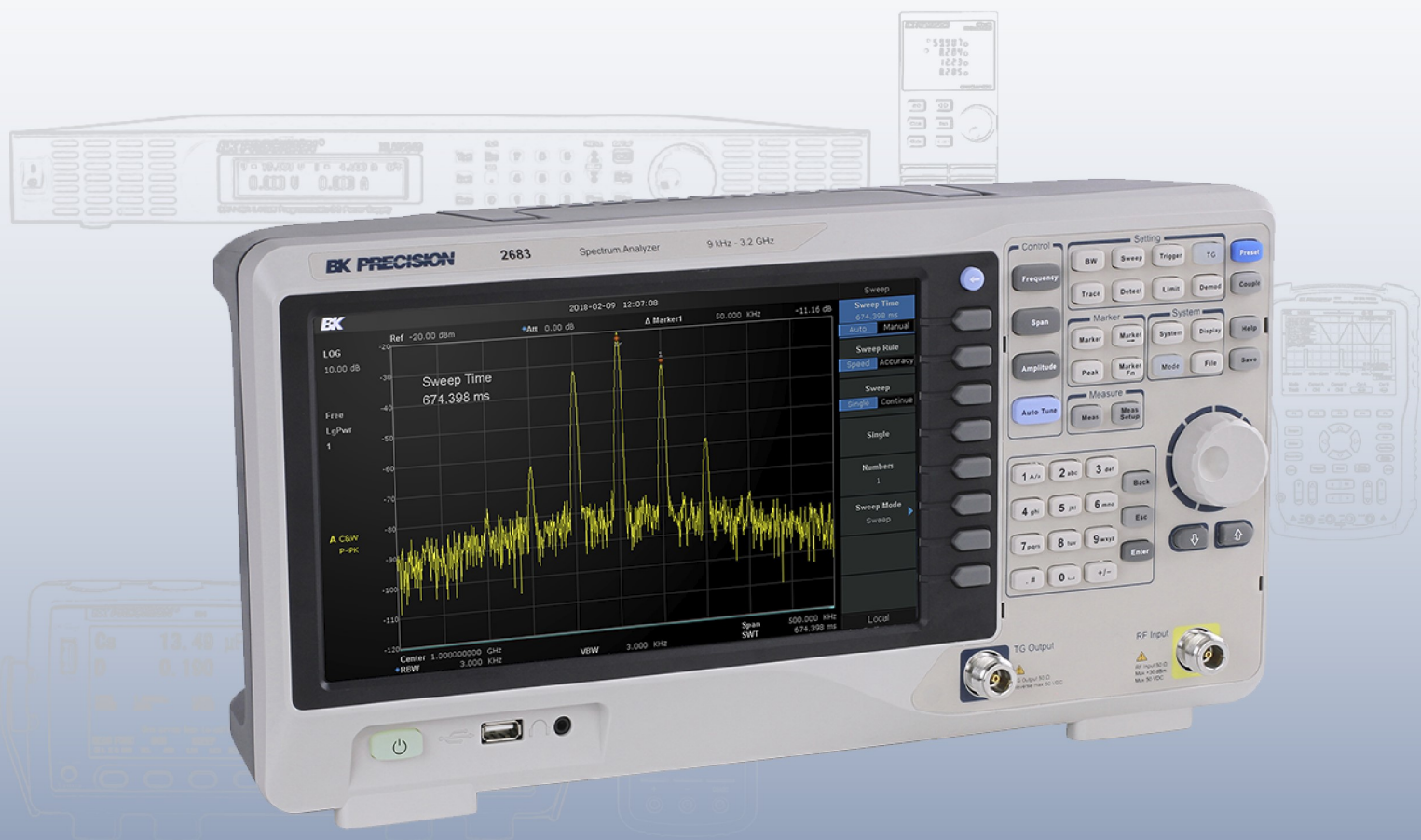


Programming Manual

2680 Series - Spectrum Analyzers



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About Commands & Queries

This section lists and describes the remote control commands and queries recognized by the instrument. All commands and queries can be executed in either local or remote state.

The description for each command or query, with syntax and other information, begins on a new page. The name (header) is given in both long and short form, and the subject is indicated as a command or query or both. Queries perform actions such as obtaining information, and are recognized by the question mark (?) following the header.

1.1 How They are Listed

The descriptions are listed in alphabetical order according to their short form.

1.2 How They are Described

In the descriptions themselves, a brief explanation of the function performed is given. This is followed by a presentation of the formal syntax, with the header given in Upper-and-Lower-Case characters and the short form derived from it in ALL UPPER-CASE characters. Where applicable, the syntax of the query is given with the format of its response.

1.3 When can they be used?

The commands and queries listed here can be used for 2060 Series Spectrum Analyzer.

1.4 Command Notation

The following notation is used in the commands:

< > Angular brackets enclose words that are used placeholders, of which there are two types: the header path and the data parameter of a command.

:= A colon followed by an equals sign separates a placeholder from the description of the type and range of values that may be used in a command instead of the placeholder.

Braces enclose a list of choices, one of which one must be made.

[] Square brackets enclose optional items.

... An ellipsis indicates that the items both to its left and right may be repeated a number of times.

Common Command Introduction

IEEE standard defines the common commands used for querying the basic information of the instrument or executing basic operations. These commands usually start with "*" and the length of the keywords of the command is usually 3 characters.

Short	Long Form	Subsystem	What Command/Query does
*IDN	*IDN	SYSTEM	Gets identification from device.
*OPC	*OPC	SYSTEM	Gets or sets the OPC bit (0) in the Event Status Register (ESR).
*CLS	*CLS	SYSTEM	Clears all the status data registers.
*ESE	*ESE	SYSTEM	Sets or gets the Standard Event Status Enable register (ESE).
*ESR	*ESR	SYSTEM	Reads and clears the contents of the Event Status Register (ESR).
*RST	*RST	SYSTEM	Initiates a device reset.
*SRE	*SRE	SYSTEM	Sets the Service Request Enable register (SRE).
*STB	*STB	SYSTEM	Gets the contents of the IEEE 488.2 defined status register.
*TST	*TST	SYSTEM	Performs an internal self-test.
*WAI	*WAI	SYSTEM	Wait to continue command.
DDR	DDR	SYSTEM	Reads and clears the Device Dependent Register (DDR).
CMR	CMR	SYSTEM	Reads and clears the command error register.
CHDR	COMM_HEADER	SIGNAL	Sets or gets the command returned format OUTP OUTPUT SIGNAL Sets or gets output state.
BSWV	BASIC_WAVE	SIGNAL	Sets or gets basic wave parameters.
MDWV	MODULATEWAVE	SIGNAL	Sets or gets modulation parameters.
SWWV	SWEEPWAVE	SIGNAL	Sets or gets sweep parameters.
BTWV	BURSTWAVE	SIGNAL	Sets or gets burst parameters.
PACP	PARACOPY	SIGNAL	Copies parameters from one channel to the other.
ARWV	ARBWAVE	DATA	Changes arbitrary wave type.
SYNC	SYNC	SIGNAL	Sets or gets synchronization signal.
NBFM	NUMBER_FORMAT	SYSTEM	Sets or gets data format.
LAGG	LANGUAGE	SYSTEM	Sets or gets language. SCFG SYS_CFG SYSTEM Sets or gets the power-on system setting way.
BUZZ	BUZZER	SYSTEM	Sets or gets buzzer state.
SCSV	SCREEN_SAVE	SYSTEM	Sets or gets screen save state.

Short	Long Form	Subsystem	What Command/Query does
ROSC	ROSCILLATOR	SIGNAL	Sets or gets state of clock source.
FCNT	FREQCOUNTER	SIGNAL	Sets or gets frequency counter parameters.
INVT	INVERT	SIGNAL	Sets or gets polarity of current channel.
COUP	COUPLING	SIGNAL	Sets or gets coupling parameters.
VOLTPRT	VOLTPRT	SYSTEM	Sets or gets state of over-voltage protection.
STL	STORELIST	SIGNAL	Lists all stored waveforms.
WVDT	WVDT	SIGNAL	Sets and gets arbitrary wave data.
VKEY	VIRTUALKEY	SYSTEM	Sets the virtual keys.
SYST:COMM: LAN:IPAD	SYSTEM: COMMUNICATE: LAN:IPADDRESS	SYSTEM	The Command can set and get system IP address.
SYST:COMM: LAN:SMAS	SYSTEM: COMMUNICATE: LAN:SMASK	SYSTEM	The Command can set and get system subnet mask.
SYST:COMM: LAN:GAT	SYSTEM: COMMUNICATE: LAN:GATEWAY	SYSTEM	The Command can set and get system Gateway.
SRATE	SAMPLERATE	SIGNAL	Sets or gets sampling rate. You can only use it in TrueArb mode HARM HARMonic SIGNAL Sets or gets harmonic information.
CMBN	COMBINE	SIGNAL	Sets or gets wave combine information.

2.1 *IDN?

