMOD:RANG: STOP?	Time_1,time_2,time_3	time_n : Range_n stop time
CCDF Measure Mode	CALC:CCDF:MODE mode	CALC:CCDF:MODE?	Mode	Mode: specified method for measurement target = TIME COUN
Filter Type	FLTRTYP filter	FLTRTYP?	Filter	filter: Filter type = RECT OFF
Filter Bandwidth	FLTRBW bandwidth	FLTRBW?	Bandwidth	
Filter Frequency Offset	FLTROFS freq	FLTROFS?	Freq	
Power Distribution Scale	DISTSCALE scale	DISTSCALE?	Scale	<pre>scale: Power distribution scale = 5 10 20 50</pre>
Marker Mode	MKR on_off	MKR?	On_off	
Marker Axis	MKAXIS axis	MKAXIS?	Axis	type: Marker type = PROB DSTRBT
Marker Position	MKP position	MKP?	Position	position: Marker position type: Marker type = PROB DSTRBT
	MKP position,type	МКР? Туре	position	
Reset Result Every Measurement	RSTEVRYCAP on_off	RSTEVRYCAP?	On_off	
Data Point Query		DTCNT?	Point	

Function	Command	Query	Response	Remarks
Marker Result		MKL?	Data	data: Measured waveform's power deviation or probability
		SMMLYPWR?	Average, max, crest	
		SMMLYPWR? AVG	average	average: Average power
Power Result Query		SMMLYPWR? MAX	max	max: Maximum power
		SMMLYPWR? CREST	crest	crest: Crest factor
		PROBPWR? PWR	pd ₁ ,pd ₂ ,pd ₃ ,pd ₄ ,pd ₅	pd1: Power deviation of 10 % pd2: Power deviation of 1 % pd3: Power deviation of 0.1 % pd4: Power deviation of 0.01 % pd5: Power deviation of 0.001 %
Power Deviation and Distribution Query		PROBPWR? PROB	r ₁ , r ₂ , r ₃ , r ₄ , r ₅	 r1: Probability distribution at 1/5 grid r2: Probability distribution at 2/5 grid r3: Probability distribution at 3/5 grid r4: Probability distribution at 4/5 grid r5: Probability distribution at 5/5 grid
Query Trace Data		<pre>TRAC? [start[,lengt h]]</pre>	data_1,data_2,	
Store Reference Trace	CALC:CCDF:STOR:REF			
Reference Trace	CCDF:RTR switch	CCDF:RTR?	Switch	<pre>switch : display/no display = ON OFF 1 0</pre>

Table 3.10-1 CCDF trace setting messages (Cont'd)

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Function	Command	Query	Response	Remarks
Gaussian Trace	CCDF:GAUS switch	CCDF:GAUS?	switch	<pre>switch : display/no display = ON OFF 1 0</pre>
Marker Query		CALC:MARK:X:D ELT? marker	dist dist_result_gauss dist_result_ref	marker : marker name
CCDF Fetch		FETC:CCDF?	<pre>When Result Mode is A. mean_power,peak_power_dbm,cresst (n=1 or when omitted.) rel_ampl_1,rel_ampl_2,rel_am pl_3,rel_ampl_4, rel_ampl_5,rel_ampl_6 (n=2) percent_1,percent_2,percent_ 3,percent_4,percent_5 (n=3) [CCDF] meas_per_1,meas_per_2, meas_per_1,meas_per_2, meas_per_1,gauss_per_2,g uass_per_5001 (n=5) [CCDF] ref_per_1,ref_per_2,ref_p er_5001 [APD] ref_per_1,ref_per_2,ref_p er_10001 (n=6)</pre>	

Function	Command	Query	Response	Remarks
CCDF Fetch Cont'd)		FETC:CCDF?	<pre>Kesponse </pre> <pre></pre> <pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	

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Table 3.10-1 CCDF trace setting messages (Cont'd)					
Function	Command	Query	Response	Remarks	
CCDF Fetch (Cont'd)		FETC:CCDF?	<pre>When Measure Method is CCDF:</pre>		

Function	Command	Query	Response	Remarks
CCDF Fetch (Cont'd)		FETC:CCDF?	<pre>When Measure Method is CCDF:</pre>	

Table 3.10-1 CCDF trace setting messages (Cont'd)

Table 3.10-1 CCDF trace setting messages (Cont'd)					
Function	Command	Query	Response	Remarks	
CCDF Fetch (Cont'd)		FETC:CCDF?	<pre>When Measure Method is CCDF:</pre>		

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Function	Command	Query	Response	Remarks
CCDF Fetch (Cont'd)		FETC:CCDF?	<pre>When Result Mode is B: mean_power,mean_power_prob,r el_ampl_1, rel_ampl_2,rel_ampl_3,rel_am pl_4,rel_ampl_5,rel_ampl_6,c rest,count (n=1 or when omitted.) [CCDF] meas_per_1,meas_per_2, meas_per_5001 [APD] meas_per_1,meas_per_2, meas_per_1,gauss_per_2,g uass_per_5001 (n=2) gauss_per_5001 (n=3) [CCDF] ref_per_1,ref_per_2,ref_p er_5001 [APD] ref_per_1,ref_per_2,ref_p er_10001 (n=4)</pre>	

Table 3.10-1 CCDF trace setting messages (Cont'd)

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3.11 Spectrogram Trace Settings

Table 3.11-1 lists device messages for setting Spectrogram trace.

Table 3.11-1 Spectrogram trace setting messages

Function	Command	Query	Response	Remarks
Level Full Scale	DISP:WIND:TRAC:Y:PDI V:RANG rel_ampl	DISP:WIND:TRAC:Y:PDI V:RANG?	rel_ampl	
Resolution Bandwidth	RB bandwidth	RB?	bandwidth	
Resolution Danuwiuth	RB AUTO	D:	Dandwidth	
Detection	DET mode	DET?	mode	mode : Detection mode = POS NEG AVG
Active Marker	MKACT marker	MKACT?	marker	marker : Marker Name
Marker Mode	MKR mode, marker	MKR? marker	mode	mode : Marker mode marker : Marker Name
Time Marker Position	CALC:TMAR:X n,time	CALC:TMAR:X? n	time	
Marker Frequency	MKZF freq,marker	MKZF? marker	freq	marker : Marker Name
Marker Width (Grid)	MKW width, marker	MKW? marker	width	marker : Marker Name
Couple Time Marker 1 and 2	CALC:TMAR:COUP:ZONE switch_com	CALC:TMAR:COUP:ZONE?	switch_res	<pre>switch_com : = ON OFF 1 0</pre>
Zone Width Type	CALC:MARK:WIDT:TYPE marker,type	CALC:MARK:WIDT:TYPE? marker	type	marker : Marker Name type : Marker width type = ZONE SPOT

Function	Command	Query	Response	Remarks
Marker Result	MKLTYPE type_com	MKLTYPE?	type_res	type_com : Marker result = INT TOTAL DENS AVG PEAK PACC
Marker to Center Freq	MKCF			
Marker to Reference Level	MKRL			
Marker Over	<u>,</u>	MKL? 1	1 ₁	
Marker Query		MKL? 2	1 ₂	
Analyze with Spectrum Trace	CALC:ANAL:SPEC			
Return To Spectrogram	CALC:ANAL:SPGR			
Storage Mode	STORAGEMODE mode	STORAGEMODE?	mode	mode : Storage mode = OFF MAX LINAVG MIN
Storage Count	STORAGECOUNT count	STORAGECOUNT?	count	
Query Trace Data		TRAC? start, length	data_1,data_2,	
Trace Point Query		FDPNT?	point	
Time Trace Point Query		TDPNT?	point	
Time Marker Peak Query		CALC:TMAR:PEAK:X? n	time	

 Table 3.11-1
 Spectrogram trace setting messages (Cont'd)

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3.12 DigRF 3G Measurement Settings

Table 3.12-1 lists device messages for the DigRF 3G measurement settings.

Note:

The DigRF 3G is not available only when the MS269x Series Option 040/140 Baseband Interface Unit is not installed or the software package is Ver.6.00.00 or later; it is not supported by MS2830A.

Function	Command	Query	Response	Remarks
Terminal Change	FEED terminal	FEED?	terminal	terminal = RF DIGRF3G
Target System	DIGR:TARG communication	DIGR:TARG?	communication	communication = WCDMA GSM
AD Full Range	DIGR:ADR volt	DIGR:ADR?	volt	volt : Voltage
I/Q Sign	DIGR:IQS iq_sign	DIGR:IQS?	iq_sign	iq_sign = SIGN TWOC
Measurement Channel	DIGR:MEAS channel	DIGR:MEAS?	channel	channel : Measurement Channel = PRIM DIV
Capture Sample Length	SWE:SAMP point	SWE:SAMP?	point	point : Capture Sample Count
Analysis Start Sample	CALC:ATIM:STAR:SAMP point	CALC:ATIM:STAR:SAMP?	point	point : Analysis Sample Point
Analysis Sample Length	CALC:ATIM:LENG:SAMP point	CALC:ATIM:LENG:SAMP?	point	point : Analysis Sample Length

Table 3.12-1 DigRF 3G measurement settings

Table 5.12-1 Digiti bo measurement settings (cont a)				
Function	Command	Query	Response	Remarks
Input Source	CALC:IQD source	CALC:IQD?	source	source : Input Source = COMP I Q
Result Delay Query		CALC:TRIG:DIGR:DEL?	sample	
Vertical Scale Center	DISP:WIND:TRAC:Y:CVO L voltage	DISP:WIND:TRAC:Y:CVO L?	voltage	voltage : Scale setting value
Smoothing Sample Length	CALC:SMO:LENG:SAMP sample	CALC:SMO:LENG:SAMP?	sample	sample : Smoothing sample length
Marker Unit	UNIT:TMAR unit	UNIT:TMAR?	unit	unit : Unit of Marker value = SAMP SEC

Table 3.12-1 DigRF3G measurement settings (Cont'd)

3.13 Waveform Data Saving Function Settings

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Table 3.13-1 lists device messages for setting the waveform data saving function.

Table 3.13-1	Waveform data saving function setting messages
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Function	Command	Query	Response	Remarks
				File: File name
Save Captured Data	DGTZ file,device			Device: Drive name
				= A B D E
Cancel Execute Digitize	DGTZCANCEL			
Output Rate for Save Captured Data	DGTZRATE rate	DGTZRATE?	rate	rate: Output rate
Time Range	MMEM:STOR:IQD:MODE	MMEM:STOR:IQD:MODE?	mode	mode : Saving range
Time Range	mode	MMEM. STOR. IQD. MODE:	mode	= FULL ATIM MAN
Start Time	MMEM:STOR:IQD:STAR	MMEM:STOR:IQD:STAR?	time	time : Start position
	time	_		
Start Sample	MMEM:STOR:IQD:STAR:S	MMEM:STOR:IQD:STAR:S	sample	sample : Start sample position
	AMP sample	AMP?		
Time Length	MMEM:STOR:IQD:LENG time	MMEM:STOR:IQD:LENG?	time	time : Time length
Sample Longth	MMEM:STOR:IQD:LENG:S	MMEM:STOR:IQD:LENG:S	sample	
Sample Length	AMP sample	AMP?	sample	sample : Sample length
Save Wave Data	MMEM:STOR:TRAC trace			trace : Trace to save
	[,filename[,device]]			= TRAC1 ALL

3.14 Replay Function Settings

Table 3.14-1 lists device messages for setting the Replay function.

Table 3.14-1 Replay function settings

Function	Command	Query	Response	Remarks
Stop Replay	MMEM:LOAD:IQD:STOP			
Execute Replay	<pre>MMEM:LOAD:IQD filename,device,appl ication</pre>			filename : Filename device : Drivename application : Application name
Replaying File Information Query		MMEM:LOAD:IQD:INF?	<pre>filename,start_time, time_length</pre>	<pre>filename : File name start_time : Data start time time_length : Data time length</pre>
Replay Execute Query		MMEM:LOAD:IQD:INF:ST AT?	switch	Switch Replay function On/Off state = 1 0
Replay Filename Query		MMEM:LOAD:IQD:INF:FI LE?	filename	filename : Filename
Replay Device Query		MMEM:LOAD:IQD:INF:DE V?	device	device : Drive name
Replay Application Query		MMEM:LOAD:IQD:INF:AP PL?	application	application : Application name
Replay Start Time Query		MMEM:LOAD:IQD:INF:ST AR?	start_time	start_time : Data start time
Replay Time Length Query		MMEM:LOAD:IQD:INF:LE NG?	time_length	time_length : Data time length
Replay Level Over Query		MMEM:LOAD:IQD:INF:CO ND?	switch	<pre>switch : Level Over On/Off state = 1 0</pre>

Function

Replay Error Query

Query

Replay Correction Query

Replay External Reference

Table 3.14-1 Replay function settings (Cont'd)					
Command	Query	Response	Remarks		
	MMEM:LOAD:IQD:INF:ER R?	switch	<pre>switch : Error icon On/Off state = 1 0</pre>		
	MMEM:LOAD:IQD:INF:CO RR?	real	real : Correction value		
	MMEM:LOAD:IQD:INF:RO SC?	source	<pre>source : Frequency reference signal source = INT INTU EXT EXTU</pre>		

3.15 Sub Trace Settings

Table 3.15-1 lists device messages for setting a sub-trace.

Table 3.15-1 Sub trace settings

Function	Command	Query	Response	Remarks
Change Sub Trace	CALC:STR:MODE trace	CALC:STR:MODE?	trace	<pre>trace : Trace type = OFF PVT SPGR</pre>
Sub Trace Detection Mode	CALC:STR:DET mode	CALC:STR:DET?	mode	<pre>mode : Detection mode = NORM POS NEG AVER</pre>
Sub Trace Analysis Time Auto/Manual	CALC:STR:ATIM:AUTO switch_com	CALC:STR:ATIM:AUTO?	switch_res	<pre>switch_com : = ON OFF 1 0</pre>
Sub Trace Analysis Start Time	CALC:STR:ATIM:STAR time	CALC:STR:ATIM:STAR?	time	time : Analysis start time
Sub Trace Analysis Start Sample	CALC:STR:ATIM:STAR:S AMP integer	CALC:STR:ATIM:STAR:S AMP?	integer	integer : Analysis sample length
Sub Trace Analysis Time Length	CALC:STR:ATIM:LENG time	CALC:STR:ATIM:LENG?	time	time : Analysis time length
Sub Trace Analysis Sample Length	CALC:STR:ATIM:LENG:S AMP integer	CALC:STR:ATIM:LENG:S AMP?	integer	integer : Analysis sample length
Sub Trace Log Scale Level Full Scale	DISP:WIND:STR:Y:PDIV :RANG:LOG rel_ampl	DISP:WIND:STR:Y:PDIV :RANG:LOG?	rel_ampl	
Sub Trace Linear Scale Level Full Scale	DISP:WIND:STR:Y:PDIV :RANG:LIN percent	DISP:WIND:STR:Y:PDIV :RANG:LIN?	percent	
Sub Trace Resolution Bandwidth	CALC:STR:BAND bandwidth	CALC:STR:BAND?	bandwidth	bandwidth : RBW

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Function	Command	Query	Response	Remarks
Sub Trace Resolution Bandwidth Auto/Manual	CALC:STR:BAND:AUTO switch_com	CALC:STR:BAND:AUTO?	switch_res	<pre>switch_com : = ON OFF 1 0</pre>
Sub Trace Result Delay Query		CALC:STR:TRIG:DIGR:D EL?	sample	

3.16 Reference Signal Settings

Device messages for setting reference signal are shown in Table 3.16-1.

Table 3.16-1 Reference signal settings

Function	Command	Query	Response	Remarks
	REFCLOCK_ADJUST value	REFCLOCK_ADJUST?	value	value: Adjustment value
Adjust Reference Clock	REFCLOCK_ADJUST PRESET			

3.17 Power Adjustment

The device message for setting power adjustment are shown in Table 3.17-1.

Table 3.17-1 Power adjustment settings

Function	Command	Query	Response	Remarks
Measure Power Adjust		<pre>MEA:POW? span,length,sg_start _level,sg_max_level, target,range[,freque ncy [,count [,adjust_log] [,sg_offset_switch]]]]</pre>	<pre>judge,sa_input,sg_ou tput,count_res,time, sa_input_log_n, sg_output_log_n,coun t_log_n</pre>	

3.18 Other Settings

Table 3.18-1 lists device messages for other settings.

Function	Command	Query	Response	Remarks
Erase Warm Up Message	ERASEWUP			
Display Title	TTL on_off	TTL?	on_off	
Entry Title Character	TITLE string	TITLE?	string	string: Character string to be displayed
Captured Data Query		DATA? start,length	<pre>datai_1,dataq_1,data i_2,dataq_2, (When ASCii, ⁰ is set to FORM) #ab b bytes of data> (When REAL, 32 is set to FORM)</pre>	
Binary Data Byte Order	FORM:BORD border	FORM: BORD? (Only when REAL, 32 is set to FORM)	border (Only when REAL, 32 is set to FORM)	
Numeric Data Format	FORM format, length	FORM?	format,length	

Table 3.18-1 Other setting messages



3.19 Setting External Mixer

Table 3.19-1 lists the device messages related to External Mixer settings.

Table 3.19-1 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

Chapter 4 Native Device Message Details

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

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Chapter 4 Native Device Message Details

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AANLY/AANLY?

Analysis Time Auto/Manual

Function	This command selects a main trace.	Auto/Manual mode for the Analysis Time of the
Command	AANLY auto_manual	
Query	AANLY?	
Response	auto_manual	
Parameter		
	auto_manual	Auto/Manual mode of Analysis Time
	AUTO MANUAL	Auto Manual
Details		
	Refer to the "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" for automatic setting operation.	
Example of Use		
	To set the Analysis Tim	ne of the main trace manually.

ACAP/ACAP?

Capture Time Auto/Manual

Function	This command selects a of the active trace.	Auto/Manual mode for the waveform capture time
Command	ACAP auto_manual	
Query	ACAP?	
Response	auto_manual	
Parameter		
Deteile	auto_manual AUTO MANUAL	Auto/manual mode of capture time Auto Manual
Details	When set to AUTO, the minimum waveform capture time required measurement is set.	
	This command is not a executed.	vailable while the Replay function is being
Example of Use	To set the waveform Ca ACAP AUTO	apture Time automatically.

ADJCARRIERCNT/ADJCARRIERCNT?

ACP In Band Center

Function	This command sets the Power measurement.	e In Band center frequency for Adjacent Channel
Command	ADJCARRIERCNT free	q
Query	ADJCARRIERCNT?	
Response	freq Returns a value ir	n Hz units without a suffix code.
Parameter		
	freq	In Band center frequency
	Range	125 MHz centered at the center frequency of waveform capture
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
Details		
Example of Use	This command is available when the following trace is active:Spectrum	
	To set In Band center adjCarrierCNT 123	frequency to 12.3 MHz. 00000

Native Device Message Details

ADJCARRIERNUM/ADJCARRIERNUM?

ACP Carrier Number

Function	This command sets the measurement.	e carrier number for Adjacent Channel Power
Command	ADJCARRIERNUM n	
Query	ADJCARRIERNUM?	
Response	n Returns a value w	ithout a suffix code.
Parameter	n Range Resolution Suffix code	Carrier Number 1 to 12 1 None
Details Example of Use	• Spectrum	able when the following trace is active: vailable when ACP Reference is set to the
	To set the carrier numb ADJCARRIERNUM 12	per to 12.

ADJCARRIERSPAC/ADJCARRIERSPAC?

ACP Carrier Spacing

Function	This command sets the Channel Power measu	e frequency interval among carriers for Adjacent rement.
Command	ADJCARRIERSPAC fre	eq
Query	ADJCARRIERSPAC?	
Response	freq Returns a value in	Hz units without a suffix code.
Parameter	freq Range Resolution Suffix code	Frequency interval among carriers 0 to 125 MHz 1 Hz HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Details Example of Use	• Spectrum	able when the following trace is active: vailable when ACP Reference is set to the
	To set the interval amo ADJCARRIERSPAC 123	ong carriers to 12.3 MHz. 300000

ADJCHBW/ADJCHBW?

ACP Offset Channel BW

Function	This command sets th Channel Power measu	e bandwidth of the Offset Channel for Adjacent arement.
Command	ADJCHBW freq	
Query	ADJCHBW?	
Response	freq Returns a value i	n Hz units without a suffix code.
_	neturns a value i	in fiz units without a suffix code.
Parameter	c	
	freq	Offset Channel bandwidth for Adjacent Channel Power measurement
	Range	1 Hz to 125 MHz
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
Details		
	This command is avai • Spectrum	lable when the following trace is active:
Example of Use	To set the Offset Char ADJCHBW 3840000	nnel bandwidth to 3.84 MHz.

ADJCHSLCT/ADJCHSLCT?

ACP Channel Select

Function	This command selects Power measurement.	the target Offset Channel for Adjacent Channel
Command	ADJCHSLCT ch,on_o	ff
Query	ADJCHSLCT? ch	
Response	on_off	
Parameter		
	ch	Target Offset Channel for measurement
	1	Offset Channel 1
	2	Offset Channel 2
	3	Offset Channel 3
	on_off	Measurement ON/OFF
	ON	To be measured
	OFF	Not measured
Details		
	This command is available when the following trace is active:	
	Spectrum	
Example of Use	÷	
	To set Offset Channel 2 for the measurement target. ADJCHSLCT 2, ON	

ADJCHSP/ADJCHSP?

ACP Offset Frequency

Function	This command sets the	e Offset Frequency of the Offset Channel for
	Adjacent Channel Pow	
Command		
	ADJCHSP ch, freq	
Query		
	ADJCHSP? ch	
Response		
	freq	
	Returns a value in Hz units without a suffix code.	
Parameter		
	ch	Target offset channel for measurement
	1	Offset Channel 1
	2	Offset Channel 2
	3	Offset Channel 3
	freq	Offset frequency for ACP measurement
	Range	-125 to 125 MHz
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
Details		
	This command is available when the following trace is active: • Spectrum	
Example of Use		
	To set the offset frequency of Offset Channel 1 to 50 MHz. ADJCHSP 1,50000000	

ADJFILTERTYPE/ADJFILTERTYPE?

ACP Filter Type

Function	This command sets the for Adjacent Channel 1	e In Band filter or filter type of the Offset Channel Power measurement.
Command	ADJFILTERTYPE fil	ter,target
Query	ADJFILTERTYPE? ta	rget
Response	filter filter, filter (When the target is on filter and the latter th	nitted: The former indicates the offset channel e In Band filter.)
Parameter	filter RECT NYQUIST ROOTNYQUIST target INBAND OFFSET When omitted:	Filter type Rectangle filter Nyquist filter Root Nyquist filter Filter to be set Sets the In Band filter. Sets the offset channel filter. Applies the same filter type to both the In Band and offset channel filters.
Details Example of Use	• Spectrum	able when the following trace is active: nel filter type to Nyquist. TNYQUIST,OFFSET

ADJINBW/ADJINBW?	?	
Function	This command sets th Channel Power measu	e carrier measurement bandwidth for Adjacent arement.
Command	ADJINBW freq	
Query	ADJINBW?	
Response	freq Returns a value i	n Hz units without a suffix code.
Parameter	freq Range Resolution Suffix code	Carrier measurement bandwidth 1 to 125 MHz 1 Hz HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Details Example of Use	 Spectrum This command is not a following: Span Total 	lable when the following trace is active: available when ACP Reference is set to the
	To set the carrier mea ADJINBW 3840000	surement bandwidth to 3.84 MHz.

ADJPWRTYPE/ADJPWRTYPE?

ACP Power Result Type

Function		
	This command switches the result display type for Adjacent Channel	
	Power measurement.	
Command		
Command	ADJPWRTYPE mode	
Query		
	ADJPWRTYPE?	
Response		
i tesponse	mode	
Parameter		
	mode	Result display type
	CARRIER	Sets the result display for Adjacent Channel
		Power measurement to Carrier Power.
	OFFSET	Sets the result display for Adjacent Channel
		Power measurement to Offset Channel Power.
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use		
	_	y for Adjacent Channel Power measurement to
	Carrier Power.	
	ADJPWRTYPE CARRIE	{

ADJROF/ADJROF? ACP Rolloff Factor		
Function		e rolloff ratio of the In Band filter and/or Offset cent Channel Power measurement.
Command	ADJROF ratio,targe	et
Query	ADJROF? target	
Response	-	nitted: The former indicates the offset channel the latter the In Band filter rolloff ratio.)
Parameter	ratio Range Resolution target INBAND OFFSET When omitted:	Filter rolloff ratio 0.01 to 1.00 0.01 Setting target Sets the rolloff ratio of In Band filter. Sets the rolloff ratio of Offset Channel filter. Applies the same rolloff ratio to both the In Band and offset channel filters.
	• Spectrum	able when the following trace is active: able when the target ACP filter type is set to
Example of Use		off ratio cannot be set when ACP Reference is set ratio to 0.13.

AFLTR/AFLTR? Filter Auto/Manual		
Function	This command switcher	s between auto and manual for filter bandwidth.
Command	AFLTR auto_manual	
Query	AFLTR?	
Response	auto_manual	
Parameter		
	auto_manual AUTO MANUAL	Auto/manual filter bandwidth setting Sets filter bandwidth automatically Sets filter bandwidth manually
Details		y
	This command is availaFrequency vs Time	able when the following trace is active:
Example of Use	T	···· (···· II -
	To set filter bandwidth AFLTR AUTO	automatically.

AM/AM?		
Measure AM Depth		
Function		
	This command perform	as the AM Depth measurement.
Command		
	AM switch_com	
Query		
	AM?	
Response		
	switch_res	
Parameter		
	switch_com	AM Depth measurement On/Off
	ON	Sets AM Depth measurement to On.
	1	Same as above
	OFF	Sets AM Depth measurement to Off.
	0	Same as above
	switch_res	AM Depth measurement On/Off
	1	On
	0	Off
Details		
		able when the following trace is active:
	• Power vs Time	
Example of Use		
	To set the AM Depth m	neasurement to On.
	AM ON	
	AM?	
	> 1	

ANLYFREQRANGE?

Maximum Frequency Range Query

Function	
	This command queries the maximum value of the frequency display
	range.
Query	
	ANLYFREQRANGE?
Response	
	freq
	No suffix code. Value is returned in Hz units.
Details	
	This command is available when the following trace is active:
	• Frequency vs Time
Example of Use	
	To query the maximum value of the frequency display range. ANLYFREQRANGE?

ANLYLEN/ANLYLEN? Analysis Time Length Function This command sets the analysis time length for the main trace. Command ANLYLEN time Query ANLYLEN? Response time No suffix code. Value is returned in ms units. Parameter time Analysis time length Range and resolution Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for details. Suffix code NS,US,MS,S Details This command is not available in the following cases: • When the Analysis Start Time is set to the maximum value. • When Terminal is DigRF 3G (only for MS269x Series). Example of Use To set the Analysis Time length for the main trace to 12 ms. ANLYLEN 12

ANLYST/ANLYST?

Analysis Start Time

Function	This command sets the	Analysis Start Time for the main trace.
Command	ANLYST time	
	ANLISI CIMe	
Query	ANLYST?	
Response		
	time	
	Returns a value in	ms units without a suffix code.
Parameter		
	time	Start time
	Range and resoluti	on
		Refer to the "MS2690A/MS2691A/MS2692A or
		MS2830A Signal Analyzer Operation Manual
		(Mainframe Remote Control)" for details.
	Suffix code	NS,US,MS,S
		ms is used when omitted.
Details		
	This command is not av	vailable in the following cases:
	• When the Analysis Start Time is set to the maximum value.	
	• When Terminal is se	t to DigRF 3G (only for MS269x Series).
Example of Use		
	To set the analysis star ANLYST 12	t time to 12 ms.

AT/AT? Attenuator		
Function	This command sets	the BE attenuator
	This command sets	the fit attenuator.
Command		
	AT att	
	AT action	
Query		
	AT?	
Response		
Response	att	
		e in dB units without a suffix code.
Parameter		
	att	Attenuator value
	Range	0 to 60 dB
	Resolution	2-dB steps
	Suffix code	DB
		dB is used even when omitted.
	action	Changes RF attenuator settings
	AUTO	Automatically set according to the reference
		levels and other settings.
	UP	Increases 1 step
	DN	Decreases 1 step
Details		
Details	This command is no	t available in the following cases:
		is Time Length is set to the maximum value.
		s DigRF 3G (only for MS269x Series).
	• When the Replay	function is being executed.
Example of Use		
	To set the attenuate	or to 30 dB.
	AT 30	

AUNITS/AUNITS? Log Scale Unit		
Function	This command sets th	ne 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	dBµV (emf)
	DBUVM	dBµV/m
	V	V
	W	W
Details		
		ilable when Scale Mode is set to Log. ad a measurement result is 99.999 GV (GW) or more, ore is displayed.
Example of Use		
	To set the level displa AUNITS DBMV	y unit system at log scale to dBmV.

BNDSP/BNDSP?

Frequency Band Mode

Function	path is switched to the	e frequency band path. The frequency at which the e preselector band or a path that does not pass or 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.
	SPURIOUS	Sets the frequency to be switched to the preselector band to 3.0 GHz.
	[MS2830A-041/043/04	-
	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		
		vailable in the following cases:
	[MS269x]	
	• When using the MS2690A.	
		when the Option 003/103 Extension of Preselector
	Lower Limit to 3 GHz is not installed in the MS2691A.	
	• SPURIOUS cannot be set when the Option 003/103 Extension of	
	Preselector Lower Limit to 3 GHz is not installed in the MS2691A.SPURIOUS cannot be set during bandwidth measurement.	
	 SPURIOUS cannot be set during bandwidth measurement. When Terminal is DigRF 3G (only for MS269x Series). 	
		inction is being executed.
	[MS2830A]	···· · · · · · · · · · · · · · · · · ·
		ot available when used with the 3.6 GHz Signal
	Analyzer option.	

