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3900 Series
Digital Radio Test Set
Remote Programming Manual

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Digital Radio Test Set

Remote Programming Manual

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10200 West York Street/ Wichita, Kansas 67215 U.S.A. / (316) 522-4981 / FAX (316) 524-2623

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Preface

ABOUT THIS MANUAL

This manual contains the following:

- Identifies conventions used in the manual;
- Describes common remote commands;
- Lists remote commands for Analog Duplex and 3900 Series Compatibility Commands.

Refer to the appropriate option programming manuals for Remote Commands specific to optional operating systems.

NOMENCLATURE STATEMENT

The 3901, 3902, 3920 and 3920B Digital Radio Test Set is the official nomenclature for the test sets currently included in the 3900 Digital Radio Test Set Series. In this manual, 3900, unit or Test Set, refers to the 3901, 3902, 3920 and 3920B Digital Radio Test Sets unless otherwise indicated.

INTENDED AUDIENCE

This manual is intended for personnel familiar with the use of remote command language. Review the 3900 Series Operation Manual prior to using the Test Set.

TEST SET REQUIREMENTS

Refer to the 3900 Series Operation Manual for information on the following:

- Safety Precautions
- Power Requirements
- Platform Performance Data Specifications
- Repacking / Shipping Test Set

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Chapter 1 - General Remote Operation

1.1 INTRODUCTION

The 3900 may be operated remotely via an interface conforming to IEEE 488.2 syntax and style. Several SCPI features have been implemented in the 3900 to facilitate system integration. These features include the extended status reporting structure, the error numbering scheme, the command mnemonic derivation rules (long and short form) and many of the frequently used commands. Many of the SCPI features included in the 3900 are not defined by the SCPI standard; therefore, the 3900 is not fully compliant with SCPI (Standard Commands for Programmable Instruments) requirements.

1.2 SYSTEM PREFIX COMMANDS

A System Prefix command is an optional command that can be included at the beginning of a remote command. If a system prefix is included in a command string, it must be applicable to the system currently loaded.

For example, :ANDX:CA:TRACe:AVERage:VALue 50 is only valid when Analog Duplex system is loaded. :CA:TRACe:AVERage:VALue 50 would be valid in any operating system because a system prefix is not included in the command.

Operating System	System Prefix Command
Analog Duplex	:ANDX
ARIB STD-T98	:ARIB
DMR	:DMR
dPMR	:DPMR
HPD®	:HPD
NXDN	:NXDN
P25	:PTF
TETRA BS	:TBS
TETRA BS T1	:TBST
TETRA DM	:TDM
TETRA MS	:TMS
TETRA MS T1	:TMST

1.3 REMOTE COMMAND DATA

The variables required in a 3900 Remote Command string depend on the command being issued. 3900 Remote Commands contain some, or all of the following data. Data that is not required or supported by the command string is not listed with the command.

Description:	Describes remote command set and query functions. Some commands are action only commands (initiate an action) or query only commands.
Parameter:	Lists variables used to define command parameters.
Query Data:	Identifies type of data returned from a query command.
Range:	Identifies range for defining command parameters such as frequency, level and averages.
Units:	Lists the units of measurement available for defining parameter.
Default Value:	Identifies parameter default value.
Set/Query Format:	Identifies parameter's program data element and query response data element. Query format identifies the unit of measurement the data is returned in when multiple units of measurement are available.
Example:	Provides an example of defining a parameter.
Query Response:	Provides an example of query command and returned data.
NOTE	Notes identify special circumstances or options required for a command to be valid.

1.4 CONVENTIONS USED IN MANUAL

1.4.1 Long and Short Forms

The elements of compound and query headers have a long and a short form, as defined by SCPI. Either the long or the short form may be entered as a command; other abbreviations are not permissible.

Example:

:CONFigure:OFFSet:ANALyzer:ENABle?

is interpreted the same as

:CONF:OFFS:ANAL:ENAB?

The short form is marked by upper case letters, the long form corresponds to the complete word. Uppercase and lowercase serve the above purpose only, as the Test Set does not make any distinction between upper and lowercase.

Queries always return the short form, or a numeric response in cases where the command provides a choice of numeric or character data.

1.4.2 Bracketed Elements

1.4.2.A Square Brackets [ ]

Elements within the compound common program header structure enclosed within square brackets are optional and may be omitted; the instrument processes the command in the same manner whether or not the bracketed element is included.

Example:

[AAA:]BBB[:CCC][:DDD]

is interpreted the same as

BBB

This formatting also applies to parameters. The ability to recognize the full command length ensures that the instrument complies with the SCPI standard in this respect.

1.4.2.B Braces { }

Parameters included within curly brackets may be included numerous times or not at all.

1.4.2.C Arrow Brackets < >

Text within angle brackets represents an actual value that needs to be inserted. For example, <freq> indicates a frequency value must be inserted in the command at this point.

1.4.3 Case Sensitivity

3900 software is not case-sensitive. Upper and lowercase characters are completely interchangeable. There is no conflict between milli (m) and mega (M) as both cannot be applied to the same data.

1.4.4 Choice Indicator

The vertical bar (|) separates a choice of parameters or commands. For example, 0 | 1 means '0 or 1.'

1.5 COMPOUND PROGRAM HEADERS

Compound program headers allow a complex set of commands to be compiled from a smaller set of basic elements in a tree structure. The elements of a compound program header are separated by a colon (:), each colon representing a change of level in the hierarchy. Each subsystem in this instrument is organized as a separate tree structure.

The compound program header may, optionally, be followed by one or more parameters encoded as program data functional elements. The semicolon ";" character is used as a delimiter to combine functional command elements. The command elements accepted by the Test Set are defined in and the SCPI Syntax and Style handbook.

NOTE	A leading colon is optional when writing command strings.

1.5.1 Valid Command Combination Examples

Example 1:

```
CONFigure:AF:ANALyzer:DISTortion:MTYPe AVER
CONFigure:AF:ANALyzer:DISTortion:WIDTh 35.2
CONFigure:AF:ANALyzer:DISTortion:FREQuency 2kHz
CONFigure:AF:ANALyzer:DISTortion:AVERerage 25
```

In this example, the compound header elements "CONFigure", "AF", "ANALyzer" and "DISTortion" appear in all command functions. The full compound header starting from the tree root can be used for each command, or commands can be combined using the special rules which apply to compound headers.

The above commands can be combined into one command string as follows:

CONFigure:AF:ANALyzer:DISTortion:MTYPe AVER;WIDTh 35.2;FREQuency 2kHz;AVERage 25

Query commands can also be combined using the compound header rules.

```
CONFigure:AF:ANALyzer:DISTortion:MTYPe?
CONFigure:AF:ANALyzer:DISTortion:WIDTh?
CONFigure:AF:ANALyzer:DISTortion:FREQuency?
CONFigure:AF:ANALyzer:DISTortion:AVERage?
```

These query commands can also be combined in the same manner.

CONFigure:AF:ANALyzer:DISTortion:MTYPe?;WIDTh?;FREQuency?;AVERage?

The combined command would return AVER;35.200000 Hz;2000;25 in string data format.

Example 2:

```
:RF:GENerator:FREQuency 625MHz
:RF:GENerator:LEVel -75dBm
:RF:GENerator:ENABle ON
```

In this example, the compound header elements "RF" and "GENerator" appear in all command functions. The commands listed above can be combined into one command string as follows:

```
RF:GENerator:FREQ 625MHz;LEVel -75dBm;ENABle ON
```

The above commands can be combined as a query command as follows:

```
RF:GENerator:FREQ?;LEVel?:ENABle?
```

The combined command would return 625000000;-75.0;1 in string data format.

1.5.2 Invalid Command Combination Examples

When combining functional elements, commands can not be combined in such a way as to access different subsystems.

Example 1:

The following example is **INVALId** because it attempts to access the Test Set's RF Generator and RF Analyzer subsystems.

CONFigure:RF:GENerator:FINCrement?;ANALyzer:FINCrement?

The commands would need to be written as the following separate commands;

CONFigure:RF:GENerator:FINCrement?

CONFigure:RF:ANALyzer:FINCrement?

Example 2:

The following example is **INVALID** because it attempts to access the Test Set's AF Analyzer and Modulation Analyzer subsystems:

FETCh:AF:ANALyzer:HN?;MOD:ANALyzer:HN?

The commands would need to be written as the following separate commands;

FETCh:AF:ANALyzer:HN?

FETCh:MOD:ANALyzer:HN?

1.6 PROGRAM DATA ELEMENTS

Program data elements contain the parameters related to the program header(s). The following program data elements are accepted by the instrument:

<CPD> (also known as <CHARACTER PROGRAM DATA>)

<NRf>(also known as <DECIMAL NUMERIC PROGRAM DATA>)

<numeric_value> (defined by SCPI)

<string program data>

<Boolean> (defined by SCPI)

These elements are defined in IEEE 488.2 and the SCPI Syntax and Style handbook.

- A white space must separate the command header(s) and the program data.
- <white space>, as defined in IEEE 488.2, can be any number of ASCII characters in the range 0-9, 11-32 decimal.
- <white space> is also allowed at other points in a message.

1.6.1 <CPD>

Character Program Data is used to set a parameter to one of a number of states that are best described by short alphanumeric strings.

Example:

ON
AUDio

1.6.2 <NRf>

Flexible numeric representation covers integer and floating-point representations. The format is known as 'flexible' because any of the three representations may be used for any type of numeric parameter.

Examples:

-466 Integer value
4.91 Explicitly placed decimal point
59.5E+2 Mantissa and exponent representation

Examples:

Where a parameter requires an integer value in the range 1 to 100, and the user needs to set the value to 42, the following values are accepted by the instrument:

42 Integer
42.0 Floating point
4.2E1, 4200E-2 Floating point - mantissa/exponent
41.5 Rounded up to 42
42.4 Rounded down to 42

1.6.3 <numeric_value>

<numeric_value> is a superset of <NRf> and <CPD>, used when parameters may consist of either a decimal value or the shorthand notations MAXimum or MINimum.

Example:

FREQ:STEP has a <numeric_value> parameter. This means that valid values for the step size may be the frequency value in Hz (for example, 250E+3), MAXimum or MINimum.

1.6.4 <STRING PROGRAM DATA>

String program data consists of a number of ASCII characters enclosed in quotes. Use either pairs of single (ASCII 39) or double (ASCII 34) quotes, but do not mix single and double in a string. A quote within a string must be enclosed within an extra pair of quotes.

Example:

'This string contains the word ' 'Hello' ' '
is interpreted as
This string contains the word 'Hello'
and
"This string contains the word " "Hello" " "
is interpreted as
This string contains the word "Hello"

1.6.4.A Hex-string

Uses characters 0-9 and A-F to produce hex pairs representing values from 0 to 255.
There are no white spaces within the string.

1.6.4.B ASCII-string

Example:

"TETRA 380-400 +12.5" which refers to the Channel Plan to be used.

1.6.4.C Phone-number-string

Uses characters 0-9, #, * and +.
There are no white spaces within the string.

1.7 QUERY RESPONSE DATA ELEMENTS

The following response data functional elements are generated by the instrument:

- <CRD> (also known as <CHARACTER RESPONSE DATA>)
- <NR1>
- <NR2>
- <STRING RESPONSE DATA>

1.7.1 <CRD>

This type of response is returned when reading the value of a parameter that can take a number of discrete states. States are represented by short alphanumeric strings.

Example:

ON

1.7.2 <NR1>

This type of numeric response is used when returning the value of integer parameters, such as an averaging number or the number of measurement points.

Examples:

15
+3
-57

1.7.3 <NR2>

This type of numeric response includes an explicitly placed decimal point, and no exponent.

Examples:

17.91
-18.27
+18.83
17.0

1.7.4 <STRING RESPONSE DATA>

This takes a similar form to <STRING PROGRAM DATA> except that the delimiting character is always a double quote ("ASCII 34").

1.7.4.A Hex-string

Returns characters 0-9 and A-F to produce hex pairs representing values from 0 to 255. There are no white spaces within the string.

1.7.4.B ASCII-string

Example:

Channel Plan in use.

1.7.4.C Phone-number-string

Returns string of characters containing 0-9, #, *, and +. There are no white spaces within the string.

1.8 ACTION ONLY COMMANDS

Action only commands initiate a specific function or action. These commands do not require parameters and can not be queried. Typical use of Action Only commands is to clear average or peak readings and to move markers on the instrument tiles and measurement graph tiles.

Example:

:AF:ANALyzer:DISTortion:HOLD:RESet

Command clears AF Analyser Peak Hold Distortion measurement. Command does not require a parameter, nor can it be queried.

1.9 TERMINATORS

A **<PROGRAM MESSAGE TERMINATOR>** (as defined in IEEE 488.2) can be a new line character (ASCII 10), a new line character with the ^END message asserted at the same time, or an ^END message asserted with the final character of the <PROGRAM MESSAGE>. The terminator may be preceded by any number of 'white space' characters - any single ASCII-encoded byte in the ranges 0 to 9 and 11 to 32 decimal.

A **<RESPONSE MESSAGE TERMINATOR>** (as defined in IEEE 488.2) is a new line character with the ^END message asserted at the same time.

Many GPIB controllers terminate program messages with a new line character and, by default, accept new line as the response message terminator. When transferring binary data, which may contain embedded new line characters, ensure that the controller uses only ^END messages. Usually this means that the controller's GPIB must be set up to generate and detect ^END. Refer to the documentation supplied with the controller.

1.10 QUERY ONLY COMMANDS

Query only commands return information only. These commands do not define parameters. Measurement query commands or status commands are the main use of query only commands.

Example:

:FETCh:AF:ANALyzer:DISTortion?

Query command returns AF Analyzer Distortion measurement.

Some commands that are used to define a parameter can also be used as a query command by adding a '?' to the end of the command.

Example:

RF:GENerator:LEVel -30.00 sets the RF Generator Level to -30 dBm.

RF:GENerator:LEVel? returns the current RF Generator Level setting.

NOTE	Query response always returns short form. For example, AVERage and WCASe are returned as AVER and WCAS.

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Chapter 2 - Common and Global Remote Commands

2.1 INTRODUCTION

This chapter describes the Common Remote Commands supported by the 3900. This chapter also describes the Global Remote Commands which apply to all 3900 operating systems. Remote commands are listed alphabetically under the following headings:

NOTE	Upper range value of 2.71 GHz applies to the 3902 and 3920 with 2.71 GHz Frequency Range option (390XOPT058) installed. The upper range value for the 3901 and standard 3920 is 1.05 GHz.

2.2 COMMON REMOTE COMMANDS

2.2.1 Equipment Identification

***IDN?**

Description: Command returns information about the Test Set.

Query Data: <arbitrary ASCII response data>
Manufacturer, model, serial number, software issue number,CAI board version

Query Response: *IDN?
AEROFLEX,3901,297001018,1.0.0,2

2.2.2 Front Panel - Keypad Mode of Operation

:SYSTem:CONFigure:FRONTPanel:LOCK
:SYSTem:CONFigure:FRONTPanel:LOCK?

Description: Set command Locks/Unlocks Front Panel Keypad when remotely accessing Test Set to lock out local user.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :SYSTem:CONFigure:FRONTPanel:LOCK ON
Locks Front Panel Keypads for local operation.

Query Response: :SYSTem:CONFigure:FRONTPanel:LOCK?
1

2.2.3 Front Panel - UUT Test Port Output

:SYSTem:CONFigure:PORT:UUT
:SYSTem:CONFigure:PORT:UUT?

Description: Set command defines the state of the designated Front Panel Test Port Output pins (pins 10 to 13) to High. Pins default to Low Level if not set to High.
Query command returns parameter setting.

Range: 0 to 15

Default Value: 0

Set/Query Format: Bit mask

levels: 5 Volts = High Level
0 Volts = Low Level

Example: :SYSTem:CONFigure:PORT:UUT 10
Sets Pins 11 and 13 to High Level and defaults Pins 10 and 12 to Low Level.

Query Response: :SYSTem:CONFigure:PORT:UUT?
10

NOTE Refer to the Front Panel Test Port Pin-Out diagram in the 3900 Series Operation Manual for pin location.

2.2.4 Front Panel - UUT Test Port Input

:SYSTem:FETch:PORT:UUT?

Description: Query command returns the state of the designated Front Panel Test Port Input pins (pins 2 to 5).

Query Format: Bit mask

levels: 5 Volts = High Level
0 Volts = Low Level

Query Response: :SYSTem:FETch:PORT:UUT?
10
Indicates Input pins 3 and 5 are High Level and Input pins 2 and 4 are Low Level.

NOTE The Front Panel Test Connector input pins 2 through 5 are floating inputs, therefore the bit mask will indicate any unconnected input pin as high.
Refer to the Front Panel Test Port Pin-Out diagram in the 3900 Series Operation Manual for pin location.

2.2.5 Loudspeaker Volume

:ASSign:VOLume
:ASSign:VOLume?

Description: Set command defines Loudspeaker volume.
Query command returns parameter setting.

Range: 0 to 100

Default Value: 50

Set/Query Format: NR1

Example: :ASSign:VOLume 25
Sets Loudspeaker volume to 25.

Query Response: :ASSign:VOLume?
25

2.2.6 Restore Factory Default Settings

***RST**

Description: Command resets all system parameters to factory default values and unloads currently loaded system.
Stores, AutoTest scripts and AutoTest results files remain intact.

Query/Parameter: none

NOTE Test Set does not process any commands following this one until Reset function is completed.

2.2.7 System Error

:SYSTem:ERRor?

Description: Command returns error from (FIFO) error queue.

Query Format: data string

Query Data: <error number> <description>

Example 1: system:error?
-222 Data out of range: Value clipped to upper level

Example 2: system:error?
No error

Example 3: system:error?
-113 Undefined header

NOTE Errors are retrieved in first in, first out (FIFO) sequence. First error returned is the first error that was stored.
Returns 'No Error' if error queue is empty or at end of error queue.

2.2.8 System MAC (Media Access Control) Address

:SYSTem:MAC?

Description: Command returns Test Set's Media Access Control address.

Query Format: string

Example: :SYSTem:MAC?
00200C114DA0

2.2.9 System Reboot - Test Set Reboot Status

***REBoot?**

Description: Query command returns Test Set Reboot status.

Query Data: 0 | 1

where: 0 = Unit has not been rebooted since last status query was sent.
1 = Unit has been rebooted since last status query was sent.

Query Format: NR1

Query Response: *REBoot?
1

2.2.10 System Status - Statusbyte

***STB?**

Description:	Command returns multiple status bits indicating system status.	
Query Data:	Status byte returned as a bitmap.	
Bit 0	System Load Status	0 = Indicates system is loaded
		1 = Indicates system load in progress
Bit 1	Stale Reading	0 = Indicates new reading is available
		1 = Reading is stale
Bit 2 - 7	Currently not implemented.	
Example 1:	*STB? 0	Indicates Bit 0 = 0, Bit 1 = 0
Example 2:	*STB? 1	Indicates Bit 0 = 1, Bit 1 = 0
Example 3:	*STB? 2	Indicates Bit 0 = 0, Bit 1 = 1
Example 4:	*STB? 3	Indicates Bit 0 = 1, Bit 1 = 1

2.2.11 Test Set Options - Installed Options

***OPT?**

Description:	Command returns the options intalled in Test Set.
Query Data:	<arbitrary ASCII response data> Options
Query Response:	*OPT? OPTION 110: TETRA MS,OPTION 111: TETRA BS Indicates that the TETRA MS and BS options are available.
NOTE	If no options are installed, a single ‘0’ is returned; otherwise the response is a comma-separated list of options.

2.3 AUTOTEST II

2.3.1 AutoTest II - Load AutoTest II Results File

:SYSTem:AUTOtest:LOAD:RESUlts <complete path name for file>
:SYSTem:AUTOtest:LOAD:RESUlts?

Description: Set command loads specified stored AutoTest II results file.
Query command returns name of currently loaded Results File.

Parameter: <complete path name for file>

Example: :SYSTem:AUTOtest:LOAD:RESUlts </USER/AutoTestII:/results/at2_script.rst>
Loads at2_script results file.

Query Response: :SYSTem:AUTOtest:LOAD:RESUlts?
at2_script

NOTE Results File must be loaded before data can be queried (:SYSTem:AUTOtest:FETCh:RESUlts?)

2.3.2 AutoTest II - Load AutoTest II Script

:SYSTem:AUTOtest:LOAD:SCRIpt <full path name of file to be loaded>
:SYSTem:AUTOtest:LOAD:SCRIpt?

Description: Set command loads specified AutoTest II script.
Query command returns name of loaded AutoTest II script.

Parameters: <file name> must be full path name for file location

Set/Query Format: string data

Example: :SYSTem:AUTOtest:LOAD:SCRIpt
"/USER/AutoTestII:/scripts/user1/at2_script.tcl"
Loads at2_sctipt.tcl script file located in AutoTestII/scripts/user directory.

Query Response: :SYSTem:AUTOtest:LOAD:SCRIpt?
"/USER/AutoTestII:/scripts/user1/at2_script.tcl"

NOTE AutoTest Script must be imported to Test Set using File Management function prior to sending this command.

2.3.3 AutoTest II - Return Results File

:SYSTem:AUTOtest:FETCh:RESUlts?

Description: Command returns results from loaded AutoTest II results File.

Query Data: Results are returned line-by-line as data string.

NOTE Command returns data from most recently loaded Results File.
Last line of the file recalled file returns EOF (End of File) to indicate file is completed.

2.3.4 AutoTest II - Run AutoTest II Script

:SYSTem:AUTOtest:RUN
:SYSTem:AUTOtest:RUN?

Description: Set command Starts/Stops AutoTest script.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Set/Query Format: Boolean

Default Value: OFF

Example: :SYSTem:AUTOtest:RUN ON
Starts AutoTest script.

Query Response: :SYSTem:AUTOtest:RUN?
1

NOTE AutoTest II Script must be loaded prior to sending this command (:SYSTem:AUTOtest:LOAD:SCRipt).

2.3.5 AutoTest II - Unload AutoTest System

:SYSTem:AUTOtest:RST

Description: Command unloads AutoTest II System and resets the Test Set to factory default state.

Parameter/Query: none

NOTE Load new system using :SYSTem:LOAD “system name“ command.

2.4 FILE STORE/RECALL

2.4.1 Recall Stored File

:SYSTem:RECAll "filename"

Description: Command recalls (loads) specified Test Set configuration file.

Parameter: "filename"

Set Format: ascii string

NOTE

Recalls file from Test Set's internal database.
Beginning and ending quotation marks are required.
Do not include file extension in filename.
Do not include spaces in filename.
Do not include forward slash (/) at beginning of directory name.
Test Set does not process any commands following this one until the file is loaded. Include ≥ 30 second delay before sending additional commands.

2.4.2 Store Test Setup/Data

:SYSTem:STORe "filename"

Description: Command stores current Test Set configuration under specified filename.

Parameter: "filename"

Set Format: ascii string

NOTE

Saves file to Test Set's internal database.
Beginning and ending quotation marks are required.
Do not include file extension in filename.
Do not include spaces in filename.
Test Set does not process any commands following this one until file is stored.

2.5 LOAD TEST SYTEM

2.5.1 Load Test System

:SYSTem:LOAD “system name“
:SYSTem:LOAD?

Description: Set command loads specified Test System.
Query command returns name of loaded Test System.

Parameters:
Analog Duplex
ARIB STD-T98
AutoTest
AutoTest II
DMR
dPMR
HPD
NXDN
P25
TETRA BS
TETRA BS T1
TETRA DM
TETRA MS
TETRA MS T1

Set/Query Format: ascii string

Example: :SYSTem:LOAD “Analog Duplex“
Loads Analog Duplex system.

Query Response: :SYSTem:LOAD?
Analog Duplex

NOTE
System name must be enclosed in double quotes to be valid.
Test Set does not process any commands following this one until system is loaded.

2.6 OVERLOAD ALARM STATUS

2.6.1 Generator Overload Status

:FETCh:RF:ALARM:GEN?

Description: Command returns Generator Overload Status.

Query Data: NORMAL | OVERLOADED

Query Format: CRD

Query Response: :FETCh:RF:ALARM:GEN?
OVERLOADED

NOTE Test Set Overload Protection must be reset when OVERLOADED state is returned.

2.6.2 Receiver Overload Status

:FETCh:RF:ALARM:REC?

Description: Command returns Receiver Overload Status.

Query Data: NORMAL | OVERLOADED

Query Format: CRD

Query Response: :FETCh:RF:ALARM:REC?
OVERLOADED

NOTE Test Set Overload Protection must be reset when OVERLOADED state is returned.

2.6.3 RF Power - Reset Power After Overload

:RF:POWer:RESet:OVERload

Description: Set command resets RF Power meter when Input Overload has occurred.

Parameter/Query: none

2.7 HARDWARE VERSION

2.7.1 RF Generator Version

:SYSTem:FETch:GEN:VER?

Description: Command returns the version of the Test Set's RF Generator.

Query Data: Number

where: 0 = Version 1
14 = Version 2

Query Response: :SYStem:FETch:GEN:VER?
0

2.8 USB TO SERIAL

2.8.1 USB to Serial - Baud Rate

:USBTOSERial:BAUDrate
:USBTOSERial:BAUDrate?

Description: Set command defines baud rate at which data is transmitted.
Query command returns parameter setting.
Parameter: B300 | B1200 | B2400 | B4800 | B9600 | B19200 | B38400 | B57600 | B115200 | B230400
Default Value: B19200
Set/Query Format: CPD | CRD
Example: :USBTOSERial:BAUDrate B4800
Sets Baud Rate to B4800.
Query Response: :USBTOSERial:BAUDrate?
B4800

2.8.2 USB to Serial - Character Size

:USBTOSERial:CHARsize
:USBTOSERial:CHARsize?

Description: Set command defines character size.
Query command returns parameter setting.
Parameter: CS7 | CS8
Default: CS8
Set/Query Format: CPD | CRD
Example: :USBTOSERial:CHARsize CS8
Sets Baud Rate to CS8.
Query Response: :USBTOSERial:CHARsize?
CS8

2.8.3 USB to Serial - Close Port

:USBTOSERial:CLOSe
:USBTOSERial:CLOSe?

Description: Set command closes opened port.
Query command returns parameter setting.
Range: 0 to 15
Default Value: 0
Set/Query Format: NR1
Example: :USBTOSERial:CLOSe 10
Closes USB Port 10.
Query Response: :USBTOSERial:CLOSe?
10

2.8.4 USB to Serial - Data Conversion

:USBTOSERial:SOCKet:READ?

Description: Command reads and converts radio data from character to integer format, returning string of integers separated by specified delimiter character.

Query Data: ascii-string where characters are separated by delimiter

Query Response: ABCD is received from radio.
:USBTOSERial:SOCKet:READ?
“65!66!67!68”

2.8.5 USB to Serial - Hardware Flow Control

:USBTOSERial:HWFLowcontrol
:USBTOSERial:HWFLowcontrol?

Description: Set command defines hardware flow control setting.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :USBTOSERial:HWFLowcontrol ON
Turns Hardware Flow Control ON.

Query Response: :USBTOSERial:HWFLowcontrol?
1

2.8.6 USB to Serial - Open Port

:USBTOSERial:OPEN
:USBTOSERial:OPEN?

Description: Set command opens selected port.
Query command returns parameter setting.

Range: 0 to 15

Default Value: 0

Set/Query Format: NR1

Example: :USBTOSERial:OPEN 10
Opens USB Port 10.

Query Response: :USBTOSERial:OPEN?
10

2.8.7 USB to Serial - Parity

:USBTOSERial:PARIty
:USBTOSERial:PARIty?