Description The *IDN? query causes the instrument to identify itself. The response comprises manufacturer, model, serial number, software version and firmware version.

Query Format *IDN?

Response Format *IDN, <device id>,<model>,<serial number>, <software version>,
<hardware version>.

<device id>="BK" is used to identify instrument.

<model>= A model identifier less than 14 characters will contain the model number.

<serial number>:Each product has its own number, the serial number can labeled product uniqueness.

<software version>= A serial numbers about software version.

<hardware version>=The hardware level field, should contain information about all separately revisable subsystems. This information can be contained in single or multiple revision codes.

Example *IDN?

Returns:

BK,2682,538A19101,1.2.9.2.a

value2: Hardware version. value3:

Hardware subversion. value4:

FPGA version.

value5: CPLD version.

2.2 *OPC

Description The *OPC (Operation Complete) command sets the OPC bit (bit 0) in the standard Event Status Register (ESR). This command has no other effect on the operation of the device because the instrument starts parsing a command or query only after it has completely processed the previous command or query. The *OPC? query always responds with the ASCII character 1 because the device only responds to the query when the previous command has been entirely executed.

COMMAND SYNTAX *OPC

Query Syntax *OPC?

Response Format *OPC 1

2.3 *CLS

Description The *CLS command clears all the status data registers.

Command Syntax *CLS

Example The following command causes all the status data registers to be cleared: *CLS

2.4 *ESE

Description The *ESE command sets the Standard Event Status Enable register (ESE). This command allows one or more events in the ESR register to be reflected in the ESB summary message bit (bit 5) of the STB register. The *ESE? query reads the contents of the ESE register.

Command Syntax *ESE <value>
<value> = 0 to 255.

Query Format *ESE?

Query Response *ESE <value>

Example The following instruction allows the ESB bit to be set if a user request (URQ bit 6, i.e. decimal 64) and/or a device dependent error (DDE bit 3, i.e. decimal 8) occurs. Summing these values yields the ESE register mask $64+8=72$.

*ESE?

Return:

*ESE 72

2.5 *ESR

Description The *ESR? query reads and clears the contents of the Event Status Register (ESR). The response represents the sum of the binary values of the register bits 0 to 7.

Query Format *ESR?

Query Response *ESR <value>
<value> = 0 to 255

Example The following instruction reads and clears the content of the ESR register

*ESR?

Return:

*ESR 0

Related Commands *CLS, *ESE

2.6 RST

Description The *RST command initiates a device reset. The *RST recalls the default setup.

Command Syntax *RST

Example This example resets the signal generator: *RST

2.7 SRE

Description The *SRE command sets the Service Request Enable register (SRE). This command allows the user to specify which summary message bit(s) in the STB register will generate a service request.

A summary message bit is enabled by writing a '1' into the corresponding bit location. Conversely, writing a '0' into a given bit location prevents the associated event from generating a service request (SRQ). Clearing the SRE register disables SRQ interrupts.

The *SRE? query returns a value that, when converted to a binary number represents the bit settings of the SRE register. Note that bit 6 (MSS) cannot be set and its returned value is always zero.

Command Syntax *SRE <value>
<value> = 0 to 255

Query Format *SRE?

Query Response *SRE <value>

Example The following instruction allows a SRQ to be generated as soon as the MAV summary bit (bit 4, i.e. decimal 16) or the INB summary bit (bit 0, i.e. decimal 1) in the STB register, or both are set. Summing these two values yields the SRE mask $16+1 = 17$.

```
*SRE?
Return:
*SRE 17
```

2.8 *STB?

Description The *STB? query reads the contents of the 488.2 defined status register (STB), and the Master Summary Status (MSS). The response represents the values of bits 0 to 5 and 7 of the Status Byte register and the MSS summary message.

The response to a *STB? query is identical to the response of a serial poll except that the MSS summary message appears in bit 6 in place of the RQS message.

Query Syntax *STB?

Query Response *STB <value>
<value> = 0 to 255

Example The following reads the status byte register:

```
*STB?
Return:
*STB 0
```

Related Commands *CLS, *SRE

2.9 *TST?

Description The *TST? query performs an internal self-test and the response indicates whether the self-test has detected any errors. The self-test includes testing the hardware of all channels. Hardware failures are identified by a unique binary code in the returned <status> number. A "0" response indicates that no failures occurred.

Query Format *TST?

Query Response *TST <status>
<status> = 0 self-test successful

Example The following causes a self-test to be performed:
TST?
Return(if no failure):
*TST 0

Related Commands *CAL

2.10 WAI

Description The *WAI (WAIT to continue) command, requires by the IEEE 488.2 standard, has no effect on the instrument, as the signal generator only starts processing a command when the previous command has been entirely executed.

Command Syntax *WAI

Related Commands *OPC

2.11 DDR

Description The DDR? query reads and clears the contents of the device dependent or device specific error register (DDR). In case of a hardware failure, the DDR register specifies the origin of the failure.

Query Format DDR?

Query Response DDR <value>
<value> = 0 to 65535

Example DDR?
Return:
DDR 0 The following table gives details:

Bit	Bit Value	Description
15...14	-	Reserved
13	8192	Time-base hardware failure detected
12	4096	Trigger Hardware failure detected
11	-	Reserved
10	-	Reserved
9	512	Channel 2 hardware failure detected
8	256	Channel 1 hardware failure detected
7	128	External input overload condition detected
6...4	-	Reserved
3	-	Reserved
2	-	Reserved
1	2	Channel 2 overload condition detected
0	1	Channel 1 overload condition detected

2.11.1 Notes: 1

2.12 CMR

Description The CMR? query reads and clears the contents of the command error register (CMR) .See the table below which specifies the last syntax error type detected by the instrument.

Query Format CMR?

Query Response CMR <value>
<value> = 0 to 14

Example CMR?
Return:
CMR 0

System Subsystem

3.1 System Time

Description Sets System time.
Gets System time.

Command Syntax SYSTem:TIME <hhmmss>

Query Format SYSTem:TIME?

Examples Sets System time: SYSTem:TIME 182559
Gets System time: SYSTem:TIME?

3.2 System Date

Description Sets system date.
Gets system date.

Command Syntax SYSTem:DATE <yyyymmdd>

Query Format SYSTem:DATE?

Query Syntax String

Examples Sets System date: SYSTem:DATE 20200902
Gets System date: SYSTem:DATE?

3.3 IP Address

DescriptionSets Sets a host name for the analyzer in network.
Gets IP address.

Command Syntax SYSTem:COMMunicate:LAN:IPADdress <"xxx.xxx.xxx.xxx">

Query Format SYSTem:COMMunicate:LAN:IPADdress

Query Syntax IP adress String

Examples SYSTem:COMMunicate:LAN:IPADdress "192.168.1.12"
SYSTem:COMMunicate:LAN:IPADdress?

3.4 Gateway

Description Sets the gateway for the analyzer in the network. The gateway will be fetched automatically if the IP assignment is set to DHCP. Gets gateway.

Command Syntax SYSTem:COMMunicate:LAN:GATeway <"xxx.xxx.xxx.xxx">

Query Format SYSTem:COMMunicate:LAN:GATeway?

Query Syntax gateway string.

Examples SYSTem:COMMunicate:LAN:GATeway "192.168.1.1"
SYSTem:COMMunicate:LAN:GATeway?

3.5 Subnet Mask

Description Sets the subnet mask according to the PC network Settings. The subnet mask will be set automatically if the IP assignment is set to DHCP.

Command Syntax SYSTem:COMMunicate:LAN:SMASk <"xxx.xxx.xxx.xxx">

Query Format SYSTem:COMMunicate:LAN:SMASk?

Query Syntax Subnet mask string

Examples SYSTem:COMMunicate
LAN:SMASk?

3.6 IP Configuration

Description Toggles the IP assignment Setting between static (manual) and DHCP (dynamic assignment) mode. Gets IP config.

Command Syntax SYSTem:COMMunicate:LAN:TYPE STATIC,DHCP

Query Format SYSTem:COMMunicate:LAN:TYPE?

Query Syntax Enumeration

Examples SYSTem:COMMunicate:LAN:TYPE DHCP
SYSTem:COMMunicate:LAN:TYPE?

3.7 Language

Description Sets language.
Gets language.

Command Syntax SYSTem:LANGuage <parameter>
<parameter>={English}
<parameter>={Schinese}

Query Format SYSTem:LANGuage?

Query Syntax Enumeration

Examples Sets language SYSTem:LANGuage SCHINESE
Gets language SYSTem:LANGuage

3.8 Power On Type

Description Set analyzer to power on in default, user, or last state.
Gets power on type.

Command Syntax SYSTem:PON:TYPE <parameter>
<parameter>={DFT}
<parameter>={Last}
<parameter>={User}

Query Format SYSTem:PON:TYPE?

Query Syntax Enumeration

Examples SYSTem:PON:TYPE DFT

3.9 System Preset

example Presets the instrument. The preset type is based on the Setting of Preset Type: DFT, User or Last.