Example of Use	To set the frequency to BNDSP SPURIOUS	switch to the preselector band to 3.0 GHz.
	DNDDI DIONICOD	
CAL Calibration		
Function		
	This command execute	s calibration.
Command		
Commanu	CAL mode	
Parameter		
r arameter	mode	Calibration mode
	ALL	Executes all calibrations
	LEVEL	Executes Level CAL
	LOLEAK_SUPPRES	^S Executes local leak suppression
	BAND	Executes inband calibration
	EXTRABAND	Executes analysis bandwidth calibration within
		the current frequency.
Example of Use		
	To execute all calibration	ons.
	CAL ALL	

CALC		
Calculate		
oulouluto		
Function		
	This command executes wa	aveform analysis without capturing. Used to
	re-analyze the same captu	red waveform with different parameters.
Command		
Command	CALC	
	CALC	
Details		
	This command can be exec	uted only when the waveform Capture Time
	(ACAP command) is set to	MANUAL.
	When no waveform has ca	ptured, or when a parameter that requires
	re-capturing of the wavefo	rm is changed, executes both waveform
	capturing and analysis.	
		s received while this function is being execute
		s re-capturing of a waveform or re-calculation
	-	ever, this function is paused during execution of
	such a command.	···· , ····· ·························
		bes not support synchronized control in
	Continuous mode.	ses not support synemonized control in
Example of Use	Continuous moue.	
	To obtain ACP massurame	nt results with 0 to 10 ms and 90 to 100 ms for
	the same IQ data:	int results with 0 to 10 ms and 50 to 100 ms to
	TRCCHG SPECTRUM	Displays Spectrum trace
	ACAP MANUAL	Sets the waveform capture time
		manually
	CAPLN 100MS	Sets the waveform capture time to 100 m
	SNGLS	Obtains IQ data
	*WAI	Waits until end of query
	ANLYLEN 10MS	Sets the analysis time length to 10 ms
	ANLYST OS	Sets the analysis start time to 0 s
	MEAS ADJ	Sets ACP measurement to ON
	CALC	Starts analysis
	*WAI	Waits until end of analysis
	RES?	Obtains ACP measurement result
	ANLYLEN 10MS	Sets the analysis time length to 10 ms
	ANLYST 90MS	Sets the analysis start time to 90 ms
	MEAS ADJ	Sets ACP measurement to ON
	CALC	Starts analysis
	*WAI	Waits until end of analysis
	RES?	Obtains ACP measurement result.

CALC:ANAL:SPEC

Analyze with Spectrum Trace

Function	
	This command analyzes the range selected in Time 1 and Time 2 by
	using Spectrum trace.
Command	
	CALC:ANAL:SPEC
Details	
	This command is available when the following trace is active:
	• Spectrogram
	The command is not available when Marker is set to Off.
Example of Use	
	To analyze the range selected in Time 1 and Time 2 by using Spectrum
	trace.
	CALC:ANAL:SPEC

CALC:ANAL:SPGR

Return To Spectrogram

Function	
	This command is used to return to Spectrogram trace from Spectrum
	trace.
Command	
	CALC:ANAL:SPGR
Details	
	If you return to Spectrogram by this command after you moved on to
	Spectrum by the Analyze with Spectrum Trace command, the same
	analysis length as in Spectrum is set in Spectrogram.
	This command can be set only after the Analyze with Spectrum Trace
	command has been used. The command cannot be set, if you change the
	parameter to set the analysis length after you returned to Spectrum.
	Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer
	Operation Manual (Mainframe Remote Control)" for details.
	This command is not available in the following case:
Example of Line	• When Terminal is set to DigRF 3G (only for MS269x Series).
Example of Use	The methods to Concerns the sec
	To return to Spectrogram trace.
	CALC:ANAL:SPGR

CALC:ATIM:GMOD/CALC:ATIM:GMOD?

Gate Mode On/Off

Function			
	When the main trace is CCDF, this command selects whether or not to use the GateMode for analysis of only the specified section in the		
	Analysis Time	e, as well as to read-out.	
Command			
	CALC:ATIM:G	MOD switch_com	
Query			
	CALCul:ATIM	:GMOD?	
Response			
	switch_res		
Parameter			
	—	Gate Mode On/Off	
	ON 1	Sets Gate Mode to On	
	OFF 0	Sets Gate Mode to Off	
	switch_res		
	1	Gate Mode: On	
	0	Gate Mode:Off	
Details			
	This function can be set when the CCDF trace is active.		
Example of Use			
	To set CCDF Gate Mode to On:		
	CALC:ATIM:GMOD ON		
	To query CCDF Gate Mode settings:		
	CALC:ATIM:GMOD?		
	> 1		
	× 1		

CALC:ATIM:GMOD:PER/CALC:ATIM:GMOD:PER?

Function			
	When GateMode is On, this command sets or queries the Period setting for each range.		
Command			
	CALC:ATIM:	GMOD:PER time	
Query			
	CALC:ATIM:	GMOD:PER?	
Response			
	Time		
	No suffix code		
	Returns the v	alues in s unit	
Parameter			
	<time></time>	Range setting cycle	
	Range/Resolution Same as Analysis Time length		
	For details, refer to "MS2690A/MS2691A/MS2692A Signal		
		Analyzer Operation Manual (Signal Analyzer Function	
		Operation)" or "MS2830A Signal Analyzer Operation	
		Manual (Signal Analyzer Function Operation)".	
	Suffix code	NS, US, MS, S	
		s is used when omitted.	
Details			
	This function can be set when the following trace is active.		
	• CCDF		
	• When Gate	Mode is On	
Example of Use	m		
	To set the interval of the CCDF gate mode to 10 ms:		
	CALC:ATIM:GMOD:PER 10MS		
	To query the interval of the CCDF gate mode: CALC:ATIM:GMOD:PER?		
	> 0.0100000		

CALC:ATIM:GMOD:RANG:STAT/CALC:ATIM:GMOD:RANG:STAT? Range State

Function	This command sets and	queries each range On/Off.
Command	CALC:ATIM:GMOD:RAN switch_com_1, swit	G:STAT ch_com_2, switch_com_3
Query	CALC:ATIM:GMOD:RAN	G:STAT?
Response	<pre>switch_res_1, swit</pre>	ch_res_2, switch_res_3
Parameter	switch_com_n ON 1 OFF 0	Range n On/Off Sets Range_n to On Sets Rnage_n to Off
	Default	
		Rangel On
	switch_res n 1 0	Range2 to 3 Off Range_n:On Range_n:Off
Details	Ū	Mange_n.on
	All segments cannot be set to Off.	
	This function can be set when the CCDF trace is active. Also, this function can be set when Gate Mode is On.	
Example of Use		
	To set the range On/Off: CALC:ATIM:GMOD:RANG:STAT ON,ON,OFF To query the range On/Off: CALC:ATIM:GMOD:RANG:STAT? > 1,1,0	

CALC:ATIM:GMOD:RANG:STAR/CALC:ATIM:GMOD:RANG:STAR?

Range Start Time

Function	This command sets and queries the start time of each range.		
Command	CALC:ATIM:GMOD:RANG:STAR <time_n></time_n>		
Query	CALC:ATIM:GMOD:RANG:STAR?		
Response	time_1,time_2,time_3 Suffix code none, returns values in S unit		
Parameter			
	time_n Start time for each Range Range 0~(Range setting period (Period)—Resolution) Resolution Same as Analysis Time Length For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)". Suffix code NS, US, MS, S S is used when the suffix code is omitted. Default Range1 to 3 0		
Details	Default Hanger to 5 0		
	This function can be set when the following trace is active.CCDFAlso, this function can be set when Gate Mode is On.		
Example of Use			
	To set the start time of each range: CALC:ATIM:GMOD:RANG:STAR 0,0.006,0.01 To query the start time of each range: CALC:ATIM:GMOD:RANG:STAR?		
	> 0.0000000,0.00600000,0.01000000		

CALC:ATIM:GMOD:RANG:STOP/CALC:ATIM:GMOD:RANG:STOP?

Range Stop Time

Function	This command sets and queries the stop time for each range.		
Command	CALC:ATIM:GMOD:RANG:STOP time_1,time_2,time_3		
Query	CALC:ATIM:GMOD:RANG:STOP?		
Response	time_1,tim	e_2,time_3	
Parameter	Suffix co	de none, return	s values in S unit
	time n	Stop time for ea	ch Range
	Range	-	ange setting period (Period)
	Resolution	Same as Analysi	s Time Length
		For details, refer	to "MS2690A/MS2691A/MS2692A Signal
		Analyzer Operat	ion Manual (Signal Analyzer Function
		-	MS2830A Signal Analyzer Operation
		_	Analyzer Function Operation)".
D - t - 11-	Default	Range1 to 3	Range setting period (Period)
Details	This Constitution	.	
	This function can be set when the following trace is active. • CCDF		
	Also, this function ca be set when Gate Mode is On.		
Example of Use	11100, 01110 1011		
	To set the stop time for each range: CALC:ATIM:GMOD:RANG:STOP 0.001,0.06,0.010 To query the stop time for each range: :CALC:ATIM:GMOD:RANG:STOP? > 0.00100000,0.06000000,0.01000000		

CALC:ATIM:LENG:SAMP/CALC:ATIM:LENG:SAMP?

Analysis Sample Length

Function			
	This command sets the Analysis Sample Length for main trace when		
	Terminal is DigRF 3G (only for MS269x Series).		
O			
Command			
	CALC:ATIM:LENG:SAM	IP point	
Query			
	CALC:ATIM:LENG:SAM	IP?	
Response			
	point		
Parameter			
	point	Analysis sample length	
	Range	0 to Capture Time Length – Analysis Start Time	
	Resolution	1 sample	
Details			
	This command is not available in the following cases:		
	• When Terminal is set to RF.		
	• When Analysis Start Sample is the maximum value.		
	• When the Replay function is being executed.		
Example of Use	1 0	<u> </u>	
	To set Analysis Sample	Length of the main trace to 15360000.	
	CALC:ATIM:LENG:SAMP 15360000		

Native Device Message Details

CALC:ATIM:STAR:SAMP/CALC:ATIM:STAR:SAMP?

Analysis Start Sample

Function	This command sets the number of sample to Analysis Start Sample of the main trace when Terminal is DigRF 3G (only for MS269x Series).		
Command			
	CALC:ATIM:STAR:SAM	IP point	
Query			
	CALC:ATIM:STAR:SAM	IP?	
Response			
	point		
Parameter			
	point	Analysis start sample	
	Range	0 to Capture Time Length – Analysis Time	
		Length	
	Resolution	1 sample	
Details			
	This command is not available in the following cases:		
	• When Input Terminal is RF.		
	• When Analysis Sample Length is the maximum value.		
	• When the Replay function is being executed.		
Example of Use			
	To set Analysis Start S	ample to 15360000 sample.	
	CALC:ATIM:STAR:SAMP 15360000		

CALC:CCDF:MODE/CALC:CCDF:MODE?

CCDF Meas Mode

Function			
	This command sets or reads the specified measurement method for the		
	CCDF trace to be measured.		
Command			
Command	CALC:CCDF:MODE <mode></mode>		
Query			
	CALC:CCDF:MODE?		
Response			
	mode		
Parameter	mode Specified method for CCDF trace to be measured		
	TIME Analyses Range data specified at Time Length		
	COUNT Measures until specified data count reached		
Details			
	This function can be set when the following trace is active. • CCDF		
	Also, this function can be set when Capture Time is Auto.		
	Theory will fullential be set when capture time is fullo.		
Example of Use			
	To set specified CCDF trace measurement method to data count.		
	CALC:CCDF:MODE COUN		
	To read specified CCDF trace measurement method.		
	CALC:CCDF:MODE?		
Remarks	> COUN		
Remaino	An error is displayed is this function is set when Capture Time is Manual.		
	The error name is the same as the screen operation.		
	*		

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Native Device Message Details

CALC:CCDF:COUN/CCDF:COUN?

Data Count

Function		a and monifor the management to much data count	
Command	This command specifies and queries the measurement target data count of the CCDF trace.		
Command	CALC:CCDF:COUN sample		
Query			
	CALC:CCDF:COUN?		
Response	sample		
Deremeter	Sampre		
Parameter	_		
	sample	Measurement target data count	
	Range	100 to 200000000	
	Resolution	1 sample	
	Default	1000000	
Details			
	This function can be set when the CCDF trace is active.		
	Also, this function can be set when CCDF Meas Mod is Count.		
Example of Use			
	To set the measurement target data count of the CCDF trace to 5000000: CCDF:COUN 5000000		

CALC:CCDF:STOR:REF

Store Reference Trace

Function		s the current CCDF/APD waveform data in the ser-defined reference trace data.
Command	CALC:CCDF:STOR:RE	ч г
Details	CALC.CCDF.SIOK.K	12
	This function can be s	et when the CCDF trace is active.
Example of Use		
	To record the current CALC:CCDF:STOR:RE	measurement result in the reference data.
CALC:CCDF:THR:ST	AT/CALC:CCDF:	THR:STAT?
Function		
	This command sets On/Off the minimum level setting for the CCDF measurement. When set to On, signals having a level less than the value specified by Threshold are excluded from the measurement target.	
Command	specifica by Threshold	a are excluded from the measurement target.
Query	CALC:CCDF:THR:STA	T switch_com
Quory	CALC:CCDF:THR:STA	ЧТ?
Response	avitab waa	
Parameter	switch_res	
	switch_com	Threshold On/off
	ON 1	Sets Threshold to On.
	OFF 0	Sets Threshold to Off.
	switch_res	Threshold On/off
	1	On
	0	Off
Details		
	This command is available when the following trace is set to active: • CCDF	
		available in the following condition: set to DigRF 3G (only for MS269x Series).
		4-20

Example of Use

To set Threshold to On. CALC:CCDF:THR:STAT ON CALC:CCDF:THR:STAT? > 1

CALC:IQD/CALC:IQD?

Input Source

Function	This command selects	the Input Source for data analysis.	
Command			
	CALC:IQD source		
Query			
	CALC:IQD?		
Response			
	source		
Parameter			
	source	Input Source	
	COMP	Selects complex data of I and Q phases.	
	I	Selects I-phase data.	
	Q	Selects Q-phase data.	
Details			
	This command is not available in the following cases:		
	• When Terminal is set to RF.		
	• Neither I phase nor Q can be set when Trace is Frequency vs Time.		
	• When the Replay function is being executed.		
Example of Use			

To set Input Source to Complex. CALC:IQD COMP

CALC:MARK:AOFF

All Marker Off

Function	
	This command sets all markers to Off.
Command	
	CALC:MARK:AOFF
Example of Use	
	To set all markers to Off.
	CALC:MARK:AOFF

CALC:MARK:COUP:ZONE/CALC:MARK:COUP:ZONE?

Couple Zone

Function	This command enables	disables sharing of the Zone Width setting.
Command		
	CALC:MARK:COUP:ZON	NE switch_com
Query		
	CALC:MARK:COUP:ZON	NE?
Response		
	switch_res	
Parameter		
	switch_com	Zone Width setting sharing On/Off
	ON	Enables setting sharing (On).
	1	Same as above
	Off	Disables setting sharing (Off).
	0 Same a	s above
	switch_res	Zone Width setting sharing On/Off
	1	On
	0	Off
Details		
	This command is avail	able when the following trace is active:
	Spectrum	
	When set to On, the Zone Width setting is shared among markers.	
Example of Use		
	To enable sharing of th	ne Zone Width setting (On).
	CALC:MARK:COUP:ZONE ON	
	CALC:MARK:COUP:ZON	NE?
	> 1	

CALC:MARK:PEAK:SORT:COUN/CALC:MARK:PEAK:SORT:COUN?

Search Peaks Number

Function		
	This command sets the number of searches when Search Peaks Sort Y/X	
	is executed.	
Command		
	CALC:MARK:PEAK:SOF	RT:COUN integer
Query		
Doononoo	CALC:MARK:PEAK:SOF	T:COUN?
Response	integer	
Parameter		
	integer	Number of searches
	Range	1 to 10
	Resolution	1
	Default value	10
Details		
	This command is available when the following trace is active:	
Example of Lies	• Spectrum	
Example of Use		
	To set the number of searches to 6.	
	CALC:MARK:PEAK:SOF	
	CALC:MARK:PEAK:SOF	RT: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 available when the following trace is active:	
	• Spectrum	
	This command cannot be executed when Marker Result is Integration or Density.	4
	Note that this command does not support synchronized control in Continuous mode.	Nat
Example of Use		tiv∈
	To sort the markers by frequency in order to query the marker values. CALC:MARK:PEAK:SORT:X	Native Device Message Details
	*WAI	ice
	CALC:MARK:READ?	Me
		ssa
		90 O
		De
		tail
		8

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 available when the following trace is active:
	• Spectrum
	This command cannot be executed when Marker Result is Integration or Density.
	Note that this command does not support synchronized control in Continuous mode.
Example of Use	
	To query the marker value by sorting markers by level. CALC:MARK:PEAK:SORT:Y *WAI
	CALC:MARK:READ?

4

Marker Readout Query

Function		
	This command queries all the marker values.	
Query		
_	CALC:MARK:READ?	
Response	<pre>freqs_1,power_1,freqs_2,power_2,,</pre>	
	freqs_10,power_10	
	(For Spectrum trace)	
	time 1, power 1, time 2, power 2	4
	(For Power vs Time trace)	
	sample 1,power 1,sample 2,power 2	ž
	(When trace is Power vs Time, and Terminal	Ť.
	<pre>is DigRF 3G)time_1,freqf_1,time_2,freqf_2</pre>	Ď
	(For Frequency vs Time trace)	PSI.
	<pre>sample_1,freqf_1,sample_2,freqf_2</pre>	Native Device Message Details
	(When trace is Frequency vs Time, and Terminal	N PS
	is set to DigRF 3G (only for MS269x Series))	0 6 2
	time_1,degree_1,time_2,degree_2	
	(For Phase vs Time trace)	2
	<pre>sample_1,degree_1,sample_2,degree_2</pre>	מ
	(When trace is Phase vs Time, and Terminal is	
	set to DigRF 3G (only for MS269x Series))	
	dist, prob	
	(For CCDF trace)	
	<pre>freqs_1,time_1,power_1,freqs_2,time_2,power_2</pre>	
	(For Spectrogram trace)	
Parameter		
	freqs_n Frequency of Marker n	
	No suffix code, Hz units, 0.1 Hz resolution	
	–9999999999999 is returned when no measurement is performed,	
	an error has occurred, or marker is set to Off.	
	power_n Level of Marker n	
	(When marker level display units are dB-system units)	
	No suffix code, in units specified by Scale Unit, 0.001 dB	
	4-45	

	resolution
	-999.0 is returned when no measurement is performed, an error
	has occurred, or marker is set to Off.
(W	Then marker level display units are V-system units)
	No suffix code, V units, 0.01 pV resolution
	-999.0 is returned when no measurement is performed, an error
	has occurred, or marker is set to Off.
(W	/hen marker level display units are W-system units)
	No suffix code, W units, 0.01 yW resolution
	-999.0 is returned when no measurement is performed, an error
	has occurred, or marker is set to Off.
(W	/hen marker level display units are X-multiple-system units)
	No suffix code, 0.0001 resolution. For no magnification, 1 is
	returned.
	-999.0 is returned when no measurement is performed, an error
	has occurred, or marker is set to Off.
time_	-
	No suffix code, s units, 1 ns resolution
	–9999999999999 is returned when no measurement is performed,
	an error has occurred, or marker is set to Off.
sampl	.e_n Sample of Marker n
1	No suffix code, 1 sample resolution
	-9999999999999 is returned when no measurement is performed,
	an error has occurred, or marker is set to Off.
freqf	
	No suffix code, Hz units, 0.01 Hz resolution
	–9999999999999 is returned when no measurement is performed,
	an error has occurred, or marker is set to Off.
degre	ee Position of Marker n
	No suffix code, degree units, 0.001 degree resolution
	9999999999999 is returned when no measurement is performed, an
	error has occurred, or marker is set to Off.
dist	Position of Marker n
	No suffix code, dB units, 0.01 dB resolution
	–9999999999999 is returned when no measurement is performed,
	an error has occurred, or marker is set to Off.
nrch	Duch al 114 of Marthan
prob	Probability of Marker n
	No suffix code, % units, 0.0001% resolution
	-999999999999 is returned when no measurement is performed,
	an error has occurred, or marker is set to Off.

Example of Use

To query all marker values (Spectrum). CALC:MARK:READ? > 1000000.0,-15.321,1100000.0,-23.000, 1200000.0,-15.321,1300000.0,-12.680, 1400000.0,-5.622,1500000.0,-65.056, 1600000.0,-26.534,1700000.0,-34.264, 1800000.0,-35.644,-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		
Commanu		ar integer
Query	CALC:MARK:REF marke	
Query	CALC:MARK:REF? mar	ker
Response		
Response	integer	
Parameter	Incogor	
	marker	Target marker number
	1	Narker1
	2	Marker1 Marker2
	3	Marker2 Marker3
	4	Marker3 Marker4
	5	Marker4 Marker5
	6	Marker6
	7	Markero Marker7
	8	Marker 7 Marker 8
	9	Marker9
	9 10	Marker9 Marker10
	integer	Reference marker number
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9

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	10	Marker10
	When omitted:	Active marker
Details		
	This command is avaSpectrum	ilable when the following trace is active:
	The setting target ma	arker cannot be set to the reference marker.
Example of Use		
	To set the reference n	narker for Marker 2 to Marker 4.
	CALC:MARK:REF 2,4	1
	CALC:MARK:REF? 2	
	> 4	
	J/CALC:MARK:SLIN	2
Spot Line		•
Function		
	This command displa	ys/hides the marker line when the zone type of the
	marker is set to Spot.	
Command		
	CALC:MARK:SLIN sv	witch_com
Query		
	CALC:MARK:SLIN?	
Response		
	switch_res	
Parameter		
	switch_com	Marker line display
	ON	Displays the marker line.
	1	Same as above
	OFF	Hides the marker line.
	0	Same as above
	switch_res	Marker line display On/Off state
	1	Marker line is displayed.
	0	Marker line is hidden.
Details		
		ilable when the following trace is active:
	• Spectrum	
Example of Use		
	To display the marke	
	CALC:MARK:SLIN ON	N
	CALC:MARK:SLIN?	
	> 1	

CALC:MARK:TABL/CALC:MARK:TABL?

Marker List

Function		
	This command selects the marker list display On/Off.	
Command		
	CALC:MARK:TABL swi	tch_com
Query		
	CALC:MARK:TABL?	
Response		
_	switch_res	
Parameter		
	switch_com	Marker list display On/Off
	ON	Sets the marker list display to On.
	1	Same as above
	OFF	Sets the marker list display to Off.
	0	Same as above
	switch_res	Marker list display On/Off state
	1	On
	0	Off
Details		
	This command is availa	able when the following trace is active:
	• Spectrum	
Example of Use		
	To set the marker list o	display to On.
	CALC:MARK:TABL ON	
	CALC:MARK:TABL?	
	> 1	

Native Device Message Details

CALC:MARK:WIDT:TYPE/CALC:MARK:WIDT:TYPE?

Zone Width Type

Function	This command sets th	e zone type of the marker.
Command		
•	CALC:MARK:WIDT:TY	PE marker, type
Query	CALC:MARK:WIDT:TY	DF2 marker
Response	CALC.MARK.WIDI.II	FE: Marker
	type	
Parameter		
	type	Zone type
	ZONE	Zone marker
	SPOT	Spot marker
	marker	Marker type
	1	Marker1
	2	Marker2
	3	Marker3
	4	Marker4
	5	Marker5
	6	Marker6
	7	Marker7
	8	Marker8
	9	Marker9
	10	Marker10
Details		
	This command is avaiSpectrum	lable when the following trace is active:
	• Spectrogram (Unavailable for Marker 3 to 10)	
	This command is not available when Marker Result is Peak (Fast) or	
	Peak (Accuracy).	
Example of Use		
	To query a marker value by setting the zone type of the active marker to	
	zone marker.	
	CALC:MARK:WIDT:TY	TPE 1,ZONE
	*WAI	
	MKL?	

CALC:MARK:X/CALC:MARK:X?

Marker Frequency

Function			
	This command moves the center of the marker to the specified frequency		
	(time). This command queries the center of the marker.		
Command			
	CALC:MARK:X marker, freq		
	(At spectrum, spectrogram trace)		
	CALC:MARK:X marker, time		
	(At Power vs Time, Frequency vs Time, Phase vs Time trace)		
	CALC:MARK:X marker, sample		
	(When performing a Power vs Time, Frequency vs Time, or		
	Phase vs Time trace for the MS269x series with the DigRF		
	3G terminal)		
	CALC:MARK:X marker, dist		
	(At CCDF trace)		
Query			
	CALC:MARK:X? marker		
Response			
	freq		
	(At spectrum, spectrogram trace)		
	time		
	(At Power vs Time, Frequency vs Time, Phase vs Time trace)		
	sample		
	(When performing a Power vs Time, Frequency vs Time, or		
	Phase vs Time trace for the $MS269x$ series with the $DigRF$		
	3G terminal)		
	dist		
	(When Trace Mode is set to CCDF and Marker Axis is set to		
	Distribution.		
	dist_result		
	(When Trace Mode is set to CCDF and Marker Axis is set to		
	Probability.		

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Parameter

(At Spectrum trace)

(At Spectrum trace)	
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
When omitted	Specifies marker 1
(At Power vs Time,	Frequency vs Time, Phase vs Time, CCDF, or
Spectrogram trace)	
marker	Marker number
1	Specifies Marker 1 (except CCDF)
	Specifies horizontal marker (CCDF)2
	Specifies Marker 2 (except CCDF)
	Cannot be specified when trace is CCDF.
When omitted	Specifies Marker 1 (except CCDF)
	Specifies horizontal marker (CCDF)
freq	Center Frequency of the marker
Range/Resolution	Within the frequency range of trace display
	For details, refer to
	"MS2690A/MS2691A/MS2692A Signal Analyzer
	Operation Manual (Signal Analyzer Function
	Operation)" or "MS2830A Signal Analyzer
	Operation Manual (Signal Analyzer Function
	Operation)".
Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
	Hz is used when omitted.
time	
-	Marker position
Range/Resolution	
	Marker position
	Marker position Within the time range of trace display
	Marker position Within the time range of trace display For details, refer to
	Marker position Within the time range of trace display For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer
	Marker position Within the time range of trace display For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer
	Marker position Within the time range of trace display For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer Function
Range/Resolution	Marker position Within the time range of trace display For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer
	Marker position Within the time range of trace display For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)".

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Range/Resolution	Within the sample range of trace display
	For details, refer to
	"MS2690A/MS2691A/MS2692A Signal Analyzer
	Operation Manual (Signal Analyzer Function
	Operation)" or "MS2830A Signal Analyzer
	Operation Manual (Signal Analyzer Function
	Operation)".
dist	Marker position
Range/Resolution	Within the power deviation range of trace
0	display
	For details, refer to
	"MS2690A/MS2691A/MS2692A Signal Analyzer
	Operation Manual (Signal Analyzer Function
	Operation)" or "MS2830A Signal Analyzer
	Operation Manual (Signal Analyzer Function
	Operation)".
Suffix code	DB
Summ totat	dB is used when omitted.
dist result	Power deviation at marker position
Range/Resolution	Within the power deviation range of trace
Range/Resolution	display
	For details, refer to
	"MS2690A/MS2691A/MS2692A Signal Analyzer
	Operation Manual (Signal Analyzer Function
	Operation)" or "MS2830A Signal Analyzer
	Operation Manual (Signal Analyzer Function
	Operation)".
Suffix code	None. Value is returned in dB units.
	–999.0 is returned at no measurement or error.

Details	
	If the marker position is changed during a Spectrum trace, the target
	marker becomes the active marker. In addition, if Marker Mode is Fixed
	or Off, Normal is specified. If the marker position is changed during
	Power vs Time, Frequency vs Time, Phase vs Time, or Spectrogram, the target marker is set to On and changed to the active marker. In addition,
	the marker position is shared among Power vs Time, Frequency vs Time,
	Phase vs Time. During a CCDF trace, Marker Axis changes to
	Distribution.
	When reading out a marker value after executing this command, use the
	*WAI command and execute synchronization control.
	Note that synchronization control during the Continuous mode is not
	supported.
	If using the MS269x Series, the settings for Power vs Time Frequency vs $% \mathcal{S}_{\mathrm{S}}$
	Time and Phase vs Time will be performed in units of samples when the
	terminal is set to DigRF 3G.
Example of Use	
	To move the center of Marker 2 to 100 MHz and query the marker value.
	CALC:MARK:X 2, 100MHZ
	*WAI
	CALC:MARK:Y?
	To query the center of Marker 2
	CALC:MARK:X? 2
	> 10000000.0
Related Command	
	This command has the same function as the following command.
	CALC:ACP:MARK:X marker
	CALC:CHP:MARK:X marker
	CALC:OBW:MARK:X marker
	CALC:BPOW:MARK:X marker

CALC:MARK:X:DELT/CALC:MARK:X:DELT?