Description: Set command defines parity setting.
Query command returns parameter setting.
Parameter: NONE | EVEN | ODD | SPACE
Default Value: NONE
Set/Query Format: CPD | CRD
Example: :USBTOSERial:PARIty ODD
Sets USB Parity to ODD.
Query Response: :USBTOSERial:PARIty?
ODD

2.8.8 USB to Serial - Read Data String

:USBTOSERial:READ?

Description: Command reads and returns string data.
Query Data: string data
Returns No Data when no data is detected.
Query Response: :USBTOSERial:READ?
No Data

2.8.9 USB to Serial - Read/Write String

:USBTOSERial:QUERy? xxx

Description: Command reads and writes string as send parameter.
Query Response: :USBTOSERial:QUERy? “*idn?”
AEROFLEX,3901,297001018,1.0.0,2
“No Data” i sreturned when no response is received.

NOTE Use :USBTOSERial:TIMEout command to set the time between write and read from RS232 when executing :USBTOSERial:QUERy? “send string” command.

2.8.10 USB to Serial - Reset Communications

:USBTOSERial:RESet

Description: Command sends 1 to reset communications.
Parameter/Query: none

2.8.11 USB to Serial - Send String Data

:USBTOSERial:WRITe

Description: Command sends string data.
Query/Parameter: none

2.8.12 USB to Serial - Socket Connection

:USBTOSERial:SOCKet:CONNection
:USBTOSERial:SOCKet:CONNection?

Description: Set command connects to the radio using the specified IP Address and Port.
Query command returns parameter setting.

Parameter: 0 = Disconnect
1 = Connect

Default Value: 0 (Disconnect)

Set/Query Format: NR1

Example: :USBTOSERial:SOCKet:CONNection 1
Connects to specified IP Address and USB Port.

Query Response: :USBTOSERial:SOCKet:CONNection?
1

NOTE Used only for Point-to-Point Protocol Over Ethernet (PPPoE).

2.8.13 USB to Serial - Socket Delimiter

:USBTOSERial:SOCKet:DELImiter <Delimiter value>
:USBTOSERial:SOCKet:DELImiter?

Description: Set command defines the string data delimiter that is sent to the radio and sets the string data delimiter returned from the radio.
Query command returns parameter setting.

Set/Query Format: ascii integer value

Default: 33

Example: :USBTOSERial:SOCKet:DELImiter 10
Sets 10 as string delimiter.

Query Response: :USBTOSERial:SOCKet:DELImiter?
10

NOTE Delimiter value must be defined as ascii integer value.

2.8.14 USB to Serial - Socket IP Address

:USBTOSERial:SOCKet:ADDRess “IP Address”
:USBTOSERial:SOCKet:ADDRess?

Description: Set command defines the Radio IP Address for Test Set connection.
Query command returns parameter setting.

Parameter: number string

Default Value: 192.168.128.1

Set/Query Format: number string

Example: :USBTOSERial:SOCKet:ADDRess 123.456.789.0
Sets Radio IP Address to 123.456.789.0.

Query Response: :USBTOSERial:SOCKet:ADDRess?
123.456.789.0

2.8.15 USB to Serial - Socket Port

:USBTOSERial:SOCKet:PORT
:USBTOSERial:SOCKet:PORT?

Description: Set command selects the port for Test Set connection.
Query command returns parameter setting.
Range: 0 to 65535
Default Value: 8002
Set/Query Format: NR1
Example: :USBTOSERial:SOCKet:PORT 335
Sets Socket Port to 335.
Query Response: :USBTOSERial:SOCKet:PORT?
335

2.8.16 USB to Serial - Software Flow Control

:USBTOSERial:SWFLowcontrol
:USBTOSERial:SWFLowcontrol?

Description: Set command defines software flow control setting.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: NR1
Example: :USBTOSERial:SWFLowcontrol ON
Turns Software Flow Control ON.
Query Response: :USBTOSERial:SWFLowcontrol?
1

2.8.17 USB to Serial - Stop Bits

:USBTOSERial:STOPBits
:USBTOSERial:STOPBits?

Description: Set command defines number of stop bits.
Query command returns parameter setting.
Parameter: 1 | 2
Default Value: 1
Set/Query Format: NR1
Example: :USBTOSERial:STOPBits 1
Sets the number of Stop Bits to 1.
Query Response: :USBTOSERial:STOPBits?
1

2.8.18 USB to Serial - Termination Character

:USBTOSERial:TERMination

Description: Set command defines the Termination Character decimal value.
Query command returns parameter setting.

Range: 0 to 255

Default Value: 13

Set/Query Format: NR1

Example: :USBTOSERial:TERMination 200
Sets USB Termination Character to 200.

Query Reponse: :USBTOSERial:TERMination?
200

2.8.19 USB to Serial - Timeout Value

:USBTOSERial:TIMEout
:USBTOSERial:TIMEout?

Description: Set command defines timeout value in µs.
Query command returns parameter setting.

Range: 0 to 300,000,000 µs

Units: µs

Default Value: 10,000,000 µs (10 seconds)

Set/Query Format: NRf | NR1

Example: :USBTOSERial:TIMEout 100000
Sets USB Timeout to 100,000 µs.

Query Response: :USBTOSERial:TIMEout?
100000

2.8.20 USB to Serial - Write String

:USBTOSERial:SOCKet:WRITe “String”
:USBTOSERial:SOCKet:WRITe?

Description: Set command sends data / command to radio where “String” is the integer form of each character in string format with each integer separated by specified delimiter.
Query command returns the last string parameter sent using the set command.

Set/Query Format: ascii string

Example: :USBTOSERial:SOCKet:WRITe “This is a test data string”
Sends data string “65 84 90 13 10”.

Query Response: :USBTOSERial:SOCKet:WRITe?
65 84 90 13 10

2.9 USER CALIBRATION

2.9.1 User Calibration - Calibration Requirement

:CALibrate:USER:UNCAL?

Description: Command indicates if calibration is required.
Query Data: <statusbyte>
statusbyte (NR1): 0 = Calibration is not required
1 = Calibration is required
Query Response: :CALibrate:USER:UNCAL?
1

2.9.2 User Calibration - Calibration Threshold

:CALibrate:USER:SETPoint
:CALibrate:USER:SETPoint?

Description: Set command defines Temperature Change Threshold.
Query command returns parameter setting.
Range: 0.1 to 10.0 dB
Units: dB
Default Value: 1.0 dB
Set/Query Format: NRf | NR1
Example: :CALibrate:USER:SETPoint 2dB
Sets User Calibration Threshold to 2.0 dB.
Query Response: :CALibrate:USER:SETPoint?
2.0

2.9.3 User Calibration - Run

:CALibrate:USER:RUN

Description: Command starts User Calibration procedure.
Query/Parameter: none

NOTE

All Front Panel connections must be removed before sending command.

2.9.4 User Calibration - Calibration Status

:CALibrate:USER:STATus?

Description: Command returns calibration status.
Query Data: <statusbyte>
statusbyte (NR1): 0 to 25 = Calibration is running
0 = Calibration passed
negative value = Calibration failed
Query Response: :CALibrate:USER:STATus?
0

2.10 PIN CONTROL REMOTE COMMANDS

2.10.1 Microphone - Pin 5 Output

:CONFigure:RF:GENerator:VOUT
:CONFigure:RF:GENerator:VOUT?

Description: Set command defines output of Microphone Connector.
Query command returns parameter setting.

Range: 0 to 4095

Default Value: 0

Set/Query Format: NR1

Example: CONFigure:RF:GENerator:VOUT 1310
Sets output of Microphone Connector Pin 5 to 1310.

Query Response: CONFigure:RF:GENerator:VOUT?
1310

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Chapter 3 - AF, Modulation and RF Generators Remote Commands

3.1 INTRODUCTION

This chapter describes the remote commands for configuring 3900 AF, Modulation and RF Generators. Commands are listed alphabetically under the following headings:

3.2 AF GENERATORS

3.2.1 AF Generators - Attenuation Offset

:CONFigure:OFFSet:AF:GENerator
:CONFigure:OFFSet:AF:GENerator?

Description: Set command defines the AF Generator Offset.
Query command returns parameter setting.
Parameter: NONE | DB20 | DB40
Default Value: NONE
Set/Query Format: CPD | CRD
Example: :CONFigure:OFFSet:AF:GENerator DB20
Sets AF Generator Offset to 20 dB.
Query Response: :CONFigure:OFFSet:AF:GENerator?
DB20

3.2.2 AF Generators - DCS Code

:AF:GENerator:SOURceN:CODEword “xxx”
:AF:GENerator:SOURceN:CODEword?

Description: Set command defines the DCS code for specified AF Generator.
Query command returns parameter setting.
Parameter: Refer to Appendix A of 3900 Series Remote Programming Manual for supported DCS codes.
Default Value: 023
Set/Query Format: NR1
Example: :AF:GENerator:SOURce1:CODEword “071”
Sets AF Generator 1 DCS Code to 071.
Query Response: :AF:GENerator:SOURce1:CODEword?
071

NOTE
AF Generator Waveform must be defined as DCS for command to be valid.
SourceN = 1, 2 or 3 (AF Generator 1, 2 or 3)

3.2.3 AF Generators - DTMF Burst Length

:AF:GENerator:SOURce1:MARK
:AF:GENerator:SOURce1:MARK?

Description: Set command defines the length of time a DTMF burst is ON for the AF Generator 1.
Query command returns parameter setting.

Range: 1 to 6,000,000 ms

Units: ms

Default Value: 100 ms

Set/Query Format: NRf | NR1

Example: :AF:GENerator:SOURce1:MARK 5000ms
Sets length of AF Generator 1 DTMF burst to 5000 milliseconds.

Query Response: :AF:GENerator:SOURce1:MARK?
5000

NOTE
DTMF waveform is only supported on AF Generator 1.
AF Generator 1 Waveform must be defined as DTMF for command to be valid.

3.2.4 AF Generators - DTMF Dead Time

:AF:GENerator:SOURce1:END
:AF:GENerator:SOURce1:END?

Description: Set command defines the dead time between DTMF tones for AF Generator 1.
Query command returns parameter setting.

Range: 1 to 6,000,000 ms

Units: ms

Default Value: 500 ms

Set/Query Format: NRf | NR1

Example: :AF:GENerator:SOURce1:END 1000ms
Sets dead time between DTMF tones to 1000 milliseconds.

Query Response: :AF:GENerator:SOURce1:END?
1000

NOTE
DTMF waveform is only supported on AF Generator 1.
AF Generator 1 Waveform must be defined as DTMF for command to be valid.

3.2.5 AF Generators - DTMF Sequence

:AF:GENerator:SOURce1:SEQuence
:AF:GENerator:SOURce1:SEQuence?

Description: Set command defines DTMF Sequence when DTMF Waveform is selected.
Query command returns parameter setting.

Parameter: 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | # | *
maximum of 16 characters encased in double quotes " "

Default Value: 01234567

Set/Query Format: hex string

Example: :AF:GENerator:SOURce1:SEQuence "ABCD*1245#5678"
Sets AF Generator 1 DTMF Sequence to ABCD*1245#5678.

Query Response: :AF:GENerator:SOURce1:SEQuence?
ABCD*1245#5678

NOTE
DTMF waveform is only supported on AF Generator 1.
AF Generator 1 Waveform must be defined as DTMF for command to be valid.

3.2.6 AF Generators - DTMF Sequence Mode

:AF:GENerator:SOURce1:SEQMode
:AF:GENerator:SOURce1:SEQMode?

Description: Set command defines the DTMF sequence mode of operation for the AF Generator 1.
Query command returns parameter setting.

Parameter: 0 = Single DTMF burst
1 = Continuous DMTF burst

Default Value: 0 (Single)

Set/Query Format: NR1

Example: :AF:GENerator:SOURce1:SEQMode 1
Sets DTMF Sequence of AF Generator 1 to Continuous.

Query Response: :AF:GENerator:SOURce1:SEQMode?
1

NOTE
DTMF waveform is only supported on AF Generator 1.
AF Generator 1 Waveform must be defined as DTMF for command to be valid.

3.2.7 AF Generators - DTMF Sequence Spacing

:AF:GENerator:SOURce1:SPACe
:AF:GENerator:SOURce1:SPACe?

Description: Set command defines the length of time a DTMF burst is ON for the AF Generator 1.
Query command returns parameter setting.

Range: 1 to 6,000,000 ms

Units: ms

Default Value: 500 ms

Set/Query Format: NRf | NR1

Example: :AF:GENerator:SOURce1:SPACe 1000ms
Sets dead time between DTMF tone sequences to 1000 milliseconds.

Query Response: :AF:GENerator:SOURce1:SPACe?
1000

NOTE DTMF waveform is only supported on AF Generator 1.
Continuous Sequence Mode must be selected for command to be valid.

3.2.8 AF Generators - Enable

:AF:GENerator:SOURceN:ENABle
:AF:GENerator:SOURceN:ENABle?

Description: Set command Enables/Disables the specified AF Generator.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AF:GENerator:SOURce2:ENABle ON
Enables AF Generator 2.

Query Response: :AF:GENerator:SOURce2:ENABle?
1

NOTE SourceN = 1, 2 or 3 (AF Generator 1, 2 or 3)

3.2.9 AF Generators - Frequency

:AF:GENerator:SOURceN:FREQuency
:AF:GENerator:SOURceN:FREQuency?

Description: Set command defines the frequency source for the specified AF Generator.
Query command returns parameter setting.

Range: 1.0 Hz to 40.0 kHz

Units: Hz | kHz

Default Value: AF 1: 1.0 kHz
AF 2: 300.0 Hz
AF 3: 3.4 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :AF:GENerator:SOURce3:FREQuency 15kHz
Sets AF Generator 3 Frequency to 15.0 kHz.

Query Response: :AF:GENerator:SOURce3:FREQuency?
15000.0

NOTE SourceN = 1, 2 or 3 (AF Generator 1, 2 or 3)

3.2.10 AF Generators - Impedance

:CONFigure:IMPedance:AF:GENerator
:CONFigure:IMPedance:AF:GENerator?

Description: Set command defines the Impedance of the AF Generator.
Query command returns parameter setting.

Range: 1 to 10,000 Ohms

Units: Ohms

Default Value: 600 Ohms

Set/Query Format: NRf | NR1

Example: :CONFigure:IMPedance:AF:GENerator 500OHMS
Sets AF Generator Impedance to 500 Ohms.

Query Response: :CONFigure:IMPedance:AF:GENerator?
500

3.2.11 AF Generators - Level

:AF:GENerator:SOURceN:LEVel
:AF:GENerator:SOURceN:LEVel? <units>

Description: Set command defines the Source Level for the specified AF Generator.
Query command returns parameter setting in specified units.

Range: 1.0 mV to 5.0 Vrms

Units: dBm | V | mV | µV | nV | dBµV

Default Value: 100.0 mV

Set/Query Format: NRf | NR2 (mV)

Example: :AF:GENerator:SOURce1:LEVel 5V
Sets AF Generator 1 Level (Amplitude) to 5.0 Volts.

Query Response: :AF:GENerator:SOURce1:LEVel? nV
50000000000.0

NOTE
SourceN = 1, 2 or 3 (AF Generator 1, 2 or 3)

3.2.12 AF Generators - Waveform

:AF:GENerator:SOURceN:SHAPe
:AF:GENerator:SOURceN:SHAPe?

Description: Set command defines the Waveform for the specified AF Generator.
Query command returns parameter setting.

Parameter: SINE | SQUare | TRIangle | RAMP | DCS | DCSINV | DTMF

Query Data: SNR | SINE | SQUare | TRIangle | RAMP | DCS | DCSINV | DTMF | TONESEQ | TONEREM

Default Value: SINE

Set/Query Format: CPD | CRD

Example: :AF:GENerator:SOURce2:SHAPe SQUare
Sets AF Generator 2 Waveform shape to Square.

Query Response: :AF:GENerator:SOURce2:SHAPe?
SQU

NOTE
SourceN = 1, 2 or 3 (AF Generator 1, 2 or 3)
DTMF waveform is only valid on AF Generator 1. AF Generator 2 is unavailable when DTMF is selected on AF Generator 1.
DCS and DCSINV are not supported on AF Generator 3.
AF Generator 1 is unavailable as a modulation source when Normal MOD SNR Noise Measurements are defined (:CONFigure:MOD:ANALyzer:SNR:MODE 1) and AF:GENerator:SOURce1:SHAPe? returns SNR.

3.3 AF GENERATORS - TONE ENCODING

3.3.1 AF Generators - Encoding Enable

:AF:GENerator:ENCODE:ENABle
:AF:GENerator:ENCODE:ENABle?

Description: Set command Enables/Disables (sends) one Tone.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :AF:GENerator:ENCODE:ENABle ON
Sends one Tone from Audio Generator.
Query Response: :AF:GENerator:ENCODE:ENABle?
1

3.3.2 AF Generators - Encoded Signal Type

:AF:GENerator:ENCODE:TYPE
:AF:GENerator:ENCODE:TYPE?

Description: Set command defines type of signal being Encoded by the AF Generator.
Query command returns parameter setting.
Parameter: TWOTONE | TONESEQ | TONEREM
Default: TWOTONE
Set/Query Format: CPD | CRD
Example: :AF:GENerator:ENCODE:TYPE TWOTONE
Sets Audio Generator Tone Signaling Type to Two Tone Sequential.
Query Response: :AF:GENerator:ENCODE:TYPE?
TWOTONE

3.3.3 AF Generators - Tone Remote Function Duration

:AF:GEN:TONE:REMote:FUNCtion:DURation
:AF:GEN:TONE:REMote:FUNCtion:DURation?

Description: Set command defines length of single Tone.
Query command returns parameter setting.
Range: 20 to 500 ms
Units: ms | s
Default: 40 ms
Set/Query Format: NRf | NR1 (ms)
Example: :AF:GEN:TONE:REMote:FUNCtion:DURation 50ms
Sets length of single Tone to 50 milliseconds.
Query Response: :AF:GEN:TONE:REMote:FUNCtion:DURation?
50

3.3.4 AF Generators - Tone Remote Function Frequency

:AF:GEN:TONE:REMote:FUNCtion:FREQuency
:AF:GEN:TONE:REMote:FUNCtion:FREQuency?

Description: Set command defines the Tone frequency.
Query command returns parameter setting.
Range: 1.0 Hz to 2.999 kHz
Units: Hz | kHz
Default Value: 1.050 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :AF:GEN:TONE:REMote:FUNCtion:FREQuency 15Hz
Sets Tone Frequency to 15.0 Hz.
Query Response: :AF:GEN:TONE:REMote:FUNCtion:FREQuency?
15.0

3.3.5 AF Generators - Tone Remote Function Level

:AF:GEN:TONE:REMote:FUNCtion:LEVel
:AF:GEN:TONE:REMote:FUNCtion:LEVel?

Description: Set command defines the Tone Audio Level.
Query command returns parameter setting.
Range: -20.0 to +20.0 dB
Units: dB
Default Value: 0.0 dB
Set/Query Format: NRf | NR2
Example: :AF:GEN:TONE:REMote:FUNCtion:LEVel 5dB
Sets the Tone Audio Level to 5.0 dB.
Query Response: :AF:GEN:TONE:REMote:FUNCtion:LEVel?
5.0

3.3.6 AF Generators - Tone Remote Guard Duration

:AF:GEN:TONE:REMote:GUARD:DURation
:AF:GEN:TONE:REMote:GUARD:DURation?

Description: Set command defines length of single Tone.
Query command returns parameter setting.
Range: 1 to 6,000,000 ms
Units: ms | s | ks
Default: 120 ms
Set/Query Format: NRf | NR1 (ms)
Example: :AF:GEN:TONE:REMote:GUARD:DURation 50ms
Sets length of single Tone 50 milliseconds.
Query Response: :AF:GEN:TONE:REMote:GUARD:DURation?
50

3.3.7 AF Generators - Tone Remote Guard Frequency

:AF:GEN:TONE:REMote:GUARD:FREQuency
:AF:GEN:TONE:REMote:GUARD:FREQuency?

Description: Set command defines the Tone frequency.
Query command returns parameter setting.
Range: 1.0 Hz to 2.999 kHz
Units: Hz | kHz
Default Value: 2.175 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :AF:GEN:TONE:REMote:GUARD:FREQuency 15Hz
Sets Tone Frequency to 15.0 Hz.
Query Response: :AF:GEN:TONE:REMote:GUARD:FREQuency?
15.0

3.3.8 AF Generators - Tone Remote Guard Level

:AF:GEN:TONE:REMote:GUARD:LEVel
:AF:GEN:TONE:REMote:GUARD:LEVel?

Description: Set command defines the Tone Audio Level.
Query command returns parameter setting.
Range: -20.0 to +20.0 dB
Units: dB
Default Value: -20.0 dB
Set/Query Format: NRf | NR2
Example: :AF:GEN:TONE:REMote:GUARD:LEVel 5dB
Sets the Tone Audio Level to 5.0 dB.
Query Response: :AF:GEN:TONE:REMote:GUARD:LEVel?
5.0

3.3.9 AF Generators - Tone Remote Maximum Duration

:AF:GEN:TONE:REMote:MAXimum:DURation
:AF:GEN:TONE:REMote:MAXimum:DURation?

Description: Set command defines length of single Tone.
Query command returns parameter setting.
Range: 20 to 500 ms
Units: ms | s
Default: 120 ms
Set/Query Format: NRf | NR1 (ms)
Example: :AF:GEN:TONE:REMote:MAXimum:DURation 50ms
Sets length of single Tone to 50 milliseconds.
Query Response: :AF:GEN:TONE:REMote:MAXimum:DURation?
50

3.3.10 AF Generators - Tone Remote Maximum Frequency

:AF:GEN:TONE:REMote:MAXimum:FREQuency
:AF:GEN:TONE:REMote:MAXimum:FREQuency?

Description: Set command defines the Tone frequency.
Query command returns parameter setting.
Range: 1.0 Hz to 2.999 kHz
Units: Hz | kHz
Default Value: 2.175 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :AF:GEN:TONE:REMote:MAXimum:FREQuency 15Hz
Sets Tone Frequency to 15.0 Hz.
Query Response: :AF:GEN:TONE:REMote:MAXimum:FREQuency?
15.0

3.3.11 AF Generators - Tone Remote Maximum Level

:AF:GEN:TONE:REMote:MAXimum:LEVel
:AF:GEN:TONE:REMote:MAXimum:LEVel?

Description: Set command defines the Tone Audio Level.
Query command returns parameter setting.
Range: -20.0 to +20.0 dB
Units: dB
Default Value: 10.0 dB
Set/Query Format: NRf | NR2
Example: :AF:GEN:TONE:REMote:MAXimum:LEVel 5dB
Sets the Tone Audio Level to 5.0 dB.
Query Response: :AF:GEN:TONE:REMote:MAXimum:LEVel?
5.0

3.3.12 AF Generators - Tone Remote Reference Level

:AF:GEN:TONE:REMote:REFerence:LEVel
:AF:GEN:TONE:REMote:REFerence:LEVel?

Description: Set command defines the Tone Reference Audio Level.
Query command returns parameter setting.
Range: 20.0 to 5000.0 mV
Units: mV | V
Default Value: 1.0 V
Set/Query Format: NRf | NR2 (mV)
Example: :AF:GEN:TONE:REMote:REFerence:LEVel 2.5V
Sets the Tone Reference Audio Level to 2.5 Volts.
Query Response: :AF:GEN:TONE:REMote:REFerence:LEVel?
2500

3.3.13 AF Generators - Tone Sequential Audio Level

:AF:GEN:TONE:SEQuential:MASTER:LEVel
:AF:GEN:TONE:SEQuential:MASTER:LEVel?

Description: Set command defines the Audio Level for Tone Sequential tones.
Query command returns parameter setting.
Range: 20.0 to 5000.0 mV
Units: mV | V
Default Value: 1.0 V
Set/Query Format: NRf | NR2 (mV)
Example: :AF:GEN:TONE:SEQuential:MASTER:LEVel 2V
Sets the Audio Level for Tone Sequential tones to 2.0 Volts.
Query Response: :AF:GEN:TONE:SEQuential:MASTER:LEVel?
2000.0

3.3.14 AF Generators - Tone Sequential Call Delay

:AF:GENerator:TONE:SEQuential:CALL:DELAy
:AF:GENerator:TONE:SEQuential:CALL:DELAy?

Description: Set command defines how long the AF Generator extends the first tone in the tone sequence.
Query command returns parameter setting.
Range: 0 to 9999 ms
Units: ms
Default Value: 0 ms
Set/Query Format: NR1
Example: :AF:GENerator:TONE:SEQuential:CALL:DELAy 500
Sets AF Generator to wait for 500 ms before sending User 1, Tone A.
Query Response: :AF:GENerator:TONE:SEQuential:CALL:DELAy?
500

3.3.15 AF Generators - Tone Sequential Frequency Shift

:AF:GENerator:TONE:SEQuential:FREQuency:SHIFt
:AF:GENerator:TONE:SEQuential:FREQuency:SHIFt?

Description: Set command defines the frequency shift applied to the frequency of tones transmitted by the AF Generator.
Query command returns parameter setting.
Range: -10% to +10%
Units: %
Default Value: 0%
Set/Query Format: NR1
Example: :AF:GENerator:TONE:SEQuential:FREQuency:SHIFt 5
Sets AF Generator to apply a frequency shift of 5% to the tone's frequency.
Query Response: :AF:GENerator:TONE:SEQuential:FREQuency:SHIFt?
5

3.3.16 AF Generators - Tone Sequential Mode

:AF:GEN:TONE:SEQuential:MODE
:AF:GEN:TONE:SEQuential:MODE?

Description: Set command selects Tone Mode of operation.
Query command returns parameter setting.
Parameter: SINGLE | CONTINUOUS
Default Value: SINGLE
Set/Query Format: CPD | CRD
Example: :AF:GEN:TONE:SEQuential:MODE CONTINUOUS
Sets Mode of Tone Sequential burst to Continuous.
Query Response: :AF:GEN:TONE:SEQuential:MODE?
CONTINUOUS

3.3.17 AF Generators - Tone Sequential Pause

:AF:GENerator:TONE:SEQuential:PAUSe
:AF:GENerator:TONE:SEQuential:PAUSe?

Description: Set command defines how long the AF Generator pauses before sending the Tone.
Query command returns parameter setting.
Range: 0 to 9999 ms
Units: ms
Default Value: 15 ms
Set/Query Format: NR1
Example: :AF:GENerator:TONE:SEQuential:PAUSe 500
Sets AF Generator to pause for 500 ms before sending tone.
Query Response: :AF:GENerator:TONE:SEQuential:PAUSe?
500

3.3.18 AF Generators - Tone Sequential Protocol

:AF:GEN:TONE:SEQuential:PROTocol
:AF:GEN:TONE:SEQuential:PROTocol?

Description: Set command selects protocol of single tone.
Query command returns parameter setting.
Parameter: ZVEI1 | ZVEI2 | ZVEI3 | PZVEI | DZVEI | PDZVEI | CCIR1 | CCIR2 | PCCIR | EEA | EUROSIG | NATEL | EIA | MODAT | USER1 | USER2
Default Value: ZVEI1
Set/Query Format: CPD | CRD
Example: :AF:GEN:TONE:SEQuential:PROTocol PZVEI
Sets Tone Protocol for User 1 to PZVEI.
Query Response :AF:GEN:TONE:SEQuential:PROTocol?
PZVEI

NOTE USER1 and USER2 are custom protocol configurations.