Command Syntax SYSTem:PRESet

Example SYSTem:PRESet 3.2.10

3.10 System Restart

Description Restart the instrument (part of machine may not support).

Command Syntax SYSTem:REStart

Example SYSTem:REStart

3.11 Preset Type

Command Syntax SYSTem:PRESet:TYPE <parameter>
 <parameter>={DFT}
 <parameter>={Last}
 <parameter>={User}

Query Format SYSTem:PRESet:TYPE?

Description Uses this command to preset the analyzer to default, user, or last state. Gets preset type.

Example SYSTem:PRESet:TYPE DFT

3.12 Factory ReSet

Description Sets both the measure and setting parameters to factory preset parameters.

Command Syntax SYSTem:FDEFault

Example SYSTem:FDEFault

3.13 Enable Option

Description Use this command to enable the specified option with the license key, please restart the instrument to make license active.

Command Syntax SYSTem:LKEY <"option">,<"license key"> Range <option>= {Meas} <option>= {EMI}
 <option>= {CAT} <option>= {TG}

Example SYSTem:LKEY EMI,fjbdajffnklmgwno

3.14 Installed Options Query

Description Returns a list of the options that are installed.

Command Syntax SYSTem:OPTions?

Example SYSTem:OPTions?
Returns:
Meas,TG

3.15 Power Off

Description Use this command to turn off the instrument.

Command Syntax SYSTem:POWer:OFF

Description Use this command to turn off the instrument.

Example :SYSTem:POWer:OFF

3.16 Screenshot Data

Description Query the screenshot data(.bmp)

Command Syntax HCOPy:SDUMp:DATA?

Example HCOPy:SDUMp:DATA?

3.17 System Info

Description Query the system message of the instrument.

Command Syntax SYSTem:CONFigure:SYSTem?

Example SYSTem:CONFigure:SYSTem?

Instrument Subsystem

4.1 Instrument Mode

Description Sets instrument mode.

Command Format INSTRument <option>
<option>={SA}
<option>={CAT}

Query Syntax INSTRument?

Example INSTRument CAT

4.2 Measure Mode

Example Sets measure mode.
Gets measure mode.

Command Syntax INSTRument:MEASure <option>
<option>={OFF} ,<option>={ACPR}
<option>={CHPower},<option>={OBW}
<option>={TPOWer},<option>={SPECtrogram}
<option>={TOI} .

Query Syntax INSTRument:MEASure?

Example INSTRument:MEASure ACPR

Initiate Subsystem

5.1 Single Sweep

Description Sets single sweep.

Command Syntax INITiate[:IMMEDIATE]

Example INITiate:IMMEDIATE

5.2 Continuous or Single Sweep

Description Sets continuous sweep mode on-off.
Gets continuous sweep mode state.

Command Syntax INITiate:CONTinuous <state>
<state>={OFF,ON or 0,1}

Query Syntax INITiate:CONTinuous?

Example INITiate:CONTinuous OFF

Sense Subsystem

Note: all values, such as frequency must be typed in scientific notation
For example 2GHz = 2e+9

6.1 Center Frequency

Description Sets the center frequency of the spectrum analyzer.
Gets the center frequency.

Command Syntax FREQUency:CENTer <freq>
<freq>={50 Hz 3.199999950 GHz(2.999999950 GHz, 2.099999950 GHz, 1.799999950 GHz, 1.499999950 GHz, 0.999999950 GHz)}
Zero Span: 0 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)

Query Syntax FREQUency:CENTer?

Example FREQUency:CENTer 2e+2
FREQUency:CENTer?
Returns:
2.0000000000E+02

6.2 Start Frequency

Description Sets the start frequency of the spectrum analyzer. Gets the start Frequency.

Command Syntax FREQUency:STARt <freq>
<freq>={0 Hz 3.199999900 GHz(2.999999900 GHz, 2.099999900 GHz, 1.799999900 GHz, 1.499999900 GHz, 0.999999900 GHz)}
Zero Span: 0 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)

Query Syntax FREQUency:STARt?

Example FREQUency:STARt 100 Hz

6.3 Stop Frequency

Description Sets the stop frequency of the spectrum analyzer.
Gets the stop frequency.

Command Syntax FREQUency:STOP <freq>
<freq>={100 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)} Zero Span: 0 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)

Query Syntax FREQUency:STOP?

Example FREQUency:STOP 1.0 GHz

6.4 Center Frequency Step

Description Specifies the center frequency step size.
Gets the center frequency step.

Command Syntax FREQUency:CENTer:STEP <freq>
 <freq>={1 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)}

Query Syntax FREQUency:CENTer:STEP?

Example FREQUency:CENTer:STEP 2 MHz

6.5 Center Frequency Step Mode

Description Specifies whether the step size is set automatically based on the span.
 Gets center frequency step mode

Command Syntax Format FREQUency:CENTer:STEP:AUTO <state>
 <state>={OFF,ON or 0,1}

Query Syntax Format FREQUency:CENTer:STEP:AUTO?

Example FREQUency:CENTer:STEP:AUTO OFF

6.6 CF—>Step

Description Sets step value equal to center frequency.

Command Syntax FREQUency:CENTer:SET:STEP

Example FREQUency:CENTer:SET:STEP

6.7 Frequency Span

Description Sets the frequency span. Setting the span to 0 Hz puts the analyzer into zero span

Command Syntax FREQUency:SPAN <freq>
 <freq>={0 Hz, 100 Hz 3.2GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)}

Query Syntax FREQUency:SPAN?

Example FREQUency:SPAN 1 GHz

6.8 Span

Description Sets the frequency span.

Command Syntax FREQUency:SPAN:<state>
 <state>={FULL, ZERO, and PREVIOUS}

Example FREQUency:SPAN:FULL

6.9 Zoom

Description Sets the frequency span to wither half or double the previous span setting.

Command Syntax FREQUency:SPAN:<parameter>
 <parameter>={HALF or DOUBLE}
 DOUBLE<zooMS in>
 HALF<zooMS out>

Example FREQUency:SPAN:HALF
FREQUency:SPAN:DOUBle

6.10 Auto Tune

Description Auto tune the spectrum analyzer parameter to display the main signal.

Command Syntax FREQUency:TUNE:IMMEDIATE

Example FREQUency:TUNE:IMMEDIATE

6.11 Reference Level

Description Sets the reference level for the Y-axis.
Gets reference level.

Command Syntax DISPlay:WINDow:TRACe:Y:RLEVel <parameter>
<parameter unit is dBm>={ -100 dBm 30 dBm }
<parameter unit is dBmV>={ -53.01 dBmV 76.99 dBmV }
<parameter unit is dBuV>={ 6.99 dBuV 136.99 dBuV }
<parameter unit is Volts>={ 2.24 uV 7.07 V }
<parameter unit is Watts>={ 100 fW 1 W }

Query Syntax DISPlay:WINDow:TRACe:Y:RLEVel?

Example DISPlay:WINDow:TRACe:Y:RLEVel 20 DBM

6.12 Input Attenuator

Description Sets the input attenuator of the spectrum analyzer.
Gets the input attenuator.

Command Syntax POWer:ATTenuation <value>
<value>={0 dB 50 dB }

Query Syntax POWer:ATTenuation?

Example POWer:ATTenuation 10

6.13 Attenuator Auto Mode

Description Turns on/off auto input port attenuator state.
Gets input port attenuator state.

Command Syntax POWer:ATTenuation:AUTO <state>
<state>={OFF,ON or 0,1}

Query Syntax POWer:ATTenuation:AUTO?

Example POWer:ATTenuation:AUTO?
POWer:ATTenuation:AUTO OFF

6.14 Preamp on-off

Description Turns the internal preamp on/off. Gets preamp on-off state.

Command Syntax POWer:GAIN <state>
<state>={OFF,ON or 1,0}

Query Syntax POWer:GAIN?

Example POWer:GAIN ON
POWer:GAIN?

6.15 Amplitude Offsets

Description Sets reference offsets.
Gets reference offsets.

Command Syntax DISPlay:WINDow:TRACe:Y:SCALe:RLEVEL:OFFSet <value>
<value>= {-300dB 300dB}

Query Syntax DISPlay:WINDow:TRACe:Y:SCALe:RLEVEL:OFFSet?

Example DISPlay:WINDow:TRACe:Y:SCALe:RLEVEL:OFFSet 2

6.16 Amplitude Units

Description Specifies amplitude units for the input, output and display.
Gets amplitude units.

Command Syntax UNIT:POWer <mode>
<mode>={DBM, DBMV, DBUV, V, or W }

Query Syntax UNIT:POWer?

Example UNIT:POWer DBMV

6.17 Scale Tupe

Description Toggles the vertical graticule divisions between logarithmic unit and linear unit.
The default logarithmic unit is dBm, and the linear unit is V.
Gets scale type.

Command Syntax DISPlay:WINDow:TRACe:Y:SPACing <parameter>
<parameter>={LINear or LOGarithmic}

Query Syntax DISPlay:WINDow:TRACe:Y:SPACing?