Marker Query

Function		
	When in Spectrum tra	ce, this command moves the center of the marker
	to the frequency specif	fied by relative value. This command queries the
	center of marker in rel	lative value. When in CCDF trace, this command
	queries the difference	value of a Gaussian trace or reference trace.
Command		
Command	CALC:MARK:X:DELT	marker, freg
		Spectrum trace)
Query		
	CALC:MARK:X:DELT?	marker
Response		
	freq	_
	(When in S	Spectrum trace, and Marker mode is Delta)
	dist	
	(When Tra	ce Mode is set to CCDF and Marker Axis is set to
	Distributio	on.
	dist_result_gauss	,dist_result_ref
	(When Tra	ce Mode is set to CCDF and Marker Axis is set to
	Probability	Τ.
Parameter		
	marker	Marker Number
	1	Specifies marker 1 (Spectrum)
	2	Specifies marker 2 (Spectrum)
	3	Specifies marker 3 (Spectrum)
	4	Specifies marker 4 (Spectrum)
	5	Specifies marker 5 (Spectrum)
	6	Specifies marker 6 (Spectrum)
	7	Specifies marker 7 (Spectrum)
	8	Specifies marker 8 (Spectrum)
	9	Specifies marker 9 (Spectrum)
	10	Specifies marker 10 (Spectrum)
	When omitted	Specifies marker 1 (Spectrum)
	1	Marker set in Marker Axis (CCDF)
	When omitted:	Marker set in Marker Axis (CCDF)

freq Range/Resolution Suffix code	Marker position Within the frequency range of trace display For details, refer to <i>MS2690A/MS2691A/MS2692A Signal Analyzer</i> <i>Operation Manual (Signal Analyzer Function</i> <i>Operation)</i> or <i>MS2830A Signal Analyzer</i> <i>Operation Manual (Signal Analyzer Function</i> <i>Operation).</i> HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
dist Range/Resolution Suffix code	Marker position Within the power deviation range of trace display For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)". None. Value is returned in dB units.
dist_result_gauss Range/Resolution	Difference from the Gaussian trace at the marker position Within the power deviation range of trace display For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer Function Operation)".
Suffix code	None. Value is returned in dB units. -999.0 is returned at Gaussian trace off, no measurement, or error

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	dist_result_ref	Difference from the reference trace at the
		marker position
	Range/Resolution	Within the power deviation range of trace
		display
		For details, refer to
		"MS2690A/MS2691A/MS2692A Signal Analyzer
		Operation Manual (Signal Analyzer Function
		Operation)" or "MS2830A Signal Analyzer
		Operation Manual (Signal Analyzer Function
		Operation)".
	Suffix code	None. Value is returned in dB units.
		-999.0 is returned at reference trace off, no
		measurement, or error
Details		
	This function can be set	t when the following trace is active.
	• Spectrum	•
	• CCDF	
Example of Use		
-	To query the delta mar	ker value
	CALC:MARK:X:DELT?	
	> 0.065	

CALC:MARK:Y:DELT?

Marker Query

Function	
	This command queries the delta marker value of main trace.
Query	
	CALC:MARK:Y:DELT? marker
Response	
	rel_ampl_spe
	(At Spectrum trace)
	ratio_spe
	(For a Spectrum trace when Scale Mode is set to Linear and
	Marker Result is set to Peak (Fast) or Peak (Accuracy))
	rel_ampl_pvt
	(At Power vs Time trace)
	ratio_pvt
	(At Power vs Time trace and when Scale Mode is set to
	Linear)
	freq
	(At Frequency vs Time)
	degree
	(At Phase vs Time)
	prob
	(When Trace Mode is set to CCDF and Marker Axis is set to
	Probability.)
	<pre>prob_result_gauss,prob_result_ref</pre>
	(When Trace Mode is set to CCDF and Marker Axis is set to
	Distribution.
Parameter	
	(At Spectrum)

t Spectrum)	
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
When omitted	Specifies marker 1

(At Power vs Time, Fr	requency vs Time, Phase vs Time trace)
marker	Marker number
1	Marker 1 and 2 are targeted.
When omitted	Marker 1 and 2 are targeted.
rel_ampl_spe	Comparison of the marker selected by n and the
Relative To target ma	rker
	No suffix code. Value is returned in dB units.
	–999.0 is returned at no measurement or error
	-999.0 is returned when Marker Mode is set other than Delta.
(At CCDF)	omer man Dena.
marker	Marker Number
1	Marker set in Marker Axis (CCDF)
When omitted	The marker specified for Marker Axis is targeted. (CCDF)
rel_ampl_pvt	Comparison of Marker 1 and Marker 2
	No suffix code. Value is returned in dB units.
	–999.0 is returned at no measurement or error
ratio_spe	Value of the marker selected by n or the Relative
To target marker	
	–999.0 is returned at no measurement or error
	-999.0 is returned when Marker Mode is set other than Delta.
ratio_pvt	Marker 1 or Marker 2 value
	–999.0 is returned at no measurement or error
freq	Marker 2 frequency - Marker 1 frequency No suffix code. Value is returned in Hz units. –999999999999999 is returned at no measurement or error
degree	Marker 2 frequency – Marker 1 frequency No suffix code. Value is returned in degree units. -9999999999999999 is returned if there is no measurement or an error.
prob	Marker position of the target marker A percentage value with no suffix code is returned.

prob_result_gauss	 -999.0 is returned if there is no measurement or an error The difference value of the target marker and Gaussian trace is returned. A percentage value with no suffix code is returned. -999.0 is returned if the Gaussian trace is off, there is no measurement, or there is an error.
prob_result_ref	The difference value of the target marker and reference trace is returned. A percentage value with no suffix code is returned. -999.0 is returned if the Gaussian trace is off, there is no measurement, or there is an error.

Details

This function can be set when the following trace is active.

- Spectrum
- Power vs Time
- Frequency vs Time
- Phase vs Time

Example of Use

To query the delta marker value

CALC:MARK:Y:DELT? > 0.065

CALC:MARK:Y:PHAS?

Marker Phase Query

Function		
	Returns phase spectru	$\operatorname{am} \ \theta_k = \operatorname{arg} C_k \qquad [\mathrm{rad}]$
	when marker position	Fourier coefficient is C_k
	However, $-\pi < \theta_k \le$	π
Query		
	CALC:MARK:Y:PHAS?	marker
Response		
	phase	
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
	phase	Marker position phase spectrum
	Suffix code No suf	fix code, rad units, 0.0001 rad resolution
		-999.0 is returned at no measurement or error
Details		
	–999.0 is returned wh	$\operatorname{en} C_k = 0.$
	Returns phase spectr setting is Integration	rum of Zone Center position when Marker Result or Density.
		rum for marker positions in zone when Marker or Peak (Accuracy) and Zone Type is Zone.
	• At Spectrum trace	

• When Noise Cancel is Off

When using this function, :CALCulate:PHASe:STATe must be set to ON.

(For details, refer to :CALCulate:PHASe:STATe.)

Although multiple Fourier transformations are performed when Analysis Time Length is longer than 0 s, the phase spectrum used for the measurement results is the one for the Fourier transform performed last in the analysis time range. For example, when Analysis Start Time is 1 s and Analysis Time Length is 3 s, the phase spectrum for the Fourier transform performed at 4 s is used for the measurement result.

Example of Use

To read phase spectrum at 6 GHz CALC:PHAS:STAT ON SNGLS CALC:MARK:X 1,6GHZ *WAI CALC:MARK:Y:PHAS? 1 >1.4325

CALC:PHAS:STAT/CALC:PHAS:STAT?

Calculate Phase Spectrum

Function	This command sets pl	hase spectrum calculation On and Off
Command		
	CALC:PHAS:STAT sv	vitch_com
Query		
	CALC:PHAS:STAT?	
Response		_
	switch_res	
Parameter		
	switch_com	Sets phase spectrum calculation On and Off
	0 OFF	Does not execute phase spectrum calculation
		(default setting)
	1 ON	Executes phase spectrum calculation
	switch_res	Sets phase spectrum calculation On and Off
	0	Does not execute phase spectrum calculation
	1	Executes phase spectrum calculation
Details		
		ot perform phase spectrum calculation at the Off \rightarrow
	On switching instant	. After setting to On, either execute one of the two
	On switching instant commands below or :	
	On switching instant commands below or a measurement.	. After setting to On, either execute one of the two
	On switching instant commands below or a measurement. SNGLS	. After setting to On, either execute one of the two
	On switching instant commands below or a measurement. SNGLS CALC	After setting to On, either execute one of the two read the phase spectrum after performing a single
	On switching instant commands below or a measurement. SNGLS CALC	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command:
	On switching instant commands below or a measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command:
	On switching instant commands below or a measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command:
Example of Use	On switching instant commands below or a measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST This function can be a	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command:
Example of Use	On switching instant commands below or a measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST This function can be a	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command: set when the Spectrum trace is active.
Example of Use	On switching instant commands below or a measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST This function can be a • Spectrum	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command: set when the Spectrum trace is active.
Example of Use	On switching instant commands below or a measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST This function can be a • Spectrum To read phase spectru	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command: set when the Spectrum trace is active.
Example of Use	On switching instant commands below or a measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST This function can be a • Spectrum To read phase spectru CALC:PHAS:STAT ON	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command: set when the Spectrum trace is active.
Example of Use	On switching instant commands below or in measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST This function can be set • Spectrum To read phase spectru CALC:PHAS:STAT OF SNGLS	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command: set when the Spectrum trace is active.
Example of Use	On switching instant commands below or in measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST This function can be so • Spectrum To read phase spectru CALC:PHAS:STAT ON SNGLS CALC:MARK:X 1,6GH	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command: set when the Spectrum trace is active. um at 6 GHz
Example of Use	On switching instant commands below or i measurement. SNGLS CALC The phase spectrum of CALC:MARK:Y:PHAST This function can be s • Spectrum To read phase spectru CALC:PHAS:STAT ON SNGLS CALC:MARK:X 1,6GH *WAI	After setting to On, either execute one of the two read the phase spectrum after performing a single can be read using the following command: set when the Spectrum trace is active. um at 6 GHz

CALC:MARK:Y:PHAS?

Marker Phase Query

Function

	Returns phase spectru	${}^{\mathbf{m}} \theta_k = \arg C_k \qquad [\mathrm{rad}]$	
	when marker position Fourier coefficient is C_k		
	However, $-\pi < \theta_k \le 1$	π .	
Query	CALC:MARK:Y:PHAS?		
Response			
	phase		
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	
	When omitted:	Specifies marker 1	
	phase	Marker position phase spectrum	
		No suffix code, rad units, 0.0001 rad resolutio	
		-999.0 returned at no measurement or error	

resolution

Details		
	-999.0 returned when $ C_k = 0$	
	Returns phase spectrum of Zone Center position when Marker Result setting is Integration or Density	
	Returns phase spectrum for marker positions in zone when Marker Result is Peak (Fast) or Peak (Accuracy) and Zone Type is Zone	
	This function can be used in the following cases:At Spectrum traceWhen Marker Mode of target markers is Normal	
	When Storage Mode is Normal	
	When Noise Cancel is Off	
	When using this function, :CALCulate:PHASe:STATe must be set to ON. (For details, refer to:CALCulate:PHASe:STATe.)	
	Although multiple Fourier transformations are performed when Analysis Time Length is longer than 0 s, the phase spectrum used for the measurement results is the one for the Fourier transform performed last in the analysis time range. For example, when Analysis Start Time is 1 s	
	and Analysis Time Length is 3 s, the phase spectrum for the Fourier	
	transform performed at 4 s is used for the measurement result.	
Example of Use		
	To read phase spectrum at 6 GHz	
	CALC:PHAS:STAT ON	
	SNGLS	
	CALC:MARK:X 1,6GHZ	
	*WAI	
	CALC:MARK:Y:PHAS? 1	

> 1.4325

CALC:SMO:LENG:SAMP/CALC:SMO:LENG:SAMP?

Smoothing Sample Length

Function		
	This command sets the Smoothing Sample Length of the main trace when Terminal is DigRF 3G (only for MS269x Series).	
	When forming is Digit	
Command		
	CALC:SMO:LENG:SAME	' sample
Query		
	CALC:SMO:LENG:SAME	??
Response	_	
	sample	
Parameter	-	
	sample	Smoothing Sample Length
	Range	1 to 10000
	Resolution	1 sample
Details		
	This command is available when the following trace is active:	
	Power vs Time	
	Frequency vs Time	
	• Phase vs Time	
	This command is not available in the following cases:	
	• When Terminal is RF.	
	• When the Replay function is being executed.	
Example of Use		
	To set the Smoothing S	ample Length to 500.
	CALC:SMO:LENG:SAMP 500	

CALC:STR:ATIM:AUTO/CALC:STR:ATIM:AUTO?

Sub Trace Analysis Time Auto/Manual

Function			
	This command selects whether to set the analysis time for sub traces		
	automatically or manu	ally.	
Command			
	CALC:STR:ATIM:AUTC) switch_com	
Query			
5	CALC:STR:ATIM:AUTC)?	
Response			
Deremeter	switch_res		
Parameter	avitab com	Auto/Manual	
	switch_com ON 1	Auto	
	OFF 0	Manual	
	011 0	Mailuai	
	switch_res	Auto/Manual	
	1	Auto	
	0	Manual	
Details			
Details	This command is not a	vailable when the sub trace is set to Off.	
Example of Use	This command is not a	valiable when the sub-trace is set to Off.	
	To set the analysis time	e to the auto mode	
	To set the analysis time to the auto mode. CALC:STR:ATIM:AUTO ON		
	CALC:STR:ATIM:AUTO		
	> 1		

CALC:STR:ATIM:LENG/CALC:STR:ATIM:LENG?

Sub Trace Analysis Time Length

Function	This command sets the	e analysis time length of the sub-trace.
Command	CALC:STR:ATIM:LENG time	
Query	CALC:STR:ATIM:LENG	3?
Response		
	time	No suffix code. Value is returned in S units.
Parameter		
	time Range/Resolution Suffix code	Time analysis length For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)". NS, US, MS, S
Details	Sum code	No, 05, 115, 5
		vailable when the analysis start time (Sub Trace set to the maximum value.
	This command is not available in the following condition:	
Example of Use	When Terminal is seWhen the sub-trace	et to DigRF 3G (only for MS269x Series). is set to Off.
• •	To set the analysis time CALC:STR:ATIM:LENG CALC:STR:ATIM:LENG > 0.01200000	

CALC:STR:ATIM:LENG:SAMP/CALC:STR:ATIM:LENG:SAMP?

Sub Trace Analysis Sample Length

Function	This command sets the sub trace analysis sample length when Terminal		
	is set to DigRF 3G (onl	y for MS269x Series).	
Command			
	CALC:STR:ATIM:LENG	S:SAMP integer	
Query			
Response	CALC:STR:ATIM:LENG	S:SAMP?	
Response	integer		
Parameter			
	integer	Analysis sample length	
	Range	0 to Capture Time Length-Analysis Start Time	
	Resolution	1 sample	
Details	This command is not available when the analysis start position (Sub Trace Analysis Start Sample) is set to the maximum value.		
	This command is not a	vailable in the following condition:	
	• When Terminal is RF:		
Example of Use	• When the sub-trace is set to Off.		
·	To set the analysis sam	ple length of the sub-trace to 15360000.	
	CALC:STR:ATIM:LENG:SAMP 15360000		
	CALC:STR:ATIM:LENG:SAMP?		
	CALC:STR:ATIM:LENC > 15360000	S:SAMP?	

CALC:STR:ATIM:STAR/CALC:STR:ATIM:STAR?

Sub Trace Analysis Start Time

Function	This command sets the analysis start time of the sub-trace.	
Command Query	CALC:STR:ATIM:STAR time	
Response	CALC:STR:ATIM:STAP	R?,
Response	time	No suffix code. Value is returned in S units.
Parameter		No sum code. Value is returned in 5 units.
	time Range/Resolution	Time analysis length For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)".
	Suffix code	NS, US, MS, S S is used when omitted.
Details		vailable when the analysis time length (Sub Trace
	Analysis Time Length) is set to the maximum value.	
	This command is not available in the following cases:	
Example of Use	When Terminal is sWhen the sub-trace	et to DigRF 3G (only for MS269x Series). is set to Off.
	To set the analysis star CALC:STR:ATIM:STAR CALC:STR:ATIM:STAR > 0.01200000	R 12MS

CALC:STR:ATIM:STAR:SAMP/CALC:STR:ATIM:STAR:SAMP?

Sub Trace Analysis Start Sample

Function	This command uses the number of samples to set the sub trace analysis start position when Terminal is set to DigRF 3G (only for MS269x Series).	
Command		
Query	CALC:STR:ATIM:STAF	R:SAMP integer
Query	CALC:STR:ATIM:STAF	R:SAMP?
Response		
	integer	
Parameter		
	integer	Sub trace analysis start position
	Range	0 to Capture Time Length - Analysis Time
		Length
	Resolution	1 sample
Details		
	This command is not available when the analysis start position (Sub	
	Trace Analysis Start Sample) is set to the maximum value.	
	This command is not available in the following cases:	
	• When Terminal is RF.	
	• When the sub-trace is set to Off.	
Example of Use		
	To set the analysis star	rt position to 15360000 sample.
	CALC:STR:ATIM:STAP	R:SAMP 15360000
	CALC:STR:ATIM:STAP	R:SAMP?
	> 15360000	

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CALC:STR:BAND/CALC:STR:BAND?

Sub Trace Resolution Bandwidth

Function	This command sets the resolution bandwidth (RBW) of the sub-trace.	
Command	CALC:STR:BAND band	dwidth
Query	CALC:STR:BAND?	
Response		
	bandwidth	
Parameter		No suffix code. Value is returned in Hz units.
	bandwidth Range/Resolution Suffix code	Resolution bandwidth (RBW) 1 Hz to 10 MHz (1-3 sequence) HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Details	This command is available when the following sub-trace is set to active	
	• Spectrogram This command is not a for MS269x Series).	vailable when Terminal is set to DigRF 3G (only
	The setting range is limited by the Frequency Span setting. For details, refer to "MS2690A/MS2691A/MS2692A Signal Analyzer Operation Manual (Signal Analyzer function Operation)" or "MS2830A Signal Analyzer Operation Manual (Signal Analyzer function Operation)".	
Example of Use	To set the resolution bandwidth of the sub-trace to 300 kHz. CALC:STR:BAND 300KHZ CALC:STR:BAND? > 300000	

CALC:STR:BAND:AUTO/CALC:STR:BAND:AUTO?

Sub Trace Resolution Bandwidth Auto/Manual

Function		
	This command selects whether to set the resolution bandwidth (RBW) for	
	sub traces automatical	lly or manually.
Command		
	CALC:STR:BAND:AUTO	O switch_com
Query		
_	CALC:STR:BAND:AUTO	0?
Response		
	switch_res	
Parameter		
	switch_com	Auto/Manual
	ON 1	Sets the auto mode to On.
	OFF 0	Sets the auto mode to Off.
	switch_res	Auto/Manual
	1 0	Auto mode is set to On. Auto mode is set to Off.
Details	0	Auto mode is set to Off.
Details	This command is not a	weilable when the following substrate is get to
	This command is not available when the following sub-trace is set to active.	
	Spectrogram	
	This command is not available when Terminal is set to DigRF 3G (only	
	for MS269x Series).	
Example of Use		
	To enable automatic se	etting for the sub trace RBW.
	CALC:STR:BAND:AUT	NO C
	CALC:STR:BAND:AUT	0?
	> 1	

CALC:STR:DET/CALC:STR:DET?

Sub Trace Detection Mode

Function		
	This command selects the detection mode for waveform patterns of sub	
	traces.	
Command		
	CALC:STR:DET mode	
Query		
	CALC:STR:DET?	
Response		
	mode	
Parameter		
	mode	Detection mode
	NORM	Simultaneous detection of positive and negative
		peaks (unavailable for Spectrogram sub trace)
	POS	Positive peak detection
	NEG	Negative peak detection
	AVER	Average value detection
Details		
	This command is not a	vailable when the sub-trace is set to Off.
Example of Use		
	To set the detection mode to positive peak detection.	
	CALC:STR:DET POS	
	CALC:STR:DET?	
	> POS	

CALC:STR:MODE/CALC:STR:MODE?

Change Sub Trace

Function		
	This command sets the sub-trace type.	
Command		
	CALC:STR:MODE trac	ce
Query		
	CALC:STR:MODE?	
Response		
	trace	-
Parameter		
	trace	Trace type
	OFF	None
	PVT	Power vs Time
	SPGR	Spectrogram
Details		
	Spectrogram cannot k	be set when Scale Mode is set to Lin or when
	Terminal is set to DigRF 3G (only for MS269x Series).	
	This command is not available when Trace Mode is set to No Trace.	
Example of Use		
	To set the sub-trace to Spectrogram.	
	CALC:STR:MODE SPGE	2
	CALC:STR:MODE?	
	> SPGR	

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CALC:STR:TRIG:DIGR:DEL?

Sub Trace Result Delay Query

Function	
	This command queries the delay time of sub trace results in sample
	units.
Command	
	CALC:STR:TRIG:DIGR:DEL?
Response	
	sample
Details	
	When a trigger is used for DigRF 3G (only for MS269x Series), a delay
	may occur in the results because there is no pre-trigger. The number of
	may occur in the results because there is no pre-trigger. The number of samples from the analysis start sample point to the actual trigger point
Example of Use	samples from the analysis start sample point to the actual trigger point
Example of Use	samples from the analysis start sample point to the actual trigger point
Example of Use	samples from the analysis start sample point to the actual trigger point (trigger input + trigger delay) is queried as a delay.

CALC:TMAR:COUP:ZONE/CALC:TMAR:COUP:ZONE?

Couple Time Marker 1 and 2

This command enables	s/disables sharing of the Time Marker setting.
CALC:TMAR:COUP:ZO	NE switch_com
CALC:TMAR:COUP:ZO	NE 2
01110.111111.0001.100	
switch_res	
switch_com	Time Marker setting sharing On/Off
ON	Enables setting sharing (On).
1	Same as above
OFF	Disables setting sharing (Off).
0	Same as above
switch_res	Time Marker setting sharing On/Off
1	On
0	Off
This command is available when the following trace is active: • Spectrogram	
This command is not available when Marker Type is Spot.	
Setting to On makes T	`ime Marker 1 and Time Marker 2 move together.
To enable sharing of the Time Marker setting (On).	
CALC:TMAR:COUP:ZONE ON	
CALC:TMAR:COUP:ZO	NE?
> 1	
	CALC:TMAR:COUP:ZO CALC:TMAR:COUP:ZO switch_res switch_com ON 1 OFF 0 switch_res 1 0 This command is avail • Spectrogram This command is not a Setting to On makes T To enable sharing of th CALC:TMAR:COUP:ZO CALC:TMAR:COUP:ZO

CALC:TMAR:PEAK:X?

Time Marker Peak Query

Function			
	This command queries the time at the peak of Time Marker.		
Query			
	:CALC:TMAR:PEAK:X?		
Response			
_	time		
Parameter			
	n	Marker number	
	1	Marker 1	
	2	Marker 2	
	(When Marker Type is	s Spot, or when Marker Type is Zone and when	
	Couple Time 1 and 2 and	re Off)	
	Range	Analysis Start Time to Analysis Start Time +	
		Analysis Time Length	
	(When Marker Type is	Zone and when Couple Time 1 and 2 are On)	
	Range	Greater value of Analysis Start Time and	
		(Marker1 – Marker2 + Analysis Start Time) to	
		smaller value of Analysis Start Time+Analysis	
		Time Length and Analysis Start Time+Analysis	
		Time Length – (Marker 2– Marker 1)	
		No suffix code. Value is returned in s units.	
Details			
	This command is available when the following trace is active:Spectrogram		
	This command is available when Marker Result is Peak.		
Example of Use			
	To query the time at th	e peat of Time Marker.	
	CALC:TMAR:PEAK:X?		
	> 0.10000000		

CALC:TMAR:X/CALC:TMAR:X?

Time Marker Position

Function		
	This command moves Time Marker to the specified time.	
Command		
	CALC:TMAR:X n,tim	e
Query		
_	CALC:TMAR:X? n	
Response		
Deveryor	time	
Parameter		
	n 1	Marker number
	1 2	Time Marker 1
		Time Marker 2
	When omitted: time	Time Marker 1
		Marker position
		e is Spot, or when Marker Type is Zone and when
	Couple Time 1 and 2	
	Range	Analysis Start Time to Analysis Start Time +
	Default value	Analysis Time Length
		Analysis Start Time
		is Zone or when Couple Time 1 and 2 are On) From Analysis Start Time or (Marker 1 –
	Range	Marker 2 + Analysis Start Time or (Warker 1 –
		greater, to (Analysis Start Time + Analysis Time
		Length) or ((Analysis Start Time + Analysis Time
		Time Length) – (Marker 2 – Marker 1)),
		whichever is smaller
	Default value	Analysis Start Time + Analysis Time Length/2
	Suffix code	NS, US, MS, S
		S is used when omitted.
Details		
	Marker 2 cannot be se	t when Marker Type is set to Spot.
	This command is available when the following trace is active:	
	 Spectrogram 	5
Example of Use	1 0	
	To move the center poi	int of Time Marker 1 to 100 ms.
	CALC:TMAR:X 100MS	
	*WAI	
	CALC:TMAR:X?	

CALC:TRIG:DIGR:DEL?

Result Delay Query

Function	This command queries the delay time of the result by sample unit.
0	
Query	CALC:TRIG:DIGR:DEL?
Response	
	sample
Details	
	Since there is no pre-trigger when the trigger is used with DigRF $3G$
	(only for MS269x Series), there is a chance of delay in the results.
	Sample numbers from the sample point where the analysis has started to
	the actual trigger point (trigger input + trigger delay) will be read as a delay.
	This command is not available in the following case:
	• When Terminal is RF.
Example of Use	
	To query the delay time by sample unit
	CALC:TRIG:DIGR:DEL?

Function This command sets waveform capture time. Command CAPLN time Query CAPLN? Response time Returns a value in ms units without a suffix code. Parameter time Capture time Range and resolution Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for details. NS,US,MS,S Suffix code ms is used when omitted. Details The shortest capture time length will be set if automatic setting is enabled. The setting method is switched to the manual setting when capture time is set. The setting range and resolution are limited by the Frequency Span setting. This command is not available in the following cases: • When Terminal is DigRF 3G (only for MS269x Series). • When the Replay function is being executed. Example of Use To set waveform capture time to 2 seconds. CAPLN 2S

CAPLN/CAPLN? Capture Time Length

4

Native Device Message Details

CCDF:COUN/CCDF:COUN?

Data Count Function		
	This command specifie of the CCDF trace.	es and queries the measurement target data count
Command		
	CCDF:COUN <sample></sample>	>
Query		
	CCDF:COUN?	
Response		
	sample	Measurement target data count
Parameter		
	sample	Measurement target data count
	Range	100 to 200000000
	Resolution	1 sample
	Default	1000000
Details		
	This function can be set when the CCDF trace is active.	
	Also, this function can be set when CCDF Meas Mode is Count.	
Example of Use		
	To set the measurement CCDF:COUN 5000000	at target data count of the CCDF trace to 5000000:

CCDF:GAUS/CCDF:GAUS?

Gaussian Trace

Function		
	This command sets whether to show or hide the Gaussian trace data	
	during CCDF measure	ement.
Command		
	CCDF:GAUS switch	
Query		
	CCDF:GAUS?	
Parameter		
	switch	
	ON 1	To display Gaussian trace data.
	OFF 0	Does not display Gaussian trace data.
Details		
	This function can be set when the CCDF trace is active.	
	However, this function cannot be set if Measure Method is APD.	
Example of Use		
	To display Gaussian trace data.	
	CCDF:GAUS ON	
	To query Gaussian trace data display setting.	
	CCDF:GAUS?	
	> 0	

CCDF:RTR/CCDF:RTR?

Reference Trace

Function		ether to show or hide the reference trace data ing CCDF measurement.
Command		
	CCDF:RTR switch	
Query		
	CCDF:RTR?	
Parameter		
	switch	
	ON 1	Displays the reference trace data.
	OFF 0	Does not display the reference trace data.
Details		
	This function can be set when the CCDF trace is active.	
	Nothing can be set when no reference trace data is recorded.	
Example of Use		
	To display the referenc CCDF:RTR ON	e trace data.
	To query the reference CCDF:RTR? > 0	trace data display settings.

CHPWRCENTER/CHPWRCENTER?

Channel Power Channel Center Frequency

Function	This command sets the	e center frequency for Channel Power
	measurement.	center nequency for channel rower
Command	CHPWRCENTER freq	
Query	CHPWRCENTER?	
Response	c	
	freq No suffix code. Value is returned in Hz units.	
Parameter		
	freq Range	Channel center frequency 125 MHz centered at the center frequency of waveform capture
	Resolution Suffix code	1 Hz HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Details		
	This command is available when the following trace is active: • Spectrum	
Example of Use	To get the Channel Der	non contan facture on to COLCHE and query the
	To set the Channel Power center frequency to 6.01 GHz and query the results.	
	CHPWRCENTER 6.01GHZ	
	*WAI	
	RES?	

CHPWRFLTRTYP/CHPWRFLTRTYP?

Channel Power Filter Type

Function	This command sets the	e filter type for Channel Power measurement.
Command	CHPWRFLTRTYP filter	
Query	CHPWRFLTRTYP?	
Response	filter	
Parameter		
	filter RECT	Filter type Rectangle filter
	NYQUIST	Nyquist filter
	ROOTNYQUIST	Root Nyquist filter
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use	m	
	To set the filter type to Nyquist filter and query the results. CHPWRFLTRTYP NYQUIST	
	*WAI	
	RES?	

CHPWRROF/CHPWRROF?

Channel Power Rolloff Factor

Function	This command sets the measurement.	filter rolloff ratio for Channel Power	
Command	CHPWRROF factor		
Query	CHPWRROF?		
Response	factor		
Parameter			
	factor	Filter rolloff ratio	
	Range	0.01 to 1	
	Resolution	0.01	
Details			
	This command is available when the following trace is active:		
	• Spectrum		
	This command is available when the channel power filter type is set to		
	either of the followings:		
	• Nyquist		
	Root Nyquist		
Example of Use			
		ratio to 0.62 and query the results.	
	NEO:		
Parameter	factor factor Range Resolution This command is availa • Spectrum This command is availa either of the followings • Nyquist • Root Nyquist	0.01 to 1 0.01 able when the following trace is active: able when the channel power filter type is set to	

CHPWRWIDTH/CHPWRWIDTH?

Channel Power Channel Bandwidth

Function	This command sets the measurement.	e channel bandwidth for Channel Power
Command	CHPWRWIDTH freq	
Query	CHPWRWIDTH?	
Response	freq No suffix code. Val	ue is returned in Hz units.
Parameter	freq Range Resolution Suffix code	Channel bandwidth 1 Hz to 125 MHz 1 Hz HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Details		able when the following trace is active:
Example of Use	• Spectrum To set the channel band CHPWRWIDTH 1MHZ *WAI RES?	dwidth to 1 MHz and query the results.