3.3.19 AF Generators - Tone Sequential Sequence

:AF:GEN:TONE:SEQuential:SEQuence
:AF:GEN:TONE:SEQuential:SEQuence?

Description: Set command defines Sequence of single tone.
Query command returns parameter setting.

Parameter: 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F | —
maximum of 40 characters encased in double quotes " "

Default Value: 01234

Set/Query Format: hex string

Example: :AF:GEN:TONE:SEQuential:SEQuence "ABCD1245"
Sets Tone Sequential Sequence to ABCD1245.

Query Response: :AF:GEN:TONE:SEQuential:SEQuence?
ABCD1245

NOTE The "—" character is used to indicate a pause. The length of the pause is defined using :AF:GEN:TONE:SEQuential:PAUSe command.

3.3.20 AF Generators - Tone Sequential (User Protocol) Duration

:AF:GENerator:TONE:SEQuential:USERx:TONEn:DURAtion
:AF:GENerator:TONE:SEQuential:USERx:TONEn:DURAtion?

Description: Set command defines how long the AF Generator sends tone for the specified User and Tone parameters.
Query command returns parameter setting.

Range: 20 to 9999 ms

Units: ms

Default Value: 70 ms

Set/Query Format: NR1

Example: :AF:GENerator:TONE:SEQuential:USER1:TONEA:DURAtion 500
Sets AF Generator to generate User 1, Tone A for 500 ms,

Query Response: :AF:GENerator:TONE:SEQuential:USER1:TONEA:DURAtion?
500

NOTE USERx, x = 1 or 2
TONEn, n = 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F

3.3.21 AF Generators - Tone Sequential (User Protocol) Frequency

:AF:GENerator:TONE:SEQuential:USERx:TONEn:FREQuency
:AF:GENerator:TONE:SEQuential:USERx:TONEn:FREQuency?

Description: Set command defines the AF Generator frequency for the specified User and Tone parameters.
Query command returns parameter setting.

Range: 0.0 to 15 kHz

Units: Hz | kHz

Default Value: Tone 0 = 1500 Hz, increases in 50 Hz increments for Tone 1 through Tone F

Set/Query Format: NRf | NR2 (Hz)

Example: :AF:GENerator:TONE:SEQuential:USER1:TONEA:FREQuency 150Hz
Sets AF Generator Frequency for User 1, Tone A to 150.0 Hz.

Query Response: :AF:GENerator:TONE:SEQuential:USER1:TONEA:FREQuency?
150.00

NOTE
USERx, x = 1 or 2
TONEn, n = 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F

3.3.22 AF Generators - Tone Sequential (User Protocol) Pause

:AF:GENerator:TONE:SEQuential:USERx:TONEn:PAUSe
:AF:GENerator:TONE:SEQuential:USERx:TONEn:PAUSe?

Description: Set command defines how long the AF Generator pauses before sending the Tone.
Query command returns parameter setting.

Range: 0 to 9999 ms

Units: ms

Default Value: 15 ms

Set/Query Format: NR1

Example: :AF:GENerator:TONE:SEQuential:USER1:TONEA:PAUSe 500
Sets AF Generator to pause for 500 ms before sending User 1, Tone A.

Query Response: :AF:GENerator:TONE:SEQuential:USER1:TONEA:PAUSe?
500

NOTE
USERx, x = 1 or 2
TONEn, n = 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F

3.3.23 AF Generators - Two Tone Sequential Duration

:AF:GENerator:TTS:nTONE:DURation
:AF:GENerator:TTS:nTONE:DURation?

Description: Set command defines length of single specified Tone.
Query command returns parameter setting.

Range: 100 ms to 10 s

Units: ms | s

Default: 1.0 s

Set/Query Format: NRf | NR1 (ms)

Example: :AF:GENerator:TTS:ATONE:DURation 5s
Sets length of single Tone A burst to 5 seconds.

Query Response: :AF:GENerator:TTS:ATONE:DURation?
5000

NOTE nTone = A or B (Tone A or B)

3.3.24 AF Generators - Two Tone Sequential Frequency

:AF:GENerator:TTS:nTONE:FREQuency
:AF:GENerator:TTS:nTONE:FREQuency?

Description: Set command defines AF Generator Frequency for specified Tone.
Query command returns parameter setting.

Range: 1.0 Hz to 2.999 kHz

Units: Hz | kHz

Default Value: Tone A: 500.0 Hz
Tone B: 1.0 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :AF:GENerator:TTS:ATONE:FREQuency 150Hz
Sets AF Generator Frequency for Tone A to 150.0 Hz.

Query Response: :AF:GENerator:TTS:ATONE:FREQuency?
150.00

NOTE nTone = A or B (Tone A or B)

3.3.25 AF Generators - Two Tone Sequential Level

:AF:GENerator:TTS:LEVel
:AF:GENerator:TTS:LEVel?

Description: Set command defines the Level for single tone.
Query command returns parameter setting.

Range: 20.0 mV to 5.0 Vrms

Units: mV | V

Default Value: 1.0 V

Set/Query Format: NRf | NR2 (mV)

Example: :AF:GENerator:TTS:LEVel 3V
Sets AF Generator Level (Amplitude) to 3.0 Volts.

Query Response: :AF:GENerator:TTS:LEVel?
3000.0

3.4 EXTERNAL MODULATION GENERATORS

3.4.1 External Modulation Generator - Amplitude Scaling

:MOD:GENerator:ESOURce:AM
:MOD:GENerator:ESOURce:AM?

Description: Set command defines AM Depth (Amplitude) setting Test Set uses for scaling External Modulation source.
Query command returns parameter setting.

Range: 0.0 to 99.0%

Units: % (percent)

Default Value: 10.0%

Set/Query Format: NRf | NR2

Example: :MOD:GENerator:ESOURce:AM 15
Sets External Modulation Amplitude scaling to 15.0%.

Query Response: :MOD:GENerator:ESOURce:AM?
15.0

NOTE RF Modulation must be set to AM.

3.4.2 External Modulation Generator - Deviation Scaling

:MOD:GENerator:ESOURce:FM
:MOD:GENerator:ESOURce:FM?

Description: Set command defines FM Deviation setting Test Set uses for scaling External Modulation.
Query command returns parameter setting.

Range: 0.0 Hz to 150.0 kHz

Units: Hz | kHz

Default Value: 2.5 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :MOD:GENerator:ESOURce:FM 3kHz
Sets External Modulation Deviation scaling to 3.0 kHz.

Query Response: :MOD:GENerator:ESOURce:FM?
3000.00

NOTE FM Modulation must be selected for command to be valid.

3.4.3 External Modulation Generator - Enable Source

:MOD:GENerator:ESOURce:ENABle
:MOD:GENerator:ESOURce:ENABle?

Description: Set command Enables/Disables External Modulation source.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :MOD:GENerator:ESOURce:ENABle ON
Enables selected External Generator port.

Query Response: :MOD:GENerator:ESOURce:ENABle?
1

NOTE Test Set does not process any commands following this one until this command is completed.

3.4.4 External Modulation Generator - Source

:CONFigure:MOD:GENerator:ESOurce
:CONFigure:MOD:GENerator:ESOurce?

Description: Set command defines external source of Modulation Generator.
Query command returns parameter setting.

Parameter: AUD1HI | AUD2HI | MIC | BAL | AUD1600 | AUD2600

Default Value: AUD1HI (Audio 1 Hi-Z)

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:GENerator:ESOurce MIC
Selects Microphone as External Modulation Source.

Query Response: :CONFigure:MOD:GENerator:ESOurce?
MIC

NOTE Test Set does not process any commands following this one until this command is completed.
External Modulation Generator must be enabled to change source (:MOD:GENerator:ESOURce:ENABle ON).

3.5 MODULATION GENERATORS

3.5.1 Modulation Generators - AM Depth (Amplitude)

:MOD:GENerator:SOURceN:AM
:MOD:GENerator:SOURceN:AM?

Description: Set command defines AM Depth setting for selected modulation generator.
Query command returns parameter setting.

Range: 0.0 to 99.0%

Units: % (percent)

Default Value: 10.0%

Set/Query Format: NRf | NR2

Example: :MOD:GENerator:SOURce2:AM 2.5%
Sets Modulation Generator 2 Amplitude to 2.5%.

Query Response: :MOD:GENerator:SOURceN:AM?
2.5

NOTE
AM Modulation must be selected for command to be valid.
SourceN = 1, 2 or 3 (Modulator 1, 2 or 3)
Test Set does not process any commands following this one until this command is completed.

3.5.2 Modulation Generators - DCS Code

:MOD:GENerator:SOURceN:CODEword “xxx”
:MOD:GENerator:SOURceN:CODEword?

Description: Set command defines the DCS code for specified Mod Generator Source.
Query command returns parameter setting.

Parameter: Refer to Appendix A of 3900 Series Remote Programming Manual for supported DCS codes.

Default Value: 023

Set/Query Format: NR1

Example: :MOD:GENerator:SOURce1:CODEword “071”
Sets Mod Generator 1 DCS Code to 071.

Query Response: :MOD:GENerator:SOURce1:CODEword?
071

NOTE
Command only valid when Mod Generator Shape (Waveform) is set to DCS.
SourceN = 1, 2 or 3 (Mod Generator 1, 2 or 3)

3.5.3 Modulation Generators - DTMF Burst Length

:MOD:GENerator:SOURce1:MARK
:MOD:GENerator:SOURce1:MARK?

Description: Set command defines length of time a DTMF burst is ON for Mod Generator 1.
Query command returns parameter setting.

Range: 1 to 6,000,000 ms

Units: ms

Default Value: 100 ms

Set/Query Format: NRF | NR1

Example: :MOD:GENerator:SOURce1:MARK 5000ms
Sets length of Mod Generator 1 DTMF burst to 5000 milliseconds.

Query Response: :MOD:GENerator:SOURce1:MARK?
5000

NOTE DTMF waveform is only supported on Mod Generator 1

3.5.4 Modulation Generators - DTMF Dead Time

:MOD:GENerator:SOURce1:END
:MOD:GENerator:SOURce1:END?

Description: Set command defines the dead time between DTMF tones for Mod Generator 1.
Query command returns parameter setting.

Range: 1 to 6,000,000 ms

Units: ms

Default Value: 500 ms

Set/Query Format: NRf | NR1

Example: :MOD:GENerator:SOURce1:END 1000ms
Sets dead time between DTMF tones to 1000 milliseconds.

Query Response: :MOD:GENerator:SOURce1:END?
1000

NOTE DTMF waveform is only supported on Mod Generator 1.

3.5.5 Modulation Generators - DTMF Sequence

:MOD:GENerator:SOURce1:SEQuence
:MOD:GENerator:SOURce1:SEQuence?

Description: Set command defines DTMF Sequence when DTMF Waveform is selected.
Query command returns parameter setting.

Parameter: 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | # | *
maximum of 16 characters encased in double quotes " "

Default Value: 01234567

Set/Query Format: hex string

Example: :MOD:GENerator:SOURce1:SEQuence "ABCD*1234#5678"
Sets Mod Generator DTMF Sequence to ABCD*1245#5678.

Query Response: :MOD:GENerator:SOURce1:SEQuence?
ABCD*1245#5678

NOTE Command only valid when Mod Generator 1 Waveform is set to DTMF.
DMTF waveform is only supported on Mod Generator 1.

3.5.6 Modulation Generators - DTMF Sequence Mode

:MOD:GENerator:SOURce1:SEQMode
:MOD:GENerator:SOURce1:SEQMode?

Description: Set command defines DTMF sequence mode of operation for Mod Generator 1.
Query command returns parameter setting.

Parameter: 0 = Single DTMF burst
1 = Continuous DMTF burst

Default Value: 0 (Single)

Set/Query Format: NR1

Example: :MOD:GENerator:SOURce1:SEQMode 1
Sets DTMF Sequence Mode of Mod Generator 1 to Continuous.

Query Response: :MOD:GENerator:SOURce1:SEQMode?
1

NOTE Command only valid when Mod Generator 1 Waveform is set to DTMF.
DMTF waveform is only supported on Mod Generator 1.

3.5.7 Modulation Generators - DTMF Sequence Spacing

:MOD:GENerator:SOURce1:SPACe
:MOD:GENerator:SOURce1:SPACe?

Description: Set command defines the dead time between DTMF tone sequence when operating in Continuous Sequence mode of operation for RF Mod Generator 1.
Query command returns parameter setting.

Range: 1 to 6,000,000 ms

Units: ms

Default Value: 500 ms

Set/Query Format: NRf | NR1

Example: :MOD:GENerator:SOURce1:SPACe 1000ms
Sets dead time between DTMF tone sequences to 1000 milliseconds.

Query Response: :MOD:GENerator:SOURce1:SPACe?
1000

NOTE
Command only valid when Continuous Sequence Mode is selected.
DTMF waveform is only supported on Mod Generator 1.

3.5.8 Modulation Generators - Enable

:MOD:GENerator:SOURceN:ENABle
:MOD:GENerator:SOURceN:ENABle?

Description: Set command Enables/Disables Source for Mod Generator.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :MOD:GENerator:SOURce2:ENABle ON
Enables Mod Generator 2.

Query Response: :MOD:GENerator:SOURce2:ENABle?
1

NOTE
SourceN = 1, 2 or 3 (Modulator 1, 2 or 3)
Test Set does not process any commands following this one until this command is completed.

3.5.9 Modulation Generators - FM Deviation

:MOD:GENerator:SOURceN:FM
:MOD:GENerator:SOURceN:FM?

Description: Set command defines FM Deviation for selected Modulation Generator.
Query command returns parameter setting.

Range: 0.0 Hz to 150.0 kHz

Units: Hz | kHz

Default Value: 2.5 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :MOD:GENerator:SOURce3:FM 3kHz
Sets Modulation Generator 3 Deviation to 3.0 kHz.

Query Response: :MOD:GENerator:SOURce3:FM?
3000.00

NOTE
FM Modulation must be selected for command to be valid.
SourceN = 1, 2 or 3 (Modulator 1, 2 or 3)
Test Set does not process any commands following this one until this command is completed.

3.5.10 Modulation Generators - Frequency

:MOD:GENerator:SOURceN:FREQuency
:MOD:GENerator:SOURceN:FREQuency?

Description: Set command defines Frequency for Mod Generator Source.
Query command returns parameter setting.

Range: 1.0 Hz to 20.0 kHz

Units: Hz | kHz

Default Value: Mod 1: 1.0 kHz
Mod 2: 300.0 Hz
Mod 3: 3.4 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :MOD:GENerator:SOURce1:FREQuency 15kHz
Sets Modulation Generator 1 Frequency to 15.0 kHz.

Query Response: :MOD:GENerator:SOURce1:FREQuency?
15000.0

NOTE
SourceN = 1, 2 or 3 (Mod Generator 1, 2 or 3)

3.5.11 Modulation Generators - Waveform

:MOD:GENerator:SOURceN:SHAPe
:MOD:GENerator:SOURceN:SHAPe?

Description: Set command defines Waveform Shape for Modulation Generator.

Query command returns parameter setting.

Parameter: SINE | SQUare | TRIangle | RAMP | DCS | DCSINV | DTMF

Query Data: SNR | SINE | SQUare | TRIangle | RAMP | DCS | DCSINV | DTMF | TONESEQ | TONEREM | TRKGEN

Default Value: SINE

Set/Query Format: CPD | CRD

Example: :MOD:GENerator:SOURce2:SHAPe SQUare

Sets Mod Generator 2 Waveform shape to Square.

Query Response: :MOD:GENerator:SOURce2:SHAPe?

SQU

NOTE

SourceN = 1, 2 or 3 (Mod Generator 1, 2 or 3)

DTMF waveform is only valid on Mod Generator 1; Mod Generator 2 is unavailable when DTMF selected on Mod Generator 1.

Test Set does not process any commands following this one until this command is completed.

Mod Generator 1 is unavailable as a modulation source when Normal AF SNR Noise Measurements are defined (:CONFigure:AF:ANALyzer:SNR:MODE 1) and MOD:GENerator:SOURce1:SHAPe? returns SNR.

3.6 MODULATION GENERATORS - TONE ENCODING

3.6.1 Modulation Generators - Encoding Enable

:MOD:GENerator:ENCODE:ENABle
:MOD:GENerator:ENCODE:ENABle?

Description: Set command Enables/Disables (sends) one Tone from Modulation Generator.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :MOD:GENerator:ENCODE:ENABle ON
Sends one Tone from Modulation Generator.
Query Response: :MOD:GENerator:ENCODE:ENABle?
1

3.6.2 Modulation Generators - Encoded Signal Type

:MOD:GENerator:ENCODE:TYPE
:MOD:GENerator:ENCODE:TYPE?

Description: Set command defines type of signal being Encoded by the Modulation Generator.
Query command returns parameter setting.
Parameter: TWOTONE | TONESEQ | TONEREM
Default: TWOTONE
Set/Query Format: CPD | CRD
Example: :MOD:GENerator:ENCODE:TYPE TWOTONE
Sets Modulation Generator Tone Signaling Type to Two Tone Sequential.
Query Response: :MOD:GENerator:ENCODE:TYPE?
TWOTONE

3.6.3 Modulation Generators - Tone Remote Functional Duration

:MOD:GEN:TONE:REMote:FUNCtion:DURation
:MOD:GEN:TONE:REMote:FUNCtion:DURation?

Description: Set command defines length of single Tone.
Query command returns parameter setting.
Range: 20 to 500 ms
Units: ms | s
Default: 40 ms
Set/Query Format: NRf | NR1 (ms)
Example: :MOD:GEN:TONE:REMote:FUNCtion:DURation 50ms
Sets length of single Tone burst to 50 milliseconds.
Query Response: :MOD:GEN:TONE:REMote:FUNCtion:DURation?
50

3.6.4 Modulation Generators - Tone Remote Functional Frequency

:MOD:GEN:TONE:REMote:FUNCtion:FREQuency
:MOD:GEN:TONE:REMote:FUNCtion:FREQuency?

Description: Set command defines the Tone frequency.
Query command returns parameter setting.
Range: 1.0 Hz to 2.999 kHz
Units: Hz | kHz
Default Value: 1.050 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :MOD:GEN:TONE:REMote:FUNCtion:FREQuency 15Hz
Sets Tone Frequency to 15.0 Hz.
Query Response: :MOD:GEN:TONE:REMote:FUNCtion:FREQuency?
15.0

3.6.5 Modulation Generators - Tone Remote Functional Level

:MOD:GEN:TONE:REMote:FUNCtion:LEVel
:MOD:GEN:TONE:REMote:FUNCtion:LEVel?

Description: Set command defines the Tone Level.
Query command returns parameter setting.
Range: -20.0 to +20.0 dB
Units: dB
Default Value: 0.0 dB
Set/Query Format: NRf | NR2
Example: :MOD:GEN:TONE:REMote:FUNCtion:LEVel 5dB
Sets the Tone Level to 5.0 dB.
Query Response: :MOD:GEN:TONE:REMote:FUNCtion:LEVel?
5.0

3.6.6 Modulation Generators - Tone Remote Guard Duration

:MOD:GEN:TONE:REMote:GUARD:DURation
:MOD:GEN:TONE:REMote:GUARD:DURation?

Description: Set command defines length of single Tone Remote burst.
Query command returns parameter setting.
Range: 1 to 6,000,000 ms
Units: ms | s | ks
Default: 120 ms
Set/Query Format: NRf | NR1 (ms)
Example: :MOD:GEN:TONE:REMote:GUARD:DURation 50ms
Sets length of single Tone Remote burst to 50 milliseconds.
Query Response: :MOD:GEN:TONE:REMote:GUARD:DURation?
50

3.6.7 Modulation Generators - Tone Remote Guard Frequency

:MOD:GEN:TONE:REMote:GUARD:FREQuency
:MOD:GEN:TONE:REMote:GUARD:FREQuency?

Description: Set command defines Tone Frequency.
Query command returns parameter setting.
Range: 1.0 Hz to 2.999 kHz
Units: Hz | kHz
Default Value: 2.175 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :MOD:GEN:TONE:REMote:GUARD:FREQuency 15Hz
Sets Tone Frequency to 15.0 Hz.
Query Response: :MOD:GEN:TONE:REMote:GUARD:FREQuency?
15.0

3.6.8 Modulation Generators - Tone Remote Guard Level

:MOD:GEN:TONE:REMote:GUARD:LEVel
:MOD:GEN:TONE:REMote:GUARD:LEVel?

Description: Set command defines the Tone Level.
Query command returns parameter setting.
Range: -20.0 to +20.0 dB
Units: dB
Default Value: -20.0 dB
Set/Query Format: NRf | NR2
Example: :MOD:GEN:TONE:REMote:GUARD:LEVel 5dB
Sets the Tone Level to 5.0 dB.
Query Response: :MOD:GEN:TONE:REMote:GUARD:LEVel?
5.0

3.6.9 Modulation Generators - Tone Remote Maximum Duration

:MOD:GEN:TONE:REMote:MAXimum:DURation
:MOD:GEN:TONE:REMote:MAXimum:DURation?

Description: Set command defines length of single Tone.
Query command returns parameter setting.
Range: 20 to 500 ms
Units: ms | s
Default: 120 ms
Set/Query Format: NRf | NR1 (ms)
Example: :MOD:GEN:TONE:REMote:MAXimum:DURation 50ms
Sets length of single Tone burst to 50 milliseconds.
Query Response: :MOD:GEN:TONE:REMote:MAXimum:DURation?
50

3.6.10 Modulation Generators - Tone Remote Maximum Frequency

:MOD:GEN:TONE:REMote:MAXimum:FREQuency
:MOD:GEN:TONE:REMote:MAXimum:FREQuency?

Description: Set command defines the Tone frequency.
Query command returns parameter setting.
Range: 1.0 Hz to 2.999 kHz
Units: Hz | kHz
Default Value: 2.175 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :MOD:GEN:TONE:REMote:MAXimum:FREQuency 15Hz
Sets Tone Frequency to 15.0 Hz.
Query Response: :MOD:GEN:TONE:REMote:MAXimum:FREQuency?
15.0

3.6.11 Modulation Generators - Tone Remote Maximum Level

:MOD:GEN:TONE:REMote:MAXimum:LEVel
:MOD:GEN:TONE:REMote:MAXimum:LEVel?

Description: Set command defines the Tone Level.
Query command returns parameter setting.
Range: -20.0 to +20.0 dB
Units: dB
Default Value: 10.0 dB
Set/Query Format: NRf | NR2
Example: :MOD:GEN:TONE:REMote:MAXimum:LEVel 5dB
Sets the Tone Level to 5.0 dB.
Query Response: :MOD:GEN:TONE:REMote:MAXimum:LEVel?
5.0

3.6.12 Modulation Generators - Tone Remote Reference Deviation

:MOD:GEN:TONE:REMote:REFerence:DEViation
:MOD:GEN:TONE:REMote:REFerence:DEViation?

Description: Set command defines the Tone Reference Deviation.
Query command returns parameter setting.
Range: 414.0 Hz to 150.0 kHz
Units: Hz | kHz
Default Value: 2.5 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :MOD:GEN:TONE:REMote:REFerence:DEViation 1.75kHz
Sets the Tone Reference Deviation to 1.75 kHz.
Query Response: :MOD:GEN:TONE:REMote:REFerence:DEViation?
1750.0

3.6.13 Modulation Generators - Tone Sequential Call Delay

:MOD:GENerator:TONE:SEQuential:CALL:DELAy
:MOD:GENerator:TONE:SEQuential:CALL:DELAy?

Description: Set command defines how long the Modulation Generator extends the first tone in the tone sequence.
Query command returns parameter setting.

Range: 0 to 9999 ms

Units: ms

Default Value: 700 ms

Set/Query Format: NR1

Example: :MOD:GENerator:TONE:SEQuential:CALL:DELAy 500
Sets Modulation Generator to wait for 500 ms before sending User 1, Tone A.

Query Response: :MOD:GENerator:TONE:SEQuential:CALL:DELAy?
500

3.6.14 Modulation Generators - Tone Sequential FM Deviation

:MOD:GEN:TONE:SEQuential:MASTER:DEViation
:MOD:GEN:TONE:SEQuential:MASTER:DEViation?

Description: Set command defines the Modulation FM Deviation for Tone Sequential Encoding.
Query command returns parameter setting.

Range: 414.0 Hz to 150.0 kHz

Units: Hz | kHz

Default Value: 2.5 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :MOD:GEN:TONE:SEQuential:MASTER:DEViation 1.75kHz
Sets the Tone FM Deviation to 1.75 kHz.

Query Response: :MOD:GEN:TONE:SEQuential:MASTER:DEViation?
1750.0

3.6.15 Modulation Generators - Tone Sequential Frequency Shift

:MOD:GENerator:TONE:SEQuential:FREQuency:SHIFt
:MOD:GENerator:TONE:SEQuential:FREQuency:SHIFt?

Description: Set command defines the frequency shift applied to the frequency of tones transmitted by the Modulation Generator.
Query command returns parameter setting.

Range: -10% to +10%

Units: %

Default Value: 0%

Set/Query Format: NR1

Example: :MOD:GENerator:TONE:SEQuential:FREQuency:SHIFt 5
Sets Modulation Generator to apply a frequency shift of 5% to the tone's frequency.

Query Response: :MOD:GENerator:TONE:SEQuential:FREQuency:SHIFt?
5

3.6.16 Modulation Generators - Tone Sequential Mode

:MOD:GEN:TONE:SEQuential:MODE
:MOD:GEN:TONE:SEQuential:MODE?

Description: Set command selects Tone Mode of operation.
Query command returns parameter setting.
Parameter: SINGLE | CONTINUOUS
Default Value: SINGLE
Set/Query Format: CPD | CRD
Example: :MOD:GEN:TONE:SEQuential:MODE CONTINUOUS
Sets Tone Sequential Mode to Continuous.
Query Response: :MOD:GEN:TONE:SEQuential:MODE?
CONTINUOUS

3.6.17 Modulation Generators - Tone Sequential Pause

:MOD:GENerator:TONE:SEQuential:PAUSe
:MOD:GENerator:TONE:SEQuential:PAUSe?

Description: Set command defines how long the Modulation Generator pauses before sending the first Tone.
Query command returns parameter setting.
Range: 0 to 9999 ms
Units: ms
Default Value: 15 ms
Set/Query Format: NR1
Example: :MOD:GENerator:TONE:SEQuential:PAUSe 500
Sets Modulation Generator to pause for 500 ms before sending first tone.
Query Response: :MOD:GENerator:TONE:SEQuential:PAUSe?
500

3.6.18 Modulation Generators - Tone Sequential Protocol

:MOD:GEN:TONE:SEQuential:PROTocol
:MOD:GEN:TONE:SEQuential:PROTocol?

Description: Set command selects Tone protocol.
Query command returns parameter setting.
Parameter: ZVEI1 | ZVEI2 | ZVEI3 | PZVEI | DZVEI | PDZVEI | CCIR1 | CCIR2 | PCCIR | EEA | EUROSIG | NATEL | EIA | MODAT | USER1 | USER2
Default Value: ZVEI1
Set/Query Format: CPD | CRD
Example: :MOD:GEN:TONE:SEQuential:PROTocol PZVEI
Sets Tone Protocol for User 1 to PZVEI.
Query Response: :MOD:GEN:TONE:SEQuential:PROTocol?
PZVEI

NOTE USER1 and USER2 are custom protocol configurations.

3.6.19 Modulation Generators - Tone Sequential Sequence

:MOD:GEN:TONE:SEQuential:SEQuence
:MOD:GEN:TONE:SEQuential:SEQuence?