Example DISPlay:WINDow:TRACe:Y:SPACing LINear

6.18 ScaleDiv

Description Sets the per-division display scaling for the y-axis when scale type of Y axis is set to Log.
Gets ScaleDiv when scale type of Y axis is set to Log.

Command Syntax DISPlay:WINDow:TRACe:Y<:SCALe>:PDIVision <integer>
<integer>= {1 dB 10 dB }

Query Syntax DISPlay:WINDow:TRACe:Y<:SCALe>:PDIVision?

Example DISPlay:WINDow:TRACe:Y:PDIVision 10 dB

6.19 Correction Off

Description Turn off the amplitude correction function off and all of the correction sets are off.

Command Syntax CORRection:OFF

Example SENSE:CORRection:OFF

6.20 Correction Apply State

Description Turns on or off the amplitude corrections.
When turned on, only the correction sets that were turned on are enabled.
When turned off, all of the correction Sets are disabled.
If there is no correction enabled, state can not be set to on.

Command Syntax CORRection:CSET:ALL:STATe <parameter>
<parameter>={OFF,ON or 0,1}

Query Syntax CORRection:CSET:ALL:STATe?

Example SENSE:CORRection:CSET:ALL:STATe OFF

6.21 Correction X State Off

Description Turns the amplitude correction function on/off.
Gets the amplitude correction function state.

Command Syntax CORRection:CSET<parameter>:OFF
<parameter>={1,2,3, or 4}

Query Syntax CORRection:CSET:STATe?

Example CORRection:CSET2:OFF

6.22 Correction Data

Description Set correction X data 1,2,3,4
Read correction X data.

Command Syntax CORRection:CSET<parameter>:DATA
<parameter>={1,2,3, or 4}

Query Syntax CORRection:CSET<parameter>:DATA?

Example CORRection:CSET2:DATA?

6.23 Current Correction Select

Description Set current correction for load COR file onto proper CorrectionX.
Read current correction.

Command Syntax CORRection:SElect<parameter>
<parameter>={1,2,3, or 4}

Query Syntax CORRection:SElect?

Example CORRection:CSET2:SElect 1

6.24 Load Correction Data

Description	Load correction data.
Command Syntax	MMEMory:LOAD:CORRection:CSET <parameter> <name.COR> <parameter>={1,2,3, or 4}
Example	MMEMory:LOAD:CORRection:CSET1 "oldname.COR"

6.25 Input Impedance

Description	Set the input impedance for voltage-to-power conversions. Get the input impedance.
Command Syntax	CORRection:IMPedance<value> <value>={50 OHM or 75 OHM}
Query Syntax	CORRection:IMPedance?
Example	CORRection:IMPedance? CORRection:IMPedance OHM75

6.26 Resolution Bandwidth

Description	Specifies the resolution bandwidth. For numeric entries, all RBW types choose the nearest (arithmetically, on a linear scale, rounding up) available RBW to the value entered.
Command Syntax	BWIDth <freq> <freq>={10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 KHz, 3 KHz, 10 KHz, 30 KHz, 100 KHz, 300 KHz, 1 MHz}
Query Syntax	BWIDth?
Example	BWIDth 1 KHz

6.27 Resolution Bandwidth Auto Mode

Description	Turns on/off auto resolution bandwidth state.
Command Syntax	BWIDth:AUTO <state> <state>={OFF, ON or 0,1}
Query Syntax	BWIDth:AUTO?
Example	BWID:AUTO On

6.28 Video Bandwidth

Description	Specifies the video bandwidth.
Command Syntax	BWIDth:VIDeo <freq> <freq>={1 Hz, 3 Hz, 10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 KHz, 3 KHz, 10 KHz, 30 KHz, 100 KHz, 300 KHz, 1 MHz }
Query Syntax	BWIDth:VIDeo?

Example BWIDth:VIDeo 10 KHZ

6.29 Auto Video Bandwidth State

Description Turns on/off auto video bandwidth state.

Command Syntax BWIDth:VIDeo:AUTO <state>
<state>={OFF, ON or 0,1}

Query Syntax BWIDth:VIDeo:AUTO?

Example BWIDth:VIDeo:AUTO OFF

6.30 Video to Resolution Bandwidth Ratio

Description Specifies the ratio of the video bandwidth to the resolution bandwidth

Command Syntax BWIDth:VIDeo:RATio <number>
<number>={0.001, 0.003, 0.01, 0.03, 0.1, 0.3, 1.0, 3.0, 10.0, 30.0, 100.0, 300.0, 1000.0 }

Query Syntax BWIDth:VIDeo:RATio?

Example BWIDth:VIDeo:RATio 30

6.31 Auto Video to Resolution Bandwidth Ratio State

Description Turns on/off auto video to resolution bandwidth ratio.

Command Syntax BWIDth:VIDeo:RATio:CONfig <state>
<state>={OFF, ON or 0, 1}

Query Syntax BWIDth:VIDeo:RATio:CONfig?

Example BWIDth:VIDeo:RATio:CONfig?

6.32 Filter Type

Description Sets filter type.
Gets filter type

Command Syntax FILTer:TYPE <type>
<type>={EMI or GAUSS}

Query Syntax FILTer:TYPE?

Example FILTer:TYPE EMI

6.33 Trace Mode

Description Selects the display mode for the selected trace.

Command Syntax TRACe <1,2,3,4>:MODE <parameter>

Parameter	Description
WRITe	puts the trace in the normal mode, updating the data.
MAXHold	displays the highest measured trace value for all the data that has been measured since the function was turned on.
MINHold	displays the lowest measured trace value for all the data that has been measured since the function was turned on.
VIEW	turns on the trace data so that it can be viewed on the display.
BLANK	turns off the trace data so that it is not viewed on the display.
AVERage	averages the trace for test period.

Query Syntax TRACe 1,2,3,4:MODE?

Example TRAC1:MODE VIEW

6.34 Query Trace Data

Description Returns the current displayed data.

Query Syntax TRACe:DATA? <parameter>
<parameter>={1,2,3, or 4}

Example TRACe:DATA? 1

6.35 Query Trace Sweep State

Description Returns 1 if trace scan is completed else returns 0.

Query Syntax TRACe:SWEep:STATe?

Example TRACe:SWEep:STATe?

6.36 Trace Data Format

Description Sets trace data type.
Gets trace data type.

Command Syntax FORMat <parameter>
<parameter>={ASCIi or REAL}

Query Syntax FORMat?

Example FORMat ASCIi

6.37 Trace Math Type

Description Sets trace math type.
Gets trace math type.

Command Syntax TRACe:MATH:TYPE <parameter>

Parameter	Description
Off	turns off the trace math function.
PDIF	The difference between the 2 selected signals. This compares the absolute power difference. For example, 2 signals of -20 and -26 dBm (A and B respectively) yield approximately -21.2 dBm.
PSUM	The sum of 2 signals. This combines the absolute power levels.
LOFF	Take a signal and offset it a value in dB. The "ref" is the offset of the signal from 0 dB.
LDIF	Take the relative difference between 2 signals. Ex. A is -20 dB and B is -26 dB, the value of this will be 6dB. Use the "ref" value to move the signal.

Query Syntax TRACe:MATH:TYPE?

Example TRACe:MATH:TYPE PSUM

6.38 Trace Math Variable X

Description Sets trace math variable X.
Gets trace math variable X.

Command Syntax TRACe:MATH:X <variable>
<variable>={A,B, or C}

Query Syntax TRACe:MATH:X?

Example TRACe:MATH:X A

6.39 Trace Math Variable Y

Description Sets trace math variable Y.
Gets trace math variable Y.

Command Syntax TRACe:MATH:Y <variable>
<variable>={A,B, or C}

Query Syntax TRACe:MATH:Y?

Example TRACe:MATH:Y A

6.40 Trace Math Output

Description Sets trace math output.
Gets trace math output.

Command Syntax TRACe:MATH:Z <variable>
<variable>={A,B, or C}

Query Syntax TRACe:MATH:Z?

Example TRACe:MATH:Z A

6.41 Trace Math Const

Sets trace math const.
Gets trace math const.

Command Syntax TRACe:MATH:CONSt <parameter>
<parameter>={-300dB 300 dB}

Query Syntax TRACe:MATH:CONSt?

Example TRACe:MATH:CONSt 7

6.42 Type of Detection

Description Specifies the detection mode. For each trace interval (bucket), average detection displays the average of all the samples within the interval.