CNF/CNF?		
Center Frequency		
Function		
	This command sets th	e center frequency for waveform capturing.
Command		
	CNF freq	
Query		
	CNF?	
Response		
	freq	
	Returns a value in	n Hz units without a suffix code.
Parameter		
	freq	Center frequency
	[MS26	9XA] 0 to 6 GHz (MS2690A)
		0 to 0.000 GHz (MS2690A) 0 to 13.5 GHz (MS2691A)
		0 to 26.5 GHz (MS2692A)
	[MS28	
		0 Hz to 3.6 GHz (Option 040)
		0 Hz to 6.0 GHz (Option 041)
		0 Hz to 13.5 GHz (Option 043)
		0 Hz to 26.5 GHz (Option 044)
		0 Hz to 43 GHz (Option 045)
	Resolution	1 Hz
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
	Default	
	[MS26	9xA]
		6.00 GHz (MS2690A)
		6.00 GHz (MS2691A)
	r	6.00 GHz (MS2692A)
	[MS28]	
		3.6 GHz (Option 040)
		3.6 GHz (Option 041)
		3.6 GHz (Option 043)
		3.6 GHz (Option 044) 3.6 GHz (Option 045)

Details			
	Limited by the Frequency Span setting.		
	When MS2690A/91/92A is used and Frequency Span is 50 MHz or more, the lower limit frequency is 100 MHz.		
	When MS2830A is used and Frequency Span is 50 MHz or more, the lower limit frequency is 300 MHz.		
	This command is limited in the following case.		
	• When Terminal is DigRF 3G (only for MS269x Series), the center frequency is fixed to 0 Hz.		
	This command is not available while the Replay function is being executed.		
Example of Use			
	To set the center frequency for waveform capturing to 12.3 MHz. CNF 12300000		

CNVLOSS/CNVLOSS?

External Mixer Conversion Loss

Function	This command sets the	e external mixer's conversion loss.
Command	CNVLOSS power	
Query	CNVLOSS?	
Response	power	
Parameter Details	MS2830A.	External mixer's conversion loss 0.00 to 99.99 dB 0.01 dB None. Value is returned in dB units. 15.00 dB ble only when Option 044/045 is installed for external mixer's band.
Example of Use	To set the external mix CNVLOSS 10.00 CNVLOSS? > 10.00	er's conversion loss to 10.00 dB.

CONF:AM

AM Depth Configure

Function	
Command	This command sets the AM Depth measurement to On.
Details	CONF:AM
	No measurement is performed. Scale Mode is set to Linear and Detection is set to Pos&Neg, and Peak to Peak function is set to ON.
	This command is available when the following is active:Power vs Time
Example of Use	To set the AM Depth measurement to On. CONF:AM
CONF:FM	
FM deviation Configure	
Function	
Commend	This command sets the FM deviation measurement to On.
Command	CONF:FM
Details	
	No measurement is performed. Scale Unit is set to Δ Hz, Detection is set to Pos&Neg, and Peak to Peak function is set to ON.
	This command is available when the following trace is active:Frequency vs Time
Example of Use	To set the FM deviation measurement to On. CONF:FM

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 measurement function. CONF:SAN
CONTS Continuous Measurement	
Function	This command executes continuous measurement.
Command	CONTS
Details	Other commands or queries are received while this function is being executed. If a command that requires re-capturing of a waveform or re-calculation of a trace is received, however, this function is paused during execution of such command. This command is not available while the Replay function is being executed.
Example of Use	To start continuous measurement. CONTS

4

Native Device Message Details

DATA?

Captured Data Query

Function	This command queries	the IQ data captured into the waveform memory.	
Query	DATA? start,length	1	
Response	When ASC,0 is set to FORM: datai_1,dataq_1,datai_2,dataq_2,		
	in the following order, ' length of the binary da data (in the Ascii forma Similarly, in the binary	o :FORM, "#" (in the Ascii format) is followed by, 'Character string range which indicates the byte ta (in the Ascii format)", "Byte length of binary at)", and "IQ data string (in the binary format). of format, response message terminator is added. 8.2 SCPI Response Message Mode Mainframe	
	>#216<16 bytes of data "2" in #216 indicates th	wo samples when REAL,32 is set to [:] FORM [:] a> hat 2 characters with the binary data length follow, that 16 Byte binary data follows.	
Parameter			
	When the terminal is s start Range	et to RF, the parameters are set as follows: Query starting point (in sample units) Relative value from Analysis Start Time = 0 s Relative value from minimum Analysis Start Time (when Replay function is executed) Starting from 0 (Analysis Start Time[s]	
	Resolution When omitted:	+ Analysis Time Length[s]) ×Sampling Rate[Hz] – 1 (When Capture Time is Auto) Starting from 0 Capture Time Length[s]×Sampling Rate[Hz] – 1 (When Capture Time is Manual) 1 0	
	length Range	Query length (in sample units) Starting from 1 (Analysis Start Time[s]	

	+ Analysis Time Length[s]) ×Sampling Rate[Hz] – <start> (When Capture Time is Auto) From 1 Capture Time Length[s]×Sampling Rate[Hz] – <start> (When Capture Time is Manual) Up to 200000 can be set.</start></start>		
Resolution When omitted:	1 (Analysis Start Time[s] + Analysis Time Length[s])		
	×Sampling Rate[Hz] – <start> (When Capture Time is Auto) Capture Time Length[s]×Sampling Rate[Hz] – <start> (When Capture Time is Manual) If more than 200000 is set, then 200000 is automatically set.</start></start>		
datai_n	I phase data No suffix code A parameter is read out in the index format of 8 digit effective figure when ASC,0 is set to :FORMat[:DATA]. A parameter is read out in the 32 byte single precision floating number point format, when REAL,32 is set to :FORMat [:DATA].		
dataq_n	Q data No suffix code A parameter is read out in the index format of 8 digit effective figure when ASC,0 is set to :FORMat[:DATA]. A parameter is read out in the 32 byte single precision floating number point format, when REAL,32 is set to :FORMat[:DATA].		
When the terminal is DigRF 3G (only for MS269x Series), the parameters are set as follows:			
start	Same as when the terminal is RF:		

datai_n	I-phase data No Suffix code When ASCii,0 is set for :FORMat[:DATA], it will be output as exponential form of 8 digits of essential figures. When REAL,32 is set for :FORMat[:DATA], Target System:GSM is output in 16 bit format, and Target System:W-CDMA is output in 8 bit format.
dataq_n	Q-phase data No Suffix code When ASCii,0 is set for 'FORMat['DATA], it will be output as exponential form of 8 digits of essential figures. When REAL,32 is set for 'FORMat['DATA], Target System:GSM is output in 16 bit format, and Target System:W-CDMA is output in 8 bit format.

Details

(When Terminal is RF)

The actually captured IQ data range is larger than the range set in Analysis Time, because of the internal analysis such as filter processing. Since IQ data read out by this command is within the range set in Analysis Time, you cannot read out all the IQ data captured by this command. Use the Save Captured Data function in order to read out all of them.

Note that the range of the IQ data read out by this command is different from that of the IQ data saved by the Save Captured Data function. The position at which Analysis Start Time of IQ data saved by Save Capture Data is 0 s is calculated by the following formula:

 $POS = TP - TD \times FS$

Where	
POS	Position at which Analysis Start Time of IQ data
	saved by Save Capture Data is 0 s [sample]
TP	"Trigger Position" value [sample] in XML file X
TD	Trigger Delay setting value [s]
	0 is set when Trigger Switch is Off.
FS	Sampling Rate [Hz]

IQ data can be converted into power by the following formula:

$$P = 10 Log_{10} (I^2 + Q^2)$$

Where

P : Power [dBm]

I : I phase data

Q : Q phase data

The query function is disabled when Analysis Start Time is set to 0 s, when Analysis Time Length is set to 0 s, and when Capture Time is set to Auto.

The query function is disabled during measurement.

FORM and FORM: BORD allows you to change the mode in which this command reads out IQ data.

Sampling Rate can be read out by SMPLRATE?.

(When the terminal is DigRF 3G (only for MS269x Series)) Actual range of IQ data that is captured will be wider than what is set with Analysis Sample Length (or Capture Time Length), due to the internal analysis process, such as filter process, etc. Range of the IQ data that is read with this command is only the range set with Analysis Sample Length (or Capture Time Length), so all the IQ data that was captured with this command cannot be read. To read all the IQ data, use Save Captured Data function.

Beware that the range of IQ data read with this command and range of IQ data saved by the Save Captured Data function is different.

It cannot be queried when the Analysis Start Sample is 0 s, Analysis Sample Length is 0 s, and Capture Time is Auto.

It cannot be queried while measuring.

Output format of IQ data by this command can be changed by ${\tt FORM}$ and ${\tt FORM:BORD}$.

When all the following conditions are met, this command reads out IQ data most rapidly.

- The terminal is RF.
- •: FORMat [: DATA] is set to REAL, 32.
- :FORMat:BORDer is set to SWAPped.

Example of Use	To query two IQ data s (When ASC, 0 is set to DATA? 0,2 > 2.4358980E-03,-1 6.3400291E+00,1.	1.9873490E+01,
DET/DET? Detection		
Function	This command sets the	e detection mode for the main trace.
Command	DET mode	
Query	DET?	
Response	mode	
Parameter		
	mode NRM POS NEG AVG SAMP	Detection mode Maximum/minimum value detection Maximum value detection Minimum value detection Average value detection Sample detection
Details		
Example of Use	 Spectrum, Spectrog Power vs Time (SAN Frequency vs Time Phase vs Time (NRI) 	(SAMP is not available)

DETMODE/DETMODE?

Marker Value in Pos&Neg detection

Function	This command selects detection mode is Pos&	the marker value to be displayed when the Neg.	
Command	DETMODE det,marker	c · · · · · · · · · · · · · · · · · · ·	
Query	DETMODE? marker		
Response	det		
Parameter		_	
	det	Detection mode to be displayed	
	POS	Displays the maximum value detection value	
	NEG	Displays the minimum value detection value	
	marker	Displayed marker	
	1	Marker 1	
	2	Marker 2	
	When omitted:	Active marker	
		Marker 1 applies when both Markers 1 and 2 are active.	
Details			
	This command is available on the following trace:		
	 Frequency vs Time 		
	This command is available only when Detection is set to Pos&Neg.		
Example of Use			
	To set the display value for Marker 1 as the maximum value detection		
	value.		
	DETMODE POS,1		

DGTZ Save Captured Data			
Function	This command saves ca	ptured waveform data into a file.	
Command	DGTZ file,device		
Parameter			
	file	Name of file to be saved Any character string enclosed by double quotes or single quotes.	
	device	Saving drive name Drive name such as A, B, D, E, etc.	
Details			
	This function can be executed when a waveform is captured in the following cases:		
	• Measurement performed by Single Measurement (SNGLS command) is completed.		
	• Storage Mode is set to OFF. This function results in an error if a parameter requires re-capturing of waveform after execution of waveform capturing.		
	Files are saved in the following directory of the specified drive. \Anritsu Corporation\Signal Analyzer\User Data \Digitized Data\Signal Analyzer		
	Up to 1000 files can be saved in a folder.		
Example of Use	To save a waveform dat	a file "DATA" into drive D.	
	DGTZ "DATA", D		

DGTZCANCEL

Cancel Execute Digitize

Function			
	This command cancels s	aving of waveform data into a file.	
Command			
	DGTZCANCEL		
Example of Use			
	To cancel digitizing.		
	DGTZCANCEL		
DGTZRATE/DGTZRA	TE?		4
Output Rate for Save Captured	Data		
		-	z
Function	This command acts the	output note when executing Save Conturned Date	ativ
	This command sets the	output rate when executing Save Captured Data.	ve I
Command)ev
	DGTZRATE rate		ice
Query			Me
	DGTZRATE?		ssa
Response			Native Device Message Details
	rate)et:
	No suffix code. Valu	e is returned in Hz units.	ails
Parameter			
	rate	Output rate	
	Range	Refer to the table below.	
	Dissolution Suffix code	Same as above. HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
	Sum tout	Hz is used when omitted.	

Frequency span[Hz]	Minimum [Hz]	Maximum [Hz]	Default [Hz]	Resolution [Hz]
$1000 *_2$	1000	2000	2000	1
2500 * 2	2000	5000	5000	1
$5000 *_2$	5000	10000	10000	1
$10000 *_2$	10000	20000	20000	1
25000 * 2	20000	50000	50000	1
$50000 *_2$	50000	100000	100000	10
$100000 *_2$	100000	200000	200000	10
$250000 *_{2}$	200000	500000	500000	10
$500000 *_2$	500000	1000000	1000000	100
$1000000 *_2$	1000000	2000000	2000000	100
$2500000 *_2$	2000000	5000000	5000000	100
$5000000 *_2$	5000000	1000000	1000000	1000
$10000000 *_2$	1000000	2000000	2000000	1000
$25000000 *_{1}$	2000000	5000000	5000000	1000
31250000 *1	2000000	5000000	5000000	1000
50000000 *3, *4	5000000	10000000	10000000	10000
62500000 *4	5000000	10000000	10000000	1000
10000000*3, *5	10000000	20000000	20000000	10000
$12500000^{*3, *5}$	10000000	20000000	20000000	10000

For 2690A/91A/92A:

- *1,*2 : This can be set regardless of option configurations.
- *3 :This can be set when the Option 004/104 (Wideband Analysis Hardware) is installed.
- *4 :This can be set when the Option 077/177 (Analysis Bandwidth Extension to 62.5 MHz) is installed.
- *5 :This can be set when the Option 078/178 (Analysis Bandwidth Extension to 125 MHz) is installed.

For MS2830A:

- *1 :This can be set when the Option 005/105/007/009/109 (Analysis Bandwidth Extension to 31.25 MHz) is installed.
- *2 :This can be set when the Option 006/106 (Analysis Bandwidth 10 MHz) is installed.
- *4 :This can be set when the Option 077/177 (Analysis Bandwidth Extension to 62.5 MHz) is installed.
- *5 :This can be set when the Option 078/178 (Analysis Bandwidth Extension to 125 MHz) is installed.

Details	The setting range is This command is not	lt value if the frequency span is changed. limited by the Frequency Span setting. available in the following case: DigRF 3G (only for MS269x Series).		
Example of Use	To set the output rate DGTZRATE 30MHZ	To set the output rate to 30 MHz. DGTZRATE 30MHZ		
DIGR:ADR/DIGR:A AD Full Range	DR?			
Function				
		he entering the factor for converting the DigRF 3G ries) signal to V units.		
Command				
0	DIGR:ADR volt			
Query	DIGR:ADR?			
Response				
Parameter	volt			
	volt	Voltage		
	Range	1 mV to 10V		
	Resolution	0.1 mV		
	Suffix code	V, MV V is used when omitted.		
Details		v is used when onlitted.		
		This command is not available in the following cases:		
[MS269 [MS283	 Setting for AD F 040/140 Baseband When the Replay : 	Yull Range cannot be performed when the Option Interface Unit is not installed in this instrument. function is being executed.		
Example of Use	Not available			
To set coefficient is 10 mV				
	DIGR:ADR 10MV			

4

Native Device Message Details

DIGR:IQS/DIGR:IQS' I/Q Sign	?	
Function	This command sets the	e I/Q sign.
Command		
Query	DIGR:IQS iq_sign	
	DIGR: IQS?	
Response	iq sign	
Parameter	14_31911	
	iq_sign	I/Q Sign
	SIGN	Sets to "Sign Bit + Abs. Value"
	TWOC	Sets to "Two's Complement"
Details		
	This command is not available in the following cases:	
[MS269xA	J	
	• Setting for I/Q Sign	n cannot be performed when the Option 040/140
	Baseband Interface Unit is not installed in this instrument.	
	• When the Replay fu	nction is being executed.
[MS2830A]	
	• Not available	
Example of Use	To set the I/Q Sign to Sign + Bit Abs.Value. DIGR:IQS SIGN	

DIGR:MEAS/DIGR:MEAS?

Measurement Channel

Function		This command sats the	Logical shannel Type of the resoluting DigRF 3G	
		This command sets the Logical channel Type of the receiving DigRF 3G (only for MS269x Series) signal.		
Command				
Query		DIGR:MEAS channel		
Response		DIGR:MEAS?		
Parameter		channel		
rarameter		channel	Measurement Channel	
		PRIM	Sets to Primary	
		DIV	Sets to Diversity	
Details				
		This command is not a	vailable in the following cases:	
	[MS269xA]			
		• Setting for Measur	rement Channel cannot be performed when the	
		Option 040/140 Baseband Interface Unit is not installed in this		
		instrument.		
	[MC2020A1		nction is being executed.	
	[MS2830A]			
		• Not available		
Example of Use				
		To set the Logical Channel Type to Primary.		
		DIGR:MEAS PRIM		

Target System

Function		This command selects MS269x Series).	the communication method for DigRF 3G (only for
Command		DIGR:TARG communic	cation
Query		DIGR:TARG?	
Response		communication	
Parameter		communication	Communication method
		WCDMA GSM	Sets the communication method to W-CDMA Sets the communication method to GSM
Details			
	[MS269xA]		vailable in the following cases:
		 Setting for Target System cannot be performed when the Option 040/140 Baseband Interface Unit is not installed in this instrument. When the Replay function is being executed. 	
	[MS2830A]		
Example of Use		To set the communicat	ion method of input signal to W-CDMA.
		DIGR:TARG WCDMA	

DISP:WIND:STR:Y:PDIV:RANG:LIN/DISP:WIND:STR:Y:PDIV:RANG:LIN?

Sub Trace Linear Scale Level Full Scale

Function			
This command sets the level-axis scale range for sub traces in I	inear		
scale mode.			
Command			
DISP:WIND:STR:Y:PDIV:RANG:LIN percent			
Query			
DISP:WIND:STR:Y:PDIV:RANG:LIN?			
Response	-		
percent			
Parameter			
percent Y-axis Scale			
10 10%			
20 20 %			
50 50 %			
100 100 %			
No Suffix code			
Details			
This command is not available in the following cases:			
• When the sub-trace is set to Off.			
• When Scale Mode is set to Log AND the sub-trace is set to Power	• When Scale Mode is set to Log AND the sub-trace is set to Power vs		
Time.			
• When the sub-trace is set to Spectrogram.			
Example of Use			
To set the level-axis scale range for sub traces to 50%.			
DISP:WIND:STR:Y:PDIV:RANG:LIN 50			
DISP:WIND:STR:Y:PDIV:RANG:LIN?			
> 50			

DISP:WIND:STR:Y:PDIV:RANG:LOG/DISP:WIND:STR:Y:PDIV:RANG:LOG?

Sub Trace Log Scale Level Full Scale

Function			
		e level-axis scale range for sub traces in Log scale	
	mode.		
Command			
	DISP:WIND:STR:Y:PD	DIV:RANG:LOG rel_ampl	
Query			
	DISP:WIND:STR:Y:PD	DIV:RANG:LOG?	
Response			
	rel_ampl		
Parameter			
	rel_ampl	Y-axis Scale	
	Resolution	10 dB	
	Range	10 to 150 dB	
	Suffix code	DB	
		dB is used when omitted.	
Details			
	This command is not a	vailable in the following cases:	
	• When the sub-trace	is set to Off.	
	• When Scale Mode is set to Linear AND the sub-trace is set to Power vs		
	Time.		
Example of Use			
	To set the level-axis sca	ale range for sub traces to 50 dB.	
	DISP:WIND:STR:Y:PD	IV:RANG:LOG 50	
	DISP:WIND:STR:Y:PD	IV:RANG:LOG?	
	> 50		

DISP:WIND:TRAC:Y:CVOL/DISP:WIND:TRAC:Y:CVOL?

Vertical Scale Center

Function	This command sets the	e value for the center of the vertical scale.	
Command	DISP:WIND:TRAC:Y:	CVOL voltage	
Query	DISP:WIND:TRAC:Y:CVOL?		
Response	DISP.WIND.IRAC.I.		
_	voltage		
Parameter			
	voltage	Scale setting value	
	Range	-Reference Level - Reference Level Offset to	
		Reference Level + Reference Level Offset	
	Resolution	0.01 pV	
	Suffix code	PV, NV, UV, MV, V	
		V is used when omitted.	
Details			
	This command is avail	able when the following trace is active:	
	Power vs Time		
	This command is not available in the following cases:		
	When Terminal is RF		
	When Scale Mode is Log		
	• When Input Source is Complex		
	• When the Replay function is being executed.		
Example of Use			
	To set the value for center of vertical scale to 2 mV.		
	DISP:WIND:TRAC:Y:CVOL 2MV		

DISP:WIND:TRAC:Y:PDIV:RANG/DISP:WIND:TRAC:Y:PDIV:RANG?

Level Full Scale

Function			
	This command sets the	level-axis scale range.	
Command			
_	DISP:WIND:TRAC:Y:P	DIV:RANG rel_ampl	
Query			
Boononco	DISP:WIND:TRAC:Y:P	DIV:RANG?	
Response	rel ampl		
Parameter	rer_ampr		
	rel ampl	Y-axis scale	
	_ Resolution	10 dB	
	Range	10 to 150 dB	
	Default value	100 dB	
Details			
		able on the following trace:	
Fuerente efiles	 Spectrogram 		
Example of Use		f the level aris to 50 dD	
	To set the scale range of the level axis to 50 dB. DISP:WIND:TRAC:Y:PDIV:RANG 50		
	DISP:WIND:TRAC:Y:PDIV:RANG 50 DISP:WIND:TRAC:Y:PDIV:RANG?		
	> 50		

DISTSCALE/DISTSCALE?

Power Distribution Scale

Function			
	This command sets power distribution axis scale.		
Command			
	DISTSCALE scale		
Query			
	DISTSCALE?		
Response			
Response	scale		
Parameter			
Parameter	scale		
		Power distribution axis scale	
	05	5 dB	
	10	10 dB	
	20	20 dB	
	50	50 dB	
Details			
	This command is available when the following trace is active:		
	• CCDF		
Example of Use			
	To set the power distribution axis scale to 10 dB.		
	DISTSCALE 10		

DTCNT? Data Point Query	
Function	This command queries the number of the measured points.
Query	DTCNT?
Response	point
Details	This command is available when the following trace is active: • CCDF
Example of Use	To query the number of the measured points. DTCNT?
ERASEWUP Erase Warm Up Message	
Function	This command erases the warm-up message.
Command	ERASEWUP
Details	This command is not available while the Replay function is being executed.
Example of Use	To erase the warm-up message. ERASEWUP

ESE2/ESE2?

End Event Status Enable Command/Query

Function			
		and is issued, the va	ent status enable register. When the alue of the END event status enable
Command	ESE2 n		
Query	ESE2?		
Response	n		
Parameter			
	n	END event statu	us enable register
	Value	= bit0 + bit1 + bi	it2 + bit3 + bit4 + bit5 + bit6 + bit7
		bit0: $2^0 = 1$	End of measurement
		bit1: $2^1 = 2$	End of analysis
		bit2: $2^2 = 4$	(Not used)
		bit3: $2^3 = 8$	End of Storage Stop
		bit4: $2^4 = 16$	End of Marker value calculation
		bit5: $2^5 = 32$	End of Measure
		bit6: $2^6 = 64$	End of Peak Search
		bit7: 2 ⁷ = 128	End of file operation
	Range	0 to 255	
Example of Use			
	To enable the	e measurement end	l status.
	1: ESE2 1		
	2: ESE2?	Respon	use> 1

ESE3/ESE3?

ERROR Event Status Enable Command/Query

Function		nd is issued, the va	event status enable register. When the alue of the ERROR event status enable
Command	ESE3 n		
Query	ESE3?		
Response	n		
Parameter	n Value	= bit0 + bit1 + bit bit0: $2^{0} = 1$ bit1: $2^{1} = 2$ bit2: $2^{2} = 4$ bit3: $2^{3} = 8$ bit4: $2^{4} = 16$ bit5: $2^{5} = 32$ bit6: $2^{6} = 64$ bit7: $2^{7} = 128$	atus enable register t2 + bit3 + bit4 + bit5 + bit6 + bit7 (Not used) (Not used) (Not used) (Not used) (Not used) (Not used) (Not used) (Not used) (Not used)
	Range	0 to 255	

ESR2?

END Event Status Register Query

Function			
		-	event status register value and clears
	the END ever	nt status register a	fter query.
Query			
	ESR2?		
Boononco			
Response	n		
Parameter			
	n	END event statu	_
	Value	= bit0 + bit1 + bi	t2 + bit3 + bit4 + bit5 + bit6 + bit7
		bit0: $2^0 = 1$	End of measurement End of analysis
		bit1: $2^1 = 2$	End of analysis
		bit2: $2^2 = 4$	(not used)
		bit3: $2^3 = 8$	End of Storage Stop End of Marker value calculation
		bit4: $2^4 = 16$	End of Marker value calculation
		bit5: 2 ⁵ = 32	
		bit6: 2 ⁶ = 64	End of Peak Search
		bit7: 2 ⁷ = 128	End of Measure End of Peak Search End of file operation
	Range	0 to 255	
Details			SR2 is enabled even when an operation is
	The register o	corresponding to E	SR2 is enabled even when an operation is
	-	to error occurrence.	•
Example of Use			
	To query the END event status register value. ESR2?		
	Response		
	> 1	End of	measurement

ESR3?

ERROR Event Status Register Query

QueryESR3?ResponsenParameternParameterSume and the status registerValueERROR event status registerValue $= bit0 + bit1 + bit2 + bit3 + bit4 + bit5 + bit4$ $bit0: 2^0 = 1$ (Not used) $bit1: 2^1 = 2$ (Not used) $bit3: 2^3 = 8$ (Not used) $bit4: 2^4 = 16$ (Not used) $bit4: 2^4 = 16$ (Not used)		and queries the erro a event status regist	r event status register value and clears er after query.
nParameternERROR event status registerValue= bit0 + bit1 + bit2 + bit3 + bit4 + bit5 + bitbit0: $2^0 = 1$ (Not used)bit1: $2^1 = 2$ (Not used)bit2: $2^2 = 4$ (Not used)bit3: $2^3 = 8$ (Not used)bit4: $2^4 = 16$ (Not used)	-		
n ERROR event status register Value $= bit0 + bit1 + bit2 + bit3 + bit4 + bit5 + bit$ $bit0: 2^0 = 1$ (Not used) $bit1: 2^1 = 2$ (Not used) $bit2: 2^2 = 4$ (Not used) $bit3: 2^3 = 8$ (Not used) $bit4: 2^4 = 16$ (Not used)			
bit 5: $2^5 = 32$ (Not used) bit 6: $2^6 = 64$ (Not used) bit 7: $2^7 = 128$ (Not used) Range 0 to 255	n Value	= bit0 + bit1 + b bit0: $2^0 = 1$ bit1: $2^1 = 2$ bit2: $2^2 = 4$ bit3: $2^3 = 8$ bit4: $2^4 = 16$ bit5: $2^5 = 32$ bit6: $2^6 = 64$ bit7: $2^7 = 128$	<pre>it2 + bit3 + bit4 + bit5 + bit6 + bit7 (Not used) (Not used)</pre>

FDPNT? Trace Point Query		
Function	This command querie the main trace.	es the number of data points on the frequency axis of
Query	FDPNT?	
Response	point	
Parameter	point	Number of data points on the frequency axis
Details		_
	This command is avaSpectrumSpectrogram	ilable when the following traces are active:
Example of Use		
	To query the number trace. FDPNT?	of data points on the frequency axis of the main

FEED/FEED? Terminal Change		
Function	This command selects	Terminal.
Command	FEED terminal	
Query	FEED?	
Response	terminal	
Parameter		
	terminal RF DIGRF3G	Terminal Sets Terminal to RF Sets Terminal to DigRF 3G (only for MS269x Series)
Details [MS269xA]		vailable in the following cases:
	• Setting for DigRF 3G (only for MS269x Series) cannot be performed when the Option 040/140 Baseband Interface Unit is not installed in this instrument.	
	• When the Replay fu	nction is being executed.
[MS2830A] Example of Use	• Not available	
	To set Terminal to RF.	
	FEED RF	

FETC:AM? AM Depth Fetch		
Function		
	This command queries	s the result of the AM Depth measurement.
Query	FETC:AM?	
Response	1010.111.	
	pos,neg,p-p,avg	
Parameter		
		Peak to Peak measurement result
	pos	+Peak value
	neg	-Peak value
	p-p	{(-Peak)-(+Peak)}/2
		Value is returned in % units, without suffix code.
		measurement is performed or an error occurs.
	avg	Average value
		Value is returned in V units, without suffix code.
		–9999999999999 is returned when no
		measurement is performed or an error occurs.
Details		
	This function outputs	the result of the last performed AM Depth
	measurement. Becaus	e this function is not related to capturing, it can be
	used to output the res	ults of a previously finished measurement in a
	different format.	
	To perform measurem attempt, use the REA	ent again by using the results of another capturing D command.
Example of Use		
· p · · ·	To query the result of FETC:AM?	the AM Depth measurement.