Description: Set command defines Sequence of Tone.
Query command returns parameter setting.

Parameter: 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F | —
maximum of 40 characters encased in double quotes " "

Default Value: 01234567

Set/Query Format: hex string

Example: :MOD:GEN:TONE:SEQuential:SEQuence "ABCD1245"
Sets Sequence to ABCD1245.

Query Response: :MOD:GEN:TONE:SEQuential:SEQuence?
ABCD1245

NOTE The "—" character is used to indicate a pause. The length of the pause is defined using :MOD:GEN:TONE:SEQuential:PAUSe command.

3.6.20 Modulation Generators - Tone Sequential (User Protocol) Duration

:MOD:GENerator:TONE:SEQuential:USERx:TONEn:DURAtion
:MOD:GENerator:TONE:SEQuential:USERx:TONEn:DURAtion?

Description: Set command defines how long the Modulation Generator sends tone for the specified User and Tone parameters.
Query command returns parameter setting.

Range: 20 to 9999 ms

Units: ms

Default Value: 70 ms

Set/Query Format: NR1

Example: :MOD:GENerator:TONE:SEQuential:USER1:TONEA:DURAtion 500
Sets Modulation Generator to generate User 1, Tone A for 500 ms,

Query Response: :MOD:GENerator:TONE:SEQuential:USER1:TONEA:DURAtion?
500

NOTE USERx, x = 1 or 2
TONEn, n = 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F

3.6.21 Modulation Generators - Tone Sequential (User Protocol) Frequency

:MOD:GENerator:TONE:SEQuential:USERx:TONEn:FREQuency
:MOD:GENerator:TONE:SEQuential:USERx:TONEn:FREQuency?

Description: Set command defines the Modulation Generator frequency for the specified User and Tone parameters.
Query command returns parameter setting.

Range: 0.0 to 15 kHz

Units: Hz | kHz

Default Value: Tone 0 = 1500 Hz, increases in 50 Hz increments for Tone 1 through Tone F

Set/Query Format: NRf | NR2 (Hz)

Example: :MOD:GENerator:TONE:SEQuential:USER1:TONEA:FREQuency 150Hz
Sets Mod Generator Frequency for User 1, Tone A to 150.0 Hz.

Query Response: :MOD:GENerator:TONE:SEQuential:USER1:TONEA:FREQuency?
150.00

NOTE
USERx, x = 1 or 2
TONEn, n = 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F

3.6.22 Modulation Generators - Tone Sequential (User Protocol) Pause

:MOD:GENerator:TONE:SEQuential:USERx:TONEn:PAUSe
:MOD:GENerator:TONE:SEQuential:USERx:TONEn:PAUSe?

Description: Set command defines how long the Modulation Generator pauses before sending the Tone.
Query command returns parameter setting.

Range: 0 to 9999 ms

Units: ms

Default Value: 15 ms

Set/Query Format: NR1

Example: :MOD:GENerator:TONE:SEQuential:USER1:TONEA:PAUSe 500
Sets Modulation Generator to pause for 500 ms before sending User 1, Tone A.

Query Response: :MOD:GENerator:TONE:SEQuential:USER1:TONEA:PAUSe?
500

NOTE
USERx, x = 1 or 2
TONEn, n = 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F

3.6.23 Modulation Generators - Two Tone Sequential Duration

:MOD:GENerator:TTS:nTONE:DURation
:MOD:GENerator:TTS:nTONE:DURation?

Description: Set command defines length of single Tone.
Query command returns parameter setting.
Range: 100 ms to 10 s
Units: ms | s
Default: Tone A: 1.0 s
Tone B: 3.0 s
Set/Query Format: NRf | NR1 (ms)
Example: :MOD:GENerator:TTS:ATONE:DURation 5s
Sets length of single Tone A burst to 5 seconds.
Query Response: :MOD:GENerator:TTS:ATONE:DURation?
5000

NOTE nTone = A or B (Tone A or B)

3.6.24 Modulation Generators - Two Tone Sequential Frequency

:MOD:GENerator:TTS:nTONE:FREQuency
:MOD:GENerator:TTS:nTONE:FREQuency?

Description: Set command defines Tone frequency for Modulation Generator.
Query command returns parameter setting.
Range: 1.0 Hz to 2.999 kHz
Units: Hz | kHz
Default Value: Tone A: 500.0 Hz
Tone B: 1.0 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :MOD:GENerator:TTS:ATONE:FREQuency 150Hz
Sets Mod Generator Frequency for Tone A to 150.0 Hz.
Query Response: :MOD:GENerator:TTS:ATONE:FREQuency?
150.00

NOTE nTone = A or B (Tone A or B)

3.6.25 Modulation Generators - Two Tone Sequential FM Deviation

:MOD:GENerator:TTS:DEViation
:MOD:GENerator:TTS:DEViation?

Description: Set command defines the Tone Deviation for Modulation Generator.
Query command returns parameter setting.

Range: 414.0 Hz to 150.0 kHz

Units: Hz | kHz

Default Value: 2.5 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :MOD:GENerator:TTS:DEViation 4kHz
Sets Mod Generator Deviation to 4.0 kHz

Query Response: :MOD:GENerator:TTS:DEViation?
4000.0

3.7 RF GENERATOR

3.7.1 Duplex Frequency - Offset Enable

:CONFigure:OFFSet:DUPLex:LOCK
:CONFigure:OFFSet:DUPLex:LOCK?

Description: Set command defines the RF Analyzer Offset mode of operation.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :CONFigure:OFFSet:DUPLex:LOCK ON
Locks Duplex Frequency Offset to RF Analyzer Frequency.
Query Response: :CONFigure:OFFSet:DUPLex:LOCK?
1

3.7.2 Duplex Frequency - Offset Value

:CONFigure:OFFSet:DUPLex:VALue
:CONFigure:OFFSet:DUPLex:VALue?

Description: Set command defines the RF Analyzer Offset Value.
Query command returns parameter setting.
Range: -999.0 to +999.0 MHz
Units: Hz | kHz | MHz
Default Value: 0.00000 MHz
Set/Query Format: NRf | NR1 (Hz)
Example: :CONFigure:OFFSet:DUPLex:VALue 15MHz
Sets Duplex Offset to 15.0 MHz.
Query Response: :CONFigure:OFFSet:DUPLex:VALue?
15000000

3.7.3 RF Generator - Enable

:RF:GENerator:ENABle
:RF:GENerator:ENABle?

Description: Set command Enables/Disables RF Generator.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :RF:GENerator:ENABle ON
Enables RF Generator.
Query Response: :RF:GENerator:ENABle?
1

3.7.4 RF Generator - Frequency

:RF:GENerator:FREQuency
:RF:GENerator:FREQuency?

Description: Set command defines RF Generator Frequency.
Query command returns parameter setting.
Range: 100.0 kHz to 2.71 GHz
Units: Hz | kHz | MHz | GHz
Default Value: 150.0 MHz
Set/Query Format: NRf | NR1 (Hz)
Example: :RF:GENerator:FREQuency 850MHz
Sets RF Generator Frequency to 850.0 MHz.
Query Response: :RF:GENerator:FREQuency?
850000000

3.7.5 RF Generator - Frequency Decrement

:RF:GENerator:FDECrement

Description: Command decreases RF Generator Frequency by defined frequency increment value.
Parameter/Query: none

NOTE RF Generator Frequency Increment value is defined with command :CONFigure:RF:GENerator:FINCrement.

3.7.6 RF Generator - Frequency Increment

:RF:GENerator:FINCrement

Description: Command increases RF Generator Frequency by defined frequency increment value.
Parameter/Query: none

NOTE RF Generator Frequency Increment value is defined with command :CONFigure:RF:GENerator:FINCrement.

3.7.7 RF Generator - Frequency Increment Value

:CONFigure:RF:GENerator:FINCrement
:CONFigure:RF:GENerator:FINCrement?

Description: Set command defines RF Generator Frequency Increment value.
Query command returns parameter setting.
Range: 1.0 Hz to 999.0 MHz
Units: Hz | kHz | MHz
Default Value: 1.0 Hz
Set/Query Format: NRf | NR1 (Hz)
Example: :CONFigure:RF:GENerator:FINCrement 5kHz
Sets RF Generator Frequency Increment value to 5.0 kHz.
Query Response: :CONFigure:RF:GENerator:FINCrement?
5000

3.7.8 RF Generator - Level

:RF:GENerator:LEVel
:RF:GENerator:LEVel?

Description: Set command defines RF Generator Level.
Query command returns parameter setting.

Range: AM/LSB/USB Modulation
TR: -138.0 to -35.0 dBm
GEN: -130.0 to 0.0 dBm

Range: All other Modulation Types
TR: -138.0 to -30.0 dBm
GEN: -130.0 to +10.0 dBm

Units: dBm | µV | mV | V | dBµV

Default Value: -80.0 dBm

Set/Query Format: NRf | NR2 (dBm)

Example: :RF:GENerator:LEVel -75dBm
Sets RF Generator Level to -75.0 dBm.

Query Response: :RF:GENerator:LEVel?
-75.0

3.7.9 RF Generator - Level Decrement

:RF:GENerator:LDECrement

Description: Command decreases RF Generator Level by defined Level Increment value.

Parameter/Query: none

NOTE Level Increment value is defined with :CONF:RF:GENerator:LINCrement command.

3.7.10 RF Generator - Level Increment

:RF:GENerator:LINCrement

Description: Command increases RF Generator Level by defined Level Increment value.

Parameter/Query: none

NOTE Level Increment value is defined with :CONF:RF:GENerator:LINCrement command.

3.7.11 RF Generator - Level Increment Value

:CONFigure:RF:GENerator:LINCrement
:CONFigure:RF:GENerator:LINCrement?

Description: Set command defines RF Generator Level Increment value.
Query command returns parameter setting.
Range: 0.1 to 100.0 dB
Units: dB
Default Value: 0.1 dB
Set/Query Format: NRf | NR1
Example: :CONFigure:RF:GENerator:LINCrement 10dB
Sets RF Generator Level Increment value to 10.0 dB.
Query Response: :CONFigure:RF:GENerator:LINCrement?
10.0

3.7.12 RF Generator - Modulation Type

:RF:GENerator:MOD
:RF:GENerator:MOD?

Description: Set command defines RF Generator Modulation.
Query command returns parameter setting.
Parameter: OFF | AM | FM | FM50 | FM75 | FM750 | AMUSB | AMLSB | IQGEN
Default Value: FM
Set/Query Format: CPD | CRD
Example: :RF:GENerator:MOD AMUSB
Sets RF Generator Modulation to AM Upper Sideband.
Query Response: :RF:GENerator:MOD?
AMUSB

NOTE

IQGEN is only available when IQ Gen option is installed in Test Set.
Test Set does not process any commands following this one until this command is completed.

3.7.13 RF Generator - Offset Enable

:CONFigure:OFFSet:GENerator:ENABle
:CONFigure:OFFSet:GENerator:ENABle?

Description: Set command Enables/Disables RF Generator Offset.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :CONFigure:OFFSet:GENerator:ENABle ON
Enables RF Generator Offset.
Query Response: :CONFigure:OFFSet:GENerator:ENABle?
1

3.7.14 RF Generator - Offset Value

:CONFigure:OFFSet:GENerator:VALue
:CONFigure:OFFSet:GENerator:VALue?

Description: Set command defines RF Generator Offset Value.
Query command returns parameter setting.
Range: -100.0 to +100.0 dB
Units: dB
Default Value: 0.0 dB
Set/Query Format: NRf | NR2
Example: :CONFigure:OFFSet:GENerator:VALue 2.5dB
Set RF Generator Offset to 2.5 dB.
Query Response: :CONFigure:OFFSet:GENerator:VALue?
2.5

3.7.15 RF Generator - Output Connector

:RF:GENerator:PORT
:RF:GENerator:PORT?

Description: Set command selects the RF Out Connector.
Query command returns parameter setting.
Parameter: TR | GEN
Default Value: TR
Set/Query Format: CPD | CRD
Example: :RF:GENerator:PORT GEN
Selects Generator Connector as RF Output Connector.
Query Response: :RF:GENerator:PORT?
GEN

3.7.16 RF Generator - Push to Talk Control Enable

:CONFigure:RF:GENerator:PTTControl
:CONFigure:RF:GENerator:PTTControl?

Description: Set command Enables/Disables Push To Talk Control.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :CONFigure:RF:GENerator:PTTControl ON
Enables PTT Control.
Query Response: :CONFigure:RF:GENerator:PTTControl?
1

3.7.17 RF Generator - Push to Talk Out Control Enable

:CONFigure:RF:GENerator:PTTOut
:CONFigure:RF:GENerator:PTTOut?

Description: Set command Enables/Disables Push to Talk Out Control (MIC).
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :CONFigure:RF:GENerator:PTTOut ON
Enables PTT Out Functionality.
Query Response: :CONFigure:RF:GENerator:PTTOut?
1

3.7.18 RF Generator - Push to Talk Polarity

:CONFigure:RF:GENerator:PTTPolarity
:CONFigure:RF:GENerator:PTTPolarity?

Description: Set command defines Push to Talk Polarity Control setting.
Query command returns parameter setting.
Parameter: HIGH | LOW
Default Value: LOW
Set/Query Format: CPD | CRD
Example: :CONFigure:RF:GENerator:PTTPolarity HIGH
Set command selects High Polarity for Push To Talk control.
Query Response: :CONFigure:RF:GENerator:PTTPolarity?
HIGH

Chapter 4 - AF Analyzer Measurements Remote Commands

4.1 INTRODUCTION

This chapter describes the Remote Commands to configure and obtain AF Measurements. Commands are listed alphabetically under the following headings:

4.2 AF MEASUREMENTS CONFIGURATION

4.2.1 AF Measurements - 300 Hz Filter Type

:CONFigure:AF:HZ300FILter
:CONFigure:AF:HZ300FILter?

Description:	Set command defines the type of 300 Hz Filter used for AF measurements when 300 Hz Filter is selected.
	Query command returns parameter setting.
Parameter:	STD | SHARP
	STD = Highpass 300 Hz Low-Q Filter
	SHARP = Highpass 300 Hz High-Q Filter
Default Value:	STD
Set/Query Format:	CPD | CRD
Example:	:CONFigure:AF:HZ300FILter SHARP
	Selects Highpass 300 Hz High-Q Filter for AF measurements.
Query Response:	:CONFigure:AF:HZ300FILter?
	SHARP
NOTE	AF Filter Weight must be defined as 300 Hz (:AF:ANALyzer:MFILter HP1) for command to be valid.

4.2.2 AF Measurements - Filter Type

:AF:ANALyzer:MFILter
:AF:ANALyzer:MFILter?

Description: Set command selects the Audio Analyzer Post Detection Filter.
Query command returns parameter setting.

Parameter: PSOPh | None | LP1 | LP2 | LP3 | LP4 | LP5 | LP6 | LP7 | HP1 | HP2 | HP3 | BP0 | BP1 | BP2 | BP3 | BP4 | BP5 | BP6 | BP7 | BP8 | BP9 | BP10 | BP11 | BP12 | BP13 | BP14 | BP15 | BP16

where:

NONE = No Filter	BP2 = 0.3 to 5.0 kHz BP
PSOPh = Psoph (CMESS or CCITT)	BP3 = 0.3 to 20.0 kHz BP
LP1 = 300.0 Hz LP	BP4 = 0.3 to 15.0 kHz BP
LP2 = 5.0 kHz LP	BP5 = 0.02 to 300.0 Hz BP
LP3 = 20.0 kHz LP	BP6 = 0.02 to 3.0 kHz BP
LP4 = 15.0 kHz LP	BP7 = 0.02 to 3.4 kHz BP
LP5 = 3.0 kHz LP	BP8 = 0.02 to 5.0 kHz BP
LP6 = 625.0 kHz LP*	BP9 = 0.02 to 15.0 kHz BP
LP7 = 10.0 kHz LP*	BP10 = 0.02 to 20.0 kHz BP
LP8 = 100.0 Hz LP*	BP11 = 0.05 to 300.0 Hz BP
HP1 = 300.0 Hz HP**	BP12 = 0.05 to 3.0 kHz BP
HP2 = 20.0 Hz HP	BP13 = 0.05 to 3.4 kHz BP
HP3 = 50.0 Hz HP	BP14 = 0.05 to 5.0 kHz BP
BP0 = 0.3 to 3.0 kHz BP	BP15 = 0.05 to 15.0 kHz BP
BP1 = 0.3 to 3.4 kHz BP	BP16 = 0.05 to 20.0 kHz BP

Default Value: NONE (No Filter)

Set/Query Format: CPD | CRD

Example: :AF:ANALyzer:MFILter LP3
Selects 20.0 kHz Low Pass Filter for AF measurements.

Query Response: :AF:ANALyzer:MFILter?
LP3

NOTE

Filter selected should be appropriate for signal received from UUT.
When PSOPH is selected, Filter weight is defined using :CONFigure:AF:MFILter command.
Test Set does not process any commands following this one until this command is completed.
*LP6, LP7 and LP8 are used by the Audio Analyzer Tracking Generator and can not be defined by user, but may be returned as query data.
**When HP1 (300 Hz HP) is selected, CONFigure:AF:HZ300FILter selects the type of 300 Hz filter being used.

4.2.3 AF Measurements - Filter Weight

:CONFigure:AF:MFILter
:CONFigure:AF:MFILter?

Description: Set command defines the weight of psoph filter for AF measurements when Psoph filter type is selected.
Query command returns parameter setting.

Parameter: CMESs | CCITt

Default Value: CMESS

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:MFILter CCITt
Selects CCITT Psoph Filter for AF measurements.

Query Response: :CONFigure:AF:MFILter?
CCIT

NOTE AF Filter type must be defined as Psoph (:AF:ANALyzer:MFILter PSOPH) for command to be valid.
Test Set does not process any commands following this one until this command is completed.

4.2.4 AF Measurements - Impedance

:CONFigure:AF:ANALyzer:SOURce:LOAD
:CONFigure:AF:ANALyzer:SOURce:LOAD?

Description: Set command defines the Impedance of selected Audio Frequency (Receiver) source.
Query command returns parameter setting.

Parameter: UNBHI | UNB600

Default Value: Audio Source defined

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:SOURce:LOAD UNBHI
Sets Impedance of selected Audio Frequency (Receiver) Source to Unbalanced Hi-Z.

Query Response: :CONFigure:AF:ANALyzer:SOURce:LOAD?
UNBHI

NOTE Command not valid when AF Analyzer Source is set to Balanced (:CONFigure:AF:ANALyzer:SOURce is set to BAL).

4.2.5 AF Measurements - Impedance Audio 1

:CONFigure:AF:ANALyzer:SOURce:AUD1:LOAD
:CONFigure:AF:ANALyzer:SOURce:AUD1:LOAD?

Description: Set command defines the Impedance for Audio 1 input connector.
Query command returns parameter setting.

Parameter: UNBHI | UNB600

Default Value: UNBHI

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:SOURce:AUD1:LOAD UNBHI
Sets selected Audio 1 Impedance to Unbalanced Hi-Z.

Query Response: :CONFigure:AF:ANALyzer:SOURce:AUD1:LOAD?
UNBHI

NOTE — Sets Impedance of Audio 1 Input connector whether or not Audio 1 is defined as Audio Frequency (Receiver) Source.

4.2.6 AF Measurements - Impedance Audio 2

:CONFigure:AF:ANALyzer:SOURce:AUD2:LOAD
:CONFigure:AF:ANALyzer:SOURce:AUD2:LOAD?

Description: Set command defines the Impedance for Audio 2 input connector.
Query command returns parameter setting.

Parameter: UNBHI | UNB600

Default Value: UNBHI

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:SOURce:AUD2:LOAD UNBHI
Sets selected Audio 2 Impedance to Unbalanced Hi-Z.

Query Response: :CONFigure:AF:ANALyzer:SOURce:AUD2:LOAD?
UNBHI

NOTE — Sets Impedance of Audio 2 Input connector whether or not Audio 2 is defined as Audio Frequency (Receiver) Source.

4.2.7 AF Measurements - Impedance External Load

:CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD
:CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD?

Description: Set command defines the Impedance of selected Audio Frequency Analyzer (Receiver) source.
Query command returns parameter setting.

Range: 1 to 9999 Ohms

Units: Ohms

Default Value: 8 Ohms

Set/Query Format: NRf | NR1

Example: :CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD 100OHMS
Sets External Load to 100 Ohms for Audio Frequency Analyzer (Receiver).

Query Response: :CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD?
100

NOTE Command only valid when Impedance is set to Unbalanced Hi-Z (:CONFigure:AF:ANALyzer:SOURce:LOAD UNBHI).

4.2.8 AF Measurements - Impedance External Load Enable

:CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD:ENABle
:CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD:ENABle?

Description: Set command enables External Load for Impedance.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Set/Query Format: Boolean

Default Value: OFF

Example: :CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD:ENABLe ON
Enables and applies defined External Impedance Load.

Query Response: :CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD:ENABle?
1

NOTE Command :CONFigure:AF:ANALyzer:SOURce:VARiable:LOAD defines the external load applied when External Load is enabled.

4.2.9 AF Measurements - Noise Measurement Type

:AF:ANALyzer:NTYPe
:AF:ANALyzer:NTYPe?

Description: Set command sets the Audio Analyzer Noise measurement type.
Query command returns parameter setting.

Parameter: DISTortion | SINad | SN

Default Value: SINad

Set/Query Format: CPD | CRD

Example: :AF:ANALyzer:NTYPe SINad
Selects Sinad measurement as active Modulation Noise measurement.

Query Response: :AF:ANALyzer:NTYPe?
SIN

NOTE Noise measurement Type must be properly defined to obtained valid Distortion, Sinad, SNR and Hum & Noise measurements.

4.2.10 AF Measurements - Source

:CONFigure:AF:ANALyzer:SOURce
:CONFigure:AF:ANALyzer:SOURce?

Description: Set command defines the Source for Audio Frequency Analyzer (Receiver) and Site Sensitivity Search (Option).
Query command returns parameter setting.

Parameter: AUD1 | AUD2 | BAL | MIC

Default Value: AUD1

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:SOURce MIC
Selects Microphone as the Audio Frequency Analyzer (Receiver) Source.

Query Response: :CONFigure:AF:ANALyzer:SOURce?
MIC

NOTE Test Set does not process any commands following this one until this command is completed.

4.2.11 MIC Phantom Power

:CONFigure:PORT:MPPower
:CONFigure:PORT:MPPower?

Description: Set command Enables/Disables Microphone Phantom Power.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :CONFigure:PORT:MPPower ON
Enables Microphone Phantom Power.

Query Response: :CONFigure:PORT:MPPower
1

4.2.12 Loudspeaker

:CONFigure:PORT:LOUDspeaker
:CONFigure:PORT:LOUDspeaker?

Description: Set command selects Loudspeaker port.
Query command returns parameter setting.

Parameter: OFF | AUDio | FAUDio | DEMod | DDEMod | FDEMod | FDDEMod

Default Value: OFF

Set/Query Format: CPD | CRD

Example: :CONFigure:PORT:LOUDspeaker AUDio
Selects Audio as the Loudspeaker port.

Query Response: :CONFigure:PORT:LOUDspeaker?
AUD

4.2.13 Rx Meter - Mode of Operation

:SYSTem:RCI:METER:MODE
:SYSTem:RCI:METER:MODE?

Description: Set command defines Rx Meter mode of operation when operating remotely.
Query command returns parameter setting.

Parameter: SLOW | FAST

Default Value: FAST

Set/Query Format: CPD | CRD

Example: :SYSTem:RCI:METER:MODE SLOW
Sets Rx Meter Mode to Slow.

Query Response: :SYSTem:RCI:METER:MODE?
SLOW

NOTE

When set to FAST, *stb command can be used to obtain data stale byte.
When Mode is set to SLOW, data is not returned for the executed :FETCh command until fresh data is available or averaging is complete.
Commands that support this mode are identified by the following note:
*rci meter mode compatible

4.3 AF DISTORTION MEASUREMENT

4.3.1 AF Distortion - Averages

:CONFigure:AF:ANALyzer:DISTortion:AVERage
:CONFigure:AF:ANALyzer:DISTortion:AVERage?

Description: Set command defines the number of readings taken to calculate Average AF Distortion measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:AF:ANALyzer:DISTortion:AVERage 75
Sets number of readings being taken to calculate Average AF Distortion measurement to 75.

Query Response: :CONFigure:AF:ANALyzer:DISTortion:AVERage?
75

NOTE AF Analyzer Noise measurement type must be defined as Distortion (:AF:ANALyzer:NTYPe DISTortion) to obtain valid AF Distortion measurement.

4.3.2 AF Distortion - Frequency Bandwidth

:CONFigure:AF:ANALyzer:DISTortion:WIDTh
:CONFigure:AF:ANALyzer:DISTortion:WIDTh?

Description: Set command selects the Frequency bandwidth for AF Distortion measurement.
Query command returns parameter setting.

Parameter: 11.7 Hz | 35.2 Hz | 58.6 Hz | 82.0 Hz | 105.5 Hz | 128.9 Hz | 152.3 Hz

Default Value: 82.0 Hz

Set/Query Format: NRf | NR2

Example: :CONFigure:AF:ANALyzer:DISTortion:WIDTh 25.2 [Hz]
Sets Bandwidth for AF Analyzer Distortion measurement to 25.2 Hz.

Query Response: :CONFigure:AF:ANALyzer:DISTortion:WIDTh?
25.2 Hz

4.3.3 AF Distortion - Frequency Modulation

:CONFigure:AF:ANALyzer:DISTortion:FREQuency
:CONFigure:AF:ANALyzer:DISTortion:FREQuency?

Description: Set command defines the Modulation frequency for AF Distortion measurement.
Query command returns parameter setting.

Range: 1.0 Hz to 40.0 kHz

Units: Hz | kHz

Default Value: 1000.0 Hz

Set/Query Format: NRf | NR1 (Hz)

Example: :CONFigure:AF:ANALyzer:DISTortion:FREQuency 5kHz
Sets AF Analyzer Distortion Frequency to 5.0 kHz.

Query Response: :CONFigure:AF:ANALyzer:DISTortion:FREQuency?
5000

4.3.4 AF Distortion - Frequency Mode

:CONFigure:AF:MLOCK
:CONFigure:AF:MLOCK?

Description: Set command defines the mode of operation for defining the Modulation frequency for AF Distortion measurement.
Query command returns parameter setting.

Parameter: 0 = Unlocked
1 = Locked to M1

Default Value: (0) Unlocked

Set/Query Format: NR1

Example: :CONFigure:AF:MLOCK 1
Locks AF SINAD/Distortion Frequency to Mod Generator 1 Frequency.

Query Response: :CONFigure:AF:MLOCK?
1

4.3.5 AF Distortion - Measurement Query

:FETCh:AF:ANALyzer:DISTortion?

Description: Command returns AF Analyzer Distortion measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>,<wc>

statusbyte (NR1): 0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

avgcount (NR1): value

avg, wc (NR2): %

Query Response: :FETCh:AF:ANALyzer:DISTortion?
0,0,1,1.31,99.99

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
AF Analyzer Noise measurement type must be defined as Distortion (:AF:ANALyzer:NTYPe DISTortion) to obtain valid AF Distortion measurement.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.3.6 AF Distortion - Measurement Type

:CONFigure:AF:ANALyzer:DISTortion:MTYPe
:CONFigure:AF:ANALyzer:DISTortion:MTYPe?

Description: Set command selects the measurement type for AF Distortion measurement.
Query command returns parameter setting.