Command Syntax DETector:TRACe<trace> <parameter>

Parameter	Description
NEGative	Negative peak detection displays the lowest sample taken during the interval being displayed. POSitive: Positive peak detection displays the highest sample taken during the interval being displayed.
SAMPle	Sample detection displays the sample taken during the interval being displayed, and is used primarily to display noise or noise-like signals. In sample mode, the instantaneous signal value at the present display point is placed into memory. This detection should not be used to make the most accurate amplitude measurement of non noise-like signals.
AVERage	Average detection is used when measuring the average value of the amplitude across each trace interval (bucket). The averaging method used by the average detector is set to either video or power as appropriate when the average type is auto coupled.
NORMAL	Normal detection selects the maximum and minimum video signal values alternately. When selecting Normal detection, "Norm" appears in the upper-left corner.
QUASi	Quasipeak detection is a form of detection where a signal level is weighted based on the repetition frequency of the spectral components making up the signal. That is to say, the result of a quasi-peak measurement depends on the repetition rate of the signal.

Query Syntax DETector:TRACe<trace>?

Example DETector:TRAC1 AVERage

6.43 Average Type

Description Toggle the average type between Log power, power and voltage.

Command Syntax AVERage:TYPE <mode>
<mode>={LOGPower,POWer, or VOLTage}

Query Syntax AVERage:TYPE?

Example AVERage:TYPE VOLTage

6.44 Average Number

Description Specifies the number of measurements that are combined.

Command Syntax AVERage:TRACe<parameter>:COUNT <integer>
<parameter>={1,2,3,or 4}
<integer>={1 999}

Query Syntax AVERage:TRACe<parameter>:COUNT?

Example AVERage:TRACe1:COUNt 10

6.45 Average Restart

Description Restarts the trace average. Only available when average is on.

Command Syntax AVERage:TRACe<parameter>:CLEar
<parameter>={1,2,3,or 4}

Example AVERage:TRAC1:CLEar

6.46 SweepMode

Description Sets sweep mode.
Gets sweep mode.

Command Syntax SWEep:MODE <parameter>
<parameter>={AUTO, FFT, SWEEP}
RBW must be in range for FFT

Query Syntax SWEep:MODE?

Example SWEep:MODE SWEEP

6.47 Sweep Time

Description Specifies the time in which the instrument sweeps the display. A span value of 0 Hz causes the analyzer to enter zero span mode. In zero span the X-axis represents time rather than frequency.

Command Syntax SWEep:TIME <time>
<time>={917us 1000 s }

Query Syntax SWEep:TIME?

Example SWEep:TIME 5s

6.48 Sweep Time State

Description Turns on/off auto sweep time state.

Command Syntax SWEep:TIME:AUTO <state>
<state>={OFF, ON or 0, 1}

Query Syntax SWEep:TIME:AUTO?

Example SWEep:TIME:AUTO ON

6.49 Sweep Speed

Description Toggles the sweep speed between normal and accuracy.
<parameter>={ACCURacy or NORMAl }

Command Syntax SWEep:SPEed <parameter>

Query Syntax SWEep:SPEed?

Example SWEep: SPEed NORMAl

6.50 Sweep Numbers

Description Sets sweep numbers, when single sweep on.
Gets sweep numbers, when single sweep on.

Command Syntax SWEep:COUNT <integer>
<integer>={1 99999 }

Query Syntax SWEep:COUNT?

Example SWEep:COUNT 10

6.51 QPD Time

Description Sets QPD Time.
Gets QPD Time.

Command Syntax QPD:DWELI:TIME <time>
<time>={0us 10s(qusai-peak: 900us 30ks) }

Query Syntax QPD:DWELI:TIME?

Example QPD:DWELI:TIME 10s

6.52 Grid Brightness

Description Sets grid brightness.
Gets grid brightness.

Command Syntax TRACe:GRATicule:GRID:BRIGhtness <value>
<value>={0 100 }

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

Example DISPlay:WINDow:TRACe:GRATicule:GRID:BRIGhtness 30

6.53 Display Line on-off

Description Toggles the display line between on and off.
Gets the display line state.

Command Syntax DISPlay:WINDow:TRACe:Y:DLINe:STATe <parameter>
<parameter>={OFF,ON or 0,1 }

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

Example DISPlay:WINDow:TRACe:Y:DLINe:STATe ON

6.54 Display Line

Description Sets the amplitude value for the display line.
Gets the amplitude value for the display line.

Command Syntax DISPlay:WINDow:TRACe:Y:DLINe <value>
<value>={Ref Level Ref Level - 100 dBm }

Query Syntax DISPlay:WINDow:TRACe:Y:DLINe?

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

Calculate Subsystem

7.1 Marker ON/OFF

Description Toggles the selected marker status between on and off.
Gets marker state.

Command Syntax CALCulate:MARKer<trace>:STATe <parameter>
<trace>={1,2,3,4}
<parameter>={OFF,ON or 0,1}

Query Syntax CALCulate:MARKer<number>:STATe?

Example CALCulate:MARK1:STATe ON

7.2 Marker All Off

Description Turn all the markers off.

Command Syntax CALCulate:MARKer:AOFF

Example

CALCulate:MARKer:AOFF

7.3 Marker Mode

Description Selects the type of markers that you want to activate.
Gets the type of markers.

Command Syntax CALCulate:MARKer<trace>:MODE <mode>
<trace>={1,2,3,4}
<mode>={POSITION, DELTA, BAND, OFF}

Query Syntax CALCulate:MARKer<parameter>:MODE?

Example CALCulate:MARK1:MODE POSITION

7.4 Marker to Trace

Description Assigns the specified marker to the designated trace 1, 2, 3 or 4.
Gets the specified marker to the designated trace.

Command Syntax CALCulate:MARKer<marker>:TRACe <trace>
<marker>={1,2,3,4}
<trace>={1,2,3,4}
trace 1=trace A, trace 2=trace B

trace 3=trace 3, trace 4=trace D

Query Syntax CALCulate:MARKer1<trace>:TRACe?

Example CALCulate:MARK1:TRAC 4

7.5 Marker Relative To

Description	Sets marker relative to. Gets marker relative to.
Command Syntax	CALCulate:MARKer<trace>:RELative:TO:MARKer <trace>={1,2,3,4}
Query Syntax	CALCulate:MARKer<trace>:RELative:TO:MARKer?
Example	CALCulate:MARKer1:RELative:TO:MARK 3

7.6 Marker X Value

Description	Positions the designated marker on its assigned trace at the specified trace X value. The value is in the X-axis units, which can be a frequency or time. The query returns the current X value of the designated marker. When the readout mode is frequency, the query returns the X value of the span of the marker in integer and the unit is "Hz". When the readout mode is time or period, the query returns the X value of the span of the marker in scientific notation and the unit is "s".
Command Syntax	CALCulate:MARKer<trace>:X <parameter > <trace>={1,2,3,4} <parameter>={0 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz) or 10 ms 1000 s }
Query Syntax	CALCulate:MARKer<trace>:X?
Example	CALCulate:MARKer1:X 2e+9 CALCulate:MARKer4:X 200 ms CALCulate:MARKer4:X?

7.7 Reference Marker X Value

Description	Positions the designated reference marker on its assigned trace at the specified trace X value. The value is in the X-axis units, which can be a frequency or time. The query returns the current X value of the designated reference marker. This command only can be used when marker mode is DELTa, BAND, Reference Command: CALCulate:MARKer 1, 2, 3, 4:MODE
	When the readout mode is frequency, the query returns the X value of the span of the marker in integer and the unit is "Hz". When the readout mode is time or period, the query returns the X value of the span of the marker in scientific notation and the unit is "s".
Command Syntax	CALCulate:MARKer<trace>:X:REFerenc <parameter> <trace>={1,2,3,4} <parameter>={0 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz) or 10 ms 1000 s }
Query Syntax	CALCulate:MARKer<trace>:X:REFerence?
Example	CALCulate:MARKer1:X:REFerence 1.6 GHz

7.8 Marker Delta X Value

Description	This command positions the designated delta marker on its assigned trace at the specified trace X value. The value is in the X-axis units, which can be a frequency
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or time. The query returns the current X value of the designated delta marker. This command only can be used when marker mode is DELTA, BAND, Reference Command: CALCulate:MARKer<marker>:MODE

When the readout mode is frequency, the query returns the X value of the span of the marker in integer and the unit is "Hz". When the readout mode is time or period, the query returns the X value of the span of the marker in scientific notation and the unit is "s".

Command Syntax CALCulate:MARKer<trace>:X:DELTA <parameter>
 <trace>={1,2,3,4}
 <parameter>={0 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz) or 10 ms 1000 s}

Query Syntax CALCulate:MARKer<trace>:X:DELTA?

Example CALCulate:MARKer2:X:DELTA 1.6 GHz

7.9 Center Pair Marker X Value

Description Sets the center frequency of the center pair marker and the default unit is Hz. Gets the center frequency of the center pair marker. This command only can be used when marker mode is DELTA, BAND, Reference Command: CALCulate:MARKer<marker>:MODE

When the readout mode is frequency, the query returns the X value of the span of the marker in integer and the unit is "Hz". When the readout mode is time or period, the query returns the X value of the span of the marker in scientific notation and the unit is "s".