FETC:CCDF? CCDF Fetch	
Function	
	This command fetches the CCDF measurement result.
Query	
	FETC:CCDF?
Response	
	When Result Mode is "A".
	mean power,peak power dbm,crest
	(n=1 or when omitted)
	rel_ampl_1,rel_ampl_2,rel_ampl_3,rel_ampl_4,
	rel ampl 5, rel ampl 6
	percent 1,percent 2,percent 3,percent 4,
	percent 5
	(n=3)
	[Measure method is CCDF]
	<pre>meas_per_1,meas_per_2,meas_per_5001</pre>
	[Measure method is APD]
	<pre>meas_per_1,meas_per_2,meas_per_10001</pre>
	(n=4)
	gauss_per_1, gauss_per_2,guass_per_5001 (n=5)
	[Measure method is CCDF]
	ref_per_1,ref_per_2,ref_per_5001
	[Measure method is APD]
	<pre>ref_per_1, ref_per_2, ref_per_10001</pre>
	(n=6)
	count
	(n=7)
	<pre>mean_power_range_1,</pre>
	<pre>peak_power_dbm_range_1, crest_range_1</pre>
	(n=8)
	<pre>rel_ampl_range_1_1,rel_ampl_range_1_2,</pre>
	<pre>rel_ampl_ range_1_3, rel_ampl_range_1_4,</pre>
	<pre>rel_ampl_range_1_5,rel_ampl_range_1_6</pre>
	(n=9)
	<pre>percent_range_1_1, percent_range_1_2, percent_range_1_3,</pre>
	<pre>percent_range_1_4,percent_range_1_5</pre>
	(n=10)

```
[Measure Method is CCDF]
meas_per_range_1_1,meas_per_ range_1_2,...
meas per range 1 5001
[Measure Method is APD]
meas_per_range_1_1,meas_per_range_1_2,...
meas per range 1 10001
                  (n=11)
[Measure Method is CCDF]
ref per range 1 1, ref per range 1 2,...
ref per range 1 5001
[Measure Method is APD]
ref per range 1 1, ref per range 1 2,...
ref per range 1 10001
                  (n=13)
count range 1
                  (n=14)
mean_power_range 2,
peak_power_dbm_range_2,crest_range_2
                  (n=15)
rel ampl range 2 1, rel ampl range 2 2,
rel_ampl_range_2_3, rel_ampl_range_2_4,
rel_ampl_range_2_5,rel_ampl_range_2_6
                  (n=16)
percent_range_2_1, percent_range_2_2, percent_range_2_3,
percent range 2 4, percent range 2 5
                  (n=17)
[Measure Method is CCDF]
meas per range 2 1, meas per range 2 2,...
meas per range 2 5001
[Measure Method is APD]
meas per range 2 1, meas per range 2 2,...
meas per range 2 10001
                  (n=18)
[Measure Method is CCDF]
ref_per_range_2_1, ref_per_range_2_2, ...
ref per range 2 5001
[Measure Method is APD]
ref_per_range_2_1, ref_per_range_2_2, ...
ref per range 2 10001
                  (n=20)
count range 2
                  (n=21)
mean_power_range_3,peak_power_dbm_range_3,crest_range_3
                  (n=22)
```

```
rel ampl range 3 1, rel ampl range 3 2,
 rel ampl range 3 3, rel ampl range 3 4,
 rel_ampl_range_3_5,rel_ampl_range_3_6
                    (n=23)
 percent_range_3_1, percent_range_3_2, percent_range_3_3,
 percent_range_3_4,percent_range_3_5
                    (n=24)
 [Measure Method is CCDF]
 meas per range 3 1, meas per range 3 2,...
 meas per range 3 5001
 [Measure Method is APD ]
 meas per range 3 1, meas per range 3 2,...
 meas_per_range_3_10001
                    (n=25)
 [Measure Method is CCDF]
 ref_per_range_3_1, ref_per_range_3_2, ...
 ref per range 3 5001
 [Measure Method is APD]
 ref_per_range_3_1, ref_per_range_3_2, ...
 ref_per_range_3_10001
                    (n=27)
 count_range_3
                    (n=28)
When Result Mode is "B".
 mean power, mean power prob, rel ampl 1,
 rel ampl 2, rel ampl 3, rel ampl 4, rel ampl 5,
 rel ampl 6, crest, count
                    (n = 1 \text{ or when omitted})
 [Measure method is CCDF]
 meas_per_1, meas_per_2,... meas_per_5001
 [Measure method is APD]
 meas per 1, meas per 2,... meas_per_10001
                    (n=2)
 gauss_per_1, gauss_per_2,...guass_per_5001
                    (n=3)
 [Measure method is CCDF]
 ref per 1, ref per 2,...ref per 5001
 [APD]
 ref_per_1, ref_per_2,...ref_per_10001
                    (n=4)
                    Measurement Result types
mean_power
                    Average power
peak_power dbm
                    Max power
```

Parameter

	No suffix code. Value is returned in dBm units. –999.0 is returned at no measurement or error
percent_n	 Each value indicates the power deviation in the probability distributions below. 1, 2, 3, 4, 5 dB (When Horizontal Scale is set to 5 dB) 2, 4, 6, 8, 10 dB (When Horizontal Scale is set to 10 dB) 4, 8, 12, 16, 20 dB (When Horizontal Scale is set to 20 dB) 10, 20, 30, 40, 50 dB (When Horizontal Scale is set to 50 dB) A percentage value without a suffix code that has a resolution of 0.0001% is returned. -999.0 is returned at no measurement or error
mean_power_prob	Mean power probability distribution No suffix code. Value is returned in % units. –999.0 is returned at no measurement or error
rel_ampl_n	Each value indicates the power deviation in the probability distributions below.10, 1, 0.1, 0.01, 0.001, 0.0001%
meas_percent_n	Each value indicates the power deviation of the measured value in the probability distributions below. • -50.00, -49.99,,49.99, 50.00 dB (APD) • 00.00, 00.01,,49.99, 50.00 dB (At CCDF) A percentage value without a suffix code that has a resolution of 0.0001% is returned. -999.0 is returned at no measurement or error
guauss_percent_n	 Each value indicates the power deviation of the Gaussian trace in the probability distributions below. -50.00, -49.99,,49.99, 50.00 dB (This is for APD. "-999.0" is returned for all values.) 00.00, 00.01,,49.99, 50.00 dB (At CCDF) A percentage value without a suffix code that has a resolution of 0.0001% is returned999.0 is returned at no measurement or error

	ref_percent_n	 Each value indicates the power deviation of the reference trace in the probability distributions below. -50.00, -49.99,,49.99, 50.00 dB (APD) 00.00, 00.01,,49.99, 50.00 dB (At CCDF) A percentage value without a suffix code that has a resolution of 0.0001% is returned.
		–999.0 is returned at no measurement or error
	crest	Crest factor No suffix code. Value is returned in dB units. –999.0 is returned at no measurement or error
	Count	Number of data samples No suffix code –999.0 is returned at no measurement or error
Details		
	measurement. Becau used to output the red different format. To perform measurem attempt, use the REA The value returned k (cf. :SYSTem:RESul	oy this command differs depending on Result Mode.
	• CCDF	0
Example of Use	To query the measured mode). FETC:CCDF? > -66.68,-54.90,	rement result during CCDF measurement (n = 1, A

FETC:FM?

FM deviation Fetch

Function		
	This command queries	s the result of the FM deviation measurement.
Query		
Response	FETC:FM?	
	pos,neg,p-p,avg	
Parameter		
		Peak to Peak measurement result
	pos	+Peak value
	neg	–Peak value
	p-p	{(-Peak)-(+Peak)}/2
		Value is returned in Hz units, without suffix
		code. (Frequency vs Time)
		–9999999999999 is returned when no
		measurement is performed or an error occurs.
	avg	Average value
		Value is returned in Hz units, without suffix
		code. (Frequency vs Time)
		–9999999999999 is returned when no
		measurement is performed or an error occurs.
Details		
	This command is avail • Frequency vs Time	lable when the following trace is active:
	This command queries the result of the Spurious Emission measurement	
	performed lastly. This function does not accompany any sweep, thus this	
	function is used to read out the measurement result in a different type, when the measurement has already completed.	
		to perform re-measurement with redoing sweep.
Example of Lise	Use READ command	to perform re measurement with redoing sweep.
Example of Use		the FM deviction measurement
	1 0	the FM deviation measurement.
	FETC:FM?	

FLTRBW/FLTRBW? Filter Bandwidth Function This command sets the filter bandwidth of the main trace. Command FLTRBW bandwidth Query FLTRBW? Response bandwidth No suffix code. Value is returned in Hz units. Parameter bandwidth Filter bandwidth Range and resolution Limited by settings for Frequency Span and Filter Type. Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for details. Suffix code HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted. Details This command is available when any of the following traces is active: • Power vs Time • CCDF • Frequency vs Time This command is available when the Filter Type is set to any of the following: • Rect • Gauss • Nyquist Root Nyquist The setting range is limited by the Frequency Span and Filter Type settings. Example of Use To set the filter bandwidth of the main trace to 1 MHz. FLTRBW 1MHz

FLTROFS/FLTROFS?

Filter Frequency Offset

Function	This command sets the	e filter frequency offset of the main trace.
Command	FLTROFS freq	
Query	FLTROFS?	
Response	freq Returns a value in	Hz units without a suffix code.
Parameter		
	freq Range Resolution Suffix code	Channel width -1 × Frequency span to Frequency span Hz 1 Hz HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
Details	 Power vs Time CCDF This command is avail following: Rect 	Channel width -1 × Frequency span to Frequency span Hz 1 Hz HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted. able when either of the following traces is active: able when the Filter Type is set to any of the
Example of Use	 Gauss Nyquist Root Nyquist To set the filter frequent FLTROFS 30KHZ 	ncy offset of the main trace to 30 kHz.

FLTRTYP/FLTRTYP? Filter Type		
Function	This command selects	the Filter Type for the main trace.
Command	FLTRTYP filter	
Query	FLTRTYP?	
Response	filter	
Parameter		
	filter	Filter type
	RECT	Rectangle filter
	GAUSS	Gauss filter
	NYQUIST	Nyquist filter
	ROOTNYQUIST	Root Nyquist filter
	OFF	No filtering
Details		
Example of Use	 Power vs Time CCDF (selectable for	able when either of the following traces is active: or rectangle filter and no filtering only) to OFF when the frequency span is set to 1 kHz.
	To set the Filter Type t FLTRTYP GAUSS	to Gauss filter.

FM/FM?

Measure FM deviation

Function		
	This command performs the FM deviation measurement.	
Command		
	FM switch_com	
Query		
_	FM?	
Response		
5	switch_res	
Parameter		
	switch_com	FM deviation measurement On/Off
	ON	Sets FM deviation measurement to On.
	1	Same as above
	OFF	Sets FM deviation measurement to Off.
	0	Same as above
	switch_res	FM deviation measurement On/Off
	1	On
	0	Off
Details		
	This command is available when the following trace is active:	
	• Frequency vs Time	
Example of Use		
	To set the FM deviation measurement to On.	
	FM ON	
	FM?	
	> 1	

FORM/FORM?

Numeric Data Format

Function		
	This command sets the format of the IQ data read out by DATA?.	
Command		
Commanu	FORM format_com,le	anath
Query		
Query	FORM?	
Response		
	format res,length	
Parameter		
	The following are set w	when the terminal is RF:
	format_com	IQ data format
	ASC	Ascii format (Default value)
	REAL	Binary 32 byte floating point number format
	format_res	IQ data format
	ASC	Ascii format (Default value)
	REAL	Binary 32 byte floating point number format
	length	Secondary setting to the selected format
	0	Returns the results in the effective digit number unique to this instrument.
		Setting is possible only when ASCii is specified as the format.
	32	Returns the results in the 32 byte floating point number format.
		Setting is possible only when REAL is specified as the format.
	When omitted:	0 is automatically set when ASCii is specified
		as the format, while 32 is automatically set when REAL is specified as the format.
	The following are set	when the terminal is DigRF 3G (only for MS269x
	Series):	
	format com	IQ data format
	ASC	Ascii format (Default value)
	REAL	Binary 16 bits format (When Target System is
		GSM).
		Binary 8 bits format (When Target System is W-CDMA).

	format_res	IQ data format
	ASC	Ascii format (Default value)
	REAL	Binary 16 bits format (When Target System is GSM)
		Binary 8 bits format (When Target System is W-CDMA)
	length	Supplementary setting for selected format
	0	Result is sent back in number of significant
		figures of this instrument. This can be set only when ASCii is specified for format.
	32	This is returned when the REAL is specified for
		format. This can be set only when REAL is specified for format.
	When omitted	0 is set when ASC is specified for format. 32 is set when REAL is specified for format.
Details		-
	(When Terminal is RF)
	When REAL is set, IQ	data is queried in the 32 byte single precision
	floating point number	format specified in IEEE754.
	(When Terminal is Dig	gRF 3G (only for MS269x Series))
	When the REAL is set	, IQ data is output in 16 bits for the Target
	System:GSM, and in 8	3 bits for Target System:W-CDMA.
Example of Use		
	To set the IQ data for FORM ASC	mat to Ascii.
	FORM?	
	> REAL,32	

FORM:BORD/FORM:BORD?

Binary Data Byte Order

Function	This command sets th set to FORM.	e byte order of the reading data when REAL, 32 is
Command	FORM:BORD border_	com
Query Response	FORM:BORD?	
Parameter	border_res	
	border_com NORM SWAP	Byte order Sets the byte order to Big-endian (Default value) Sets the byte order to Little-endian.
	border_res NORM SWAP	Byte order Bite order is Big-endian. Bite order is Little-endian.
Details	This command sets the order in which the data is arranged when data is read out in a binary style. In Big-endian, the data is arranged in the descending order (starting from the most significant value in the sequence), and in Little-endian, the data is arranged in the ascending order (starting from the least significant value in the sequence). (When Terminal is RF) For instance, in Big-endian, "0x01234567" (four-byte data) is arranged in the order of "01 23 45 67, while, in Little-endian, it is arranged in the order of "67 45 23 01".	
	The 2 byte data of "0x in order of "23 01" in I	gRF 3G (only for MS269x Series)) 0123" in the Target System:GSM will be arranged 3ig endian, and "01 23" in Little endian. Ill not change for Target System:W-CDMA since the
Example of Use	To set the byte order t FORM:BORD SWAP FORM:BORD? > SWAP	o the little endian.

FREQ:CENT:STEP/FREQ:CENT:STEP?

Frequency Step Size

Function	This command sets the	e step size of the center, start and stop frequency.
Command	FREQ:CENT:STEP fre	
Query		~~~
	FREQ:CENT: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)
	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 1	100.0 kHz.
	FREQ:CENT:STEP 10	0000
	To query the step size.	
	FREQ:CENT:STEP?	
	> 100000	

FREQ:SYNT/FREQ:S	SYNT?	
Function	This command selects	the switching speed of frequency.
Command	FREQ:SYNT mode	
Query	FREQ:SYNT?	
Response	mode	Frequency switching mode
Parameter		
	<mode></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 avai	lable only for MS2830A.
		FAST setting gives priority to the switching speed the phase noise characteristic worsens.
Example of Use		
	To set the frequency s FREQ:SYNT FAST	witching mode to the speed priority mode.
	To query frequency sw FREQ:SYNT? > FAST	vitching speed

FREQ:SYNT:LPH:STAT?

Low Phase Noise Performance Status Query

Function			
	This command queries the state of Low Phase Noise function with the		
	current measurement	conditions.	
Query			
	FREQ:SYNT:LPH:STA	Γ?	
Response			
	status	Low Phase Noise function status	
Parameter			
	status	Low Phase Noise function status	
	1	Lowers Phase Noise	
	0	Does not lower Phase Noise	
Detail			
	This command is avail	able only for MS2830A.	
	This function is available only when Option 062 or 066 is installed.		
	The phase noise performance is improved when the Low Phase Noise switch is On and the center frequency is less than 3.7 GHz (3.5 GHz when the Frequency Band Mode is Spurious).		
	Whether the Low Phase Noise option can be used or not is read from the current setting parameters by this function.		
Example of Use			
	To query the state of L measurement condition	ow Phase Noise function with the current ns.	
	FREQ:SYNT:LPH:STA	Γ?	
	> 1		

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 only when Option 044/045 is installed for	
	MS2830A.	
Example of Use		
	To set the external mixer band to Band U.	
	FULBAND U	
	FULBAND?	
	> U	

FUNITS/FUNITS?

Frequency Scale Unit

Function	This command sets th	e display unit system of the frequency axis.
Command	FUNITS unit	
Query	FUNITS?	
Response	unit	
Parameter		
	unit HZ DHZ	Display unit system of the frequency axis Hz ΔHz
Details	DEZ	ΔΠΖ
		lable when the following trace is active:
Example of Use	 Frequency vs Time To set the display unit system to Hz. FUNITS HZ 	
INI Initialize		
Function	This command initial	izes the parameters.
Command	INI	
Example of Use	To initialize the parar INI	neters.

INIT:AM	
AM Depth Initiate	
Function	
	This command starts the AM Depth measurement.
Command	
	INIT:AM
Details	
	When this function has been executed, the AM Depth measurement is set
	to On and the measurement will start.
	Scale Mode is set to Linear and Detection is set to Pos&Neg, and Peak to Peak function is set to On.
	This command is available when the following trace is active:
	Power vs Time
Example of Use	
	To start the AM Depth measurement.
	INIT:AM
INIT:FM	
FM deviation Initiate	
Function	
	This command starts the FM deviation measurement.
Command	
	INIT:FM
Details	
	When this function has been executed, the FM Deviation measurement is
	set to On and the measurement starts.
	Scale Unit is set to Δ Hz and Detection is set to Pos&Neg, and Peak to Peak function is set to ON.
	This command is available when the following trace is active:
	• Frequency vs Time
Example of Use	
	To start the FM deviation measurement. INIT:FM

Liner Scale Range

Function	This command sets the (Lin scale).	e scale range of the level axis for the main trace
Command	LINSCALEDIV scale	
Query	LINSCALEDIV?	
Response	scale Returns a value in	a percentage units without a suffix code.
Parameter		Level axis scale
	scale	
Details	Range	1 to 10% (1-2-5 sequence) able when either of the following traces is active: able when Scale Mode is Linear.
	This command is available when either of the following traces is active:Spectrum	
	• Power vs Time	č A
	This command is avail	able when Scale Mode is Linear.
Example of Use		
	To set the scale of level LINSCALEDIV 10	axis for the main trace to 10%/div.

LOADSTD/LOADSTD?

Load Standard Parameter

Function		
	This command changes parameter settings according to the	
	communication metho	d selected for Standard.
Command		
	LOADSTD measure	
	LOADSTD measure,pa	attern
Query	LOADSTD? measure	
Boononco	LOADSID: Measure	
Response	nattorn	
Parameter	pattern	
Parameter	measure	Touget measurement
	ADJ	Target measurement
		ACP measurement (Spectrum)
	CHPWR	Channel power measurement (Spectrum)
	OBW BRSTAVGPWR	OBW measurement (Spectrum)
	BRSIAVGPWR	Burst Average Power measurement (Power vs
		Time)
	When Standard is set	to W-CDMA Uplink (ACP 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 (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

、 、	to W-CDMA Uplink (Burst Average Power
measurement) Pattern	Parameter to be set
MEAN	
MEAN	3GPP W-CDMA Uplink, Mean Power
	measurement
RRCFILTER	3GPP W-CDMA Uplink, RRC Filtered Power
XX71 ··· 1.	measurement
When omitted:	3GPP W-CDMA Uplink, Mean Power
	measurement
When Standard is set	to W-CDMA Downlink (ACP measurement):
Pattern	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink (Single Carrier)
SINGLECARR	3GPP W-CDMA Downlink (Single Carrier)
2CARR	3GPP W-CDMA Downlink (2 Carriers)
When omitted:	3GPP W-CDMA Downlink (Single Carrier)
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 measurement)	to W-CDMA Downlink (Channel Power
Pattern	Parameter to be set
DOWNLINK	3GPP W-CDMA Downlink, Mean Power
DOWNLINK	3GPP W-CDMA Downlink, Mean Power measurement
DOWNLINK MEAN	
	measurement
	measurement 3GPP W-CDMA Downlink, Mean Power
MEAN	measurement 3GPP W-CDMA Downlink, Mean Power measurement
MEAN	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power
MEAN RRCFILTER	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement
MEAN RRCFILTER	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power
MEAN RRCFILTER When omitted:	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power
MEAN RRCFILTER When omitted:	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power measurement
MEAN RRCFILTER When omitted: When Standard is set	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power measurement
MEAN RRCFILTER When omitted: When Standard is set measurement)	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power measurement to W-CDMA Downlink (Burst Average Power
MEAN RRCFILTER When omitted: When Standard is set measurement) Pattern	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power measurement
MEAN RRCFILTER When omitted: When Standard is set measurement) Pattern	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power measurement to W-CDMA Downlink (Burst Average Power Parameter to be set 3GPP W-CDMA Downlink, Mean Power
MEAN RRCFILTER When omitted: When Standard is set measurement) Pattern MEAN	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power measurement W-CDMA Downlink (Burst Average Power V-CDMA Downlink (Burst Average Power Approximation of the set 3GPP W-CDMA Downlink, Mean Power measurement
MEAN RRCFILTER When omitted: When Standard is set measurement) Pattern MEAN	measurement 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, RRC Filtered Power measurement 3GPP W-CDMA Downlink, Mean Power measurement W-CDMA Downlink (Burst Average Power Parameter to be set 3GPP W-CDMA Downlink, Mean Power measurement 3GPP W-CDMA Downlink, Mean Power

When Standard is set to	o Mobile WiMAX		
pattern	Parameter to be set		
10M	10MHz BW (Channel Bandwidth 10 MHz)		
5M	5MHz BW (Channel Bandwidth 5 MHz)		
When omitted:	10MHz BW		
When Standard is set to	o LTE Uplink/Downlink (ACP measurement)		
pattern	Parameter to be set		
1M4BW_UTRA5MHZ	1.4 MHz BW (UTRA 5 MHz)		
1M4BW_EUTRA1M4H	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)		
When omitted:	5 MHz BW (UTRA 5 MHz)		
When Standard is get to	o LTE TDD Downlink (ACP measurement)		
	Parameter to be set		
pattern 1M4BW UTRA1M6HZ			
1M4BW_UTRA1M6H2			
3MBW UTRA1M6HZ	3 MHz BW(UTRA 1.6 MHz)		
3MBW_UIRAIMOHZ 3MBW EUTRA3MHZ	3 MHz BW(UTRA 1.8 MHz) 3 MHz BW(E-UTRA 3 MHz)		
5MBW_E01RASMHZ 5MBW_UTRA1M6HZ	5 MHz BW(UTRA 1.6 MHz)		
5MBW_UTRA5MHZ	5 MHz BW(UTRA 5 MHz)		
5MBW_01RA5MHZ 5MBW EUTRA5MHZ	5 MHz BW(UTRA 5 MHz) 5 MHz BW(E-UTRA 5 MHz)		
When omitted:			
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	1.4MHz BW (UTRA 1.6 MHz)		
1M4BW_EUTRA1M4H	1.4MHz BW (E-UTRA 1.4 MHz)		
3MBW_UTRA1M6HZ	3MHz BW (UTRA 1.6 MHz)		
3mbw_eutra3mhz	3MHz BW (E-UTRA 3 MHz)		
5MBW_UTRA1M6HZ	5MHz BW (UTRA 1.6 MHz)		
5mbw_eutra5mhz	5MHz BW (E-UTRA 5 MHz)		
When omitted	5MHz BW (E-UTRA 5 MHz)		

When Standard is set to LTE Uplink/Downlink or LTE TDD Uplink/Downlink (OBW measurement)

pattern	Parameter to be set
1M4BW	1.4 MHz Bandwidth
3MBW	3 MHz Bandwidth
5MBW	$5~\mathrm{MHz}$ 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 or 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 or LTE TDD Uplink/Downlink (Burst Average Power measurement)

1	e
pattern	Parameter to be set
MEAN_1M4BW	Mean Power 1.4 Hz 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 ETC_DSRC (Applies to all but Burst Average

Power measurement)

pattern	Parameter to be set
PI4DQPSK	$\pi/4DQPSK$
ASK	ASK
When omitted:	$\pi/4DQPSK$

When Standard is set	to http://www.upublice.com/
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
measurement)	to TD-SCDMA (Burst Average Power
	Parameter to be set
measurement)	_
measurement) pattern	Parameter to be set 5 ms Subframe
measurement) pattern MEAN When omitted:	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe)
measurement) pattern MEAN When omitted:	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe
measurement) pattern MEAN When omitted: When Standard is set	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement)
measurement) pattern MEAN When omitted: When Standard is set pattern	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW 20MBW When omitted:	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW 20MHz BW
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW 20MBW When omitted:	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW 20MHz BW 10MHz BW
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW 20MBW When omitted: When Standard is set	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW 20MHz BW 10MHz BW to XG-PHS (CHP measurement)
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW 20MBW When omitted: When Standard is set pattern	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW 20MHz BW 10MHz BW to XG-PHS (CHP measurement) Parameter to be set
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW 20MBW When omitted: When Standard is set pattern MEAN_10MBW	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW 20MHz BW 10MHz BW to XG-PHS (CHP measurement) Parameter to be set Mean Power 10MHz BW
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW 20MBW When omitted: When Standard is set pattern MEAN_10MBW MEAN_20MBW When omitted:	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW 20MHz BW 10MHz BW to XG-PHS (CHP measurement) Parameter to be set Mean Power 10MHz BW Mean Power 20MHz BW
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW 20MBW When omitted: When Standard is set pattern MEAN_10MBW MEAN_20MBW When omitted:	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW 20MHz BW 10MHz BW to XG-PHS (CHP measurement) Parameter to be set Mean Power 10MHz BW Mean Power 20MHz BW
measurement) pattern MEAN When omitted: When Standard is set pattern 10MBW 20MBW When omitted: When Standard is set pattern MEAN_10MBW MEAN_20MBW When omitted: When Standard is set	Parameter to be set 5 ms Subframe (Power measurement of 1 subframe) 5 ms Subframe to XG-PHS (OBW measurement) Parameter to be set 10MHz BW 20MHz BW 20MHz BW 10MHz BW to XG-PHS (CHP measurement) Parameter to be set Mean Power 10MHz BW Mean Power 20MHz BW Mean Power 10MHz BW to CDMA2000 Forward Link

Average Power	
Average Power	
Average Power	
Average Power	
measurement)	
ent)	
۲ F .	
This command is available when Standard is set to OFF. Standard parameters of a trace that is different from the main trace cannot be set.	
The communication methods selectable for Standard are limited when the Replay function is executed, because Span and Capture Time are fixed.	
nalysis Bandwidth nstalled.	
to 3GPP W-CDMA	

LOGSCALEDIV/LOG	SCALEDIV?	
Function	This command sets the (Log scale).	e scale range of the level axis for the main trace
Command	LOGSCALEDIV scale	
Query	LOGSCALEDIV?	
Response	scale	
	Returns a value in	n dB units without a suffix code.
Parameter		
	scale	Level axis scale
	Range	0.1 to 20.0 dB (1-2-5 sequence)
	Resolution	0.1 dB
	Suffix code	DB
		dB is used even when omitted.
Details		
		able when the following traces are active:
	SpectrumPower vs Time	
		able when Scale Mode is Log.
		able when Scale Houe is hog.
Example of Use		
	To set the scale of leve LOGSCALEDIV 10	l axis for the main trace to 10 dB/div.

MADJMOD/MADJMOD?

ACP Reference

Function	This command sets the reference of the relative level display for Adjacent Channel Power measurement.	
Command	MADJMOD mode MADJMOD num	
Query	MADJMOD?	
Response	mode	
Parameter	num	
	mode	Reference method for the relative level display for ACP measurement.
	MOD	Uses the integral power of the whole 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 a reference for the lower offset (Both Sides of Carriers method).
	num	Carrier number used as a reference when the reference of the relative level display for ACP measurement is set to Carrier.
	Range	1 to Carrier Number (cf. ADJCARRIERNUM)
	Resolution	
	Suffix code	None

Details		able when the following trace is active:	
Example of Use	 Spectrum To set the relative level display reference for ACP measurement to Carrier Total and query the results. MADJMOD INBAND *WAI RES? 		
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 Suffix code	0.1 mA None, value is returned in mA units.	
	Default	0.0 mA	
Details			
	This function is available only when Option 044/045 is installed for MS2830A.		
	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	This command perfor	ms the measurement function for the main trace.
Command	MEAS item	
Query	MEAS?	
Response	item	
Parameter	item ADJ	Measurement function type ACP measurement (Spectrum)
	CHPWR OBW BRSTAVGPWR AM FM OFF	 Channel Power measurement (Spectrum) OBW measurement (Spectrum) Burst Average Power measurement (Power vs Time) AM Depth measurement (Power vs Time) FM deviation measurement (Frequency vs Time) Measurement function OFF Executable trace type is shown in parentheses.
Details	 This command is available when any of the following traces is active: Spectrum Power vs Time Frequency vs Time The following measurement functions cannot be used when Scale Mode is Lin: ACP Channel Power Burst Average Power Note that this command does not support synchronized control in 	
Example of Use	Continuous mode. To perform OBW mea SNGLS MEAS OBW *WAI RES?	surement and query the results.

MEAS:AM?

AM Depth Measure

Function

This command performs the AM Depth measurement and queries the result.

This command has the same function as the following commands executed in this order: CONF:AM INIT:AM FETC:AM?

MEAS:FM? FM deviation Measure

Function

This command performs the FM deviation measurement and queries the result.

This command has the same function as the following commands executed in this order: CONF:FM INIT:FM FETC:FM?

Native Device Message Details

span Range/Resolution	Analysis bandwidth 1000* ² , 2500* ² , 5000* ² , 10000* ² , 25000* ² , 50000* ² , 100000* ² , 250000* ² ,		
	500000* ² , 1000000 ^{*2} , 2500000 ^{*2} ,		
	5000000 ^{*2} ,10000000 ^{*2} , 25000000 ^{*1} ,		
	31250000* ¹ ,50000000 ^{*3*4} , 62500000 ^{*4} ,		
	10000000 ^{*3*5} , 125000000 ^{*3*5}		
[MS269:	xA]		
*1,*2: T	his can be set regardless of option configurations.		
*3: Opti	on 004/104		
	When the Wideband Analysis Hardware is		
	installed, the following frequency spans can be		
	set in addition to *1,*2.		
	F0000000 10000000 10F000000		

equency [, count[, adjust log]]]

specified level.

MEAS: POW?