Parameter: AVERage | WCASe

Default Value: AVERage

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:DISTortion:MTYPe WCASe
Sets AF Analyzer Distortion measurement to Worst Case.

Query Response: :CONFigure:AF:ANALyzer:DISTortion:MTYPe?
WCASe

NOTE AF Analyzer Noise measurement type must be defined as Distortion (:AF:ANALyzer:NTYPe DISTortion) to obtain valid AF Distortion measurement.

4.3.7 AF Distortion - Peak Measurement Enable

:AF:ANALyzer:DISTortion:HOLD:ENABle
:AF:ANALyzer:DISTortion:HOLD:ENABle?

Description: Set command Enables/Disables Peak AF Distortion measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AF:ANALyzer:DISTortion:HOLD:ENABle ON
Enables Peak AF Distortion measurement.

Query Response: :AF:ANALyzer:DISTortion:HOLD:ENABle?
1

NOTE Peak measurement must be enabled to obtain valid Peak measurement data.
AF Analyzer Noise measurement type must be defined as Distortion (:AF:ANALyzer:NTYPe DISTortion) to obtain valid AF Distortion measurement.

4.3.8 AF Distortion - Peak Measurement Query

:FETCh:AF:ANALyzer:DISTortion:HOLD?

Description: Command returns Peak AF Distortion measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

avg, wc (NR2): %

Query Response: :FETCh:AF:ANALyzer:DISTortion:HOLD?
0,0,1,1.44,99.93

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
Peak measurement must be enabled to obtain valid Peak measurement data.
AF Analyzer Noise measurement type must be defined as Distortion (:AF:ANALyzer:NTYPe DISTortion) to obtain valid AF Distortion measurement.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.3.9 AF Distortion - Peak Measurement Reset

:AF:ANALyzer:DISTortion:HOLD:RESet

Description: Command clears and resets Peak AF Distortion measurement.

Parameter/Query: none

4.3.10 AF Distortion - Upper Limit Enable

:LIMits:AF:DISTortion:UPPer:ENABle
:LIMits:AF:DISTortion:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for AF Distortion measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:AF:DISTortion:UPPer:ENABle ON
Enables Upper Limit for AF Distortion measurement.

Query Response: :LIMits:AF:DISTortion:UPPer:ENABle?
1

NOTE

AF Analyzer Noise measurement type must be defined as Distortion (:AF:ANALyzer:NTYPe DISTortion) to obtain valid AF Distortion measurement.

4.3.11 AF Distortion - Upper Limit Value

:LIMits:AF:DISTortion:UPPer:VALue
:LIMits:AF:DISTortion:UPPer:VALue?

Description: Set command defines the Upper Limit Value for AF Distortion measurement. Query command returns parameter setting.

Range: 0.0 to 100.0%

Units: % (percent)

Default Value: 5.0%

Set/Query Format: NRf | NR2

Example: :LIMits:AF:DISTortion:UPPer:VALue 1
Sets Upper Limit Value for AF Distortion measurement to 1.0%.

Query Response: :LIMits:AF:DISTortion:UPPer:VALue?
1.00

NOTE AF Analyzer Noise measurement type must be defined as Distortion (:AF:ANALyzer:NTYPe DISTortion) to obtain valid AF Distortion measurement.

4.4 AF FREQUENCY MEASUREMENT

4.4.1 AF Frequency - Averages

:CONFigure:AF:ANALyzer:FREQuency:AVERage
:CONFigure:AF:ANALyzer:FREQuency:AVERage?

Description: Set command defines the number of readings taken to calculate Average AF Frequency measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:AF:ANALyzer:FREQuency:AVERage 75
Sets number of readings being taken to calculate Average AF Frequency measurement to 75.

Query Response: :CONFigure:AF:ANALyzer:FREQuency:AVERage?
75

4.4.2 AF Frequency - Measurement Query

:FETCh:AF:ANALyzer:FREQuency?

Description: Command returns AF Frequency measurement data.

Query Data: <statusbyte>, <avgcount>, <avg>

statusbyte (NR1): 0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

avgcount (NR1): value

avg (NR2): Hz

Query Response: :FETCh:AF:ANALyzer:FREQuency?
0,25,1000.0

NOTE Statusbyte may return more than one condition as a bitmask.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.4.3 AF Frequency - Lower Limit Enable

:LIMits:AF:FREQuency:LOWer:ENABle
:LIMits:AF:FREQuency:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for AF Frequency measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:AF:FREQuency:LOWer:ENABle ON
Enables Lower Limit for AF Frequency measurement.

Query Response: :LIMits:AF:FREQuency:LOWer:ENABle?
1

4.4.4 AF Frequency - Lower Limit Value

:LIMits:AF:FREQuency:LOWer:VALue
:LIMits:AF:FREQuency:LOWer:VALue?

Description: Set command defines the Lower Limit Value for AF Frequency measurement.
Query command returns parameter setting.
Range: 0.0 Hz to 20.0 kHz
Units: Hz | kHz
Default Value: 0.0 Hz
Set/Query Format: NRf | NR2
Example: :LIMits:AF:FREQuency:LOWer:VALue 1Hz
Sets Lower Limit Value for AF Frequency measurement to 1.0 Hz.
Query Response: :LIMits:AF:FREQuency:LOWer:VALue?
1.0

4.4.5 AF Frequency - Upper Limit Enable

:LIMits:AF:FREQuency:UPPer:ENABle
:LIMits:AF:FREQuency:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for AF Frequency measurement.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :LIMits:AF:FREQuency:UPPer:ENABle ON
Enables Upper Limit for AF Frequency measurement.
Query Response: :LIMits:AF:FREQuency:UPPer:ENABle?
1

4.4.6 AF Frequency - Upper Limit Value

:LIMits:AF:FREQuency:UPPer:VALue
:LIMits:AF:FREQuency:UPPer:VALue?

Description: Set command defines the Upper Limit Value for AF Frequency measurement.
Query command returns parameter setting.
Range: 0.0 Hz to 20.0 kHz
Units: Hz | kHz
Default Value: 10.0 kHz
Set/Query Format: NRf | NR2 (Hz)
Example: :LIMits:AF:FREQuency:UPPer:VALue 2Hz
Sets Upper Limit Value for AF Frequency measurement to 2.0 Hz.
Query Response: :LIMits:AF:FREQuency:UPPer:VALue?
2.0

4.5 AF HUM & NOISE MEASUREMENT

4.5.1 AF Hum & Noise - Averages

:CONFigure:AF:ANALyzer:HN:AVERage
:CONFigure:AF:ANALyzer:HN:AVERage?

Description: Set command defines the number of readings taken to calculate Average AF Hum & Noise measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:AF:ANALyzer:HN:AVERage 75
Sets number of readings being taken to calculate Average AF Hum & Noise measurement to 75.

Query Response: :CONFigure:AF:ANALyzer:HN:AVERage?
75

NOTE AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

4.5.2 AF Hum & Noise - Lower Limit Enable

:LIMits:AF:HN:LOWer:ENABle
:LIMits:AF:HN:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for AF Hum and Noise measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:AF:HN:LOWer:ENABle ON
Enables Lower Limit for Hum & Noise measurement.

Query Response: :LIMits:AF:HN:LOWer:ENABle?
1

NOTE AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

4.5.3 AF Hum & Noise - Lower Limit Value

:LIMits:AF:HN:LOWer:VALue
:LIMits:AF:HN:LOWer:VALue?

Description: Set command defines Lower Limit Value for AF Hum and Noise measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dBr

Units: dBr

Default Value: 0.0 dBr

Set/Query Format: NRf | NR2

Example: :LIMits:AF:HN:LOWer:VALue -50dBr
Sets Lower Limit Value for AF Hum & Noise measurement to -50.0 dBr.

Query Response: :LIMits:AF:HN:LOWer:VALue?
-50.00

NOTE

AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

4.5.4 AF Hum & Noise - Measurement Query

:FETCh:AF:ANALyzer:HN?

Description: Command returns AF Hum and Noise measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>,<wc>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avgcount (NR1): value

avg, wc (NR2): dB

Query Response: :FETCh:AF:ANALyzer:HN?
0,0,10,-8.43,-8.43

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.5.5 AF Hum & Noise - Peak Measurement Enable

:AF:ANALyzer:HN:HOLD:ENABle
:AF:ANALyzer:HN:HOLD:ENABle?

Description: Set command Enables/Disables Peak Hum and Noise measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AF:ANALyzer:HN:HOLD:ENABle ON
Enables AF Hum & Noise Peak measurement.

Query Response: :AF:ANALyzer:HN:HOLD:ENABle?
1

NOTE

Peak measurement must be enabled to obtain valid Peak measurement data.
AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

4.5.6 AF Hum & Noise - Peak Measurement Query

:FETCh:AF:ANALyzer:HN:HOLD?

Description: Command returns Peak AF Hum and Noise measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avg, wc (NR2): dB

Query Response: :FETCh:AF:ANALyzer:HN:HOLD?
0,0,32.98,32.98

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.5.7 AF Hum & Noise - Peak Measurement Reset

:AF:ANALyzer:HN:HOLD:RESet

Description: Command clears and resets Peak AF Hum & Noise measurement.

Parameter/Query: none

4.5.8 AF Hum & Noise - Reference Lock

:CONFigure:AF:ANALyzer:HN:REFerence

Description: Command locks AF Hum and Noise reference to current meter reading.

Parameter/Query: none

NOTE

AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

4.5.9 AF Hum & Noise - Reference Value

:CONFigure:AF:ANALyzer:HN:REFerence:VALue
:CONFigure:AF:ANALyzer:HN:REFerence:VALue?

Description: Set command defines the reference value for AF Hum and Noise measurement.

Query command returns parameter setting.

Range: -100.0 to +100.0 dB

Units: dB

Default Value: 12.0 dB

Set/Query Format: NRf | NR2

Example: :CONFigure:AF:ANALyzer:HN:REFerence:VALue 1dB

Sets Hum & Noise Reference value to 1.0 dB.

Query Response: :CONFigure:AF:ANALyzer:HN:REFerence:VALue?

1.00

NOTE

Query command can be used to return HN Reference Value set from sending :CONFigure:AF:ANALyzer:HN:REFerence command.

AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

4.5.10 AF Hum & Noise - Upper Limit Enable

:LIMits:AF:HN:UPPer:ENABle
:LIMits:AF:HN:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for AF Hum and Noise measurement.

Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:AF:HN:UPPer:ENABle ON

Enables Upper Limit for Hum & Noise measurement.

Query Response: :LIMits:AF:HN:UPPer:ENABle?.

1

NOTE

AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

4.5.11 AF Hum & Noise - Upper Limit Value

:LIMits:AF:HN:UPPer:VALue
:LIMits:AF:HN:UPPer:VALue?

Description: Set command defines the Upper Limit Value for AF Hum and Noise measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dBr

Units: dBr

Default Value: 10.0 dBr

Set/Query Format: NRf | NR2

Example: :LIMits:AF:HN:UPPer:VALue 25dBr
Sets Lower Limit Value for AF Hum & Noise measurement to 25.0 dBr.

Query Response: :LIMits:AF:HN:UPPer:VALue?
25

NOTE

AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:AF:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

4.6 AF LEVEL MEASUREMENT

4.6.1 AF Level - Averages

:CONFigure:AF:ANALyzer:LEVel:AVERage
:CONFigure:AF:ANALyzer:LEVel:AVERage?

Description: Set command defines the number of readings taken to calculate Average AF Level measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:AF:ANALyzer:LEVel:AVERage 75
Sets number of readings taken to calculate Average AF Level measurement to 75.

Query Response: :CONFigure:AF:ANALyzer:LEVel:AVERage?
75

4.6.2 AF Level - Lower Limit Enable

:LIMits:AF:LEVel:LOWer:ENABle
:LIMits:AF:LEVel:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for AF Level measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:AF:LEVel:LOWer:ENABle ON
Enables Lower Limit for AF Level measurement.

Query Response: :LIMits:AF:LEVel:LOWer:ENABle?
1

4.6.3 AF Level - Lower Limit Value

:LIMits:AF:LEVel:LOWer:VALue
:LIMits:AF:LEVel:LOWer:VALue?

Description: Set command defines the Lower Limit Value for AF Level measurement.
Query command returns parameter setting.

Range: 1.0 mV to 30.0 V*

Units: mV | V | dBV | dBr | dBm | W

Default Value: 1.0 mV

Set/Query Format: NRf | NR1 (mV)

Example: :LIMits:AF:LEVel:LOWer:VALue 2.0mV
Sets Lower Limit for AF Level measurement to 2.0 mV.

Query Response: :LIMits:AF:LEVel:LOWer:VALue?
2.0

NOTE

*Upper Audio Level range value for 3901/3902 is 8.0 Volts.
*Upper Audio Level range value for 3920 is 30.0 Volts.

4.6.4 AF Level - Measurement Query

:FETCh:AF:ANALyzer:LEVel?

Description: Command returns AF Level measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avgcount (NR1): value

avg (NR2):
V (Unbalanced)
dBm (Balanced)

units (NR1):
6 = dBm
7 = V
11 = W
16 = dBr
17 = dBV

Query Response: :FETCh:AF:ANALyzer:LEVel?
0,0,1,0.0000017,11

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.6.5 AF Level - Peak Measurement Enable

:AF:ANALyzer:LEVel:HOLD:ENABle
:AF:ANALyzer:LEVel:HOLD:ENABle?

Description: Set command Enables/Disables Peak AF Level measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AF:ANALyzer:LEVel:HOLD:ENABle ON
Enables AF Level Peak measurement.

Query Response: :AF:ANALyzer:LEVel:HOLD:ENABle?
1

4.6.6 AF Level - Peak Measurement Query

:FETCh:AF:ANALyzer:LEVel:HOLD?

Description: Command returns Peak AF Level measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avg (NR2):
V (Unbalanced)
dBm (Balanced)

Query Response: 0,0,5.960,16

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
Peak measurement must be enabled to obtain valid Peak measurement data.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.6.7 AF Level - Peak Measurement Reset

:AF:ANALyzer:LEVel:HOLD:RESet

Description: Command clears and resets Peak AF Level measurement.

Parameter/Query: none

4.6.8 AF Level - Units Audio

:CONFigure:AF:ANALyzer:LEVel:AUDio:UNIts
:CONFigure:AF:ANALyzer:LEVel:AUDio:UNIts?

Description: Set command defines the unit of measure for AF Audio Level measurement.
Query command returns parameter setting.

Parameter: V | dBr | dBV | dBm | W

Default Value: V

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:LEVel:AUDio:UNIts dBR
Displays AF Level Audio measurement in dBr.

Query Response: :CONFigure:AF:ANALyzer:LEVel:AUDio:UNIts?
DBR

4.6.9 AF Level - Units Balanced

:CONFigure:AF:ANALyzer:LEVel:BALanced:UNIts
:CONFigure:AF:ANALyzer:LEVel:BALanced:UNIts?

Description: Set command defines the unit of measure for AF Balanced Level measurement.
Query command returns parameter setting.

Parameter: V | dBr | dBV | dBm | W

Default Value: dBm

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:LEVel:BALanced:UNIts dBr
Displays AF Balanced Level measurement in dBr.

Query Response: :CONFigure:AF:ANALyzer:LEVel:BALanced:UNIts?
DBR

NOTE AF Measurement Source must be defined as BALANCED for command to be valid.

4.6.10 AF Level - Upper Limit Enable

:LIMits:AF:LEVel:UPPer:ENABle
:LIMits:AF:LEVel:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for AF Level measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:AF:LEVel:UPPer:ENABle ON
Enables Upper Limit for AF Level measurement.

Query Response: :LIMits:AF:LEVel:UPPer:ENABle?
1

4.6.11 AF Level - Upper Limit Value

:LIMits:AF:LEVel:UPPer:VALue
:LIMits:AF:LEVel:UPPer:VALue?

Description: Set command defines the Upper Limit Value for AF Level measurement.
Query command returns parameter setting.

Range: 1.0 mV to 30.0 V*

Units: mV | V | dBV | dBr | dBm | W

Default Value: 10.0 V

Set/Query Format: NRf | NR2 (mV)

Example: :LIMits:AF:LEVel:UPPer:VALue 5.0mV
Sets Upper Limit Value for AF Level measurement to 5.0 mV.

Query Response: :LIMits:AF:LEVel:UPPer:VALue?
5.0

NOTE *Upper Audio Level range value for 3901/3902 is 8.0 Volts.
*Upper Audio Level range value for 3920 is 30.0 Volts.

4.7 AF SINAD MEASUREMENT

4.7.1 AF Sinad - Averages

:CONFigure:AF:ANALyzer:SINad:AVERage
:CONFigure:AF:ANALyzer:SINad:AVERage?

Description: Set command defines the number of readings taken to calculate Average AF Sinad measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:AF:ANALyzer:SINad:AVERage 25
Sets number of readings taken to calculate Average AF Sinad measurement to 75.

Query Response: :CONFigure:AF:ANALyzer:SINad:AVERage?
75

4.7.2 AF Sinad - Lower Limit Enable

:LIMits:AF:SINad:LOWer:ENABle
:LIMits:AF:SINad:LOWer:ENABle?

Description: Set command Enables/disables Lower Limit for AF Sinad measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Command Example: :LIMits:AF:SINad:LOWer:ENABle ON
Enables Lower Limit for AF Sinad measurement.

Query Response: :LIMits:AF:SINad:LOWer:ENABle?
1

4.7.3 AF Sinad - Lower Limit Value

:LIMits:AF:SINad:LOWer:VALue
:LIMits:AF:SINad:LOWer:VALue?

Description: Set command defines the Lower Limit Value for AF Sinad measurement.
Query command returns parameter setting.

Range: 0.0 to 100.0 dB

Units: dB

Default Value: 0.0 dB

Set/Query Format: NRf | NR1

Command Example: :LIMits:AF:SINad:LOWer:VALue 50dB
Sets Lower Limit Value for AF Sinad measurement to 50.0 dB.

Query Response: :LIMits:AF:SINad:LOWer:VALue?
50

4.7.4 AF Sinad - Measurement Query

:FETCh:AF:ANALyzer:SINad?

Description: Command returns AF Sinad measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>,<wc>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
2 = Average lower failed limit
8 = Worst Case lower failed limit

avgcount (NR1): value

avg, wc (NR2): dB

Query Response: :FETCh:AF:ANALyzer:SINad?
0,0,25,0.01,0.00

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.7.5 AF Sinad - Measurement Type

:CONFigure:AF:ANALyzer:SINad:MTYPe
:CONFigure:AF:ANALyzer:SINad:MTYPe?

Description: Set command defines the measurement type for AF Sinad measurement.
Query command returns parameter setting.

Parameter: AVERage | WCASe

Default Value: AVERage

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:SINad:MTYPe AVERage
Sets AF Sinad measurement to Average.

Query response: :CONFigure:AF:ANALyzer:SINad:AVERage?
AVER

4.7.6 AF Sinad - Peak Measurement Enable

:AF:ANALyzer:SINad:HOLD:ENABle
:AF:ANALyzer:SINad:HOLD:ENABle?

Description: Set command Enables/Disables Peak AF Sinad measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example :AF:ANALyzer:SINad:HOLD:ENABle ON
Enables AF Sinad Peak measurement.

Query Response: :AF:ANALyzer:SINad:HOLD:ENABle?
1

NOTE Peak measurement must be enabled to obtain valid Peak measurement data.
AF Analyzer Noise measurement type must be defined as Sinad (:AF:ANALyzer:NTYPe SINad) to obtain valid Sinad measurement.

4.7.7 AF Sinad - Peak Measurement Query

:FETCh:AF:ANALyzer:SINad:HOLD?

Description: Command returns Peak AF Sinad measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
2 = Average lower failed limit
8 = Worst Case lower failed limit

avg, wc (NR2): dB

Query Response: :FETCh:AF:ANALyzer:SINad:HOLD?
0,0,0.01,0.00

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
Peak measurement must be enabled to obtain valid Peak measurement data.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.7.8 AF Sinad - Peak Measurement Reset

:AF:ANALyzer:SINad:HOLD:RESet

Description: Command clears and resets Peak AF Sinad measurement.

Parameter/Query: none

4.8 AF SNR MEASUREMENT

4.8.1 AF SNR - Averages

:CONFigure:AF:ANALyzer:SNR:AVERage
:CONFigure:AF:ANALyzer:SNR:AVERage?

Description: Set command defines the number of readings taken to calculate Average AF SNR measurement.

Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:AF:ANALyzer:SNR:AVERage 75

Sets number of readings taken to calculate Average AF SNR measurement to 75.

Query Response: :CONFigure:AF:ANALyzer:SNR:AVERage?

75

NOTE AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

4.8.2 AF SNR - Lower Limit Enable

:LIMits:AF:SNR:LOWer:ENABle
:LIMits:AF:SNR:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for AF Signal to Noise Ratio measurement.

Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:AF:SNR:LOWer:ENABle ON

Enables Lower Limit for AF SNR measurement.

Query Response: :LIMits:AF:SNR:LOWer:ENABle?

1

NOTE AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

4.8.3 AF SNR - Lower Limit Value

:LIMits:AF:SNR:LOWer:VALue
:LIMits:AF:SNR:LOWer:VALue?

Description: Set command defines the Lower Limit Value for AF Signal to Noise Ratio measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dB

Units: dB

Default Value: 0.0 dB

Set/Query Format: NRf | NR1

Example: :LIMits:AF:SNR:LOWer:VALue 50dB
Sets Lower Limit Value for AF SNR measurement to 50.0 dB.

Query Response: :LIMits:AF:SNR:LOWer:VALue?
50

NOTE AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

4.8.4 AF SNR - Measurement Query

:FETCh:AF:ANALyzer:SNR?

Description: Command returns AF Signal to Noise Ratio measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avg, wc (NR2): dB

Query Response: :FETCh:AF:ANALyzer:SNR?
0,0,25,-1.99

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.8.5 AF SNR - Mode

:CONFigure:AF:ANALyzer:SNR:MODE
:CONFigure:AF:ANALyzer:SNR:MODE?

Description: Set command defines the SNR Meter Mode (Normal or Hum and Noise) when performing Signal to Noise Ratio measurement.
Query command returns parameter setting.

Parameter: 0 = Hum & Noise
1 = Normal

Default Value: 0

Set/Query Format: NR1

Example: :CONFigure:AF:ANALyzer:SNR:MODE 0
Sets AF Signal to Noise measurement to Hum & Noise measurement.

Query Response: :CONFigure:AF:ANALyzer:SNR:MODE?
0

NOTE AF Analyzers Noise measurement type must be defined as SN for command to be valid (:AF:ANALyzer:NTYPe SN).

4.8.6 AF SNR - Enable Notch Filter

CONFigure:AF:ANALyzer:SNR:NOTCh:ENABle
CONFigure:AF:ANALyzer:SNR:NOTCh:ENABle?

Description: Set command Enables/Disables (Includes/excludes) AF SNR Notch Filter for AF SNR measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: CONFigure:AF:ANALyzer:SNR:NOTCh:ENABle ON
Includes Notch Filter when performing AF SNR measurement.

Query Response: CONFigure:AF:ANALyzer:SNR:NOTCh:ENABle?
1

NOTE AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

4.8.7 AF SNR - Notch Filter Frequency

CONFigure:AF:ANALyzer:SNR:NOTCh:FREQuency
CONFigure:AF:ANALyzer:SNR:NOTCh:FREQuency?

Description: Set command defines the AF SNR Notch Frequency.
Query command returns parameter setting.

Range: 1.0 Hz to 3 kHz

Units: Hz | kHz

Default Value: 300 Hz

Set/Query Format: NRf | NR2 (Hz)

Example: CONFigure:AF:ANALyzer:SNR:NOTCh:FREQuency .15kHz
Sets AF SNR Notch Frequency to .15 kHz (150.0 Hz)

Query Response: CONFigure:AF:ANALyzer:SNR:NOTCh:FREQuency?
150

NOTE

AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

4.8.8 AF SNR - Notch Filter Bandwidth

CONFigure:AF:ANALyzer:SNR:NOTCh:WIDth
CONFigure:AF:ANALyzer:SNR:NOTCh:WIDth?

Description: Set command defines bandwidth of AF SNR Notch Filter
Query command returns parameter setting.

Parameter: 11.7 Hz | 35.2 Hz | 58.6 Hz | 82.0 Hz | 105.5 Hz | 128.9 Hz | 152.3 Hz

Default Value: 82.0 Hz

Unit: Hz | kHz

Set/Query Format: CPD | CRD

Example: CONFigure:AF:ANALyzer:SNR:NOTCh:WIDth 105.5Hz
Sets AF SNR Notch Filter to 105.5 Hz Bandwidth

Query Response: CONFigure:AF:ANALyzer:SNR:NOTCh:WIDth?
105.5

NOTE

Bandwidth selected should be appropriate for signal received from UUT.

4.8.9 AF SNR - Peak Measurement Enable

:AF:ANALyzer:SNR:HOLD:ENABle
:AF:ANALyzer:SNR:HOLD:ENABle?

Description: Set command Enables/Disables Peak AF Signal to Noise Ratio measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AF:ANALyzer:SNR:HOLD:ENABle ON
Enables AF SNR Peak measurement.

Query Response: :AF:ANALyzer:SNR:HOLD:ENABle?
1

NOTE

Peak measurement must be enabled to obtain valid Peak measurement data.
AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid Hum & Noise measurement.

4.8.10 AF SNR - Peak Measurement Query

:FETCh:AF:ANALyzer:SNR:HOLD?

Description: Command returns Peak AF Signal to Noise Ratio measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avg, wc (NR2): dB

Query Response: :FETCh:AF:ANALyzer:SNR:HOLD?
0,0,-1.44,13.02

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

4.8.11 AF SNR - Peak Measurement Reset

:AF:ANALyzer:SNR:HOLD:RESet

Description: Command clears and resets Peak AF Signal to Noise Ratio measurement.

Parameter/Query: none

4.8.12 AF SNR - Upper Limit Enable

:LIMits:AF:SNR:UPPer:ENABle
:LIMits:AF:SNR:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for AF Signal to Noise Ratio measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:AF:SNR:UPPer:ENABle ON
Enables Upper Limit for AF SNR measurement.

Query Response: :LIMits:AF:SNR:UPPer:ENABle?
1

NOTE AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

4.8.13 AF SNR - Upper Limit Value

:LIMits:AF:SNR:UPPer:VALue
:LIMits:AF:SNR:UPPer:VALue?

Description: Set command defines the Upper Limit Value for AF Signal to Noise Ratio measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dB

Units: dB

Default Value: 10.0 dB

Set/Query Format: NRf | NR2

Example: :LIMits:AF:SNR:UPPer:VALue 50dB
Sets Upper Limit Value for AF SNR measurement to 50.0 dB.

Query Response: :LIMits:AF:SNR:UPPer:VALue?
50

NOTE AF Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:AF:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:AF:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

4.9 AF TONE DECODING

4.9.1 AF Analyzer - Clear Decode Log

:AF:ANALyzer:DECODE:LOGS:CLEAR

Description: Command clears all AF data logs for Tone Remote, Tone Sequential and Two Tone Sequential signal types.

Parameter/Query: none

4.9.2 AF Analyzer - Decode Protocol

:AF:ANALyzer:DECODE:PROTocol
:AF:ANALyzer:DECODE:PROTocol?

Description: Set command selects Protocol to be decoded by the AF Analyzer.
Query command returns parameter setting.