Command Syntax CALCulate:MARKer<trace>:X:CENTer <parameter>
 <trace>={1,2,3,4}
 <parameter>={0 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz) or 10 ms 1000 s}

Query Syntax CALCulate:MARKer<trace>:X:CENTer?

Example CALCulate:MARKer3:X:CENTer 1.6 GHz

7.10 Span Pair Marker X Value

Description Sets the X value corresponding to the span of the Span Pair marker. Gets the X value corresponding to the span of the Span Pair marker. This command only can be used when marker mode is DELTA, BAND, Reference Command: CALCulate:MARKer 1, 2, 3, 4:MODE

When the readout mode is frequency, the query returns the X value of the span of the marker in integer and the unit is "Hz". When the readout mode is time or period, the query returns the X value of the span of the marker in scientific notation and the unit is "s".

Command Syntax CALCulate:MARKer<trace>:X:SPAN <parameter>
 <trace>={1,2,3,4}
 <parameter>={0 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz) or 10 ms 1000 s }

Query Syntax CALCulate:MARKer<trace>:X:SPAN?

Example CALCulate:MARKer4:X:SPAN 2 GHz

7.11 Query Marker Y Value

Description Reads the current Y value for the designated marker.
 Reads the results of noise marker.
 Make sure that Marker is on

Query Syntax CALCulate:MARKer<trace>:Y?
 <trace>={1,2,3,4}

Example CALCulate:MARKer1:Y?
 Return: -25

7.12 Reference Marker Y Value

Description Gets the current Y value for the designated reference marker.
 Only available when marker mode is DELTA or BAN.
 Reference Command:
 CALCulate:MARKer<trace>:MODE

Query Syntax CALCulate:MARKer<trace>:Y:REFerence?
 <trace>={1,2,3,4}

Example CALCulate:MARKer1:Y:REFerence?
 Return:
 -25

7.13 Marker Delta Y Value

Description Gets the current Y value for the designated delta marker.
 This command only can be used when marker mode is DELTA, BAND,
 Reference Command:
 CALCulate:MARKer<trace>:MODE

Query Syntax CALCulate:MARKer<trace>:Y:DELTA?
 <trace>={1,2,3,4}

Example CALCulate:MARKer1:Y:DELTA?
 Return:
 -25

7.14 Marker Table

Description Toggles the marker table between on and off. Gets the status of the marker table.

Command Syntax CALCulate:MARKer:TABLE <mode>
 <mode>={OFF, ON or 0, 1}

Query Syntax CALCulate:MARKer:TABLE?

Example CALCulate:MARKer:TABLE ON

7.15 Marker to Stop Frequency

Description Sets the start frequency to the value of the specified marker frequency.
 This command is not available in zero span. If the Marker is OFF, it will set the marker on center.

Command Syntax CALCulate:MARKer<trace>:START
<trace>={1,2,3,4}

Example CALCulate:MARKer1:START

7.16 Marker to Stop Frequency

Description Sets the stop frequency to the value of the specified marker frequency. Not available in zero span.
If the Marker is OFF, it will set the marker on center.

Command Syntax CALCulate:MARKer<trace>:STOP
<trace>={1,2,3,4}

Example CALCulate:MARKer1:STOP

7.17 Marker to Center Frequency

Description This command sets the center frequency equal to the specified marker frequency, which moves the marker to the center of the screen. Not available in zero span.
If the Marker is OFF, it will set the marker on center.

Command Syntax CALCulate:MARKer<trace>:CENTer
<trace>={1,2,3,4}

Example CALCulate:MARKer1:CENTer

7.18 Marker to Center Frequency Step

Description This command sets the center frequency step equal to the specified marker frequency. Not available in zero span. If the Marker is OFF, it will set the marker on center.

Command Syntax :CALCulate:MARKer<trace>:STEP
<trace>={1,2,3,4}

Example CALCulate:MARKer1:STEP

7.19 Marker to Reference Level

Description Sets the reference level equal to the specified marker frequency.
If the Marker is OFF, it will set the marker on center

Command Syntax CALCulate:MARKer<marker>]:RLEVEL
<marker>={1,2,3,4}

Example CALCulate:MARKer2:RLEVEL

7.20 Marker Delta to Center Frequency

Description sets the center frequency equal to the specified delta marker frequency.
Can be only used in DELTA, BAND marker mode:
Reference Command:CALCulate:MARKer<marker>:MODE <mode>

Command Syntax CALCulate:MARKer<marker>:DELTA:CENTer
<marker>={1,2,3,4}

Example CALCulate:MARKer3:DELTA:CENTer

7.21 Peak Search

Description Analyzer's internal peak identification routine is set to recognize a signal as a peak.

Command Syntax CALCulate:MARKer:PEAK:SEARch:MODE <mode>
<mode>={MAXimum or MINimum}

Query Syntax CALCulate:MARKer:PEAK:SEARch:MODE?

Example CALCulate:MARKer:PEAK:SEARch:MODE MINimum

7.22 Peak Threshold

Description Specifies the minimum signal level for the analyzers internal peak identification routine to recognize a signal as a peak. This applies to all markers and all windows. Gets the minimum signal level for the analyzers internal peak identification routine to recognize a signal as a peak.

Command Syntax CALCulate:MARKer:PEAK:THReshold <value>
<value>={ -200.0 dBm 200.0 dBm}

Query Syntax CALCulate:MARKer:PEAK:THReshold?

Example CALCulate:MARKer:PEAK:THReshold -50

7.23 Peak Excursion

Description Specifies the minimum signal excursion above the threshold for the internal peak identification routine to recognize a signal as a peak.

Command Syntax CALCulate:MARKer:PEAK:EXCursion <value>
<value>={0 dBm 200.0 dBm}

Query Syntax CALCulate:MARKer:PEAK:EXCursion?

Example CALCulate:MARKer:PEAK:EXCursion 10

7.24 Peak Table

Description Toggles the peak table between on and off. Gets the status of the peak table.

Command Syntax CALCulate:MARKer:PEAK:TABLE <parameter>
<parameter>={OFF, ON or 0,1}

Query Syntax CALCulate:MARKer:PEAK:TABLE?

Example CALCulate:MARKer:PEAK:TABLE ON

7.25 Query Peak Table Data

Description Return peak table data.

Query Syntax CALCulate:PEAK:TABLE?

Example CALCulate:PEAK:TABLE?

7.26 Continuous Peaking Marker

Description Toggles the continuous peak search function between on and off.
Gets the continuous peak search function state.

Command Syntax CALCulate:MARKer<marker>:CPEak <parameter>
<parameter>={OFF, ON or 0,1}

Query Syntax CALCulate:MARKer<marker>:CPEak?

Example CALCulate:MARKer1:CPEak ON

7.27 Peak Search

Description Performs a peak search based on the search mode settings. (based on the search mode settings, include: peak search mode, peak threshold and peak excursion.
Reference Commands:
CALCulate:MARKer:PEAK:SEARch:MODE
CALCulate:MARKer:PEAK:THReshold
CALCulate:MARKer:PEAK: EXCursion

Command Syntax CALCulate:MARKer<marker>:MAXimum
<marker>={1,2,3,4}

Example CALCulate:MARKer4:MAXimum

7.28 Next Peak Search

Description Places the selected marker on the next highest signal peak of the current marked peak.(based on the search mode settings, include: peak search mode, peak threshold and peak excursion.
Reference Commands:
CALCulate:MARKer:PEAK:SEARch:MODE
CALCulate:MARKer:PEAK:THReshold
CALCulate:MARKer:PEAK: EXCursion

Command Syntax CALCulate:MARKer<marker>:MAXimum:NEXT
<marker>={1,2,3,4}

Example CALCulate:MARKer1:MAXimum:NEXT

7.29 Marker Peak Left Search

Description Places the selected marker on the next highest signal peak to the left of the current marked peak. (based on the search mode settings, include: peak search mode, peak threshold and peak excursion. Reference Commands:
CALCulate:MARKer:PEAK:SEARch:MODE
CALCulate:MARKer:PEAK:THReshold
CALCulate:MARKer:PEAK: EXCursion

Command Syntax CALCulate:MARKer<marker>:MAXimum:LEFT
<marker>={1,2,3,4}

Example CALCulate:MARKer1:MAXimum:LEFT

7.30 Marker Peak Right Search

Description Places the selected marker on the next highest signal peak to the right of the current marked peak.

(based on the search mode settings, include: peak search mode, peak threshold and peak excursion.

Reference Commands:

CALCulate:MARKer:PEAK:SEARch:MODE

CALCulate:MARKer:PEAK:THReshold

CALCulate:MARKer:PEAK: EXCursion

Command Syntax CALCulate:MARKer<marker>:MAXimum:RIGHT
<marker>={1,2,3,4}

Example CALCulate:MARKer1:MAXimum:RIGHT

7.31 Peak to Peak Search

Description Positions a pair of delta markers on the highest and lowest points on the marker.

Command Syntax CALCulate:MARKer<marker>:PTPeak
<marker>={1,2,3,4}

Example CALCulate:MARKer1:PTPeak

7.32 Marker Function

Description Selects the marker function for the designated marker.
Gets the selected marker function for the designated marker.