,count_log_n

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

span,length,sg_start_level,sg_max_level,target,range[,fr

judge,sa_input,sg_output,count_res,time,sa_input_log_n,sg_output_log_n

MEAS:POW? Measure Power

Function

Query

Response

Parameter

5000000, 10000000, 12500000

*4: Option 077/177

When the Analysis Bandwidth Extension to 62.5MHz option is installed, the following frequency spans can be set in addition to *1,*2. 5000000, 62500000

*5: Option 078/178

When the Analysis Bandwidth Extension to 125 MHz option is installed, the following frequency spans can be set in addition to *1,*2. 10000000, 12500000

[MS2830	DA]
*1: Optio	ON 005/105/007/009/109 When the Analysis Bandwidth Extension to 31.25 MHz option is installed, the following frequency spans can be set in addition to *2. 25000000 , 31250000
*2: Optio	on 006/106
	When the Analysis Bandwidth 10 MHz option is installed, the following frequency spans can be set.
	1000 , 2500 , 5000,10000,25000,50000, 100000 ,250000 ,500000 , 1000000 , 2500000 , 5000000 , 10000000
*4: Optio	on 077/177 When the Analysis Bandwidth Extension to 62.5 MHz option is installed, the following frequency spans can be set in addition to *1,*2. 50000000, 62500000
*5: Optic	on 078/178
	When the Analysis Bandwidth Extension to 125 MHz option is installed, the following frequency spans can be set in addition to *1,*2. 100000000, 125000000
	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted. MAXimum, MINimum, and DEFault cannot be used.
length	Analysis length
Range Suffix code	The setting range varies with . Refer to section 2.4.1 Setting Capture Time in the Operation version. NS,US,MS,S
ourrentoue	S is used when omitted.
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 [MS2693 [MS2830 Resolution	[A] -140 dBm to -5 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.

_	
target Range Resolution	Target level when executing power adjustment. -150 dBm to 30 dBm 0.01 dBm Suffix code DBM, DM
range Range Resolution	Power adjustment range Power adjusted is evaluated as PASS when adjustment is within the specified range. 0 to 20 dB 0.01 dB Suffix code DB
	Power adjustment execution frequency 269xA] 125 MHz to 6 GHz 2830A] 250 kHz to 3.6 GHz (Option 020) 250 kHz to 6 GHz (Option 041 or 043, 021)
Resolution	 0.01 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 can be used when omitted.
count	Power adjustment execution count
Range Resolution Suffix code	1 to 10 1 None If the value is omitted, power adjustment is executed 5 times.
adjust_log ON 1	Specifies whether or not to output Log at each power adjustment. Output log
OFF 0	Do not output log
sg_offset_switch	setting in SG output level setting range. Return level offset setting
OFF 0 judge	Do not return the level offset setting values 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 Suffix code	DUT output level 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 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	
Suffix code	None, 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. This function cannot be executed during replay.

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 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 = < target > + Crest Factor - 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

Attenuator = Reference Level - Mixer Input Level + Pre - Amp Gain *

- * Mixer Input Level = 0
- * Pre-Amp Gain = 20 dB (only at Pre-Amp On)

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: $35 \text{ dB} \rightarrow 36 \text{ dB}$).

To execute power adjustment under the following conditions: Frequency: 2 GHz Analysis width: 5 MHz 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

Example of Use

MEAS:POW? 5000000,500US,-30,-5,-10,0.4,2000000000,6,On
> 0,-9.6,-12.5,3,156,-28,-30,1,-9.5,-12.0,2,-9.6,-12.5,3

MKACT/MKACT? Active Marker		
Function		
	This command speci	fies active marker for the active trace.
Command	MKACT marker	
	MACI Maikei	
Query		
	MKACT?	
Response		
	marker	
Parameter		
	(For Spectrum trace	
	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
	(At Power vs Time, Frequency vs Time, Phase vs Time, Spectrogram	
	trace)	
	marker	Active marker
	MKR1	Marker 1
	MKR2	Marker 2
	BOTH	Both Marker 1 and 2
Details		
	This command is av	ailable when any of the following traces is active:
	• Spectrum	
	• Power vs Time	
	Frequency vs Tim	ne
	Phase vs Time	
	 Spectrogram 	
	For Spectrum trace,	multiple markers cannot be set to Active.
Example of Use		
	To set Marker 1 to the	he active marker.
	MKACT MKR1	
1 1 5 0		

MKAXIS/MKAXIS? Marker Axis		
Function	This command specifi	es the marker movement axis for the main trace.
Command	MKAXIS axis	
Query	MKAXIS?	
Response	axis	
Parameter		
	axis	Marker movement axis
	PROB	Probability distribution direction (vertical axis)
	DSTRBT	Power distribution direction (horizontal axis)
Details		
	This command is available when the following trace is active:CCDF	
Example of Use		
	To set the marker movement axis to the probability distribution direction. MKAXIS \ensuremath{PROB}	

MKCF Marker to Center Freq	
Function	This command sets the active marker frequency to the center frequency for waveform capturing.
Command	MKCF
Details	 This command is available when the following trace is active: Spectrum Spectrogram This command is not available when the marker mode is set to Off. This command is not available while the Replay function is being executed.
Example of Use	To set the active marker frequency to the center frequency for waveform capturing. MKCF

MKF?

Marker Frequency Query

Function			
	This command queries the frequency at the marker point of the active		
	marker, and queries the frequency difference between the delta marker		
	and the marker set by	v Relative To when Marker Mode is Delta.	
Query			
	MKF? marker		
Response			
	freq	_	
	No suffix code. Va	alue is returned in Hz units and with a resolution of	
	0.1 Hz.		
Details			
	This command is available when the following trace is active:		
	• Spectrum		
Parameter			
	marker	Marker number	
	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 frequence MKF?	ey at the active marker point.	
	> 1000000000.0		

MKL?

Marker Query

Function

Query

This command queries the data at the marker point of the main trace.

MKL? type	(Spectrum,Power vs Time,Freq vs Time, Phase vs Time)
MKL?	(CCDF)

Response

For Spectrum, Spectrogram (Unavailable for type 3 to 10)

This command queries the level at the active marker point, and the level ratio for delta markers (Spectrum).

Туре	Response	Type of Data
1	l_1	Level of Marker1
2	l_2	Level of Marker2
3	l_3	Level of Marker3
4	l_4	Level of Marker4
5	l_5	Level of Marker5
6	l_6	Level of Marker6
7	17	Level of Marker7
8	l_8	Level of Marker8
9	l_9	Level of Marker9
10	l_{10}	Level of Marker10
When omitted	1	Level of active marker

Response has no suffix code. The units of the results are shown below:

Scale Mode	Marker Result	Units	
	Integration	Log Scale Unit,	
		However,	
	Density	μV units for V,	
Log		and µW units for W	
Log	Peak (Fast)	Log Scale Unit,	
		However,	
	Peak (Accuracy)	μV units for V,	
		μW units for μW	
Lin	Integration	dBm units	
	Density		
	Peak (Fast)	Winnita	
	Peak (Accuracy)	μV units	

For Power vs Time trace

Response has no suffix code.

For Power vs Time trace, returns a value in Log Scale Unit when Scale Mode is Log. However, for V, the unit is μV , and for W, the unit is μW . Returns a value in μV units when Scale Mode is Lin.

Scale Mode	Marker Result	Units
1	l_1	Level of Marker1
2	l_2	Level of Marker2
3	l _{2·1}	Ratio of Marker 2 and Marker 1 dB units. However, when Power vs Time trace and Scale Mode are Lin, it is a value of Marker2/Marker1.
When omitted	l_{1}, l_{2}, l_{2-1}	

For Frequency vs Time trace

Response has no suffix code. Returns a value in Hz units without a suffix code.

type	Response	Type of data
1	l_1	Frequency of Marker1
2	l_2	Frequency of Marker2
3	l ₂₋₁	Frequency of Marker2 – Frequency of Marker1
When omitted	l_1, l_2, l_{2-1}	

For Phase vs Time trace

Response has no suffix code. Returns a value in degree units without a suffix code.

type	Response	Type of data
1	l_1	Phase of Marker1
2	l_2	Phase of Marker2
3	l_{2-1}	Phase of Marker2 – Phase of Marker1
When omitted	l_1, l_2, l_{2-1}	

For CCDF trace

data

Response has no suffix code. Returns a value in dB units (when Marker Axis is Probability).

Response has no suffix code. Returns a value in percentage units (when Marker Axis is Distribution).

Details	*** is returned if there	e is no marker value.
Example of Use		
	To query the marker v MKL? 2	alue of Marker 2.
MKLTYPE/MKLTYPE ⁴ Marker Result	?	
Function		
	This command sets the trace.	e type of the marker display value of the main
Command		
	MKLTYPE type_com	
Query		
_	MKLTYPE?	
Response	tumo nos	
Parameter	type_res	
i arameter	type com	Marker value type
	INT	Integral power in zone
	TOTAL	Same as above
	DENS	Power density in zone
	AVG	Same as above
	PEAK	Peak level in zone (emphasis on measurement
		speed)
	PACC	Peak level in zone (emphasis on level accuracy)
	type_res	Marker value type
	TOTAL	Integral power in zone
	AVG	Power density in zone
	PEAK	Peak level in zone (emphasis on measurement speed)
	PACC	Peak level in zone (emphasis on level accuracy)
Details		
	This command is avail	able when either of the following traces is active:
	• Spectrum	
	• Spectrogram	
Example of Use		
	To set the marker disp MKLTYPE AVG	lay value type to the average power in zone band.
	*WAI	
	MKL?	
4-162		

MKP/MKP? Marker Position		
Function	This command sets the	marker position for the main trace.
Command	MKP time, marker	(Power vs Time, Frequency vs Time, Phase vs Time)
	MKP sample, marker	(When performing a Power vs Time, Frequency vs Time, or Phase vs Time trace for the MS269x series with the DigRF 3G terminal)
Query	MKP position, type	
Query	MKP? marker	(Power vs Time,Frequency vs Time,Phase vs Time)
	MKP? type	(CCDF)
Response	time	(Power vs Time,Frequency vs Time,Phase vs
	No suffix code. Val	Time) ue is returned in ms units.
	sample	(When performing a Power vs Time, Frequency vs Time, or Phase vs Time trace for the MS269x series with the DigRF 3G terminal)
	No suffix code. Val	ue is returned in sample units.
	position	(CCDF)
		dB units without a suffix code (when type = PROB). percentage units without a suffix code (when type
Parameter		
	(Power vs Time, Freque time	ency vs Time, Phase vs Time trace) Marker position
	Range and resoluti	on
		Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for details.
	Suffix code	NS,US,MS,S

4

	sample	Marker position
	Range and Reso	lution
		For details, refer to the
		"MS2690A/MS2691A/MS2692A or MS2830A
		Signal Analyzer Operation Manual (Mainframe
		Remote Control)".
	Suffix code	None
		Marker type
	1	Marker 1
	2	Marker 2
	When omitted:	Active marker
	When onlined	Marker 1 applies when both Markers 1 and 2
		are set to active.
	For CCDF trace:	
	position	Marker position
	Range and resol	-
	ivange and resor	For details, refer to the
		"MS2690A/MS2691A/MS2692A or MS2830A
		Signal Analyzer Operation Manual (Mainframe
		Remote Control)".
	Suffix code	% (When type is DSTRBT)
	Sum coue	DB (When type is PROB)
		Same as above, when omitted.
		Same as above, when omitted.
	type	Marker type
	PROB	Power deviation (horizontal axis)
	DSTRBT	Probability distribution (vertical axis)
	When omitted:	Marker Axis
Details		
	This command is ava	ailable when any of the following traces is active:
	• Power vs Time	
	• Frequency vs Tim	le
	• Phase vs Time	
	• CCDF	
	Note that this comm	and does not support synchronized control in
	Continuous mode.	
	Only when performin	ng Power vs Time, Frequency vs Time, or Phase vs
	Time trace for the M	S269x series with the DigRF 3G terminal, settings
	in sample units are a	
Evenue of the		
Example of Use	Ш- I	
		alue by setting the position of Marker 1 to 10 μs.
	MKP 10US,1	
	*WAI	
	MKL?	
4-164		

MKPK Signal Search			
Function			
	This command search the marker.	es for the peak point of the main trace and moves	
Command			
	MKPK move		
Parameter			
	move	Detection method	
	HI	Moves to the peak point where the marker value becomes maximum (Peak Search).	
	NH	Moves to the peak point lower than that before execution where the marker value becomes maximum (Next Peak).	
	LO	Moves to the peak point where the marker value becomes minimum (Dip Search) (Frequency vs Time).	
	NL When omitted:	Moves to the peak point higher than that before execution where the marker value becomes minimum (Next Dip) (Frequency vs Time). Moves to the peak point where the marker value	
		becomes maximum (Peak Search).	
Details			
	This command is avai • Spectrum • Power vs Time	lable when any of the following traces is active:	
	• Frequency vs Time		
	When the main trace is Power vs Time or Frequency vs Time while the active marker is set to BOTH (both Markers 1 and 2), only Marker 1 moves to the peak point.		
	Note that this command does not support synchronized control in Continuous mode.		
Example of Use			
	To move the main trace marker to the maximum peak point and query the marker value. MKPK HI *WAI		
	MKL?		

MKPX/MKPX?		
Search Resolution		
Function		
	This command sets the search resolution at the search point of the main	in
	trace.	
Command		
	MKPX level	
	(For Spectrum trace, when Result Mode is Integration	or
	Density; or for Spectrum trace, when Result Mode is Pe	eak
	(Fast) or Peak (Accuracy) and Scale Mode is Log Scale. I	For
	Power vs Time trace, when Scale Mode is Log Scale.)	
	MKPX percent	
	(For Spectrum trace, when Result Mode is Peak (Fast)	
	Peak (Accuracy) and Scale Mode is Linear Scale. For Pow	ver
	vs Time trace, when Scale Mode is Linear Scale.)	
	MKPX freq	
0	$(\mathrm{F}_{\mathrm{Or}}$ Freq vs Time trace)	
Query	MUDYO	
Paananaa	MKPX?	
Response	level	
	(For Spectrum trace, when Result Mode is Integration	01
	Density; or for Spectrum trace, when Result Mode is Pe	
	(Fast) or Peak (Accuracy) and Scale Mode is Log Scale. I	
	Power vs Time trace, when Scale Mode is Log Scale.)	. 01
	Returns a value in dB units without a suffix code.	
	percent	
	(For Spectrum trace, when Result Mode is Peak (Fast)	or
	Peak (Accuracy) and Scale Mode is Linear Scale. For Pow	
	vs Time trace, when Scale Mode is Linear Scale.)	
	Returns a value in percentage units without a suffix code.	
	freq	
	(For Freq vs Time trace)	
	Returns a value in Hz units without a suffix code.	

Parameter		
	level	Search resolution
	Range	0.01 to 50.00 dB
	Resolution	0.01
	Suffix code	DB
		dB is used when omitted.
	Default value	1 dB
	percent	Search resolution
	Range	0.01 to 50.00%
	Resolution	0.01
	Suffix code	None
	freq	Search resolution
	Range	1 to 5000000 Hz
	Resolution	0.01
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
Details		
	This command is availa	ble when any of the following traces is active:
	• Spectrum	
	• Power vs Time	
	• Frequency vs Time	
Example of Use		
	To set the search resolu MKPX 20DB	tion at the main trace point to 20 dB.

MKR/MKR? Marker Mode		
Function		
	This command sets the	marker mode.
Command		
Command	MKR mode, marker	(Spectrum,Power vs Time,Frequency vs Time, Phase vs Time,Spectrogram))
	MKR mode	(CCDF)
Query		
	MKR? marker	(Spectrum,Power vs Time,Frequency vs Time, Phase vs Time,Spectrogram))
	MKR?	(CCDF)
Response	mode	
Parameter		
T didificiei	(For Spectrum trace)	
	mode	Marker mode
	ON	Normal
	DELTA	Delta
	FIXED	Fixed
	OFF	Off
	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
	(At Power vs Time,	Frequency vs Time, Phase vs Time, CCDF,
	Spectrogram trace)	
	mode	Marker ON/OFF
	ON	Sets the marker to ON
	OFF	Sets the marker to OFF

Example of Use	marker 1 2 When omitted:	Marker type Marker 1 Marker 2 Active marker Marker 1 applies when both Markers 1 and 2 are active.
	To query a marker w marker to Delta. MKR 1 *WAI MKL?	ralue by setting the marker mode of the active
MKRL Marker to Reference Level		
Function	This command sets the	e active marker level to the reference level.
Command	MKRL	
Details	 This command is available when either of the following traces is active: Spectrum Spectrogram When Marker Result Type is Average Power, a value converted into Total Power is set to the reference level. This command is not available when the marker mode is set to Off. 	
Example of Use	To set the marker level MKRL	to the reference level.

MKW/MKW? Marker Width (Grid)		
Function	m . :	
	I his command sets the	e zone width of the marker in grid (div).
Command		
	MKW width,marker	
Query		
	MKW? marker	
Response		
Response	width	
Parameter		7 1 11
	width O	Zone marker width
	5	0.5 div 1 div
	6	2 div
	7	5 div
	2	10 div
	1	Spot
	-	Spot
	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 av Spectrum 	vailable when either of the following traces is active:
	• Spectrogram (Un	available for Marker 3 to 10)
	Returns *** when the of the width parameters	he zone marker width is different from the set value eter when queried.
	changed. Also, it is s Off.	is set to be active when the width of zone marker is set to Normal when Marker Mode is set to Fixed or to Spot when Marker Result is Integration or
Example of Use	-	
	To query a marker w MKW 1,2	value by setting the width of Marker 2 to Spot.
	*WAI	
	MKL?	
MKZF/MKZF?		
Marker Frequency		
Function		
	This command sets	the center frequency of the marker.
Command		
Command	MKZF freq,marke	r
	17	
Query		
	MKZF? marker	
Response		
	freq	
	Returns a value	e in Hz units without a suffix code.
Parameter		
raianicici	freq	Center frequency of marker
	Range and reso	
	_	Within the frequency range of trace display
		Refer to the "MS2690A/MS2691A/MS2692A or
		MS2830A Signal Analyzer Operation Manual
		(Mainframe Remote Control)" for details.
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ

	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 avai	lable when the following trace is active:
	• Spectrum	
	• Spectrogram (Unav	vailable for Marker 3 to 10)
	For Spectrum, when t	he center frequency of a zone marker is changed,
	the marker is set to O	N and becomes the active marker.
Example of Use		
	To set the center frequ	lency of the active marker to 6 GHz.

To set the center frequency of the active marker to 6 GF MKZF 6GHZ

MMEM:LOAD:IQD

Execute Replay

Function		
	This command execu-	tes the Replay function. IQ data for which the
	Replay function is to b	e executed can be selected by selecting a file name,
	drive name, and an ap	plication.
Command		
	MMEM:LOAD:IQD file	ename, device, application
Parameter		
	filename	Target file name
		Character string within 128 characters enclosed
		by double quotes (" ") or single quotes (' ')
		(excluding extension)
		The following characters cannot be used:
		\ / : * ? `` <i>"</i> ` <i>'</i> < >
	device	Drive name
		A, B, D, E, F,
	application	Application to load IQ data file
	SIGANA	Signal Analyzer
	EXTDIG	Extended Digitizing
Details		
	This command is not	available when Terminal is set to DigRF 3G (only
	for MS269x Series).	
Example of Use		
	To query the IQ data file "TEST" of the signal analyzer from drive D, and execute the Replay function.	
	MMEM:LOAD:IQD "TES	ST", D, SIGANA

MMEM:LOAD:IQD:INF?

Replaying File Information Query

Function		
	This command queries	s the file information when the Replay function is
	being executed.	
Query		
	MMEM:LOAD:IQD:INF?	2
Response		
_	filename,start_tir	ne,time_length
Parameter		
	filename	File name
		Character string within 128 characters
		(excluding extension)
		*** is returned when the Replay function is not
		executed.
	start_time	Start time of analyzable IQ data
	Resolution	1 ns
		No suffix code. Value is returned in S units.
		–9999999999999 is returned when the Replay
		function is not executed.
	time_length	Time length of analyzable IQ data
	Resolution	1 ns
		No suffix code. Value is returned in S units.
		-99999999999999 is returned when the Replay
		function is not executed.
Example of Use		
	To query the file inform MMEM:LOAD:IQD:INF?	nation when the Replay function is being executed.

> TEST,-38.838771500,38.838771500

MMEM:LOAD:IQD:INF:APPL?

Replay Application Query

Function		
		s the name of the application for which the Replay
Query	function is executed.	
Query	MMEM:LOAD:IQD:INF	:APPL?
Response		
	application	
Parameter		_
	application	Application to load IQ data file
	SIGANA	Signal Analyzer
	EXTDIG	Extended Digitizing *** is returned when the Replay function is
		executed.
Example of Use		
	To query the name of executed.	f the application for which the Replay function is
	MMEM:LOAD:IQD:INF	APPL?
	~ ~ ~	
MMEM:LOAD:IQD:IN	E.COND5	
Replay Level Over Query		
Function		
	This command queries	s whether Level Over is displayed while the Replay
	This command queries function is being execu	
Query	function is being execu	ited.
		ited.
Query Response	function is being execu	ited.
	function is being execu	nted. :COND?
	function is being execu MMEM:LOAD:IQD:INF switch	ited.
	function is being execu MMEM:LOAD:IQD:INF switch 1	tted. : COND? Level Over is displayed. Normal –999.0 is returned when the Replay function is
Response	function is being execu MMEM:LOAD:IQD:INF switch 1	ited. : COND? Level Over is displayed. Normal
	<pre>function is being execu MMEM:LOAD:IQD:INF switch 1 0</pre>	tted. : COND? Level Over is displayed. Normal –999.0 is returned when the Replay function is executed.
Response	<pre>function is being execu MMEM:LOAD:IQD:INF switch 1 0</pre>	tted. : COND? Level Over is displayed. Normal –999.0 is returned when the Replay function is
Response	<pre>function is being execu MMEM:LOAD:IQD:INF switch 1 0</pre>	tted. : COND? Level Over is displayed. Normal -999.0 is returned when the Replay function is executed. vel Over is displayed when the Replay function is
Response	<pre>function is being execu MMEM:LOAD:IQD:INF switch 1 0 To query whether Lev being executed.</pre>	tted. : COND? Level Over is displayed. Normal -999.0 is returned when the Replay function is executed. vel Over is displayed when the Replay function is

MMEM:LOAD:IQD:INF:CORR?

Replay Correction Query

Function		
	This command queries	the Correction value when the Replay function is
	being executed.	
Query		
	MMEM:LOAD:IQD:INF:	CORR?
Response		
	real	
Parameter	-	
	real	Correction level
	Range	-100 to 100 dB
		0.000 is returned when Correction is set to Off.
		-999.0 is returned when the Replay function is not executed.
Example of Use		not executed.
	To query the Correc	tion value when the Replay function is being
	executed.	tion value when the hepital function is soning
	MMEM:LOAD:IQD:INF:	CORR?
MMEM:LOAD:IQD:IN	F:DEV?	
Replay Device Query		
Function		
	This command guerie	s the name of the drive for which the Replay
	function is executed.	
Query		
	MMEM:LOAD:IQD:INF:	DEV?
Response		
	device	
Parameter		
	device	Drive name
		A, B, D, E, F,
		*** is returned when the Replay function is not executed.
Example of Use		
	To query the name of t	he drive for which the Replay function is executed.

To query the name of the drive for which the Replay function is executed. MMEM:LOAD:IQD:INF:DEV?

MMEM:LOAD:IQD:INF:ERR?

Replay Level Over Query

Function		
	This command queries whether Replay Error Info. icon is displayed while	
	the Replay function is b	
Query	1 0	
-	MMEM:LOAD:IQD:INF:	ERR?
Response		
	switch	
	1	Replay Error Info. icon is displayed.
	0	Normal
		-999.0 is returned when the Replay function is
		not executed.
Details		
	The Replay Error Info	. icon is displayed if the loaded xml file contains
	error information.	
Example of Use		
	To query whether Rep	lay Error Info. icon is displayed while the Replay
	function is being execut	
	MMEM:LOAD:IQD:INF:	ERR?
	> 0	
MMEM:LOAD:IQD:IN	F:FILE?	
Replay Filename Query		
Function		
	This command queries	the name of the file for which the Replay function
	is executed.	
Query		
	MMEM:LOAD:IQD:INF:	FILE?
Response		
	filename	
Parameter		
	filename	File name
		Character string within 128 characters
		(excluding extension)
		*** is returned when the Replay function is not
		executed.
Example of Use		
	To guary the name of the	he file for which the Replay function is executed

To query the name of the file for which the Replay function is executed. MMEM:LOAD:IQD:INF:FILE?

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Native Device Message Details

MMEM:LOAD:IQD:INF:LENG?

Replay Time Length Query

Function		
	This command querie	s the time length of analyzable IQ data for the
	Replay function.	
Query		
	MMEM:LOAD:IQD:INF	:LENG?
Response		
	time_length	
Parameter		
	time_length	Time length of analyzable IQ data
	Resolution	1 ns
		No suffix code. Value is returned in S units.
		–99999999999999 is returned when the Replay
		function is not executed.
Example of Use		
	To query the time leng	th of analyzable IQ data for the Replay function.

To query the time length of analyzable IQ data for the Replay function. MMEM:LOAD:IQD:INF:LENG?

MMEM:LOAD:IQD:INF:ROSC?

Replay External Reference Query

Function

	This command querie	es the frequency reference signal source when the
	Replay function is exe	
Query	1 0	
	MMEM:LOAD:IQD:INF	:ROSC?
Response		
	source	
Parameter		
	<source/>	Frequency reference signal source
	INT	Internal reference signal source
	INTU	Internal reference signal source (Unlock state)
	EXT	External reference signal source
	EXTU	External reference signal source (Unlock state)
		*** is returned when the Replay function is not
		executed.
Example of Use		
	To query the frequency reference signal source when the Replay function	
	is executed.	
	MMEM:LOAD:IQD:INF:ROSC?	

MMEM:LOAD:IQD:INF:STAR?

Replay Start Time Query

Function			
	This command queries the start time of analyzable IQ data for the		
	Replay function.		
Query			
_	MMEM:LOAD:IQD:INF	:STAR?	
Response			
Deremeter	start_time		
Parameter	start time	Start time of analyzable IQ data	
	Resolution		
	Resolution	No suffix code. Value is returned in S units.	4
		-9999999999999 is returned when the Replay	
			z
Example of Use			ati
	To query the start tim	e of analyzable IQ data for the Replay function.	ve
	MMEM:LOAD:IQD:INF	:STAR?	De
			VICE
MMEM:LOAD:IQD:IN	F:STAT?		ž
Replay Execute Query			ess
		c	äg
Function			eD
	function is not executed. Note that the provide the start time of analyzable IQ data for the Replay function. MMEM:LOAD:IQD:INF:STAR? MMEM:LOAD:IQD:INF:STAR? VF:STAT? This command queries whether the Replay function is executed.		
Query			uils
Deenenee	MMEM:LOAD:IQD:INF	:STAT?	
Response	switch		
Parameter	SWICCH		
	switch	Replay function On/Off	
	1	On	
	0	Off	
Example of Use			
	To query whether the Replay function is executed.		
	MMEM:LOAD:IQD:INF	:STAT?	
	> 1		

MMEM:LOAD:IQD:STOP

Stop Replay

Function	
	This command stops the Replay function.
Command	
	MMEM:LOAD:IQD:STOP
Details	
	This command is available while the Replay function is being executed.
Example of Use	
	To stop the Replay function.
	MMEM:LOAD:IQD:STOP

MMEM:STOR:IQD:LENG/MMEM:STOR:IQD:LENG?

Time Length

Function			
	This command sets the time length of IQ data to be saved when executing Save Captured Data with Time Range set to MANual.		
Command			
	MMEM:STOR:IQD:LENG time		
Query			
	MMEM:STOR:IQD:LENG?		
Response			
	time		
		No suffix code. Value is returned in S units.	
Parameter			
	time	Time length of IQ data	
	Range	Time Resolution to Capture Time Length – Start Time	
	Resolution	Time Resolution	
	Suffix code	NS, US, MS, S	
		S is used when omitted.	
Details			
	This command is not available in the following cases:		
	• When Time Range is set to FULL or ATIMe.		
	• When Time Range is set to Manual AND Start Time is set to the upper limit.		
	• When Terminal is set to DigRF 3G (only for MS269x Series).		

To set the time length to 12 ms. MMEM:STOR:IQD:LENG 12MS MMEM:STOR:IOD:LENG? > 0.01200000 MMEM:STOR:IQD:LENG:SAMP/MMEM:STOR:IQD:LENG:SAMP? Sample Length Function This command sets the sample length of IQ data to be saved when executing Save Captured Data with Time Range set to MANual. Command MMEM:STOR:IQD:LENG:SAMP sample Query MMEM:STOR:IOD:LENG:SAMP? Response sample Parameter sample Sample length of IQ data Time Resolution to Capture Time Length - Start Range Time Resolution Time Resolution Details This command is not available in the following cases: • When Time Range is set to FULL or ATIMe. • When Time Range is set to Manual AND Start Time is set to the upper limit. • When Terminal is set to RF. Example of Use To set the sample length for saving the IQ data to 15360000. MMEM:STOR:IQD:LENG:SAMP 15360000 MMEM:STOR:IOD:LENG:SAMP?

> 15360000

Example of Use

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Native Device Message Details

MMEM:STOR:IQD:MODE/MMEM:STOR:IQD:MODE?

Time Range

Function			
	This command sets the range of IQ data to be saved when executing Save		
	Captured Data.		
Command			
	MMEM:STOR:IQD:MODE mode		
Query			
5	MMEM:STOR:IQD:MODE?		
Response			
Parameter	mode		
Parameter	mode	Panga aven which IO data is stand	
	FULL	Range over which IQ data is stored. Full range	
	ATIM	Range set in Analysis Time	
	MAN	User-specified range	
Details		ever sponter range	
	ATIMe and MANual cannot be set when Terminal is set to RF and when		
	Capture Time Length is set to 0 s. Furthermore, ATIMe cannot be set		
	when Analysis Time Length is set to 0 s.		
	ATIMe and MANual cannot be set when Terminal is set to DigRF and		
	when Capture Sample Length is set to 0 s. Furthermore, ATIMe cannot		
	be set when Analysis Sample Length is set to 0 s.		
Example of Use			
	To set the range to Full.		
	MMEM:STOR:IQD:MODE FULL		
	MMEM:STOR:IQD:MODE?		
	> FULL		

MMEM:STOR:IQD:STAR/MMEM:STOR:IQD:STAR?