Parameter: ZVEI1 | ZVEI2 | ZVEI3 | PZVEI | DZVEI | PDZVEI | CCIR1 | CCIR2 | PCCIR | EEA | EUROSIG | NATEL | EIA | MODAT | USER1 | USER2

Default Value: ZVEI1

Set/Query Format: CPD | CRD

Example: :AF:ANALyzer:DECODE:PROTocol PZVEI
Sets AF Analyzer to decode PZVEI Protocol for User 1 Tone.

Query Response: :AF:ANALyzer:DECODE:PROTocol?
PZVEI

4.9.3 AF Analyzer - Decode Signal Type

:AF:ANALyzer:DECODE:TYPE
:AF:ANALyzer:DECODE:TYPE?

Description: Set command defines type of Signal being Decoded by the Audio Analyzer.
Query command returns parameter setting.

Set Parameter: OFF | DCS | DCSINV

Query Data: OFF | DCS | DCSINV | DTMF | TONESEQ | TONEREM | TWOTONE

Default: OFF (Demod)

Set/Query Format: CPD | CRD

Example: :AF:ANALyzer:DECODE:TYPE DCS
Sets type of signal being decoded by Audio Analyzer to DCS.

Query Response: :AF:ANALyzer:DECODE:TYPE?
DCS

4.9.4 AF Analyzer - Tone Remote Decode Data

:FETCh:AF:ANALyzer:DECODE:TONEREM:LOG?

Description: Command returns received Tone Remote data.

Query Data: <frequency>,<spec frequency>,<% error>,<freq error>,<duration>

frequency (NR2): Hz

spec frequency (NR2): Hz

% error (NR2): percent (%)

freq error (NR2): Hz

duration (NR2): ms

no activity: returned when no log data is available

Query Response: :FETCh:AF:ANALyzer:DECODE:TONEREM:LOG?
2173.8,2175.0,0.054,1.2,1422.9
1048.8,1050.0,0.112,1.2,1422.9
2173.8,2175.0,0.054,1.2,1422.9

4.9.5 AF Analyzer - Tone Sequential Decode Data

:FETCh:AF:ANALyzer:DECODE:TONESEQ:LOG?

Description: Command returns received Tone Sequential data.

Query Format: ascii data string

Query Data: <decoded tone>,<frequency>,<spec frequency>,<% error>,<freq error>,<duration>

decoded tone (hex): 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A | B | C | D | E | F

frequency (NR2): Hz

spec frequency (NR2): Hz

% error (NR2): percent (%)

freq error (NR2): Hz

duration (NR2): ms

no activity: returned when no log data is available

Query Response: :FETCh:AF:ANALyzer:DECODE:TONESEQ:LOG?
0,2399.4,2400.0,0.024,0.6,85.3
1,1060.5,1060.0,0.052,0.5,64.0
2,1160.2,1160.0,0.013,0.2,74.7
3,1280.3,1270.0,0.809,10.3,74.7
4,1400.4,1400.0,0.028,0.4,74.7

4.9.6 AF Analyzer - Two Tone Sequential Decode Data

:FETCh:AF:ANALyzer:DECODE:TWOTONE:LOG?

Description: Command returns received Two Tone Sequential data.

Query Data: <frequency>,<duration>

frequency (NR2): Hz

duration (NR2): ms

no activity: returned when no log data is available

Query Response: :FETCh:AF:ANALyzer:DECODE:TWOTONE:LOG?
1004.9,7349.3
501.0,1013.3
999.0,3008.0
501.0,1013.3
999.0,3008.0

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Chapter 5 - Modulation Analyzer Measurements Remote Commands

5.1 INTRODUCTION

This chapter describes the Remote Commands to configure and return Modulation measurement data. Commands are listed alphabetically under the following headings:

5.2 MODULATION MEASUREMENTS - CONFIGURATION

5.2.1 FM Compensation - Offset Enable

:CONFigure:MOD:ANALyzer:FM:OFFSet:ENABle
:CONFigure:MOD:ANALyzer:FM:OFFSet:ENABle?

Description: Set command defines the FM Compensation Offset mode of operation.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :CONFigure:MOD:ANALyzer:FM:OFFSet:ENABle ON
Locks Duplex Frequency Offset to RF Analyzer Frequency.

Query Response: :CONFigure:MOD:ANALyzer:FM:OFFSet:ENABle?
1

5.2.2 Function Generator / Demod Out

:CONFigure:PORT:FGEN
:CONFigure:PORT:FGEN?

Description: Set command selects Function Generator / Demod Out port.
Query command returns parameter setting.

Parameter: FGEN | AUDio | FAUDio | DEMod | DDEMod | FDEMod | FDDEMod

Default Value: DEMod (Off)

Set/Query Format: CPD | CRD

Example: :CONFigure:PORT:FGEN DEMod
Selects Demod as the Function Generator / Demod Out port.

Query Response: :CONFigure:PORT:FGEN?
DEM

5.2.3 Modulation - Decode Type

:MOD:ANALyzer:DECODE:TYPE
:MOD:ANALyzer:DECODE:TYPE?

Description: Set command defines decode type for received signal.
Query command returns parameter setting.

Parameter: OFF | DCS | DCSINV

where: OFF = Decode disabled
DCS = Digital Coded Squelch
DCSINV = DCS Inverted

Default Value: OFF

Set/Query Format: CPD | CRD

Example: :MOD:ANALyzer:DECODE:TYPE DCS
Selects DCS Decoding for processing received signal.

Query Response: :MOD:ANALyzer:DECODE:TYPE?
DCS

5.2.4 Modulation - Decode Value

:FETCh:MOD:ANALyzer:DECODE:VALue?

Description: Command returns decode value of received signal.

Query Format: ascii

Query Response: :FETCh:MOD:ANALyzer:DECODE:VALue?
047

5.2.5 Modulation - Filter Type

:MOD:ANALyzer:MFILter
:MOD:ANALyzer:MFILter?

Description: Set command selects the Mod Analyzer Post Detection Filter.
Query command returns parameter setting.

Parameter: PSOPh | None | LP1 | LP2 | LP3 | LP4 | LP5 | LP6 | LP7 | HP1 | HP2 | HP3 | BP0 | BP1 | BP2 | BP3 | BP4 | BP5 | BP6 | BP7 | BP8 | BP9 | BP10 | BP11 | BP12 | BP13 | BP14 | BP15 | BP16

where:

NONE = No Filter	BP2 = 0.3 to 5.0 kHz BP
PSOPh = Psoph (CMESS or CCITT)	BP3 = 0.3 to 20.0 kHz BP
LP1 = 300.0 Hz LP	BP4 = 0.3 to 15.0 kHz BP
LP2 = 5.0 kHz LP	BP5 = 0.02 to 300.0 Hz BP
LP3 = 20.0 kHz LP	BP6 = 0.02 to 3.0 kHz BP
LP4 = 15.0 kHz LP	BP7 = 0.02 to 3.4 kHz BP
LP5 = 3.0 kHz LP	BP8 = 0.02 to 5.0 kHz BP
LP6 = 625.0 kHz LP*	BP9 = 0.02 to 15.0 kHz BP
LP7 = 10.0 kHz LP*	BP10 = 0.02 to 20.0 kHz BP
LP8 = 100.0 Hz LP*	BP11 = 0.05 to 300.0 Hz BP
HP1 = 300.0 Hz HP**	BP12 = 0.05 to 3.0 kHz BP
HP2 = 20.0 Hz HP	BP13 = 0.05 to 3.4 kHz BP
HP3 = 50.0 Hz HP	BP14 = 0.05 to 5.0 kHz BP
BP0 = 0.3 to 3.0 kHz BP	BP15 = 0.05 to 15.0 kHz BP
BP1 = 0.3 to 3.4 kHz BP	BP16 = 0.05 to 20.0 kHz BP

Default Value: NONE (No Filter)

Set/Query Format: CPD | CRD

Example: :MOD:ANALyzer:MFILter BP4
Selects 0.3 to 15.0 kHz band pass filter for receiver signal path.

Query Response: :MOD:ANALyzer:MFILter?
BP4

NOTE

Filter selected should be appropriate for signal received from UUT.
When PSOPH is selected, Filter weight is defined using :CONFigure:MOD:MFILter command.
Test Set does not process any commands following this one until this command is completed.
*LP6, LP7 and LP8 are used by the Audio Analyzer Tracking Generator and can not be defined by user, but may be returned as query data.
**When HP1 (300 Hz HP) is selected, CONFigure:MOD:HZ300FILter selects the type of 300 Hz filter being used.

5.2.6 Modulation - Filter Weight

:CONFigure:MOD:MFILter
:CONFigure:MOD:MFILter?

Description: Set command defines the weight of psoph filter for Mod Analyzer when Psoph filter is selected.
Query command returns parameter setting.

Parameter: CMESs | CCITt

Default Value: CMESS

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:MFILter CCITt
Selects CCITT Psoph Filter for modulation measurement.

Query Response: :CONFigure:MOD:MFILter?
CCIT

NOTE
Mod Filter type must be defined as Psoph (:MOD:ANALyzer:MFILter PSOPH) for command to be valid.
Test Set does not process any commands following this one until this command is completed.

5.2.7 Modulation - 300 Hz Filter Type

:CONFigure:MOD:HZ300FILter
:CONFigure:MOD:HZ300FILter?

Description: Set command defines the type of 300 Hz Filter used for Modulation measurements when 300 Hz Filter is selected.
Query command returns parameter setting.

Parameter: STD | SHARP
STD = Highpass 300 Hz Low-Q Filter
SHARP = Highpass 300 Hz High-Q Filter

Default Value: STD

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:HZ300FILter SHARP
Selects Highpass 300 Hz High-Q Filter for Modulation measurements.

Query Response: :CONFigure:MOD:HZ300FILter?
SHARP

NOTE
Modulation Filter Weight must be defined as 300 Hz (:MOD:ANALyzer:MFILter HP1) for command to be valid.

5.2.8 Modulation - Modulation Frequency Mode

:CONFigure:MOD:MLOCK
:CONFigure:MOD:MLOCK?

Description: Set command defines the mode of operation for defining the Modulation frequency for Mod Distortion measurement.
Query command returns parameter setting.

Parameter: 0 = Unlocked
1 = Locked to A1

Default Value: 0 (Unlocked)

Set/Query Format: NR1

Example: :CONFigure:MOD:MLOCK 1
Locks Mod SINAD/Distortion Frequency to AF Generator 1 Frequency.

Query Response: :CONFigure:MOD:MLOCK?
1

5.2.9 Modulation - Output Connector

:MOD:ANALyzer:OUTPut
:MOD:ANALyzer:OUTPut?

Description: Set command selects the Mod Analyzer Output Port.
Query command returns parameter setting.

Parameter: OFF | MIC | MD

where: OFF = No Output selected
MIC = Microphone Connector
MD = Microphone and Demod Out

Default Value: OFF

Set/Query Format: CPD | CRD

Example: :MOD:ANALyzer:OUTPut MIC
Sets Modulation Analyzer Output to the Microphone connector.

Query Response: :MOD:ANALyzer:OUTPut?
MIC

5.2.10 Mod Distortion - Frequency Modulation

:CONFigure:MOD:ANALyzer:DISTortion:FREQuency
:CONFigure:MOD:ANALyzer:DISTortion:FREQuency?

Description: Set command defines Notch Filter frequency for Modulation Distortion measurement.
Query command returns parameter setting.

Range: 1.0 Hz to 20.0 kHz

Units: Hz | kHz

Default Value: 1.0 Hz

Set/Query Format: NRf | NR1 (Hz)

Example: :CONFigure:MOD:ANALyzer:DISTortion:FREQuency 5kHz
Sets Mod Analyzer Distortion Frequency to 5.0 kHz.

Query Response: :CONFigure:MOD:ANALyzer:DISTortion:FREQuency?
5

5.2.11 Modulation - Noise Measurement Type

:MOD:ANALyzer:NTYPe
:MOD:ANALyzer:NTYPe?

Description: Set command selects Mod Analyzer Noise measurement type.
Query command returns parameter setting.

Parameter: DISTortion | SINad | SN

Default Value: SINad

Set/Query Format: CPD | CRD

Example: :MOD:ANALyzer:NTYPe SINad
Selects Mod Sinad as the active noise measurement.

Query Response: :MOD:ANALyzer:NTYPe?
SIN

NOTE Noise measurement Type must be properly defined to return valid Distortion, Sinad, SNR and Hum & Noise measurement.

5.2.12 Rx Meter - Mode of Operation

:SYSTem:RCI:METER:MODE
:SYSTem:RCI:METER:MODE?

Description: Set command defines Rx Meter mode of operation when operating remotely.
Query command returns parameter setting.

Parameter: SLOW | FAST

Default Value: FAST

Set/Query Format: CPD | CRD

Example: :SYSTem:RCI:METER:MODE SLOW
Sets Rx Meter Mode to Slow.

Query Response: :SYSTem:RCI:METER:MODE?
SLOW

NOTE When set to FAST, *stb command can be used to obtain data stale byte.
When Mode is set to SLOW, data is not returned for the executed :FETCh command until fresh data is available or averaging is complete.
Commands that support this mode are identified by the following note:
*rci meter mode compatible

5.3 AM DEPTH MEASUREMENT

5.3.1 AM Depth - Averages

:CONFigure:MOD:ANALyzer:AM:AVERage
:CONFigure:MOD:ANALyzer:AM:AVERage?

Description: Set command defines number of readings taken to calculate average AM Depth measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:MOD:ANALyzer:AM:AVERage 75
Sets number of readings taken to calculate Average AM Depth measurement to 75.

Query Response: :CONFigure:MOD:ANALyzer:AM:AVERage?
75

5.3.2 AM Depth - Lower Limit Enable

:LIMits:MOD:AM:LOWer:ENABle
:LIMits:MOD:AM:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for AM Depth measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:AM:LOWer:ENABle ON
Enables Lower Limit for AM Depth measurement.

Query Response: :LIMits:MOD:AM:LOWer:ENABle?
1

5.3.3 AM Depth - Lower Limit Value

:LIMits:MOD:AM:LOWer:VALue
:LIMits:MOD:AM:LOWer:VALue?

Description: Set command defines the Lower Limit Value for AM Depth measurement.
Query command returns parameter setting.

Range: 0.0 to 100.0%

Units: % (percent)

Default Value: 0.0%

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:AM:LOWer:VALue 1.0
Sets Lower Limit for AM Depth measurement to 1.0%.

Query Response: :LIMits:MOD:AM:LOWer:VALue?
1.0

5.3.4 AM Depth - Measurement Query

:FETCh:MOD:ANALyzer:AM?

Description: Command returns AM Depth measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<pk-pk/2>,<pos peak>,<neg peak>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid
8 = Squelch

failbyte (NR1):
0 = All limit checks passed
1 = Peak to peak Upper Limit failed
2 = Peak to peak Lower Limit failed
4 = Positive peak Upper Limit failed
8 = Positive peak Lower Limit failed
16 = Negative peak Upper Limit failed
32 = Negative peak Lower Limit failed

avgcount (NR1): value

pk-pk/2 (NR2): %

pos/neg peak (NR2): %

Query Response: :FETCh:MOD:ANALyzer:AM?
0,0,50,23.08,22.85,-23.30

NOTE
Statusbyte and Failbyte may return more than one condition as a bitmask.
AM Modulation must be selected to obtain valid AM Depth measurement data.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.3.5 AM Depth - Peak Measurement Enable

:MOD:ANALyzer:AM:HOLD:ENABle
:MOD:ANALyzer:AM:HOLD:ENABle?

Description: Set command Enables/Disables Peak AM Depth measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :MOD:ANALyzer:AM:HOLD:ENABle ON
Enables Peak AM Depth measurement.

Query Response: :MOD:ANALyzer:AM:HOLD:ENABle?
1

5.3.6 AM Depth - Peak Measurement Query

:FETCh:MOD:ANALyzer:AM:HOLD?

Description: Command returns Peak AM Depth measurement data.

Query Data: <statusbyte>,<failbyte>,<pk-pk/2>,<pos peak>,<neg peak>

statusbyte (NR1):
0 = Valid
1 = Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Peak to peak Upper Limit failed
2 = Peak to peak Lower Limit failed
4 = Positive peak Upper Limit failed
8 = Positive peak Lower Limit failed
16 = Negative peak Upper Limit failed
32 = Negative peak Lower Limit failed

pk-pk/2 (NR2): %

pos/neg peak (NR2): %

Query Response: :FETCh:MOD:ANALyzer:AM:HOLD?
0,0,23.68,25.14, -32.96

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
AM Modulation must be selected to obtain valid AM Depth measurement data.
must be enabled to obtain valid Peak measurement data.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.3.7 AM Depth - Peak Measurement Reset

:MOD:ANALyzer:AM:HOLD:RESet

Description: Command clears and resets Peak AM Depth measurement.

Parameter/Query: none

5.3.8 AM Depth - Upper Limit Enable

:LIMits:MOD:AM:UPPer:ENABle
:LIMits:MOD:AM:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for AM Depth measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:AM:UPPer:ENABle ON
Enables Upper Limit for AM Depth measurement.

Query Response: :LIMits:MOD:AM:UPPer:ENABle?
1

5.3.9 AM Depth - Upper Limit Value

:LIMits:MOD:AM:UPPer:VALue
:LIMits:MOD:AM:UPPer:VALue?

Description: Set command defines the Upper Limit Value for AM Depth measurement.
Query command returns parameter setting.

Range: 0.0 to 100.0%

Units: % (percent)

Default Value: 0.0%

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:AM:UPPer:VALue 1.0
Sets Upper Limit Value for AM Depth measurement to 1.0%.

Query Response: :LIMits:MOD:AM:UPPer:VALue?
1.0

5.3.10 AM Measurements - Units

:CONFigure:MOD:ANALyzer:AM:UNIts
:CONFigure:MOD:ANALyzer:AM:UNIts?

Description: Set command defines the units for AM measurements.
Query command returns parameter setting.

Parameter: PCT | dBr

Default Value: % (Percent)

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:ANALyzer:AM:UNIts dBr
Displays AM measurements in dBr.

Query Response: :CONFigure:MOD:ANALyzer:AM:UNIts?
DBR

5.4 AM DEVIATION (DBR) MEASUREMENTS

5.4.1 AM Deviation (dBr) - Lower Limit Enable

:LIMits:MOD:AM:DBR:LOWer:ENABle
:LIMits:MOD:AM:DBR:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for AM dBr Deviation measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:AM:DBR:LOWer:ENABle ON
Enables Lower Limit for AMdBr Deviation measurement.

Query Response: :LIMits:MOD:AM:DBR:LOWer:ENABle?
1

5.4.2 AM Deviation (dBr) - Lower Limit Value

:LIMits:MOD:AM:DBR:LOWer:VALue
:LIMits:MOD:AM:DBR:LOWer:VALue?

Description: Set command defines the Lower Limit Value for AM dBr Deviation measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0

Units: dBr

Default Value: 0.0

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:AM:DBR:LOWer:VALue 10
Sets Lower Limit Value for AM dBr Deviation measurement to 10.0 dBr.

Query Response: :LIMits:MOD:AM:DBR:LOWer:VALue?
10.0

5.4.3 AM Deviation (dBr) - Upper Limit Enable

:LIMits:MOD:AM:DBR:UPPer:ENABle
:LIMits:MOD:AM:DBR:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for AM dBr Deviation measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:AM:UPPer:ENABle ON
Enables Upper Limit for AMdBr Deviation measurement.

Query Response: :LIMits:MOD:AM:UPPer:ENABle?
1

5.4.4 AM Deviation (dBr) - Upper Limit Value

:LIMits:MOD:AM:DBR:UPPer:VALue
:LIMits:MOD:AM:DBR:UPPer:VALue?

Description: Set command defines the Upper Limit Value for AM dBr Deviation measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0

Units: dBr

Default Value: 26.0

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:AM:DBR:UPPer:VALue 30
Sets Upper Limit Value for AM dBr Deviation measurement to 30.0 dBr.

Query Response: :LIMits:MOD:AM:DBR:UPPer:VALue?
30.0

5.4.5 AM Measurements - Units

:CONFigure:MOD:ANALyzer:AM:UNIts
:CONFigure:MOD:ANALyzer:AM:UNIts?

Description: Set command defines the units for AM measurements.
Query command returns parameter setting.

Parameter: PCT | dBr

Default Value: % (Percent)

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:ANALyzer:AM:UNIts dBr
Displays AM measurements in dBr.

Query Response: :CONFigure:MOD:ANALyzer:AM:UNIts?
DBR

5.5 FM MEASUREMENTS

The following commands apply to all FM measurement types.

5.5.1 FM Measurements - Averages

:CONFigure:MOD:ANALyzer:FM:AVERage
:CONFigure:MOD:ANALyzer:FM:AVERage?

Description: Set command defines number of readings taken to calculate Average FM measurements.

Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:MOD:ANALyzer:FM:AVERage 75

Sets number of readings being taken to calculate Average FM measurements to 75.

Query Response: :CONFigure:MOD:ANALyzer:FM:AVERage?

75

5.5.2 FM Measurements - Measurement Query

:FETCh:MOD:ANALyzer:FM?

Description: Command returns FM measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<pk-pk/2>,<pos peak>,<neg peak>,<RMS>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid
8 - Squelch

failbyte (NR1):
0 = All limit checks passed
1 = Peak to peak Upper Limit failed
2 = Peak to peak Lower Limit failed
4 = Positive peak Upper Limit failed
8 = Positive peak Lower Limit failed
16 = Negative Upper Limit failed
32 = Negative peak Lower Limit failed
64 = RMS peak Upper Limit failed
128 = RMS peak Lower Limit failed

avgcount (NR1): value

pk-pk/2 (NR1): <units>

pos/neg peak (NR1): <units>

RMS (NR1): <units>

units (CRD): <units>

Query Response: :FETCh:MOD:ANALyzer:FM?
0,0,1,0.093,0.035,-0.093,-0.002,16

NOTE
Statusbyte and Failbyte may return more than one condition as a bitmask.
FM Modulation must be selected to return valid FM measurement data.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.5.3 FM Measurements - Peak Measurement Enable

:MOD:ANALyzer:FM:HOLD:ENABle
:MOD:ANALyzer:FM:HOLD:ENABle?

Description: Set command Enables/Disables Peak FM measurements.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :MOD:ANALyzer:FM:HOLD:ENABle ON
Enables Peak FM measurement.

Query Response: :MOD:ANALyzer:FM:HOLD:ENABle?
1

NOTE
Peak measurement must be enabled to obtain valid Peak measurement data.
FM Modulation must be selected to obtain valid FM measurement data.

5.5.4 FM Measurements - Peak Measurement Query

:FETCh:MOD:ANALyzer:FM:HOLD?

Description: Command returns Peak FM measurement data.

Query Data: <statusbyte>,<failbyte>,<pk-pk/2>,<pos peak>,<neg peak>,<RMS>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Peak to peak Upper Limit failed
2 = Peak to peak Lower Limit failed
4 = Positive peak Upper Limit failed
8 = Positive peak Lower Limit failed
16 = Negative Upper Limit failed
32 = Negative peak Lower Limit failed
64 = RMS peak Upper Limit failed
128 = RMS peak Lower Limit failed

pk-pk/2 (NR1): <units>

pos/neg peak (NR1): <units>

RMS (NR1): <units>

units (CRD): <units>

Query Response: :FETCh:MOD:ANALyzer:FM:HOLD?
0,0,1,1066,1066,-1066,701,3

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
FM Modulation must be selected to obtain valid FM measurement data.
Peak measurement must be enabled for return value Peak measurement data.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.5.5 FM Measurements - Peak Measurement Reset

:MOD:ANALyzer:FM:HOLD:RESet

Description: Command clears and resets Peak FM measurement.

Parameter/Query: none

5.5.6 FM Measurements - Units

:CONFigure:MOD:ANALyzer:FM:UNIts
:CONFigure:MOD:ANALyzer:FM:UNIts?

Description: Set command defines the units for FM measurements.
Query command returns parameter setting.

Parameter: Hz | dBr

Default Value: Hz

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:ANALyzer:FM:UNIts dBr
Displays FM measurements in dBr.

Query Response: :CONFigure:MOD:ANALyzer:FM:UNIts?
DBR

5.6 FM DEVIATION MEASUREMENT

5.6.1 FM Deviation - Lower Limit Enable

:LIMits:MOD:FM:LOWer:ENABle
:LIMits:MOD:FM:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for FM Deviation measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FM:LOWer:ENABle ON
Enables Lower Limit for FM Deviation measurement.

Query Response: :LIMits:MOD:FM:LOWer:ENABle?
1

5.6.2 FM Deviation - Lower Limit Value

:LIMits:MOD:FM:LOWer:VALue
:LIMits:MOD:FM:LOWer:VALue?

Description: Set command defines Lower Limit Value for FM Deviation measurement.
Query command returns parameter setting.

Range: 0.0 Hz to 150.0 kHz

Units: Hz | kHz

Default Value: 0.0 kHz

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:FM:LOWer:VALue 1.0Hz
Sets Lower Limit Value for FM Deviation measurement to 1.0 Hz.

Query Response: :LIMits:MOD:FM:LOWer:VALue?
1.0

5.6.3 FM Deviation - Measurement Type

:CONFigure:MOD:ANALyzer:FM:MTYPe
:CONFigure:MOD:ANALyzer:FM:MTYPe?

Description: Set command defines type of FM Demod measurement.
Query command returns parameter setting.

Parameter: PEAK | RMS

Default Value: PEAK

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:ANALyzer:FM:MTYPe RMS
Sets FM Deviation measurement to RMS measurement type.

Query Response: :CONFigure:MOD:ANALyzer:FM:MTYPe?
RMS

5.6.4 FM Deviation - Upper Limit Enable

:LIMits:MOD:FM:UPPer:ENABle
:LIMits:MOD:FM:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for FM Deviation measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FM:UPPer:ENABle ON
Enables Upper Limit for FM Deviation measurement.

Query Response: :LIMits:MOD:FM:UPPer:ENABle?
1

5.6.5 FM Deviation - Upper Limit Value

:LIMits:MOD:FM:UPPer:VALue
:LIMits:MOD:FM:UPPer:VALue?

Description: Set command defines Upper Limit Value for FM Deviation measurement.
Query command returns parameter setting.

Range: 0.0 Hz to 150.0 kHz

Units: Hz | kHz

Default Value: 100.00 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :LIMits:MOD:FM:UPPer:VALue 2.0Hz
Sets Upper Limit Value for FM Deviation measurement to 2.0 Hz.

Query Response: :LIMits:MOD:FM:UPPer:VALue?
2.0

5.7 FM DBR DEVIATION MEASUREMENTS

5.7.1 FM dBr Deviation - Lower Limit Enable

:LIMits:MOD:FM:DBR:LOWer:ENABle
:LIMits:MOD:FM:DBR:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for FM dBr Deviation measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FM:DBR:LOWer:ENABle ON
Enables Lower Limit for FM dBr Deviation measurement.

Query Response: :LIMits:MOD:FM:DBR:LOWer:ENABle?
1

5.7.2 FM dBr Deviation - Lower Limit Value

:LIMits:MOD:FM:DBR:LOWer:VALue
:LIMits:MOD:FM:DBR:LOWer:VALue?

Description: Set command defines Lower Limit Value for FM dBr Deviation measurement.
Query command returns parameter setting.

Range: -100 to +100 dBr

Units: dBr

Default Value: 0.0 dBr

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:FM:DBR:LOWer:VALue 1.0
Sets Lower Limit Value for FM dBr Deviation measurement to 1.0 dBr.