Command Syntax CALCulate:MARK<marker>:FUNction <parameter>

Parameter	Description
OFF	refers to the normal function.
FCOun	refers to the frequency counter function.
OISe	refers to the noise measurement function.
NDB	refers to the N dB bandwidth function.

Query Syntax CALCulate:MARKer<marker>:FUNction?

Example CALCulate:MARK1:FUNction FCOunt

7.33 Query Frequency Counter

Description Query the frequency counter.
Marker function must be set to FCOunt.

Query Syntax CALCulate:MARKer<marker>:FCOunt:X?

Example CALCulate:MARKer1:FCOunt:X?

7.34 N dB Bandwidth Result

Description Gets the result of N dB bandwidth measurement.

Query Syntax CALCulate:MARKer<marker>:BANDwidth:RESult?

Example CALCulate:MARK1:BANDwidth:RESult?

7.35 N dB Bandwidth Reference Value

Description Sets the reference value of N dB bandwidth measurement.
Gets the reference value of N dB bandwidth measurement.

Command Syntax CALCulate:MARK1:BANDwidth:NDB <value>

Query Syntax CALCulate:MARK1:BANDwidth:NDB?

Example CALCulate:MARK1:BANDwidth:NDB 10 DB

7.36 Marker X-Axis Read Out

Description

Command Syntax CALCulate:MARKer<marker>:X:READout <parameter>
<marker>={1,2,3,4}
<parameter>={FREQuency, TIME, PERiod}

Query Syntax CALCulate:MARKer<marker>:X:READout?

Example CALCulate:MARKer1:X:READout FREQuency

7.37 Limit Test

Description Sets limit test.

Command Syntax CALCulate:LLINe:TEST:<parameter>
<parameter>={START, STOP}

Example CALCulate:LLINe:TEST:START
CALCulate:LLINe:TEST:STOP

7.38 Limit Test State

Description Gets limit test state.

Query Syntax :CALCulate:LLINe:TEST:STATe?

Example CALCulate:LLINe:TEST:STAT?

7.39 Limit Line State

Description Sets limit line state.
Gets limit line state.

Command Syntax CALCulate:LLINe<line>:STATe <mode>
<line>={1 or 2}
<mode>={OFF, ON or 0,1}

Query Syntax CALCulate:LLINe<line>:STATe?

Example CALCulate:LLINe1:STATe OFF

7.40 Limit Type

Description Mode sets a limit line to be either an upper or lower type limit line. An upper line will be used as the maximum allowable value when comparing with the data.
Gets limit type.

Command Syntax CALCulate:LLINe<line>:TYPE <parameter>
<line>={1 or 2}
<parameter>={UPPer or LOWer }

Query Syntax CALCulate:LLINe<line>:TYPE?

Example CALCulate:LLINe1: TYPE LOWer

7.41 Limit Mode

Description Sets limit mode.
Gets limit mode

Command Syntax CALCulate:LLINe<line>:MODE <mode>
<line>={1 or 2}
<mode>={LINE or POINT }

Query Syntax CALCulate:LLINe<line>:MODE?

Example CALCulate:LLINe1:MODE POINT

7.42 Limit Line Y-axis Value

Description Sets the Y-axis value of a limit line. Limit line Y-axis value is set independently and is not affected by the X-axis units.
Gets the Y-axis value of a limit line.

Command Syntax CALCulate:LLINe<line>:Y? <value>
<line>={1 or 2}
<value>={-400 dBm 330 dBm }

Query Syntax CALCulate:LLINe<line>:Y?

Example CALCulate:LLINe1:Y 5dBm

7.43 Define Limit Points Data

Description Use this command to define the limit points.
Gets the defined limit points.

Command Syntax CALCulate:LLINe<line>:DATA <x-axis>,<ampl>{,<x-axis>, <ampl>}

Query Syntax CALCulate:LLINe<line>:DATA?

Example CALC:LLINe1:DATA 10000000,-20,20000000,-30

7.44 Add Limit Point Data

Description Add limit point data

Command Syntax CALCulate:LLINe<line>:ADD <x-axis>,<ampl>
<X-axis>={ 0 3.2GHz}
< Amplitude>={ No Range}

Example CALCulate:LLINe1:ADD 10000000,-20

7.45 Delete Assigned Limit Point

Description Use this command to delete the assigned limit point.

Command Syntax CALCulate:LLINe<line>:DELEte <number>
<Xline>={ 1 or 2}
< number>={ No range}

Example CALCulate:LLINe1:DELEte 2

7.46 Delete All Limit Points

Description Use this command to define all the limits points.

Command Syntax CALCulate:LLINe<line>:ALL:DELEte

Example CALCulate:LLINe2:ALL:DELEte

Measurement Subsystem

8.1 Main Channel

Description Specifies the range of integration used in calculating the power in the main channel.
Gets the range of integration used in calculating the power in the main channel

Command Syntax ACPRatio:BWIDth:INTegration <freq>
<freq>={100 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)}

Query Syntax ACPRatio:BWIDth:INTegration?

Example ACPRatio:BWIDth:INTegration 20 MHz

8.2 Adjacent Channel Bandwidth

Description Specifies the bandwidth used in calculating the power in the adjacent channel.
Gets the bandwidth used in calculating the power in the adjacent channel.

Command Syntax ACPRatio:OFFSet:BWIDth <freq>
<freq>={100 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)}

Query Syntax ACPRatio:OFFSet:BWIDth?

Example ACPRatio:OFFSet:BWIDth 20 MHz

8.3 Channel Space

Description Sets the space value between the center frequency of main channel power and that of the adjacent channel power.
Gets adjacent channel space

Command Syntax ACPRatio:OFFSet <freq>
<freq>={100 Hz 700 MHz }

Query Syntax ACPRatio:OFFSet?

Example ACPR:OFFS 20 MHz

8.4 Query Main Channel Power

Description Return the main channel power of ACPR measurement.

Query Syntax MEASure:ACPRatio:MAIN?

Example MEASure:ACPRatio:MAIN?

8.5 Query Lower Adjacent Channel Power

Description Return the lower adjacent channel power of ACPR measurement.

Query Syntax MEASure:ACPRatio:LOWer:POWER?

Example MEASure:ACPRatio:LOWer:POWER?

8.6 Query Lower Adjacent Channel Power Ratio

Description Return the lower adjacent channel power to main channel power ratio.

Query Syntax MEASure:ACPRatio:LOWer?

Example MEASure:ACPRatio:LOWer?

8.7 Query Upper Adjacent Channel Power

Description Return the upper adjacent channel power of ACPR measurement.

Query Syntax MEASure:ACPRatio:UPPer:POWer?

Example MEASure:ACPRatio:UPPer:POWer?

8.8 Query Upper Adjacent Channel Power Ratio

Description Return the upper adjacent channel power to main channel power ratio.

Query Syntax MEASure:ACPRatio:UPPer?

Example MEASure:ACPRatio:UPPer?

8.9 Integration BW

Description Specifies the integration bandwidth to calculate the power.
Gets the integration bandwidth.

Command Syntax CHPower:BWIDth:INTEgration <freq>
<freq>={100 Hz 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)
Zero Span: 0 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz) }

Query Syntax CHPower:BWIDth:INTEgration?

Example CHPower:BWIDth:INTEgration 1.8 GHz

8.10 Channel Span

Description Sets the analyzer span for the channel power measurement.
Be sure the span is set larger than the integration bandwidth.

Command Syntax CHPower:FREQuency:SPAN:POWer

Example CHPower:FREQuency:SPAN:POWer

8.11 Query Channel Power and Power Spectral Density

Description Returns scalar results of main channel power, and power density

Query Syntax MEASure:CHPower?

Example MEASure:CHPower?

8.12 Query Channel Power

Description This command returns the value of the channel power in dBm units.

Query Syntax MEASure:CHPower:CHPower?

Example MEASure:CHPower:CHPower?

8.13 Query Power Spectral Density

Description This command returns the value of the channel power density in dBm/Hz.

Query Syntax MEASure:CHPower:DENSity?

Example MEASure:CHPower:DENSity?

8.14 Select the Method of OBW

Description This command toggles the method of OBW measurement between percent and dBc. Gets the method of OBW measurement.

Command Syntax OBWidth:METHOD <parameter>
<parameter>={PERCent or DBC}

Query Syntax OBWidth:METHOD?

Example OBW:METHOD PERCent

8.15 Percentage Method of OBW

Description Edit the percentage of signal power used when determining the occupied bandwidth. Press {**%**} to set the percentage ranging from 10.00% to 99.99%. Gets the percentage of signal power.

Command Syntax OBWidth:PERCent <parameter>
<parameter>={10 99.99}

Query Syntax OBWidth:PERCent?

Example OBW:PERCent 50

8.16 dBc Method of OBW

Description Specify the power level used to determine the emission bandwidth as the number of dB down from the highest signal point, within the occupied bandwidth span. Gets dBc value.