Start Time

Function			
	This command sets the start position of IQ data to be saved when		
	executing Save Capture	ed Data with Time Range set to MANual.	
Command			
	MMEM:STOR:IQD:STAF	R time	
Query			
5	MMEM:STOR:IQD:STAF	22	
Response			
	time		
– <i>i</i>		No suffix code. Value is returned in S units.	
Parameter		~	
	time	Start position	
	(When the Replay function is not executed.)		
	Range	0 to Capture Time Length – Time Length	
	Resolution	Time Resolution	
	(When the Replay function is executed.)		
	Range	Start time of analyzable IQ data	
	Resolution	Time Resolution	
		Suffix codes NS, US, MS, S	
		S is used when omitted.	
Details		c	
	This command is not av	vailable in the following cases:	
	• When Time Range is set to FULL or ATIMe.		
	• When Time Range is set to Manual AND when Time Length is set to		
	the upper limit.		
	• When Terminal is set to DigRF 3G (only for MS269x Series).		
Example of Use			
•	To set the start position to 12 ms.		
	MMEM:STOR:IQD:STAR 12MS		
	MMEM:STOR:IQD:STAR?		
	> 0.01200000		

MMEM:STOR:IQD:STAR:SAMP/MMEM:STOR:IQD:STAR:SAMP?

Start Sample

Function			
	This command uses the number of samples to set the start position of IQ		
	data to be saved when executing Save Captured Data with Time Range set to MANual.		
Command			
	MMEM:STOR:IQD:STAR:SAMP sample		
Query			
5	MMEM:STOR:IQD:STAR:SAMP?		
Response	sample		
	Sampre	Value is returned without a suffix code.	
Parameter			
	sample	Start position	
	Range	0 to Capture Sample Length – Sample Length	
	Resolution	Time Resolution	
	Suffix code	None	
Details	m 1 · · · ·		
	This command is not available in the following cases:		
	• When Time Range is set to FULL or ATIMe.		
	• When Time Range is set to Manual AND when Time Length is set to the upper limit.		
	 When Terminal is set to RF. 		
Example of Use			
·	To set the start position to 15360000 sample.		
	MMEM:STOR:IQD:STAR:SAMP 15360000		
	MMEM:STOR:IQD:STAR:SAMP?		
	> 15360000		

MMEM:STOR:TRAC

Save Wave Data

Function			
	This command saves the waveform data in .csv file.		
Command			
	MMEM:STOR:TRAC tra	ce,filename,device	
Parameter			
	trace	Trace to save	
	TRAC1	Trace currently displayed	
	ALL	Trace currently displayed	
	filename	Name of the file to be saved.	
		Character string within 32 characters enclosed	
		by double quotes (" ") or single quotes (' ')	
		(excluding extension)	
		The following characters cannot be used:	
		\	
		Automatically named as "WaveData date	
		sequential number.csv" when omitted.	
	device	Drive name	
		A, B, D, E, F,	
		D drive is used when omitted.	
Details			
	This function is availab following conditions:	le when the waveform is captured under the	
	• Measurement perform	ned using Single Measurement has finished.	
	When the file name is omitted, consecutive numbers from 0 to 99 are		
	added to files. No more files can be saved if numbers up to 99 are already used.		
	Files are saved to the following directory in the specified drive. \Anritsu Corporation\Signal Analyzer\User Data\Trace Data\Signal Analyzer		
	Up to 100 files can be saved in a folder.		
Example of Use	To save the trace wave	form-data file "trace" to the E drive.	
	MMEM:STOR:TRAC TRA		

MMETHOD/MMETHO	DC?	
Function	This command selects	the measurement method for CCDF trace.
Command	MMETHOD method	
Query	MMETHOD?	
Response	method	
Parameter		
	method	Measurement method for CCDF trace
	APD	APD measurement
	CCDF	CCDF measurement
Details		
Example of Use	This command is avail • CCDF	able when the following trace is active:
	To set the APD measurement mode. MMETHOD APD	

MOBW/MOBW? OBW Method		
Function	This command sets the	OBW measurement method.
Command	MOBW method	
Query	MOBW?	
Response	method	
Parameter		
	method	Measurement method
	N	N% method
	XDB	X dB method
Details		
	This command is available when the following trace is active:	
	• Spectrum	
Example of Use		
		rement method to X dB Down and query the
	results.	
	MOBW XDB *WAI	
	RES?	

MSTAT?

Measurement Status Query

Function		
	This command queries	the main trace status.
Query		
	MSTAT?	
Response		
	status	
Parameter		
	status	Status
	0	Normal end
	2	Level over
	9	Not measured
Example of Use		
	To query the main trace status.	
	MSTAT?	

MXRMODE/MXRMO	DE?	
Function	This command switche	es 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 only when Option $044/045$ is installed for	
	MS2830A.	
Example of Use		
	To use external mixer. MXRMODE EXT MXRMODE? > EXT	

MZWF/MZWF? Marker Width (Frequency)		
Function	This command sets th	ne zone width of the marker in frequency.
Command	MZWF freq,marker	
Query	MZWF? marker	
Response		
	freq	
	Returns a value i	n Hz units without a suffix code.
Parameter		
	freq	Marker frequency width
	Resolution	0.1 Hz
	Range	Within frequency range of trace display (Restricted according to the marker's zone width)
		Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for details.
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted.
	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 available when the following trace is active:
	• Spectrum
	The target marker is set to be active when the width of zone marker is
	changed. Also, it is set to Normal when Marker Mode is set to Fixed or
	Off.
Example of Use	
	To query a marker value by setting the active marker frequency width to
	2 MHz.
	MZWF 2000000
	*WAI
	MKL?

NOISECANCEL/NOIS	SECANCEL?	
Function	This command sets wh	ether to enable the noise-canceling function.
Command	NOISECANCEL on_off	<u>-</u>
Query	NOISECANCEL?	
Response	on_off	
Parameter	on_off ON OFF	Noise-canceling function on/off Enables the noise-canceling function. Disables the noise-canceling function.
Details	This command is available only when the main trace is Spectrum or Power vs Time (cf. TRCCHG).	
	 The noise canceling function is fixed to Off in the following cases: ACP is Off (when the active trace is Spectrum). Burst Average Power is Off (when the active trace is Power vs Time). Standard is Off. 	
Example of Use	 The Standard Parameter which can execute the noise canceling function is not set in Load Standard Parameter. Any of Span, RBW, and Time Detection has been changed from Standard Parameter (ACP). Any of Span, Detection, Filter Type, Filter BW (when Filter Type is not set to Off), and Filter Rolloff Factor (when Filter Type is Nyquist or Root Nyquist) has been changed from Standard Parameter (Burst Average Power). Scale Mode is Linear. When the Replay function is being executed. 	

OBWN/OBWN? OBW N% Ratio		
Function	This command sets th	ne OBW (N% method) condition.
Command	OBWN ratio	
Query	OBWN?	
Response		
	ratio	
	Returns a value i	in percentage units without a suffix code.
Parameter		
	ratio	N%
	Range	0.01 to 99.99%
	Resolution	0.01
	Suffix code	None
Details		
		set when the following trace is active:
	• Spectrum	
Example of Use		
	To set to 12.34% and	query the results.
	OBWN 12.34 *WAI	
	^WAI RES?	
	1110:	

OBWXDB/OBWXDB? OBW X dB Value		
Function	This command sets th	e OBW (X dB) condition.
Command	OBWXDB level	
Query	OBWXDB?	
Response	level Returns a value in	n dB units without a suffix code.
Parameter		
	level	X dB
	Range	0.01 to 100.00 dB
	Resolution	0.01 dB
	Suffix code	DB
		dB is used even when omitted.
Details		
	This command is avail • Spectrum	lable when the following trace is active:
Example of Use		
	To set to 12.34 dB and	query the results.
	OBWXDB 12.34	
	*WAI	
	RES?	

PEAKTOPEAK/PEAKTOPEAK?

Display Peak to Peak Value On/Off

Function	This command sets the	Peak to Peak measurement ON/OFF.	
Command	PEAKTOPEAK on_off		
Query	PEAKTOPEAK?		
Response	on_off		
Parameter			
	on_off	Peak to peak measurement function ON/OFF	
	ON	On	
	OFF	Off	
Details			
		able when either of the following traces is active:	
	Power vs Time		
	• Frequency vs Time		
	For Power vs Time trac Mode is Linear Scale.	ee, this command is available only when Scale	
Example of Use	Mode is Linear Scale.		
		measurement function to On and query the	
	results.		
	PEAKTOPEAK ON		
	*WAI		
	PEAKTOPEAKRES?		

PEAKTOPEAKRES?

Peak to Peak Value Query

Function	This command queries	the results of the Peak to Peak measurement.	
Query	PEAKTOPEAKRES? for	rmat	
Response			
	pos	(when format is POS)	
	neg	(when format is NEG)	
	p-p	(when format is DELTAAVG)	
	Returns a value in	percentage units without a suffix code.	
	Values in % units	will be returned when the terminal is DigRF 3G	
	(only for MS269x S	Series) and the Input Source is Complex. Values in	
	μV units will be re	turned if it is not set to Complex.	
		(Power vs Time)	
	No suffix code. Value is returned in Hz units.		
	(Frequency vs Time)		
	avg	(when format is AVG)	
	Returns a value in μV units without a suffix code.		
	(Power vs Time)		
	Returns a value in Hz units without a suffix code.		
		(Frequency vs Time)	
	pos,neg,p-p,avg	(when format is omitted)	
Parameter			
	format	Result of Peak to Peak measurement	
	POS	+Peak value	
	NEG	-Peak value	
	DELTAAVG	{(-Peak) - (+Peak)}/2	
	AVG	Average value	
	When omitted:	All values	
Details			
	Returns *** when the measurement resu		
	This command is available when either of the following traces is active: • Power vs Time		
	Fower vs TimeFrequency vs Time		
Example of Use	1104.0000 00 11110		
- p - 2	To query all the results of Peak to Peak measurement. PEAKTOPEAKRES?		

POW:MW:PRES/POW:MW:PRES?

Micro Wave Preselector Bypass

This command sets the	e micro wave preselector bypass.	
POW:MW:PRES switc	n	
POW:MW:PRES?		
status		
switch ON 1 OFF 0 Default	Microwave Preselector Bypass Enables bypassing Disables bypassing ON	
status 1 0	Microwave Preselector Bypass Enables bypassing Disables bypassing	
This command is available only when Option 067/16 is installed for MS269xA. This command is available only when Option 007/067/167 is installed for MS2830A. If Frequency Span is 50 MHz or more, the microwave preselector is		
bapassed regardless of	this setting.	
POW:MW:PRES ON	elector bypass to ON. nicro wave preselector bypass	
	POW:MW:PRES switch POW:MW:PRES? status switch ON 1 OFF 0 Default status 1 0 This command is availa MS269xA. This command is availa MS2830A. If Frequency Span is 50 bapassed regardless of To set micro wave press POW:MW:PRES ON To query the state of m POW:MW:PRES?	

PRE Initialize		
Function	This command initializes the parameters.	
Command	PRE	
Example of Use	To initialize the parameters. PRE	
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]	The pre-amplifier is fixed to Off when the Option 008/108 6 GHz Preamplifier is not installed.	
[MS2830A]	This command becomes unavailable when Option 008/108/068/168 Preamplifier is NOT installed.	
[Common] Example of Use	 This command is not available in the following cases: When Terminal is DigRF 3G (only for MS269x Series) When the Replay function is being executed. 	
	To set Pre Amp to On. PREAMP ON	

PRESEL/PRESEL? Pre-selector		
Function	This command sets the	Preselector peaking bias value.
Command	PRESEL action PRESEL bias	
Query	PRESEL?	
Response	bias	
Parameter	action AUTO PRESET	Action Sets peaking bias value automatically. Sets peaking bias value to 0.
	bias Range Resolution	Peaking bias value -128 to 127 1
Details [MS269xA] [MS2830A]	 This command is not available in the following cases: When using the MS2690A When not using the preselector band The frequency to be switched to the preselector band can be set by using Frequency Band Mode (cf. BNDSP). When Terminal is DigRF 3G (only for MS269x Series) This command is not available when the Replay function is executed. This command is not available in the following case: When using MS2830A-040/041/043 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. 	
Example of Use	This command is not a	vailable when the Replay function is executed.

To set

To set the peaking bias value to 1. PRESEL 1

PROBPWR?

Power Deviation and Distribution Query

Function			
	This command queries	the power	r deviation and probability distribution.
Query			
	PROBPWR? type		
Response			
	$pd_1, pd_2, pd_3, pd_4, pd_5,$		(When type is PWR)
	Returns a value wi 0.01 dB.	thout a su	affix code in dB units with a resolution of
	Each indicates power deviation at the following probability distribution:		
	• 10, 1, 0.1, 0.01, 0.	.001, 0.000	01%
	r ₁ , r ₂ , r ₃ , r ₄ , r ₅		(When type is PROB)
	Returns a value without a suffix code in percentage units with a resolution of 0.0001%.		affix code in percentage units with a
	Each of them indicates probability distribution at the following power deviation:		
	• 1, 2, 3, 4, 5 dB		(When Horizontal Scale is set to 5 dB)
	• 2, 4, 6, 8, 10 dB		(When Horizontal Scale is set to 10 dB)
	• 4, 8, 12, 16, 20 dH	3	(When Horizontal Scale is set to 20 dB)
	• 10, 20, 30, 40, 50	dB	(When Horizontal Scale is set to 50 dB)
Parameter			
	type	Query ta	arget
	PWR	Power de distribut	eviation at specific probability tion
	PROB	Probabil deviation	ity distribution at specific power n
Details			
	This command is available when the following trace is active: • CCDF		
	Returns *** when no power or probability matches.		
Example of Use			
	To query the probability distribution at specific power deviation. PROBPWR? PROB		

RB/RB?		
Resolution Bandwidth		
Function		
	This command sets the resolutio	n bandwidth (RBW).
Command		
	RB bandwidth	
	RB AUTO	
Query		
,	RB?	
Response		
	bandwidth No suffix code. Value is retu	mod in Haunits
	No sullix code. Value is retu	rneu m mz umts.
Parameter		
	bandwidth	Resolution bandwidth (RBW)
	Range and resolution	1 Hz to 10 MHz (1–3 sequence)
	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	m	
	This command is available when the following trace is active: • Spectrum	
	Spectrogram	
	The setting range of this function is limited according to the frequency	
	span setting. Refer to the "MS2690A/MS2691A/MS2692A or MS2830A	
	Signal Analyzer Operation Manual (Mainframe Remote Control)" for	
	details.	
Example of Use		
	To set the RBW to 300 Hz. RB 300	
	200 UN	

READ:AM?

AM Depth Read

 Function
 This command performs the AM Depth measurement and queries the result.

 It works in the same way as the two commands are transmitted in the following order:

 INIT: AM

 FETC: AM?

Function

This command performs the FM deviation measurement and queries the result. It works in the same way as the two commands are transmitted in the following order: INIT:FM FETCh:FM?

REFCLOCK_ADJUST/REFCLOCK_ADJUST?

Adjust Reference Clock

Function	This command sets the adjustment value of the internal reference signal oscillator (Reference Clock).	
Command	REFCLOCK_ADJUST value REFCLOCK_ADJUST PRESET	
Query	REFCLOCK_ADJUST?	
Response	value	
Parameter		
	value	Adjustment value
	Range	0 to 1023
	Resolution	1
	PRESET	Resets the adjustment value to the factory default value.
Details		
	This command is not available while the Replay function is being executed.	
Example of Use		
	To set the adjustment value of the internal reference signal oscillator to 511. REFCLOCK_ADJUST 511	

RES?

Measurement Result Query

Function		
	This command queries the measurement results of the measurement	
	function for the main t	race.
Query		
Query	RES?	
	RES? mode	
	(in ACP measurement)	
Response	(III AOI IIIeasurement)	
	Format varies accordin	ng to the measurement function to be executed.
	Refer to the following r	
	forei to the following f	agos for astans.
Parameter		
	mode	Query mode of ACP result
	CARRIER	Queries the result of carrier power.
	OFFSET	Queries the adjacent channel power result.
	When omitted:	Queries the adjacent channel power result.
Details		
		measurement results in an error.
		able when any of the following traces is active:
	• Spectrum	
	• Power vs Time	
	• Frequency vs Time	
	The mode can be specified when the following measurement function is	
	executed.	
	• ACP	
Example of Use		
	To execute OBW measu	arement and query the result.
	MEAS OBW	
	*WAI	
	RES?	

Response (detailed)

For ACP measurement (for Spectrum trace and when mode is set to OFFSET or omitted):

lc(,lc),lr1,la1,ur1,ua1,lr2,la2,ur2,la2,lr3,la3,ur3,ua3
Returns values without suffix codes.

Two lc values will be output when ACP Reference is set to Both Sides of Carriers.

Symbol	Description	Units
lc	Reference power (Power specified by ACP Reference)	When Scale Mode is Log: In Log Scale Unit units (dBm for V, µW for W)
la1	Absolute value of the total power centered at {(Carrier Freq.) – (Offset Freq.1)}	Same as lc
lr1	Relative value of the total power centered at {(Carrier Freq.) – (Offset Freq.1)} and the reference power.	In dBc units
ual	Absolute value of the total power centered at {(Carrier Freq.) + (Offset Freq.1)}	Same as lc
ur1	Relative value of the total power centered at {(Carrier Freq.) + (Offset Freq.1)} and the reference power.	Same as lr1
la2	Absolute value of the total power centered at {(Carrier Freq.) – (Offset Freq.2)}	Same as lc
lr2	Relative value of the total power centered at {(Carrier Freq.) – (Offset Freq.2)} and the reference power.	Same as lr1
ua2	Absolute value of the total power centered at {(Carrier Freq.) + (Offset Freq.2)}	Same as lc
ur2	Relative value of the total power centered at {(Carrier Freq.) + (Offset Freq.2)} and the reference power.	Same as lr1
la3	Absolute value of the total power centered at {(Carrier Freq.) – (Offset Freq.3)}	Same as lc
lr3	Relative value of the total power centered at {(Carrier Freq.) – (Offset Freq.3)} and the reference power.	Same as lr1
ua3	Absolute value of the total power centered at {(Carrier Freq.) + (Offset Freq.3)}	Same as lc
ur3	Relative value of the total power centered at {(Carrier Freq.) + (Offset Freq.3)} and the reference power.	Same as lr1

For ACP measurement (for Spectrum trace and when mode is set to CARRIER)

ls,lca,lc1,lc2,lc3,lc4,lc5,lc6,

lc7,lc8,lc9,lc10,lc11,lc12

- Returns a value without a suffix code.
- The result of the carrier position greater than the carrier number set by ACP Carrier Number is output as "***".

Symbol	Description	Units
ls	Absolute value of the integral power on the whole screen	When Scale Mode is Log in Log Scale Unit (however, dBm in V, and µW in W)
lca	Absolute value of the total of all carrier power	Same as ls
lc1	Absolute value of the power of carrier – 1	Same as ls
lc2	Absolute value of the power of carrier -2	Same as ls
lc3	Absolute value of the power of carrier – 3	Same as ls
lc4	Absolute value of the power of carrier – 4	Same as ls
lc5	Absolute value of the power of carrier – 5	Same as 1s
lc6	Absolute value of the power of carrier – 6	Same as ls
lc7	Absolute value of the power of carrier – 7	Same as ls
lc8	Absolute value of the power of carrier – 8	Same as ls
lc9	Absolute value of the power of carrier – 9	Same as 1s
lc10	Absolute value of the power of carrier – 10	Same as ls
lc11	Absolute value of the power of carrier – 11	Same as ls
lc12	Absolute value of the power of carrier – 12	Same as ls

For Channel Power measurement (for Spectrum trace):

power, density

Returns values without suffix codes.

Symbol	Description	Units
	Total power of the band specified using	When Scale Mode is Log:
power	Channel bandwidth (CHPWRWIDTH	In Log Scale Unit units (dBm for V,
	command)	μW for W)
	Power density of the band specified using	
density	Channel bandwidth (CHPWRWIDTH	Same as power
	command)	

For OBW measurement (for Spectrum trace):

obw, center, start, stop

Returns values without suffix codes.

Symbol	Description	Units
obw	Occupied bandwidth	In Hz units
center	Center frequency of the occupied bandwidth	In Hz units
start	Start frequency of the occupied bandwidth	In Hz units
stop	Stop frequency of the occupied bandwidth	In Hz units

For Burst Average Power measurement (for Power vs Time trace):

level

Returns a value without a suffix code.

Symbol	Description	Units
level	Burst average power	When Scale Mode is Log: In Log Scale Unit units (dBm for V, µW for W)

For AM Depth measurement (Power vs Time trace)

pos,neg,p-p,avg

Value is returned, without suffix code.

Symbol	Description	Units
pos	+peak value	%(Values in % units will be returned when
neg	-peak value	the terminal is DigRF 3G (only for MS269x
p-p	{ (_Peak) _ (+Peak) }/2	Series) and the Input Source is Complex. Values in V units will be returned if it is not set to Complex.)
avg	Average value	V

For FM deviation measurement (Frequency vs Time trace)

pos,neg,p-p,avg

Value is returned, without suffix code.

Symbol	Description	Units
pos	+peak value	Hz
neg	–peak value	Hz
p-p	{(-Peak)-(+Peak)}/2	Hz
avg	Average value	Hz

RLV/RLV?

Reference Level

Function	This command sets the	v roforonco lovol	
	This command sets the	reference level.	
Command	RLV level		
Query			
Query	RLV?		
Response			
	level		
	Returns a value wi	ithout a suffix code	ð.
			alue in Log Scale Unit units (μV
	when V, and μW w		
	When Scale Mode	is Lin, returns a va	alue in μV units.
Parameter			
	level	Reference level	
	Range	Value equivalent	to -120 to $+50$ dBm (regardless
		of the ATT and P	re-Amp settings when the
		Replay function i	s executed)
	Resolution		Scale Unit settings are
		dB-system units)	
			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	dBV (emf)
		V	V
		MV	mV
		UV	μV

			Native Device message Details
		W	W
		MW	mW
		UW	μW
		NW	nW
		PW	pW
		FW	fW
		Log Scale Unit se	ettings apply when omitted.
		[∨] is used for Line	
Example of Use			
	To set the reference lev RLV -10DBM	vel to –10 dBm.	
ROF/ROF?			
Rolloff Factor			
Function			
Function	This command sets the	filter colleff cotie	
	This command sets the	e inter ronon ratio.	
Command			
	ROF factor		
Query			
	ROF?		
Response			
Response	factor		
	Ideeor		
Parameter			
	factor	Rolloff ratio	
	Range	0.01 to 1.00	
	Resolution	0.01	
Details			
	This command is avail	able when the follo	wing trace is active:
	Power vs Time		
			the following types is set using
	Filter Type (FLTRTYP	command):	
	• Nyquist		
Example of Liss	Root Nyquist		
Example of Use	To get $\frac{1}{2}$ and $\frac{1}{2}$	to 0.69	
	To set the rolloff ratio to ROF 0.62	to U.62.	
	NOT 0.02		

ROFFSET/ROFFSET?

Reference Level Offset

Function	This command sets the	offset value of the reference level offset function.
Command		
	ROFFSET level	
	ROFFSET on_off	
Query		
	ROFFSET?	
Response		
	level	When this function is ON
	OFF	When this function is OFF
Parameter		
	level	Reference level offset value
	Range	-100 to 100 dB
	Resolution	0.01
	Suffix code	DB
		dB is used even when omitted.
	on_off	Reference level offset function ON/OFF
	ON	ON
	OFF	OFF
Details		
	Changing the offset value sets the reference level offset function to ON.	
	This command is not available in the following case:	
	• When Terminal is D	igRF 3G (only for MS269x Series).
Example of Use		
	To set the reference level offset function to OFF. ROFFSET OFF	
	level Range Resolution Suffix code on_off ON OFF Changing the offset val This command is not av • When Terminal is D	Reference level offset value -100 to 100 dB 0.01 DB dB is used even when omitted. Reference level offset function ON/OFF ON OFF lue sets the reference level offset function to ON. vailable in the following case: igRF 3G (only for MS269x Series).

ROFFSETMD/ROFFSETMD?

Reference Level Offset On/Off

Function	This command sets the	e 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	On
	OFF	Off
Details	This command is not a	vailable in the following case:
	• When Terminal is D	9 bigRF 3G (only for MS269x Series)
Example of Use	To set the reference lev ROFFSETMD OFF	rel offset function to OFF.

RSTEVRYCAP/RSTEVRYCAP?

Reset Result Every Capture

Function	This command sets wh measurement.	ether to reset the result after each CCDF
Command	RSTEVRYCAP on_off	
Query	RSTEVRYCAP?	
Response	on_off	
Parameter	on_off ON OFF	Resets the result after each measurement. Does not reset the result after each measurement.
Details	 This command is available when the following trace is active: CCDF This command is not available while the Replay function is being executed. 	
Example of Use	To set to reset the resu RSTEVRYCAP ON	lt after each measurement.

SCALELINES/SCALE	ELINES?	
Function	This command sets t	he 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 ava	ailable when either of the following traces is active:
	• Spectrum	
	• Power vs Time	
	This command is ava	ailable only when Scale Mode is Log.
Example of Use		
	To set the number of SCALELINES 12	scale segments to 12.

SCALEMODE/SCALEMODE? Scale Mode			
Function	This command switche	s the scale mode.	
Command	SCALEMODE mode		
Query	SCALEMODE?		
Response	mode		
Parameter			
	mode	Scale mode	
	LOG	Log scale	
	LIN	Linear scale	
Details			
	This command is not a	vailable when Trace Mode is set to Spectrogram or	
	No Trace.		
Example of Use			
•	To set the scale mode to SCALEMODE LIN	o Linear scale.	

SELECTSTD/SELECTSTD?

Select Standard

Function			
	This command selects the communication method used when executing a measurement function. The parameter set by executing Load Standard Parameter is changed according to the selected communication method.		
	i arameter is changed	according to the selected communication method.	
Command			
	SELECTSTD standar	d	
Query		_	
	SELECTSTD?		
Response			
•	standard		
Parameter		-	
	standard	Communication method	
	OFF	Does not use Load Standard Parameter	
		(LOADSTD command)	
	WCDMAUP	3GPP W-CDMA Uplink	
	WCDMADN	3GPP W-CDMA Downlink	
	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	
Details	This command is not available in the following case:		
	• When Terminal is DigRF 3G (only for MS269x Series)		
Example of Use	• If using MS2830A, this command is not available if Analysis Bandwidth Extension to 31.25 MHz Option 005/105/007 is NOT installed.		
	To execute a measurement function using parameter conforming to 3GPP W-CDMA Uplink. SELECTSTD WCDMAUP		

SMMLYPWR? Power Result Query		
Function	This command queries factor of CCDF measur	the average power, maximum power, and crest ement.
Query	SMMLYPWR? type	
Response		
	average	(When type is AVG)
	Returns a value in	dBm units without a suffix code.
	max	(When type is MAX)
	Returns a value in	dBm units without a suffix code.
	crest	(When type is CREST)
	Returns a value in dB units without a suffix code.	
	average,max,crest	(When type is omitted)
Parameter		
	type	Measurement result type
	AVG	Average power
	MAX	Maximum power
	CREST	Crest factor
	When omitted:	All of the above
Details		
	This command is availa • CCDF	able when the following trace is active:
Example of Use		
	To query the average po SMMLYPWR? AVG	ower of measurement result.

SMOOTH/SMOOTH? Smoothing		
Function	This command enables	/disables smoothing for the main trace.
Command	SMOOTH on_off	
Query	SMOOTH?	
Response	on_off	
Parameter		
	on_off	Smoothing ON/OFF
	ON	On
	OFF	Off
Details		
	This command is availPower vs TimeFrequency vs Time	able when either of the following traces is active:
Example of Use	To enable smoothing for the main trace. SMOOTH ON	

SMOOTHLN/SMOOTHLN? Smoothing Time Length			
Function	This command sets the time length for smoothing the main trace.		
Command	SMOOTHLN time		
Query	SMOOTHLN?		
Response	time Returns a value in ms units without a suffix code.		
Parameter			
	time	Smoothing time length	
Range and resolution			
	Suffix code	Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for details. NS, US, MS, S	
		MS is used when omitted.	
Details			
	 This command is available when either of the following traces is active: Power vs Time Frequency vs Time This command is not available in the following case: 		
• When Terminal is DigRF 3G (only for MS269x Series)			
Example of Use	To set the smoothing time length to 20 $\mu s.$ smoothln 20 US		

SMPLRATE? Sampling Rate Query Function This command queries the sampling rate of waveform capturing. Query SMPLRATE? Response rate No suffix code. Value is returned in Hz units. Example of Use To query the sampling rate. SMPLRATE? **SNGLS** Single Measurement Function This command performs single measurement. Command SNGLS Details Other commands and queries can be received even while this function is being executed. If a command that requires re-capturing of a waveform or re-calculation of a trace is received, however, this function is paused while executing that command. Note that this command does not support synchronized control in Continuous mode. This command is not available while the Replay function is being executed. Example of Use To perform single measurement and query the marker value. SNGLS *WAI MKL?