Query Response: :LIMits:MOD:FM:DBR:LOWer:VALue?
1.0

5.7.3 FM dBr Deviation - Upper Limit Enable

:LIMits:MOD:FM:DBR:UPPer:ENABle
:LIMits:MOD:FM:DBR:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for FM dBr Deviation measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FM:DBR:UPPer:ENABle ON
Enables Upper Limit for FM dBr Deviation measurement.

Query Response: :LIMits:MOD:FM:DBR:UPPer:ENABle?
1

5.7.4 FM dBr Deviation - Upper Limit Value

:LIMits:MOD:FM:DBR:UPPer:VALue
:LIMits:MOD:FM:DBR:UPPer:VALue?

Description: Set command defines Upper Limit Value for FM dBr Deviation measurement. Query command returns parameter setting.

Range: -100 to +100 dBr

Units: dBr

Default Value: 26.0 dBr

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:FM:DBR:UPPer:VALue 2.0
Sets Upper Limit Value for FM dBr Deviation measurement to 2.0 dBr.

Query Response: :LIMits:MOD:FM:DBR:UPPer:VALue?
2.0

5.8 FMRMS MEASUREMENT

5.8.1 FMRMS - Lower Limit Enable

:LIMits:MOD:FMRMS:LOWer:ENABle
:LIMits:MOD:FMRMS:LOWer:ENABle?

Description: Set command Enables / Disables Lower Limit for FM Root Mean Square measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FMRMS:LOWer:ENABle ON
EnablesLower Limit for FMRMS measurement.

Query Response: :LIMits:MOD:FMRMS:LOWer:ENABle?
1

5.8.2 FMRMS - Lower Limit Value

:LIMits:MOD:FMRMS:LOWer:VALue
:LIMits:MOD:FMRMS:LOWer:VALue?

Description: Set command defines Lower Limit Value for FM Root Mean Square measurement.
Query command returns parameter setting.

Range: 0.0 Hz to 150.0 kHz

Units: Hz | kHz

Default Value: 0.0 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :LIMits:MOD:FMRMS:LOWer:VALue 1.0Hz
Sets Lower Limit for FMRMS measurement to 1.0 Hz.

Query Response: :LIMits:MOD:FMRMS:LOWer:VALue?
1.0

5.8.3 FMRMS - Upper Limit Enable

:LIMits:MOD:FMRMS:UPPer:ENABle
:LIMits:MOD:FMRMS:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for FM Root Mean Square measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FMRMS:UPPer:ENABle ON
Enables Upper Limit for FMRMS measurement.

Query Response: :LIMits:MOD:FMRMS:UPPer:ENABle?
1

5.8.4 FMRMS - Upper Limit Value

:LIMits:MOD:FMRMS:UPPer:VALue
:LIMits:MOD:FMRMS:UPPer:VALue?

Description: Set command defines Upper Limit Value for FM Root Mean Square measurement.
Query command returns parameter setting.

Range: 0.0 Hz to 150.0 kHz

Units: Hz | kHz

Default Value: 26.00 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :LIMits:MOD:FMRMS:UPPer:VALue 2Hz
Sets Upper Limit Value for FMRMS measurement to 2.0 Hz.

Query Response: :LIMits:MOD:FMRMS:UPPer:VALue?
2.0

5.9 FM DBR RMS MEASUREMENTS

5.9.1 FM dBr RMS - Lower Limit Enable

:LIMits:MOD:FMRMS:DBR:LOWer:ENABle
:LIMits:MOD:FMRMS:DBR:LOWer:ENABle?

Description: Set command Enables / Disables Lower Limit for FM dBr Root Mean Square measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FMRMS:DBR:LOWer:ENABle ON
EnablesLower Limit for FM dBr RMS measurement.

Query Response: :LIMits:MOD:FMRMS:DBR:LOWer:ENABle?
1

5.9.2 FM dBr RMS - Lower Limit Value

:LIMits:MOD:FMRMS:DBR:LOWer:VALue
:LIMits:MOD:FMRMS:DBR:LOWer:VALue?

Description: Set command defines Lower Limit Value for FM dBr Root Mean Square measurement.
Query command returns parameter setting.

Range: -100 to +100 dBr

Units: dBr

Default Value: 0.00 dBr

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:FMRMS:DBR:LOWer:VALue 1.0
Sets Lower Limit for FM dBr RMS measurement to 1.0 dBr.

Query Response: :LIMits:MOD:FMRMS:DBR:LOWer:VALue?
1.0

5.9.3 FM dBr RMS - Upper Limit Enable

:LIMits:MOD:FMRMS:DBR:UPPer:ENABle
:LIMits:MOD:FMRMS:DBR:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for FM dBr Root Mean Square measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FMRMS:DBR:UPPer:ENABle ON
Enables Upper Limit for FM dBr RMS measurement.

Query Response: :LIMits:MOD:FMRMS:DBR:UPPer:ENABle?
1

5.9.4 FM dBr RMS - Upper Limit Value

:LIMits:MOD:FMRMS:DBR:UPPer:VALue
:LIMits:MOD:FMRMS:DBR:UPPer:VALue?

Description: Set command defines Upper Limit Value for FM dBr Root Mean Square measurement.
Query command returns parameter setting.

Range: -100 to +100 dBr

Units: dBr

Default Value: 26.00 dBr

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:FMRMS:DBR:UPPer:VALue 2
Sets Upper Limit Value for FM dBr RMS measurement to 2.0 dBr.

Query Response: :LIMits:MOD:FMRMS:DBR:UPPer:VALue?
2.0

5.10 MOD DISTORTION MEASUREMENT

5.10.1 Mod Distortion - Averages

:CONFigure:MOD:ANALyzer:DISTortion:AVERage
:CONFigure:MOD:ANALyzer:DISTortion:AVERage?

Description: Set command defines number of readings taken to calculate Average Modulation Distortion measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:MOD:ANALyzer:DISTortion:AVERage 75
Sets number of readings taken to calculate Average Mod Distortion measurement to 75.

Query Response: :CONFigure:MOD:ANALyzer:DISTortion:AVERage?
75

5.10.2 Mod Distortion - Frequency Bandwidth

:CONFigure:MOD:ANALyzer:DISTortion:WIDTh
:CONFigure:MOD:ANALyzer:DISTortion:WIDTh?

Description: Set command defines the Notch Filter bandwidth for Modulation Distortion measurement.
Query command returns parameter setting.

Parameter: 11.7 Hz | 35.2 Hz | 58.6 Hz | 82.0 Hz | 105.5 Hz | 128.9 Hz | 152.3 Hz

Default Value: 82.0 Hz

Set/Query Format: NRf | NR2

Example: :CONFigure:MOD:ANALyzer:DISTortion:WIDTh 25.2
Sets Mod Analyzer Distortion measurement Bandwidth to 25.2 Hz.

Query Response: :CONFigure:MOD:ANALyzer:DISTortion:WIDTh?
25.2

5.10.3 Mod Distortion - Frequency Modulation

:CONFigure:MOD:ANALyzer:DISTortion:FREQuency
:CONFigure:MOD:ANALyzer:DISTortion:FREQuency?

Description: Set command defines Notch Filter frequency for Modulation Distortion measurement.
Query command returns parameter setting.

Range: 1.0 Hz to 20.0 kHz

Units: Hz | kHz

Default Value: 1.0 Hz

Set/Query Format: NRf | NR1 (Hz)

Example: :CONFigure:MOD:ANALyzer:DISTortion:FREQuency 5kHz
Sets Mod Analyzer Distortion Frequency to 5.0 kHz.

Query Response: :CONFigure:MOD:ANALyzer:DISTortion:FREQuency?
5

5.10.4 Mod Distortion - Measurement Query

:FETCh:MOD:ANALyzer:DISTortion?

Description: Command returns Mod Distortion measurement data.

Query Data: <statusbyte>,<failbyte>,<avg count>,<avg>,<wc>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid
8 = Squelch

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

avgcount (NR1): value

avg, wc (NR2): %

Query Response: :FETCh:MOD:ANALyzer:DISTortion?
0,0,25,4.16,99.88

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
Mod Analyzer Noise measurement type must be defined as Distortion to return valid Mod measurement data (:MOD:ANALyzer:NTYPe DISTortion.)
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.10.5 Mod Distortion - Measurement Type

:CONFigure:MOD:ANALyzer:DISTortion:MTYPe
:CONFigure:MOD:ANALyzer:DISTortion:MTYPe?

Description: Set command defines measurement type for Mod Distortion measurement.
Query command returns parameter setting.

Parameter: AVERage | WCASe

Default Value: AVERage

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:ANALyzer:DISTortion:MTYPe WCASe
Sets Mod Analyzer Distortion measurement to Worst Case.

Query Response: :CONFigure:MOD:ANALyzer:DISTortion:MTYPe?
WCASe

5.10.6 Mod Distortion - Peak Measurement Enable

:MOD:ANALyzer:DISTortion:HOLD:ENABle
:MOD:ANALyzer:DISTortion:HOLD:ENABle?

Description: Set command Enables/Disables Peak Mod Distortion measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :MOD:ANALyzer:DISTortion:HOLD:ENABle ON
Enables Peak Mod Distortion measurement.

Query Response: :MOD:ANALyzer:DISTortion:HOLD:ENABle?
1

NOTE Peak measurement must be enabled to obtain valid Peak measurement data.

5.10.7 Mod Distortion - Peak Measurement Query

:FETCh:MOD:ANALyzer:DISTortion:HOLD?

Description: Command returns Peak Mod Distortion measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

avg, wc (NR2): %

Query Response: :FETCh:MOD:ANALyzer:DISTortion:HOLD?
0,0,4.16,99.88

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
Peak measurement must be enabled to obtain valid Peak measurement data.
Mod Analyzer Noise measurement type must be defined as Distortion to return valid Mod measurement data (:MOD:ANALyzer:NTYPe DISTortion.)
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.10.8 Mod Distortion - Peak Measurement Reset

:MOD:ANALyzer:DISTortion:HOLD:RESet

Description: Command clears and resets Peak Mod Distortion measurement.

Parameter/Query: none

5.10.9 Mod Distortion - Upper Limit Enable

:LIMits:MOD:DISTortion:UPPer:ENABle
:LIMits:MOD:DISTortion:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for Mod Distortion measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:DISTortion:UPPer:ENABle ON
Enables Upper Limit for Mod Distortion measurement.

Query Response: :LIMits:MOD:DISTortion:UPPer:ENABle?
1

5.10.10 Mod Distortion - Upper Limit Value

:LIMits:MOD:DISTortion:UPPer:VALue
:LIMits:MOD:DISTortion:UPPer:VALue?

Description: Set command defines Upper Limit Value for Distortion measurement.
Query command returns parameter setting.

Range: 0.0 to 100.0%

Units: % (percent)

Default Value: 0.0%

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:DISTortion:UPPer:VALue 1.0
Sets Upper Limit Value for Mod Distortion measurement to 1.0%.

Query Response: :LIMits:MOD:DISTortion:UPPer:VALue?
1.0

5.11 MOD FREQUENCY MEASUREMENT

5.11.1 Mod Frequency - Averages

:CONFigure:MOD:ANALyzer:FREQuency:AVERage
:CONFigure:MOD:ANALyzer:FREQuency:AVERage?

Description: Set command defines number of readings taken to calculate Average Modulation Frequency measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:MOD:ANALyzer:FREQuency:AVERage 75
Sets number of readings taken to calculate Average Mod Frequency measurement to 75.

Query Response: :CONFigure:MOD:ANALyzer:FREQuency:AVERage?
75

5.11.2 Mod Frequency - Lower Limit Enable

:LIMits:MOD:FREQuency:LOWer:ENABle
:LIMits:MOD:FREQuency:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for Demod Audio Frequency measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FREQuency:LOWer:ENABle ON
Enables Lower Limit for Mod Frequency measurement.

Query Response: :LIMits:MOD:FREQuency:LOWer:ENABle?
1

5.11.3 Mod Frequency - Lower Limit Value

:LIMits:MOD:FREQuency:LOWer:VALue
:LIMits:MOD:FREQuency:LOWer:VALue?

Description: Set command defines the Lower Limit Value for Demod Audio Frequency measurement.
Query command returns parameter setting.

Range: 0.0 Hz to 20.0 kHz

Units: Hz | kHz

Default Value: 0.00 Hz

Set/Query Format: NRf | NR2 (Hz)

Example: :LIMits:MOD:FREQuency:LOWer:VALue 1.0Hz
Sets Lower Limit Value for Mod Frequency measurement to 1.0 Hz.

Query Response: :LIMits:MOD:FREQuency:LOWer:VALue?
1.0

5.11.4 Mod Frequency - Measurement Query

:FETCh:MOD:ANALyzer:FREQuency?

Description: Command returns Modulation Frequency measurement data.

Query Data: <statusbyte>, <avgcount>, <avg>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid
8 = Squelch

avgcount (NR1): value

avg (NR2): Hz

Query Response: :FETCh:MOD:ANALyzer:FREQuency?
0,1,1000.0

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.11.5 Mod Frequency - Upper Limit Enable

:LIMits:MOD:FREQuency:UPPer:ENABle
:LIMits:MOD:FREQuency:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for Demod Audio Frequency measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:FREQuency:UPPer:ENABle ON
Enables Upper Limit for Mod Frequency measurement.

Query Response: :LIMits:MOD:FREQuency:UPPer:ENABle?
1

5.11.6 Mod Frequency - Upper Limit Value

:LIMits:MOD:FREQuency:UPPer:VALue
:LIMits:MOD:FREQuency:UPPer:VALue?

Description: Set command defines the Upper Limit Value for Demod Audio Frequency measurement.
Query command returns parameter setting.

Range: 0.0 Hz to 20.0 kHz

Units: Hz | kHz

Default Value: 10.00 kHz

Set/Query Format: NRf | NR2 (Hz)

Example: :LIMits:MOD:FREQuency:UPPer:VALue 2.0Hz
Sets Upper Limit Value for Mod Frequency measurement to 2.0 Hz.

Query Response: :LIMits:MOD:FREQuency:UPPer:VALue?
1.0

5.12 MOD HUM & NOISE MEASUREMENT

SNR Mode must be defined as Hum & Noise to obtain valid Hum & Noise measurement (:CONFigure:MOD:ANALyzer:SNR:MODE 0).

5.12.1 Mod Hum & Noise - Averages

:CONFigure:MOD:ANALyzer:HN:AVERage
:CONFigure:MOD:ANALyzer:HN:AVERage?

Description: Set command defines number of readings taken to calculate the Average Mod Hum & Noise measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:MOD:ANALyzer:HN:AVERage 75
Sets number of readings taken to calculate Average Mod Distortion measurement to 75.

Query Response: :CONFigure:MOD:ANALyzer:HN:AVERage?
75

5.12.2 Mod Hum & Noise - Lower Limit Enable

:LIMits:MOD:HN:LOWer:ENABle
:LIMits:MOD:HN:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for Mod Hum & Noise measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:HN:LOWer:ENABle ON
Enables Lower Limit for Mod Hum & Noise measurement.

Query Response: :LIMits:MOD:HN:LOWer:ENABle?
1

5.12.3 Mod Hum & Noise - Lower Limit Value

:LIMits:MOD:HN:LOWer:VALue
:LIMits:MOD:HN:LOWer:VALue?

Description: Set command defines Lower Limit Value for Mod Hum & Noise measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dBr

Units: dBr

Default Value: 0.0 dBr

Set/Query Format: NRf | NR1

Example: :LIMits:MOD:HN:LOWer:VALue -50dBr
Sets Lower Limit Value for Mod Hum & Noise measurement to -50.0 dBr.

Query Response: :LIMits:MOD:HN:LOWer:VALue?
-50

5.12.4 Mod Hum & Noise - Measurement Query

:FETCh:MOD:ANALyzer:HN?

Description: Command returns Mod and Noise measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>,<wc>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid
8 = Squelch

failbyte (NR1):
0 = All limit checks passed
2 = Average lower failed limit
8 = Worst case lower failed limit

avgcount (NR1): value

avg, wc (NR2): dB

Query Response: :FETCh:MOD:ANALyzer:HN?
4,4,13,62.35,75.68

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Mod Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:MOD:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:MOD:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.12.5 Mod Hum & Noise - Peak Measurement Enable

:MOD:ANALyzer:HN:HOLD:ENABle
:MOD:ANALyzer:HN:HOLD:ENABle?

Description: Set command Enables/Disables Peak Mod Hum and Noise measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :MOD:ANALyzer:HN:HOLD:ENABle ON
Enables Peak Mod Hum & Noise measurement.

Query Response: :MOD:ANALyzer:HN:HOLD:ENABle?
1

NOTE

Peak measurement must be enabled to obtain valid peak measurement data.

5.12.6 Mod Hum & Noise - Peak Measurement Query

:FETCh:MOD:ANALyzer:HN:HOLD?

Description: Command returns Peak Mod Hum and Noise measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
2 = Average lower failed limit
8 = Worst case lower failed limit

avg, wc (NR2): dB

Query Response: :FETCh:MOD:ANALyzer:HN:HOLD?
0,2,62.35,75.37

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.

Peak measurement must be enabled to obtain valid measurement.

Mod Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:MOD:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:MOD:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.12.7 Mod Hum & Noise - Peak Measurement Reset

:MOD:ANALyzer:HN:HOLD:RESet

Description: Command clears and resets Peak Mod Hum and Noise measurement.

Parameter/Query: none

5.12.8 Mod Hum & Noise - Reference Lock

:CONFigure:MOD:ANALyzer:HN:REFerence

Description: Command locks Mod Hum and Noise reference to current meter reading.

Parameter/Query: none

NOTE

Mod Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:MOD:ANALyzer:NTYPe SN) and SNR measurement defined as Hum & Noise (:CONFigure:MOD:ANALyzer:SNR:MODE 0) to obtain valid Hum & Noise measurement.

5.12.9 Mod Hum & Noise - Reference Value

:CONFigure:MOD:ANALyzer:HN:REFerence:VALue
:CONFigure:MOD:ANALyzer:HN:REFerence:VALue?

Description: Set command defines the reference for Modulation Analyzer Hum and Noise measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dB

Units: dB

Default Value: 12.0 dB

Set/Query Format: NRf | NR2

Example: :CONFigure:MOD:ANALyzer:HN:REFerence:VALue 1dB
Sets Hum & Noise Reference value to 1.0 dB.

Query Response: :CONFigure:MOD:ANALyzer:HN:REFerence:VALue?
1

5.12.10 Mod Hum & Noise - Upper Limit Enable

:LIMits:MOD:HN:UPPer:ENABle
:LIMits:MOD:HN:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for Mod Hum & Noise measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:HN:UPPer:ENABle ON
Enables Upper Limit for Mod Hum & Noise measurement.

Query Response: :LIMits:MOD:HN:UPPer:ENABle?
1

5.12.11 Mod Hum & Noise - Upper Limit Value

:LIMits:MOD:HN:UPPer:VALue
:LIMits:MOD:HN:UPPer:VALue?

Description: Set command defines Upper Limit Value for Hum and Noise measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dBr

Units: dBr

Default Value: 10.0 dBr

Set/Query Format: NRf | NR1

Example: :LIMits:MOD:HN:UPPer:VALue 75dBr
Sets Upper Limit Value for Mod Hum & Noise measurement to 75.0 dBr.

Query Response: :LIMits:MOD:HN:UPPer:VALue?
75

5.13 MOD SINAD MEASUREMENT

5.13.1 Mod Sinad - Averages

:CONFigure:MOD:ANALyzer:SINad:AVERage
:CONFigure:MOD:ANALyzer:SINad:AVERage?

Description: Set command defines number of readings taken to calculate the Average Mod Sinad measurement.
Query command returns the number of readings being taken to calculate Average Mod Sinad measurement.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:MOD:ANALyzer:SINad:AVERage 25
Sets number of readings taken to calculate Average Mod Sinad measurement to 75.

Query Response: :CONFigure:MOD:ANALyzer:SINad:AVERage?
75

5.13.2 Mod Sinad - Lower Limit Enable

:LIMits:MOD:SINad:LOWer:ENABle
:LIMits:MOD:SINad:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for Mod Sinad measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example :LIMits:MOD:SINad:LOWer:ENABle ON
Enables Lower Limit for Mod Sinad measurement.

Query Response: :LIMits:MOD:SINad:LOWer:ENABle?
1

5.13.3 Mod Sinad - Lower Limit Value

:LIMits:MOD:SINad:LOWer:VALue
:LIMits:MOD:SINad:LOWer:VALue?

Description: Set command defines the Lower Limit Value for Mod Sinad measurement.
Query command returns parameter setting.

Range: 0.0 to 100.0 dB

Units: dB

Default Value: 26.0 dB

Set/Query Format: NRf | NR1

Example: :LIMits:MOD:SINad:LOWer:VALue 30dB
Sets Lower Limit Value for Mod Sinad measurement to 30.0 dB.

Query Response: :LIMits:MOD:SINad:LOWer:VALue?
30

5.13.4 Mod Sinad - Measurement Query

:FETCh:MOD:ANALyzer:SINad?

Description: Command returns Mod Sinad measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>,<wc>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid
8 = Squelch

failbyte (NR1):
0 = All limit checks passed
2 = Average lower failed limit
8 = Worst Case lower failed limit

avgcount (NR1): value

avg, wc (NR2): dB

Query Response: :FETCh:MOD:ANALyzer:SINad?
0,0,1,25.58,0.00

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
Mod Analyzer Noise measurement type must be defined as SINAD to return valid Mod Sinad measurement data (:MOD:ANALyzer:NTYPe SINad.)
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.13.5 Mod Sinad - Measurement Type

:CONFigure:MOD:ANALyzer:SINad:MTYPe
:CONFigure:MOD:ANALyzer:SINad:MTYPe?

Description: Set command selects type of Sinad measurement.
Query command returns parameter setting.

Parameter: AVERage | WCASe

Default Value: AVERage

Set/Query Format: CPD | CRD

Example: :CONFigure:MOD:ANALyzer:SINad:MTYPe AVERage
Sets Mod Sinad measurement to Average.

Query Response: :CONFigure:MOD:ANALyzer:SINad:MTYPe?
AVER

5.13.6 Mod Sinad - Peak Measurement Enable

:MOD:ANALyzer:SINad:HOLD:ENABle
:MOD:ANALyzer:SINad:HOLD:ENABle?

Description: Set command Enables/Disables Peak Mod Sinad measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example :MOD:ANALyzer:SINad:HOLD:ENABle ON
Enables Peak Mod Sinad measurement.

Query Response: :MOD:ANALyzer:SINad:HOLD:ENABle?
1

NOTE Peak measurement must be enabled to obtain valid peak measurement data.

5.13.7 Mod Sinad - Peak Measurement Query

:FETCh:MOD:ANALyzer:SINad:HOLD?

Description: Command returns Peak Mod Sinad measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
2 = Average lower failed limit
8 = Worst Case lower failed limit

avg, wc (NR2): dB

Query Response: :FETCh:MOD:ANALyzer:SINad:HOLD?
0,0,27.26,27.99

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
Sinad Peak measurement must be enabled to return valid data.
Mod Analyzer Noise measurement type must be defined as SINAD to return valid Mod Sinad measurement data (:MOD:ANALyzer:NTYPe SINad.)
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.13.8 Mod Sinad - Peak Measurement Reset

:MOD:ANALyzer:SINad:HOLD:RESet

Description: Command clears and resets Peak Mod Sinad measurement.

Parameter/Query: none

5.14 MOD SNR MEASUREMENT

NOTE

SNR Mode must be defined as Normal to obtain valid Hum & Noise measurement (:CONFigure:MOD:ANALyzer:SNR:MODE 1).

5.14.1 Mod SNR - Averages

:CONFigure:MOD:ANALyzer:SNR:AVERage
:CONFigure:MOD:ANALyzer:SNR:AVERage?

Description: Set command defines number of readings taken to calculate Average Mod Signal to Noise Ratio measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:MOD:ANALyzer:SNR:AVERage 75
Sets number of readings taken to calculate Average Mod SNR measurement to 75.

Query Response: :CONFigure:MOD:ANALyzer:SNR:AVERage?
75

5.14.2 Mod SNR - Lower Limit Enable

:LIMits:MOD:SNR:LOWer:ENABle
:LIMits:MOD:SNR:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for Mod SNR measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:SNR:LOWer:ENABle ON
Enables Lower Limit for Mod SNR measurement.

Query Response: :LIMits:MOD:SNR:LOWer:ENABle?
1

5.14.3 Mod SNR - Lower Limit Value

:LIMits:MOD:SNR:LOWer:VALue
:LIMits:MOD:SNR:LOWer:VALue?

Description: Set command defines the Lower Limit Value for Mod SNR measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dB

Units: dB

Default Value: 26.0 dB

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:SNR:LOWer:VALue 50dB
Sets Lower Limit for Mod SNR measurement to 50.0 dB.

Query Response: :LIMits:MOD:SNR:LOWer:VALue?
50

5.14.4 Mod SNR - Measurement Query

:FETCh:MOD:ANALyzer:SNR?

Description: Command returns Modulation Signal to Noise Ratio measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid
8 = Squelch

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avgcount (NR1): value

avg, wc (NR2): dB

Query Response: :FETCh:MOD:ANALyzer:SNR?
0,2,1,-0.00,13.02

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
Mod Analyzer Noise measurement type must be defined as SNR to return valid Mod SNR measurement data (:MOD:ANALyzer:NTYPe SN.)
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.14.5 Mod SNR - Mode

:CONFigure:MOD:ANALyzer:SNR:MODE
:CONFigure:MOD:ANALyzer:SNR:MODE?

Description: Set command defines the SNR Meter Mode (Normal or Hum and Noise) when performing Signal to Noise Ratio measurement.
Query command returns parameter setting.

Parameter: 0 = Hum & Noise
1 = Normal

Default Value: 0 (Hum & Noise)

Set/Query Format: NR1

Example: :CONFigure:MOD:ANALyzer:SNR:MODE 0
Sets Mod SNR measurement to Hum & Noise.

Query Response: :CONFigure:MOD:ANALyzer:SNR:MODE?
0

5.14.6 MOD SNR - Enable Notch Filter

CONFigure:MOD:ANALyzer:SNR:NOTCh:ENABle
CONFigure:MOD:ANALyzer:SNR:NOTCh:ENABle?

Description: Set command Enables/Disables (Includes/excludes) MOD SNR Notch Filter for MOD SNR measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: CONFigure:MOD:ANALyzer:SNR:NOTCh:ENABle ON
Includes Notch Filter when performing MOD SNR measurement.

Query Response: CONFigure:MOD:ANALyzer:SNR:NOTCh:ENABle?
1

NOTE

MOD Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:MOD:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:MOD:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

5.14.7 MOD SNR - Notch Filter Frequency

CONFigure:MOD:ANALyzer:SNR:NOTCh:FREQuency
CONFigure:MOD:ANALyzer:SNR:NOTCh:FREQuency?

Description: Set command defines the MOD SNR Notch Frequency.
Query command returns parameter setting.

Range: 1.0 Hz to 3 kHz

Units: Hz | kHz

Default Value: 300 Hz

Set/Query Format: NRf | NR2 (Hz)

Example: CONFigure:MOD:ANALyzer:SNR:NOTCh:FREQuency .15kHz
Sets MOD SNR Notch Frequency to .15 kHz (150.0 Hz)

Query Response: CONFigure:MOD:ANALyzer:SNR:NOTCh:FREQuency?
150

NOTE

MOD Analyzer Noise measurement type must be defined as Signal to Noise Ratio (:MOD:ANALyzer:NTYPe SN) and SNR measurement defined as Normal (:CONFigure:MOD:ANALyzer:SNR:MODE 1) to obtain valid SNR measurement.