Command Syntax OBWidth:XDB <value>
<value>={0.1 100 }

Query Syntax OBWidth:XDB?

Example OBWidth:XDB 3

8.17 Query OBW and Centroid

Description Query the occupied bandwidth and bandwidth centroid according to the method you set.

Query Syntax MEASure:OBWidth?

Example MEASure:OBW?

8.18 Query OBW

Description Query the occupied bandwidth according to the method you set.
Query Centroid Result.

Query Syntax MEASure:OBWidth:OBWidth?

Example :MEASure:OBWidth:OBWidth?

8.19 Query OBW Centroid

Description Use this command to query the occupied bandwidth according to the method you set.

Query Syntax MEASure:OBWidth:CENTroid?

Example MEASure:OBWidth:CENTroid?

8.20 Query Transmit Frequency Error

Description Use this command to query transmit frequency error.

Query Syntax MEASure:OBWidth:OBWidth:FERRor?

Example MEASure:OBWidth:OBWidth:FERRor?

8.21 T-Power Center Frequency

Description Sets T-power center frequency.
Gets T-power center frequency.

Command Syntax TPOWer:FREQuency:CENTer? <freq>
<freq>={50 Hz 3.199999950 GHz(2.999999950 GHz, 2.099999950 GHz,
1.799999950 GHz, 1.499999950 GHz, 0.999999950 GHz
Zero Span: 0 3.2 GHz(3.0 GHz, 2.1 GHz, 1.8 GHz, 1.5 GHz, 1.0 GHz)}

Query Syntax TPOWer:FREQuency:CENTer?

Example TPOWer:FREQuency:CENTer 15KHz

8.22 T-Power Start Line

Description Sets T-power start line.
Gets T-power start line.

Command Syntax TPOWer:LLIMit <time>
<time>={0 1000 s }

Query Syntax TPOWer:LLIMit?

Example TPOWer:LLIMit 0.01

8.23 T-Power Stop Line

Description	Sets T-power stop line. Gets T-power stop line.
Command Syntax	TPOWER:RLIMit <time> <time>={0 1000 s }
Query Syntax	TPOWER:RLIMit?
Example	TPOWER:RLIMit 0.02

8.24 Query T-Power

Description	Query the result of T-power measurement.
Query Syntax	MEASure:TPOWER?
Example	MEASure:TPOWER?

8.25 Spectrogram State

Description	Sets spectrogram state. Gets spectrogram state.
Command Syntax	SPECtrogram:STATe? <parameter> <parameter>={RUN or PAUSE}
Query Syntax	SPECtrogram:STATe?
Example	SPECtrogram:STATe PAUSE

8.26 Spectrogram Restart

Description	Restart spectrogram.
Command Syntax	SPECtrogram:REStArt
Example	SPECtrogram:REStArt

8.27 Query Third-order Intercept Point result

Description	Gets the result of Third-order Intercept Point Data is returned as FREQ,POWER,FREQ,POWER....
Query Syntax	MEASure:TOI?
Example	MEASure:TOI?

8.28 Query Third-order Intercept Point

Description	Gets the min intercept of the Lower TOI(Lower 3rd) and the Upper TOI(Upper 3rd)
Query Syntax	MEASure:TOI:IP3?
Example	MEASure:TOI:IP3?

Trigger Subsystem

9.1 Trigger Type

Description Specifies the source (or type) of triggering used to start a measurement. Gets trigger type

Command Syntax TRIGger[:SEQuence]:SOURce <parameter>

Parameter	Description
IMMEDIATE	free-run triggering.
VIDeo	triggers on the video signal level.
EXTernal	allows you to connect an external trigger source.

Query Syntax TRIGger:SOURce?

Example TRIGger:SOURce IMMEDIATE

9.2 Video Trigger Level

Description Specifies the level at which a video trigger will occur. Video is adjusted using this command, but must also be selected using the command. Gets video Trigger Level.

Command Syntax TRIGger:VIDeo:LEVel <value>
<value ranges>
Unit is dBm: -300 dBm 50 dBm
unit is dBmV: -253.01 dBmV 96.99 dBmV
unit is dBuV: -193.01 dBuV 156.99 dBuV
unit is Volts: 223.61 aV 70.71 V
unit is Watts: 1.00E-33 W 100 W

Query Syntax TRIGger:VIDeo:LEVel?

Example TRIGger:VIDeo:LEVel 0.5 dBm

9.3 Trigger Edge

Description Activates the trigger condition that allows the next sweep to start when the external voltage (connected to EXT TRIG IN connector) passes through approximately 1.5 volts. The external trigger signal must be a 0V to +5V TTL signal. This function only controls the trigger polarity (for positive or negative-going signals).

Gets Trigger edge.

Command Syntax TRIGger:RFBurst:SLOPe <parameter>
<parameter>={POSitive or NEGative}

Query Syntax TRIGger:RFBurst:SLOPe?

Example TRIGger:RFBurst:SLOPe POSitive

TG Subsystem

10.1 TG On-Off

Description Sets TG on-off.
Gets TG state.

Command Syntax OUTPut[:STAtE] <state>
<state>={OFF, ON or 0,1}

Query Syntax OUTPut?

Example OUTPut ON

10.2 TG Level

Description Sets TG level.
Gets TG level.

Command Syntax SOURce:POWer <value>
<value>={0 dBm -20 dBm }

Query Syntax SOURce:POWer?

Example SOURce:POWer -20

10.3 TG Level Offsets

Description Sets TG level offsets.
Gets TG level offsets.

Command Syntax SOURce:CORRection:OFFSet <value>
<value>={200 dBm 200 dBm }

Query Syntax SOURce:CORRection:OFFSet?

Example SOURce:CORRection:OFFSet 1

10.4 TG Normalize on-off

Description Sets TG normalize on-off.
Gets TG normalize state.

Command Syntax CALCulate:NTData <parameter>
<parameter>={OFF, ON or 0, 1}

Query Syntax CALCulate:NTData?

Example CALCulate:NTData ON

10.5 TG Normalize Reference Level

Description Sets TG normalize reference level.
Gets TG normalize reference level.

Command Syntax DISPlay:WINDow:TRACe:Y:NRLevel <value>
<value>={200 dB 200 dB }

Query Syntax DISPlay:WINDow:TRACe:Y:NRLevel?

Example DISPlay:WINDow:TRACe:Y:NRLevel 10

10.6 TG Normalize Reference Position

Description Sets TG normalize reference position.
Gets TG normalize reference position.

Command Syntax DISPlay:WINDow:TRACe:Y:NRPosition <integer>
<integer>={0 100%}

Query Syntax DISPlay:WINDow:TRACe:Y:NRPosition?

Example DISPlay:WINDow:TRACe:Y:NRPosition 10

10.7 TG Normalize Reference Trace on-off

Description Sets TG normalize reference trace on-off.

Command Syntax DISPlay:WINDow:NTTRace <parameter>
<parameter>={OFF, ON or 0, 1}

Query Syntax DISPlay:WINDow:NTTRace?

Example DISPlay:WINDow:NTTRace ON

Demod Subsystem

11.1 Demod Mode

Description	Sets demod mode. Gets demod mode.
Command Syntax	DEMod <mode> <mode>={AM, FM, OFF}
Query Syntax	DEMod?
Example	DEMod AM

11.2 Demod Tim

Description	Sets demod time. Gets demod time.
Command Syntax	DEMod:TIME <time> <time>={5 ms 1000 s}
Query Syntax	DEMod:TIME?
Example	DEMod:TIME 5 ms

11.3 Earphone

Description	Sets earphone on-off. Gets earphone on-off.
Command Syntax	DEMod:EPHone <parameter> <parameter>={OFF, ON or 0, 1}
Query Syntax	DEMod:EPHone?
Example	DEMod:EPHone ON

11.4 Volume

Description	Sets volume value. Gets volume value.
Command Syntax	DEMod:VOLume? <value> <value>={0 10}
Query Syntax	DEMod:VOLume?
Example	DEMod:VOLume 5

Calibration Subsystem

12.1 Calibration On-Off

Description Sets calibration on-off.
Gets calibration on-off.

Command Syntax CALibration:STATe <parameter>
<parameter>={OFF, ON or 0, 1}

Query Syntax CALibration:STATe?

Example CALibration:STATe ON

Memory Subsystem

13.1 Store File

Description Store file

Command Syntax MMEMemory:STORe<Type>,<file>
<Type>={STA, TRC, COR, CSV, LIM, JPG, BMP, PNG}

Example MMEMemory:STORe STA,ABC.sta

13.2 Load File

Description Load file

Command Syntax MMEMemory:LOAD <Type>,<file>
<Type>={STA, TRC, COR, LIM }

Example MMEMemory:LOAD STA,ABC.sta

13.3 Delete File

Description Delete file or folder

Command Syntax MMEMemory:DELeTe <file>

Example MMEMemory:DELeTe ABC.sta