Native Device Message Details

SOF/SOF? Stop Frequency			
Function	This command sets the	e stop frequency of waveform capturing.	
Command	SOF freq		
Query	SOF?		
Response	freq Returns a value ir	n Hz units without a suffix code.	
Parameter			
	freq	Stop frequency	
	Range	Range adding Frequency Span/2 to the following	
		center frequency ranges:	
	[MS269xA]		
		0 to 6.0 GHz (MS2690A)	
		0 to 13.5 GHz (MS2691A)	
	[M62020A]	0 to 26.5 GHz (MS2692A)	
	[MS2830A]	0 to 3.6 GHz (Option 040)	
		0 to 6.0 GHz (Option 040) 0 to 6.0 GHz (Option 041)	
		0 to 13.5 GHz (Option 043)	
		0 to 26.5 GHz (Option 044)	
		0 to 43 GHz (Option 045)	
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ	
		Hz is used when omitted.	
	Default	6.015625 GHz (MS269xA) 3.615625 GHz (MS2830A005/105/007)	
		3.605 GHz (MS2830A-006/106)	
Details			
	This function is restricted by the following condition:		
	 Stop frequency will be fixed to +270.833 kHz (for GSM) or +3.84 MHz (for W-CDMA) when the terminal is set to DigRF 3G (only for MS269x Series). 		
	This command is not available while the Replay function is being executed.		

Example of Use	To set the stop frequency to 16 MHz. SOF 16000000	
SPF/SPF? Frequency Span		
Function	This command sets the	frequency span of waveform capturing.
Command	SPF freq	
Query	SPF?	
Response	freq Returns a value in	Hz units without a suffix code.
Parameter	freq Range [MS269xA] [MS2830A] Suffix code Default [MS269xA] [MS2830A]	Frequency span 1000, 2500, 50000, 100000, 250000, 500000, 1000000, 250000, 5000000, 1000000, 2500000, 5000000, 1000000, 25000000, 31250000 5000000 *1 *2, 62500000 *2, 10000000 *1 *3, 125000000 *1 *3 1000*2, 2500*2, 5000*2, 10000*2, 250000*2, 50000*2, 100000*2, 2500000*2, 500000*2, 10000000*2, 25000000*1, 31250000*1 50000000 *3, 62500000 *3, 100000000 *4, 125000000 *4 HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Hz is used when omitted. 31.25 MHz 31.25 MHz (Option 005/105/007/009/109/077/177/078/178) 10 MHz (Option 006/106)

Native Device Message Details

Details

This function is restricted by the Frequency Band Mode, Center Frequency and Terminal settings.

[MS269xA]

*1: Option 004/104

The following frequency spans are available when the Wideband Analysis Hardware is installed:

5000000, 10000000, 12500000

*2: Option 077/177

The following frequency spans are available when the Analysis Bandwidth Extension to 62.5 MHz option is installed:

50000000, 62500000

*3: Option 078/178

In addition to the *2, the following frequency spans are available when the Analysis Bandwidth Extension to 125 MHz option is installed:

10000000, 12500000

[MS2830A]

*1: Option 005/105/007/009/109

In addition to the *2 below, the following frequency spans are available when the Analysis Bandwidth Extension to 31.25 MHz option is installed:

25000000, 31250000

*2: Option 006/106

The following frequency spans are available when the Analysis Bandwidth 10 MHz option is installed:

1000, 2500, 5000, 10000, 25000, 50000, 100000, 250000,

500000, 1000000, 2500000, 5000000, 10000000

*3: Option 077/177

In addition to the *1, the following frequency spans are available when the Analysis Bandwidth Extension to 62.5 MHz option is installed:

5000000, 62500000

*4: Option 078/178

In addition to the *3, the following frequency spans are available when the Analysis Bandwidth Extension to 125 MHz option is installed:

10000000, 12500000

This function is restricted by the following condition:

• Span frequency will be fixed to 541.666 kHz (for GSM) or 7.68 MHz (for W-CDMA) when the terminal is set to DigRF 3G (only for MS269x Series).

This command is not available while the Replay function is being executed. Example of Use To set the frequency span of waveform capturing to 25 MHz. SPF 2500000 SRCHTH/SRCHTH? Search Threshold Function This command sets the threshold value condition for the main trace search point detection. Command SRCHTH mode Query SRCHTH? Response mode Parameter mode Threshold value condition OFF Does not set the threshold value. ON Sets the threshold value (setting only). ABOVE Executes detection above the threshold value. BELOW Executes detection below the threshold value. Details This command is available when any one of the following traces is active: • Spectrum • Power vs Time • Frequency vs Time Changing the detection threshold condition (ABOVE/BELOW) sets the threshold to On. Example of Use To set the main trace detection threshold value condition to below the threshold. SRCHTH BELOW

SRCHTHLVL/SRCHTHLVL?

Search Threshold Level

Function	This command sets the detection.	threshold value for the main trace search point
Command	SRCHTHLVL level SRCHTHLVL freq	(Spectrum, Power vs Time) (Freq vs Time)
Query	SRCHTHLVL?	
Response	For Spectrum trac Scale Mode is Log When Scale Mode For Power vs Time when Scale Mode i for W). When Scale	ithout a suffix code. e, returns a value in Log Scale Unit units when (note that dBm is used for V while μ W is used for W). is Lin, returns a value in dBm units. e trace, returns a value in Log Scale Unit units s Log (note that μ V is used for V while μ W is used Mode is Lin, returns a value in μ V units. Hz units without a suffix code.
Parameter	level Range Resolution	Threshold value for search point detection Sets the vertical scale range of the main trace. 0.01 dB (When Scale Unit is dB-system units) 0.01 pV (When Scale Unit is V-system units) 0.01 yW (When Scale Unit is W-system units)

		Cnapter	4 Native Device Message Details
	Suffix code	DBM, DM	dBm
		DBMV	dBmV
		DBUV	dBµV
		DBUVE	dBµV (emf)
		V	V
		MV	mV
		UV	μV
		W	W
		MW	mW
		UW	μW
		NW	nW
		PW	pW
		FW	fW
		Log Scale Unit	t settings apply when omitted.
		(For Spectrum	trace, dBm units for V.)
		In the linear s	cale mode, dBm units are used for
		Spectrum tra	ce, while \vee units are used for
		Power vs Time	e trace.
	freq	Threshold valu	ae for search point detection
	Range	Sets the vertic	al scale range of the main trace.
	Resolution	1 Hz	
	Suffix code	HZ, KHZ, KZ,	MHZ, MZ, GHZ, GZ
		Hz is used whe	en omitted.
Details			
	This command is an	ailabla whon any o	ne of the following traces is active:
	a .		the of the following traces is active.
	SpectrumPower vs Time		
	• Frequency vs Tin		
		tion threshold value	e sets the detection threshold
warmala of Liss	value to On.		
Example of Use	m	1	
	To set the threshold	value for search po	bint detection to -50 dBm.

ld value for search point detection set the tr to -90.0 es 10 SRCHTHLVL -50

Function This command sets the start frequency of waveform capturing. Command STF freq Query STF? Response freq Returns a value in Hz units without a suffix code. Parameter freq Start frequency Range subtracting Frequency Span/2 from the Range following center frequency ranges: [MS269xA] 0 to 6.0 GHz (MS2690A) 0 to 13.5 GHz (MS2691A) 0 to 26.5 GHz (MS2692A)[MS2830A] 0 to 3.6 GHz (Option 040) 0 to 6.0 GHz (Option 041) 0 to 13.5 GHz (Option 043) 0 to 26.5 GHz (Option 044) 0 to 43 GHz (Option 045) $1 \, \mathrm{Hz}$ Resolution HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ Suffix code Hz is used when omitted. Default 5.984375 GHz (MS269xA) 3.584375 GHz (MS2830A-005/105/007) 3.595 GHz (MS2830A-006/106) Details This function is restricted by the Frequency Span setting. When MS2690A/91/92A is used and Frequency Span is 50 MHz or more, the lower limit frequency is 100 MHz. When MS2830A is used and Frequency Span is 50 MHz or more, the

lower limit frequency is 300 MHz.

Chapter 4 Native Device Message Details

STF/STF? Start Frequency

	This function is restricted by the following condition:		
	• Start frequency is fixed to -270.833 kHz (for GSM) or -3.84 MHz (for W-CDMA) when the terminal is set to DigRF 3G (only for MS269x Series).		
Example of Use	This command is not available while the Replay function is being executed.		
	To set the start frequency of waveform capturing to 12.3 MHz. STF 12300000		
STOP Storage Stop			
Function			
	This command stops waveform capturing under execution. Functions when Storage Mode of the main trace is Lin Average, Max Hold, or Min Hold.		
Command			
	STOP		
Details			
	This command is not available while the Replay function is being executed.		
Example of Use			
	To stop waveform capturing. STOP		

STORAGECOUNT/STORAGECOUNT? Storage Count			
Function	This command sets the	storage count of the main trace.	
Command	STORAGECOUNT count		
Query	STORAGECOUNT?		
Response	count		
Parameter			
	count	Storage count	
	Range	2 to 9999	
	Resolution	1	
Details			
	This command is available when any of the following traces is active:		
	• Spectrum		
	Power vs Time		
	Freq vs TimeSpectrogram		
	• Spectrogram This command is not available while the Replay function is being executed.		
Example of Use			
	To set the storage count of the main trace to 200. STORAGECOUNT 200		

STORAGEMODE/STORAGEMODE?

Storage Mode

Function	This command sets th	e storage mode for the main trace data.	
Command	STORAGEMODE mode		
Query	STORAGEMODE?		
Response	mode		
Parameter			
	mode	Storage mode	
	OFF	Does not store any data.	
	MAX	Stores the maximum value.	
	LINAVG	Stores the average value.	
	MIN	Stores the minimum value.	
Details			
	When Capture Time is set to Manual, the storage mode is fixed to OFF.		
	This command is available when any one of the following traces is active:		
	• Spectrum		
	Power vs Time		
	• Freq vs Time (LINAVG cannot be set.)		
	• Spectrogram		
	This command is not available while the Replay function is being executed.		
Example of Use			
	To set the storage mode to LINAVG. STORAGEMODE LINAVG		

SWE:SAMP/SWE:SAMP?

Capture Sample Length

Function	This command sets the number of waveform capture samples when the terminal is set to DigRF 3G (only for MS269x Series).		
Command			
Query	SWE:SAMP point		
	SWE:SAMP?		
Response	point		
Parameter	point		
	point	Number of capture samples	
	Range	100 to 500000000 (W-CDMA) 100 to 200000000 (GSM)	
	Suffix code	None	
	Resolution	1	
	Default Value	0	
Details	The shortest capture time length is set when the automatic setting enabled.		
	The automatic mode is switched to the manual mode when the capture time length is set.		
	The setting range and resolution are limited by the Frequency Span setting.		
	This command is available in the following cases:		
	When Terminal is RF.When the Replay function is being executed.		
Example of Use	To set waveform capture sample length to 20000. SWE:SAMP 20000		

SWEEPCOUNT?

Measurement Count Query

Function				
	This command quer	ries the current storage count of the main trace.		
Query				
	SWEEPCOUNT?			
Response				
	count			
Parameter				
	count	Storage count	4	
	Range	0 to 9999		
	Resolution	1		
Details			N ⁸	
	This command is av	vailable when any one of the following traces is active:	ltiv	
	• Spectrum		eΓ	
	Power vs Time)ev	
	 Frequency vs Tir 	ne	ice	
		The command is not available when Storage Mode of the main trace is		
	set to OFF.		ess	
Example of Use			Native Device Message Details	
	To guery the curren	t storage count of the main trace.	Ð	
	SWEEPCOUNT?		eta	
			ils	

Chapter 4	Native Device Message Details
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TDLY/TDLY? Trigger Delay		
Function	This command sets the capturing.	e delay from trigger input to start of waveform
Command	TDLY time	
Query	TDLY?	
Response	time Returns a value in	n ms units without a suffix code.
Parameter	time Range and resolut Suffix code	Delay time ion Refer to the "MS2690A/MS2691A/MS2692A or MS2830A Signal Analyzer Operation Manual (Mainframe Remote Control)" for details. NS, US, MS, S MS is used when omitted.
Details	 Changing the trigger delay sets the trigger delay to ON. The setting range is limited by the Frequency Span setting. This command is not available in the following cases: When Terminal is DigRF 3G (only for MS269x Series). When the Replay function is being executed. 	
Example of Use	To set the trigger delay TDLY 20MS	<i>y</i> to 20 ms.

TDPNT?

Time Trace Point Query

Function			
	This command queries the number of trace points on the time axis of the		
	main trace.		
Query			
	TDPNT?		
Response			
	point		
Parameter			
	point	Number of trace points	
		Returns a value without a suffix code.	
Details	mi		
	This command is available when either of the following traces is active:		
	Power vs Time		
	Frequency vs Time		
	Phase vs Time		
	Spectrogram		
	The number of data points is determined according to analysis time		
	length and frequency s	span.	
Example of Use			
		f the main trace data points.	
	TDPNT?		

THRSHLD/THRSHLE)?	
Function	This command sets th measurement.	ne minimum level of input signals for CCDF
Command	THRSHLD level	
Query	THRSHLD?	
Response	level No suffix code. Va	alues is returned in dBm units.
Parameter		
	level Range	Minimum level of input signals –170 to reference level (dBm) When the reference level offset value is On, it is added to the range.
	Resolution Suffix code	0.01 dBm DB, DBM, DM dBm is used when omitted.
Details		
Example of Use	This command is avaCCDFTo set the minimum l	ilable when the following trace is active: evel to –20 dBm.
	THRSHLD -20	

TITLE/TITLE? Title Entry		
Function	This command register	rs the title character string.
Command	TITLE string	
Query	TITLE?	
Response	string	
Parameter	string	Title character string
	Range	Character string within 32 characters enclosed by double quotes ("") or single quotes (' ').
Details	Setting the title charac automatically.	eter string sets title display (Display Title) to On
Example of Use	To set the title charact TITLE "Anritsu"	er string to Anritsu.

TRAC? Query Trace Data Function This command queries the trace data. Query TRAC? [start[,length]] Response data_1,data_2,... Parameter start Query start point 0 to Number of trace points -1Range Resolution 1 When omitted: 0 length Query length Range 1 to Number of trace points - start For Spectrum, 5121 is the maximum. For Spectrogram, 9999 is the maximum. Resolution 1 When omitted: Number of trace points - start For spectrum, if 5122 or more is set, 5121 is automatically set. For Spectrogram, if 10000 or more is set, 9999 is automatically set. data n Trace data For Spectrum or Power vs Time, Spectrogram trace Resolution (In Log scale) 0.001 dBm (In Linear scale) { Voltage value (V) / Reference level (V) } \times 10000 Reference level is 10000. -999.0 is returned when no measurement is performed or an error has occurred.

Data range	Returns a value within the range of Start Freq to Stop Freq for Spectrum trace. Returns a value within the range of Analysis Start Time to Analysis Start Time + Analysis Time Length for Power vs Time trace. Divides a trace into the number of trace points and returns a value within the range of Start to Length for Spectrogram. For the coordinates (frequency, time), the (Start Frequency, 0 seconds) position is point 0, and, for subsequent points, the time coordinate is fixed and the trace point position increases along the frequency axis. When the frequency axis coordinate reaches Stop Frequency, the time coordinate increases by one point and the trace point position again increases along the frequency axis.
For Freq vs Time	trace
Resolution	0.01 Hz Center frequency is 0. –9999999999999 is returned when no measurement is performed or an error has
Data range	occurred. Returns a value within the range of Analysis Start Time to Analysis Start Time + Analysis Time Length.
For Phase vs Tim	e trace
Resolution	0.01 degree resolution Unit: degree –9999999999999999 is returned when no measurement is performed, an error has occurred.
Data range	Returns a value within the range of Analysis Start Time to Analysis Start Time + Analysis Time Length.
For CCDF trace	
Resolution	0.0001% –999.0 is returned when no measurement is performed or an error has occurred.
Data range	Returns a value within the range of -50 to 50 dB for APD. Returns a value within the range of 0 to 50 dB for CCDF.

Details	Positive & Negative, re	Frequency vs Time, when Detection is set to eturns the reading for the trace data of Positive es, reads out the data of the set Detection.
	This command is not a	vailable when Trace Mode is set to No Trace.
Example of Use	To query the trace data. TRAC? > -20000,-20231,-21233,	
TRAC:NEG? Query Negative Trace Data		
Function	This command queries	the trace data.
Query		
	TRAC:NEG? [start[,	length]]
Response	data 1 data 0	
Parameter	data_1,data_2,	
	start	Starting point to query
	Range	0 to Number of trace points -1
	Resolution	1
	When omitted:	0
	length	Query length
	Range	1 to Number of trace points – start
	Resolution	1
	When omitted:	Number of trace points – start
	data_n	Trace data
	For Power vs Time	e trace
	Resolution	(In Log scale)
		0.001 dBm
		(In Linear scale)
		{ Voltage value (V) / Reference level (V) } \times 10000
		The reference level is 10000.
		–999.0 is returned when no measurement is
		performed or an error has occurred.
	Data range	Returns a value within the range of Analysis Start Time to Analysis Start Time + Analysis Time Length.

	For Freq vs Time trace			
	Resolution	0.01 Hz		
		The center frequency is 0.00.		
		–9999999999999 is returned when no		
		measurement is performed or an error has		
		occurred.		
	Data range	Returns a value within the range of Analysis		
		Start Time to Analysis Start Time + Analysis		
		Time Length.		
Details				
F	or Power vs Time or Frequency vs Time, when Detection is set to			
F	ositive & Negative, re	sitive & Negative, reads out the trace data of Negative detection. In		
0	ther cases, reads out t	he data of the set Detection.		
Т	`his command is availa	ble when either of the following traces is active:		
•	Power vs Time			
•	Frequency vs Time			
Example of Use				
Т	o query the trace data			
Т	RAC:NEG?			
>	-20000,-20231,-2	1233,		

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Native Device Message Details

TRCCHG/TRCCHG? Change Trace		
Function	This command sets the	e main trace type.
Command	TRCCHG trace	
Query	TRCCHG?	
Response	trace	
Parameter		
	trace	Trace type
	SPECTRUM	Spectrum
	POWERVSTIME	Power vs Time
	FREQVSTIME	Frequency vs Time
	PHASEVSTIME	Phase vs Time
	CCDF	CCDF
	SPECTROGRAM NONE	Spectrogram No Trace
Details		
	This command is not available in the following cases:	
• When Terminal is sele		set when Scale Mode is Linear. selected DigRF 3G (only for MS269x Series), the and No Trace cannot be set.
	To set trace type to Spectrum. TRCCHG SPECTRUM	

Trigger Level

Function	This command sets th triggers.	ne trigger level for the Video and Wide IF Video
Command	TRGLVL level	
Query	TRGLVL?	
Response	Video. Returns a value : Mode is Log).	Trigger Level (Video) Level (Video) when the trigger source is not Wide IF in dBm units without a suffix code (when Scale in percentage units without a suffix code (when n).
	Wide IF Video.	Trigger Level (Wide IF Video) Level (Wide IF Video) when the trigger source is in dBm units without a suffix code.
Parameter	level When Scale Mod Range Resolution Suffix code	Trigger Level (Video)
	When Scale Mod Range Resolution Suffix code level Range Resolution Suffix code	e is Lin: 0 to 100% 1% None Trigger Level (Wide IF Video) -60 to +50 dBm (Wide IF Video trigger) When the reference level offset value is On, it is added to the range. 1 dB DBM, DM dBm is used when omitted.

Details		
	is set, and trigger swite	e is Wide IF Video, Trigger Level (Wide IF Video) h is set to ON. When the trigger source is not Level (Video) is set, trigger source is set to Video, t to ON.
	This command is not av	vailable in the following cases:
	When Terminal is DigRF 3G (only for MS269x Series).When the Replay function is being executed.	
Example of Use		
	To set the trigger level TRGLVL 50	to 50 dBm.
TRGS/TRGS? Trigger Switch		
Function	This command sets the trigger to On/Off.	
Command	TRGS switch	
Query	TRGS?	
Response	switch	
Parameter		
	switch FREE TRGD	Trigger ON/OFF OFF ON
Details		
	This command is not executed.	available while the Replay function is bein
Example of Use	To set the trigger to ON TRGS TRGD	Ι.

TRGSLP/TRGSLP? Trigger Slope		
Function	This command sets th	e trigger detection direction (rising/falling).
Command	TRGSLP edge	
Query	TRGSLP?	
Response	edge	
Parameter		
	edge RISE	Trigger detection direction Rising edge
	FALL	Falling edge
Details	Changing the trigger of	detection direction sets trigger switch to On.
	This command is not a executed.	wailable while the Replay function is being
Example of Use		
	To set the trigger dete TRGSLP RISE	ction direction to rising edge.

TRGSOURCE/TRGSOURCE? Trigger Source			
Function			
		This command sets the	trigger source type.
Command			
		TRGSOURCE source	
0			
Query		TRGSOURCE?	
		110000101.	
Response			
		source	
Parameter			
		source	Trigger source type
		[MS269xA]	
		VID	Video trigger
		WIDEVID	Wide IF Video trigger
		EXT	External trigger
		SG	SG Marker trigger
		BBIF	Baseband Interface trigger
		[MS2830A]	
		VID	Video detection (Video)
		WIDEVID	Wideband IF detection (Wide IF Video)
		EXT	External input (Default)
		SG	SG Marker (SG Marker)
		FRAME	Frame period trigger
Details			
	[MS269xA]		be selected only when the Option 020/120 Vector
		Signal Generator is ins	
			be selected when the Option 040/140 Baseband
		Interface Unit is instal	
	[MS2830A]		an be selected only when the Option 020/120,
	[Common]	021/121 Vector Signal Generator is installed. Changing the trigger source sets trigger switch to ON. This command is not available in the following cases:	
	[Common]		
			variable in the following cases.
		-	l, Video, Wide IF Video, and SG Marker cannot be e terminal is set to DigRF 3G (only for MS269x
			nction is being executed.

Example of Use

To set trigger source to External. TRGSOURCE EXT

TRIG:FRAM:OFFS/TRIG:FRAM:OFFS?

Frame Sync Offset

Function			
		ts the offset time between when a signal source for ne trigger is input and when the frame trigger is	
Command			
	TRIG:FRAM:OFF:	5 time	
Query			
-	TRIG:FRAM:OFFS	5?	
Response			
	time		
Parameter			
	<time></time>	Offset time	
	Range	0 to 1 s	
	Resolution	10 ns	
	Suffix code	NS, US, MS, S	
		${\bf S}$ is used when the suffix code is omitted.	
	Default	0 s	
Details			
	This command is not available for MS269x Series.		
Example of Use			
	To set the offset time for generating a frame trigger to 100 ms.		
	TRIG:FRAM:OFFS 100ms		
	To query the offset time for generating a frame trigger.		
	TRIG:FRAM:OFFS	5?	
	> 0.1000000		

TRIG:FRAM:PER/TRIG:FRAM:PER?

Frame Trigger Period

Function	This command sets the	period for generating a frame trigger.
Command		
	TRIG:FRAM:PER time	2
Query		
	TRIG:FRAM:PER?	
Parameter		
	time	Frame trigger
	Range	1 s 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.	
Example of Use		
	To set the frame trigger period to 10 ms.	
	TRIG:FRAM:PER 10MS	
	To query the frame trigger period.	
	TRIG:FRAM:PER?	
	> 0.02000000	

TRIG:FRAM:SYNC/TRIG:FRAM:SYNC?

Frame Sync Source

Function		
	This command selects the synchronization signal source for starting a	
	frame trigger.	
Command		
	TRIG:FRAM:SYNC syr	nC
Query	1	
	TRIG:FRAM:SYNC?	
Parameter		
	sync	Sync signal source
	EXT	External input (Default)
	IMM	Free run
	WIF	Wideband IF detection (Wide IF Video)
Details		
	This command is not a	vailable for MS269x Series.
Example of Use		
	To set the frame-trigg	ger synchronization source to the Wide IF Video
	trigger.	
	TRIG:FRAM:SYNC WIE	2
	To query the frame-trig	gger synchronization signal source.
	TRIG:FRAM:SYNC?	
	> WIF	

TRIG:HOLD/TRIG:HOLD?

Trigger Hold

Function			
	This command sets the	e fixed amount of time trigger input is disabled	
	between the first trigg	er input and the next trigger input.	
Command			
Command	TRIG:HOLD time		
Query	IKIG.HOLD CIME		
Query	TRIG:HOLD?		
Parameter	111201110220		
	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 µ s	
Details			
	This command is not available for MS269x Series.		
	When this function is used to change a value, the Trigger Hold (ON/OFF)		
	function is set to ON.		
	This command is not available for video trigger.		
Example of Lice			
Example of Use	To get the amount of ti	ma trigger input is disabled to 100 ms	
	To set the amount of time trigger input is disabled to 100 ms. TRIG:HOLD 100ms		
	To query the amount of time trigger input is disabled.		
	TRIG:HOLD?		
	> 0.02000000		

TRIG:HOLD:STAT/TRIG:HOLD:STAT?

Trigger Hold On/Off

Function		e function for disabling trigger input between the the next trigger input for a fixed amount of time to
Command		
Quer	TRIG:HOLD:STAT sw	itch
Query	TRIG:HOLD:STAT?	
Parameter		
	<switch></switch>	Trigger Hold On/Off
	ON 1	Trigger Hold is On.
	OFF 0	Trigger Hold is Off.
Details	This command is not a	wailable for MS269x Series.
		set to On, the Trigger(On/Off) function is
Example of Use	To set the setting for disabling trigger input for a fixed amount of time to On.	
	TRIG:HOLD:STAT ON	
	To query the setting for :TRIG:HOLD:STAT? > 1	or disabling trigger input for a fixed amount of time.

TTL/TTL? Title On/Off		
Function	This command sets titl	le display to On/Off.
Command	TTL on_off	
Query	TTL?	
Response	on_off	
Parameter		
	on_off ON	Title display On/Off
	OFF	Displays the title. Hides the title.
Example of Use		
	To hide the title.	

UNIT:TMAR/UNIT:TMAR?

Marker Unit

Function		e units of the marker display value (time) when the F 3G (only for MS269x Series).	
Command			
	UNIT:TMAR unit		
Query			
	UNIT:TMAR?		
Response			
	unit		
Parameter			ľ
	unit	Units of marker display value	
	SAMP	Sets the units of marker display value to Sample	1
	SEC	Sets the units of marker display value to seconds	5
Details			-
	This command is available	ilable when either of the following trace is set to	ţ
	active:		1
	• Power vs Time		8
	• Frequency vs Time		
	Phase vs Time		
	This command is available in the following cases:		
	• When Terminal is set to RF.		
	• When the Replay function is being executed.		
Example of Lise			
Example of Use	To set the marker disp UNIT:TMAR SAMP	lay unit to Sample	

ZMCNT/ZMCNT? Zoom Center		
Function	(T) 1	
	This command sets	the center frequency of display frequency axis scale.
Command		
	ZMCNT freq	
Query		
	ZMCNT?	
_		
Response	freq	
	-	Value is returned in Hz units.
_		
Parameter	freq	Seels contour fur our ou
	Range and reso	Scale center frequency
	Mange and reso.	Refer to the "MS2690A/MS2691A/MS2692A or
		MS2830A Signal Analyzer Operation Manual
		(Mainframe Remote Control)" for details.
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
Details		
		ailable when the following trace is active:
	• Spectrum	
Example of Use	The set the sector for	
	IO SET THE CENTER ITE ZMCNT 20KHZ	quency of the display frequency axis scale to 20 kHz.

ZMWDTH/ZMWDTH?

Zoom Width/Vertical Scale Width

Function		
	This command sets the scale.	e frequency width of the display frequency axis
Command		
	ZMWDTH freq	(Spectrum)
	ZMWDTH scale	(Frequency vs Time)
Query		
Query	ZMWDTH?	
Response		
	freq	
	freq	(Spectrum)
	No suffix code. Val	lue is returned in Hz units.
	scale	(Frequency vs Time)
	00410	(Trequency vs Time)
Parameter		
	freq	Scale frequency width
	Range and resolut	ion
		Refer to the "MS2690A/MS2691A/MS2692A or $^\circ$
		MS2830A Signal Analyzer Operation Manual
		(Mainframe Remote Control)" for details.
	Suffix code	HZ, KHZ, KZ, MHZ, MZ, GHZ, GZ
		Hz is used when omitted.
	scale	Scale frequency width
	DIVBY2	Frequency bandwidth/2
	DIVBY5	Frequency bandwidth/5
	DIVBY10	Frequency bandwidth/10
	DIVBY25	Frequency bandwidth/25
Details		
Dotano	This command is avail	able when either of the following traces is active:
	 Spectrum 	
	• Frequency vs Time	
Example of Use		
·	To set the frequency w	idth of the display frequency axis scale to 31.25
	MHz.	
	ZMWDTH 31.25MHz	

ZOOM Zoom	
Function	This command expands the trace in the range specified by the marker.
Command	ZOOM
Details	 When the main trace is Spectrum, the active marker zone range is reflected to the display frequency range. When the main trace is Power vs Time, Frequency vs Time, or Phase vs Time, the time range between Marker and Marker is reflected to the analysis range. This command is not available in the following cases: The analysis range is minimum (Power vs Time, Frequency vs Time,Phase vs Time). The display frequency range is minimum (Spectrum). Marker Result is Peak (Fast), or Peak (Normal), and Zone Width Type is Spot (Spectrum). Either Marker 1 or 2 is set to Off (Power vs Time, Frequency vs Time,Phase vs Time). Marker Mode is set to Off or Fixed (Spectrum). This command is available when any one of the following traces is active: Spectrum Power vs Time Frequency vs Time Phase vs Time
Example of Use	
	To expand the specified range of the zone marker when the main trace is Spectrum. $\mbox{\sc zoom}$

ZOOMOUT Zoom Out	
Function	This command compresses the display frequency range to the range specified by the marker.
Command	ZOOMOUT
Details	 When the main trace is Spectrum, the display frequency range is compressed (zoom out) to the range specified by the active marker zone width. When the main trace is Power vs Time, Frequency vs Time, or Phase vs Time, the analysis time range is compressed (zoom out) to the range between Marker1 and Marker2 for setting change. This command is not available in the following cases: The active marker is set to Off or Fixed (Spectrum). Either Marker 1 or 2 is set to Off (Power vs Time, Frequency vs Time, Frequency vs Time, Frequency vs Time, T
	Time,Phase vs Time).Marker Result is Peak (Fast), or Peak (Normal) AND Zone Width Type is Spot.
Example of Use	To compress the display range when the main trace is Spectrum.