5.14.8 MOD SNR - Notch Filter Bandwidth

CONFigure:MOD:ANALyzer:SNR:NOTCh:WIDth
CONFigure:MOD:ANALyzer:SNR:NOTCh:WIDth?

Description: Set command defines bandwidth of MOD SNR Notch Filter
Query command returns parameter setting.

Parameter: 11.7 Hz | 35.2 Hz | 58.6 Hz | 82.0 Hz | 105.5 Hz | 128.9 Hz | 152.3 Hz

Default Value: 82.0 Hz

Unit: Hz | kHz

Set/Query Format: CPD | CRD

Example: CONFigure:MOD:ANALyzer:SNR:NOTCh:WIDth 105.5Hz
Sets MOD SNR Notch Filter to 105.5 Hz Bandwidth

Query Response: CONFigure:MOD:ANALyzer:SNR:NOTCh:WIDth?
105.5

NOTE

Bandwidth selected should be appropriate for signal received from UUT.

5.14.9 Mod SNR - Peak Measurement Enable

:MOD:ANALyzer:SNR:HOLD:ENABle
:MOD:ANALyzer:SNR:HOLD:ENABle?

Description: Set command Enables/Disables Peak Mod SNR measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :MOD:ANALyzer:SNR:HOLD:ENABle ON
Enables Peak Mod SNR measurement.

Query Response: :MOD:ANALyzer:SNR:HOLD:ENABle?
1

NOTE Peak measurement must be enabled to obtain valid Peak measurement data.

5.14.10 Mod SNR - Peak Measurement Query

:FETCh:MOD:ANALyzer:SNR:HOLD?

Description: Command returns Pek Mod SNR measurement data.

Query Data: <statusbyte>,<failbyte>,<avg>,<wc>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avg, wc (NR2): dB

Query Response: :FETCh:MOD:ANALyzer:SNR:HOLD?
0,2,-1.10,37.65

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
SNR Peak measurement must be enabled to return valid data.
Mod Analyzer Noise measurement type must be defined as SNR to return valid Mod SNR measurement data (:MOD:ANALyzer:NTYPe SN.)
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

5.14.11 Mod SNR - Peak Measurement Reset

:MOD:ANALyzer:SNR:HOLD:RESet

Description: Command clears and resets Peak Mod SNR measurement.

Parameter/Query: none

5.14.12 Mod SNR - Upper Limit Enable

:LIMits:MOD:SNR:UPPer:ENABle
:LIMits:MOD:SNR:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for Mod SNR measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:MOD:SNR:UPPer:ENABle ON
Enables Upper Limit for Mod SNR measurement.

Query Response: :LIMits:MOD:SNR:UPPer:ENABle?
1

5.14.13 Mod SNR - Upper Limit Value

:LIMits:MOD:SNR:UPPer:VALue
:LIMits:MOD:SNR:UPPer:VALue?

Description: Set command defines the Upper Limit Value for Mod SNR measurement.
Query command returns parameter setting.

Range: -100.0 to +100.0 dB

Units: dB

Default Value: 0.0 dB

Set/Query Format: NRf | NR2

Example: :LIMits:MOD:SNR:UPPer:VALue 50dB
Sets Upper Limit Value for Mod SNR measurement to 50.0 dB.

Query Response: :LIMits:MOD:SNR:UPPer:VALue?
50

5.15 MOD TONE DECODING

5.15.1 Modulation Analyzers - Clear Decode Log

:MOD:ANALyzer:DECODE:LOGS:CLEAR

Description: Command clears all modulation data logs for Tone Remote, Tone Sequential and Two Tone Sequential signal types.

Parameter/Query: none

5.15.2 Modulation Analyzers - Decode Protocol

:MOD:ANALyzer:DECODE:PROTocol
:MOD:ANALyzer:DECODE:PROTocol?

Description: Set command selects Protocol to be decoded by the Modulation Analyzer.
Query command returns parameter setting.

Parameter: ZVEI1 | ZVEI2 | ZVEI3 | PZVEI | DZVEI | PDZVEI | CCIR1 | CCIR2 | PCCIR | EEA | EUROSIG | NATEL | EIA | MODAT | USER1 | USER2

Default Value: ZVEI1

Set/Query Format: CPD | CRD

Example: :MOD:ANALyzer:DECODE:PROTocol PZVEI
Sets Modulation Analyzer to decode PZVEI Protocol.

Query Response: :MOD:ANALyzer:DECODE:PROTocol?
PZVEI

5.15.3 Modulation Analyzers - Decode Signal Type

:MOD:ANALyzer:DECODE:TYPE
:MOD:ANALyzer:DECODE:TYPE?

Description: Set command defines type of Signal being Decoded by the Modulation Analyzer.
Query command returns parameter setting.

Set Parameter: OFF | DCS | DCSINV

Query Data: OFF | DCS | DCSINV | DTMF | TONESEQ | TONEREM | TWOTONE

Default: OFF (Demod)

Set/Query Format: CPD | CRD

Example: :MOD:ANALyzer:DECODE:TYPE DCS
Sets type of signal being decoded by Modulation Analyzer to DCS.

Query Response: :MOD:ANALyzer:DECODE:TYPE?
DCS

5.15.4 Modulation Analyzers - Tone Remote Decoded Data

:FETCh:MOD:ANALyzer:DECODE:TONEREM:LOG?

Description: Command returns received Tone Remote data.

Query Data: <frequency>,<spec frequency>,<% error>,<freq error>,<duration>

frequency (NR2): Hz

spec frequency (NR2): Hz

% error (NR2): percent (%)

freq error (NR2): Hz

duration (NR2): ms

no activity: returned when no log data is available

Query Response: :FETCh:MOD:ANALyzer:DECODE:TONEREM:LOG?
2173.8,2175.0,0.054,1.2,1422.9
1051.8,1050.0,0.167,1.8,1422.9
2176.8,2175.0,0.081,1.8,1422.9

5.15.5 Modulation Analyzers - Tone Sequential Decoded Data

:FETCh:MOD:ANALyzer:DECODE:TONESEQ:LOG?

Description: Command returns received Modulation Tone Sequential data.

Query Format: ascii data string

Query Data: <decoded tone>,<frequency>,<spec frequency>,<% error>,<freq error>,<duration>

decoded tone (hex): 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A | B | C | D | E | F

frequency (NR2): Hz

spec frequency (NR2): Hz

% error (NR2): percent (%)

freq error (NR2): Hz

duration (NR2): ms

no activity: returned when no log data is available

Query Response: :FETCh:MOD:ANALyzer:DECODE:TONESEQ:LOG?
0,2399.4,2400.0,0.024,0.6,74.7
1,1057.6,1060.0,0.225,2.4,74.7
2,1163.1,1160.0,0.266,3.1,64.0
3,1274.4,1270.0,0.348,4.4,74.7
4,1400.4,1400.0,0.028,0.4,74.7

5.15.6 Modulation Analyzers - Two Tone Sequential Decoded Data

:FETCh:MOD:ANALyzer:DECODE:TWOTONE:LOG?

Description: Command returns received Two Tone Sequential data.

Query Data: <frequency>,<duration>

frequency (NR2): Hz

duration (NR2): ms

no activity: returned when no log data is available

Query Response: :FETCh:MOD:ANALyzer:DECODE:TWOTONE:LOG?
501.0,1013.3
1002.0,3008.0

Chapter 6 - RF Analyzer Measurements Remote Commands

6.1 INTRODUCTION

This chapter describes the Remote Commands for configuring and obtaining RF Analyzer measurements data. Commands are listed alphabetically under the following headings:

6.2 RF ANALYZER (RECEIVER) CONFIGURATION

6.2.1 Duplex Frequency - Offset Enable

:CONFigure:OFFSet:DUPLex:LOCK
:CONFigure:OFFSet:DUPLex:LOCK?

Description: Set command defines the RF Analyzer Offset mode of operation.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :CONFigure:OFFSet:DUPLex:LOCK ON
Locks Duplex Frequency Offset to RF Analyzer Frequency
Query Response: :CONFigure:OFFSet:DUPLex:LOCK?
1

6.2.2 Duplex Frequency - Offset Value

:CONFigure:OFFSet:DUPLex:VALue
:CONFigure:OFFSet:DUPLex:VALue?

Description: Set command defines the RF Analyzer Offset Value.
Query command returns parameter setting.
Range: -999.0 to +999.0 MHz
Units: Hz | kHz | MHz
Default Value: 0.00000 MHz
Set/Query Format: NRf | NR1 (Hz)
Example: :CONFigure:OFFSet:DUPLex:VALue 15MHZ
Sets Duplex Offset to 15.0 MHz.
Query Response: :CONFigure:OFFSet:DUPLex:VALue?
15000000

6.2.3 Rx Meter - Mode of Operation

:SYSTem:RCI:METER:MODE
:SYSTem:RCI:METER:MODE?

Description: Set command defines Rx Meter mode of operation when operating remotely.
Query command returns parameter setting.

Parameter: SLOW | FAST

Default Value: FAST

Set/Query Format: CPD | CRD

Example: :SYSTem:RCI:METER:MODE SLOW
Sets Rx Meter Mode to Slow.

Query Response: :SYSTem:RCI:METER:MODE?
SLOW

NOTE

When set to FAST, *stb command can be used to obtain data stale byte.
When Mode is set to SLOW, data is not returned for the executed :FETCh command until fresh data is available or averaging is complete.
Commands that support this mode are identified by the following note:
*rci meter mode compatible

6.2.4 RF Analyzer - AGC Level

:RF:ANALyzer:AGC:LEVel
:RF:ANALyzer:AGC:LEVel?

Description: Set command defines the AGC Level when in Manual Mode of operation.
Query command returns parameter setting.

Range: **TR:** -60.0 to +60.0 dBm
ANT: -100.0 to +10 dBm

Default Value: system defined

Set/Query Format: NRf | NR2

Example: :RF:ANALyzer:AGC:LEVel -25dBm
Sets Receiver AGC Level to -25.0 dBm.

Query Response: :RF:ANALyzer:AGC:LEVel?
-25.00

NOTE

AGC Mode must be set to Manual to enter a specific Level value.
Offsets not included in range values.

6.2.5 RF Analyzer - AGC Mode of Operation

:RF:ANALyzer:AGC:MODE
:RF:ANALyzer:AGC:MODE?

Description: Set command defines the AGC mode of operation.
Query command returns parameter setting.
Parameter: AUTo | MANual
Default Value: Manual
Set/Query Format: CPD | CRD
Example: :RF:ANALyzer:AGC:MODE MANual
Sets Automatic Gain Control to Manual.
Query Response: :RF:ANALyzer:AGC:MODE?
MAN

NOTE AGC Mode must be set to Manual to enter a specific Level value.

6.2.6 RF Analyzer - AutoTune Frequency Resolution Value

:CONFigure:RF:ANALyzer:FMODe:FRESolution
:CONFigure:RF:ANALyzer:FMODe:FRESolution?

Description: Set command defines AutoTune Frequency Resolution value when AutoTune is enabled.
Query command returns parameter setting.
Parameter: 1 | 10 | 100 | 1000
Units: Hz
Default Value: 1 Hz
Set/Query Format: NRf | NR1
Example: :CONFigure:RF:ANALyzer:FMODe:FRESolution 10
Sets AutoTune Threshold to 10 Hz.
Query Response: :CONFigure:RF:ANALyzer:FMODe:FRESolution?
10

6.2.7 RF Analyzer - AutoTune Mode of Operation

:RF:ANALyzer:FMODe
:RF:ANALyzer:FMODe?

Description: Set command selects AutoTune Frequency mode of operation.
Query command returns parameter setting.
Parameter: AUTo | MANual
Default Value: Manual
Set/Query Format: CPD | CRD
Example: :RF:ANALyzer:FMODe AUTO
Sets RF Analyzer to Autotune received frequency.
Query Response: :RF:ANALyzer:FMODe?
AUT

NOTE AutoTune must be set to Manual to enter a specific Receive frequency

6.2.8 RF Analyzer - AutoTune Operating Status

:RF:ANALyzer:FMODe:STATus?

Description: Command indicates whether AutoTune frequency search is running or complete.

Query Data: 0 = Search complete
1 = Searching

Query Format: NR1

Query Response: :RF:ANALyzer:FMODe:STATus?
1

NOTE Command only valid when AutoTune mode of operation is set to Auto.

6.2.9 RF Analyzer - AutoTune Start Frequency

:RF:ANALyzer:FMODe:START
:RF:ANALyzer:FMODe:START?

Description: Set command defines Start Frequency of AutoTune range.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz

Units: Hz | kHz | MHz | GHz

Default Value: 10.0 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :RF:ANALyzer:FMODe:START 20kHz
Sets AutoTune Start Frequency to 20.0 kHz.

Query Response: :RF:ANALyzer:FMODe:START?
200000.00

NOTE Command only valid when AutoTune mode of operation is set to Auto.

6.2.10 RF Analyzer - AutoTune Start Frequency Enable

:RF:ANALyzer:FMODe:START:ENABle
:RF:ANALyzer:FMODe:START:ENABle?

Description: Set command activates/deactivates AutoTune Start frequency.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :RF:ANALyzer:FMODe:START:ENABle ON
Activates AutoTune Start frequency.

Query Response: :RF:ANALyzer:FMODe:START:ENABle?
1

NOTE Command only valid when AutoTune mode of operation is set to Auto.

6.2.11 RF Analyzer - AutoTune Stop Frequency

:RF:ANALyzer:FMODe:STOP
:RF:ANALyzer:FMODe:STOP?

Description: Set command defines the Stop Frequency of AutoTune range.
Query command returns parameter setting.

Parameter: 100.0 kHz to 2.71 GHz

Units: Hz | kHz | MHz | GHz

Default Value: 500.00 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :RF:ANALyzer:FMODe:STOP 650MHz
Sets RF Anlyzer AutoTune Stop Frequency to 650.0 MHz.

Query Response: :RF:ANALyzer:FMODe:STOP?
650000000.00

NOTE Command only valid when AutoTune mode of operation is set to Auto.

6.2.12 RF Analyzer - AutoTune Stop Frequency Enable

:RF:ANALyzer:FMODe:STOP:ENABle
:RF:ANALyzer:FMODe:STOP:ENABle?

Description: Set command enables/disablesAutoTune Stop Frequency.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :RF:ANALyzer:FMODe:STOP:ENABle ON
Activates AutoTune Stop Frequency.

Query Response: :RF:ANALyzer:FMODe:STOP:ENABle?
1

NOTE Command only valid when AutoTune mode of operation is set to Auto.

6.2.13 RF Analyzer - AutoTune Threshold Value

:RF:ANALyzer:FMODe:THREsh
:RF:ANALyzer:FMODe:THREsh?

Description: Set command defines the AutoTune Threshold value.
Query command returns parameter setting.

Range: -75.0 to +20.0 dBm

Units: dBm

Default Value: -30.0 dBm

Set/Query Format: NRF | NR2

Example: RF:ANALyzer:FMODe:THREsh -45dBm
Sets AutoTune Threshold value to -45.0 dBm.

Query Response: RF:ANALyzer:FMODe:THREsh?
-45.000000

NOTE :CONFigure:RF:ANALyzer:THREsh command also supported for this function.

6.2.14 RF Analyzer - Bandwidth AM IF

:RF:ANALyzer:AMIF
:RF:ANALyzer:AMIF?

Description: Set command defines the AM IF Bandwidth.
Query command returns parameter setting.

Parameter: 6.25 | 8.33 | 10.0 | 12.5 | 25 | 30.0 | 100 | 230 | 300

Units: kHz

Default Value: 10 kHz

Set/Query Format: NRf | CRD

Example: :RF:ANALyzer:AMIF 8.33
Set RF Analyzer AM IF Bandwidth to 8.33 kHz.

Query Response: :RF:ANALyzer:AMIF?
8.33kHz

NOTE AM Modulation must be selected for RF Analyzer for command to be valid.
Test Set does not process any commands following this one until this command is completed.

6.2.15 RF Analyzer - Bandwidth FM IF

:RF:ANALyzer:FMIF
:RF:ANALyzer:FMIF?

Description: Set command defines FM IF Bandwidth.
Query command returns parameter setting.

Parameter: 6.25 | 8.33 | 10.0 | 12.5 | 25 | 30.0 | 100 | 230 | 300

Units: kHz

Default Value: 30 kHz

Set/Query Format: NRf | CRD

Example: :RF:ANALyzer:FMIF 300
Sets RF Analyzer FM IF Bandwidth to 300 kHz.

Query Response: :RF:ANALyzer:FMIF?
300kHz

NOTE
RF Analyzer must be set to FM for command to be valid.
Test Set does not process any commands following this one until this command is completed.

6.2.16 RF Analyzer - Frequency

:RF:ANALyzer:FREQuency
:RF:ANALyzer:FREQuency?

Description: Set command defines the RF Analyzer Frequency when in Manual Mode of operation.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz

Units : Hz | kHz | MHz | GHz

Default Value: 150.0 MHz

Set/Query Format: NRf | NR1 (Hz)

Example: :RF:ANALyzer:FREQuency 650MHz
Sets RF Analyzer Frequency to 650.0 MHz.

Query Response: :RF:ANALyzer:FREQuency?
650000000

NOTE
RF:ANALyzer:AGC:MODE MANual must be defined to manually enter RF Analyzer Frequency value.

6.2.17 RF Analyzer - Frequency Decrement

:RF:ANALyzer:FDECrement

Description: Command decreases RF Analyzer frequency by defined Increment value.

Parameter/Query: none

NOTE
RF Generator Frequency Increment value is defined with command :CONFigure:RF:ANALyzer:FINCrement.

6.2.18 RF Analyzer - Frequency Increment

:RF:ANALyzer:FINCrement

Description: Command increases RF Analyzer Frequency by defined Increment value.

Parameter/Query: none

NOTE RF Generator Frequency Increment value is defined with command :CONFigure:RF:ANALyzer:FINCrement.

6.2.19 RF Analyzer - Frequency Increment Value

:CONFigure:RF:ANALyzer:FINCrement
:CONFigure:RF:ANALyzer:FINCrement?

Description: Set command defines the RF Analyzer Frequency Increment value.
Query command returns parameter setting.

Range: 1.0 Hz to 999.0 MHz

Units: Hz | kHz | MHz

Default Value: 1.0 Hz

Set/Query Format: NRf | NR1 (Hz)

Example: :CONFigure:RF:ANALyzer:FINCrement 5kHz
Set RF Analyzer Frequency Increment value to 5.0 kHz.

Query Response: :CONFigure:RF:ANALyzer:FINCrement?
5000

6.2.20 RF Analyzer - Frequency Measurement

:FETCh:RF:ANALyzer:FREQuency?

Description: Command returns RF Frequency measurement data.

Query Data: <statusbyte>,<frequency>

statusbyte (NR1): 0 = Valid
1 = Invalid
4 = Inaccurate

frequency (NR1): Hz

Query Response: :FETCh:RF:ANALyzer:FREQuency?
0,149999994(Hz)

6.2.21 RF Analyzer - Frequency Counter Query

:FETCh:RF:ANALyzer:FCOUNTer?

Description: Command returns the RF Frequency Counter measurement.

Query Data: RF Input frequency

Units: defined by RF Frequency

Query Response: :FETCh:RF:ANALyzer:FCOUNTer?
150.169

6.2.22 RF Analyzer - Frequency Resolution Value

:CONFigure:RF:ANALyzer:FRESolution
:CONFigure:RF:ANALyzer:FRESolution?

Description: Set command defines RF Analyzer Frequency Resolution.
Query command returns parameter setting.
Parameter: 1 | 10
Units: Hz
Default Value: 1 Hz
Set/Query Format: NRf | NR1
Example: :CONFigure:RF:ANALyzer:FRESolution 10
Sets RF Analyzer Frequency Resolution to 10 Hz.
Query Response: :CONFigure:RF:ANALyzer:FRESolution?
10

6.2.23 RF Analyzer - Input Connector

:RF:ANALyzer:PORT
:RF:ANALyzer:PORT?

Description: Set command selects the RF Input Connector.
Query command returns parameter setting.
Parameter: TR | ANT
Default Value: TR
Set/Query Format: CPD | CRD
Example: :RF:ANALyzer:PORT ANT
Selects Antenna Connector as Receiver port.
Query Response: :RF:ANALyzer:PORT?
ANT

NOTE Refer to 3900 Platform Specifications for maximum input values.

6.2.24 RF Analyzer - Level Measurement Type

:CONFigure:RF:LTYPe
:CONFigure:RF:LTYPe?

Description: Set command defines type of RF Level measurement.
Query command returns parameter setting.
Parameter: EMF | PD
Default Value: EMF
Set/Query Format: CPD | CRD
Example: :CONFigure:RF:LTYPe PD
Sets RF Gen Level to PD measurement.
Query Response: :CONFigure:RF:LTYPe?
PD

6.2.25 RF Analyzer - Modulation

:RF:ANALyzer:MOD
:RF:ANALyzer:MOD?

Description: Set command selects RF Modulation Type.
Query command returns parameter setting.
Parameter: AM | FM | FM50 | FM75 | FM750 | AMUSB | AMLSB
Default Value: FM
Set/Query Format: CPD | CRD
Example: :RF:ANALyzer:MOD FM
Sets RF Analyzer Receive Modulation to FM.
Query Response: :RF:ANALyzer:MOD?
FM

NOTE Test Set does not process any commands following this one until this command is completed.

6.2.26 RF Analyzer - Offset Enable

:CONFigure:OFFSet:ANALyzer:ENABle
:CONFigure:OFFSet:ANALyzer:ENABle?

Description: Set command Enables/Disables the Audio Analyzer Offset.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :CONFigure:OFFSet:ANALyzer:ENABle ON
Enables RF Analyzer Offset.
Query Response: :CONFigure:OFFSet:ANALyzer:ENABle?
1

6.2.27 RF Analyzer - Offset Value

:CONFigure:OFFSet:ANALyzer:VALue
:CONFigure:OFFSet:ANALyzer:VALue?

Description: Set command defines the Audio Analyzer Offset Value.
Query command returns parameter setting.
Range: -40.0 to +40.0 dB
Units: dB
Default Value: 0.0 dB
Set/Query Format: NRf | NR2
Example: :CONFigure:OFFSet:ANALyzer:VALue -10dB
Sets RF Analyzer Offset to -10.0 dB.
Query Response: :CONFigure:OFFSet:ANALyzer:VALue?
-10.00

6.2.28 RF Analyzer - Power Measurement Type

:RF:ANALyzer:PMType
:RF:ANALyzer:PMType?

Description: Set command defines type of RF Power measurement.
Query command returns parameter setting.

Parameter: IB = Inband
BB = Broadband

Default Value: IB (Inband)

Set/Query Format: CPD | CRD

Example: :RF:ANALyzer:PMType BB
Sets RF Analyzer to measure Broadband Power.

Query Response: :RF:ANALyzer:PMType?
BB

6.2.29 RF Analyzer - Pre-Amplifier Enable

:RF:ANALyzer:RECeiver:AMP
:RF:ANALyzer:RECeiver:AMP?

Description: Set command Enables/Disables Receiver Pre-AMP.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :RF:ANALyzer:RECeiver:AMP ON
Enables Receive Pre-Amplifier.

Query Response: :RF:ANALyzer:RECeiver:AMP?
1

6.2.30 RF Analyzer - Pre-Amplifier Frequency Reference

:RF:ANALyzer:RECeiver:TIMEBase
:RF:ANALyzer:RECeiver:TIMEBase?

Description: Set command defines RF Frequency reference as Internal or External.
Query command returns parameter setting.

Parameter: EXTernal | INTernal

Default Value: INTernal

Set/Query Format: CPD | CRD

Example: :RF:ANALyzer:RECeiver:TIMEBase EXTernal
Sets RF Frequency Timebase reference to External source.

Query Response: :RF:ANALyzer:RECeiver:TIMEBase?
EXT

NOTE External Source must be connected to Test Set when Frequency Reference is set to EXTernal.

6.3 ANTENNA INBAND POWER MEASUREMENT

6.3.1 ANT Inband Power - Averages

:CONFigure:RF:ANALyzer:AIPower:AVERage
:CONFigure:RF:ANALyzer:AIPower:AVERage?

Description: Set command defines number of readings taken to calculate Average Antenna Inband Power measurement.
Query command returns parameter setting.

Range: 1 to 250

Set/Query Format: NR1

Default Value: 1

Example: :CONFigure:RF:ANALyzer:AIPower:AVERage 25
Sets number of readings taken to calculate Antenna Inband Power measurement to 25.

Query Response: :CONFigure:RF:ANALyzer:AIPower:AVERage?
25

6.3.2 ANT Inband Power - Lower Limit Enable

:LIMits:RF:AIPower:LOWer:ENABle
:LIMits:RF:AIPower:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for ANT Inband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:RF:AIPower:LOWer:ENABle ON
Enables Lower Limit for Antenna Inband Power measurement.

Query Response: :LIMits:RF:AIPower:LOWer:ENABle?
1

6.3.3 ANT Inband Power - Lower Limit Value

:LIMits:RF:AIPower:LOWer:VALue
:LIMits:RF:AIPower:LOWer:VALue?

Description: Set command defines Lower Limit Value for ANT Inband Power measurement.
Query command returns parameter setting.

Range: -140.0 to +70.0 dBm

Units: W | mW | µW | dBW | dBm | V | mV | µV | dBµV

Default Value: 0.0 dBm

Default Units: dBm

Set/Query Format: NRf | NR2 (dBm)

Example: :LIMits:RF:AIPower:LOWer:VALue 30dBm
Sets Lower Limit Value for Antenna Inband Power measurement to 30.0 dBm.

Query Response: :LIMits:RF:AIPower:LOWer:VALue?
30.0

6.3.4 ANT Inband Power - Measurement Query

:FETCh:RF:ANALyzer:AIPower? <units>

Description: Command returns RF ANT Inband Power measurement data in specified unit.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avgcount (NR1): value

avg (NR2): <units>

Units: dBm | mW | dBW | mV

Query Response: :FETCh:RF:ANALyzer:AIPower? DBM
5,0,1,-106.86

NOTE
Statusbyte and Failbyte may return more than one condition as a bitmask.
RF Input must be ANT for ANT Inband Power measurement to return valid data.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

6.3.5 ANT Inband Power - Peak Measurement Enable

:RF:ANALyzer:AIPower:HOLD:ENABle
:RF:ANALyzer:AIPower:HOLD:ENABle?

Description: Set command Enables/Disables Peak ANT Inband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :RF:ANALyzer:AIPower:HOLD:ENABle ON
Enables Antenna Inband Peak Power measurement.

Query Response: :RF:ANALyzer:AIPower:HOLD:ENABle?
1

NOTE
Peak measurement must be enabled to obtain valid Peak measurement data.

6.3.6 ANT Inband Power - Peak Measurement Query

:FETCh:RF:ANALyzer:AIPower:HOLD? <units>

Description: Command returns Peak ANT Inband Power measurement data in specified unit.

Query Data: <statusbyte>,<failbyte>,<avg>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avg (NR2): <units>

Units: dBm | mW | dBW | mV

Query Response: :FETCh:RF:ANALyzer:AIPower:HOLD? DBM
5,0,-106.77

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
Peak measurement must be enabled to obtain valid Peak measurement data.
RF Input must be ANT for ANT Inband Power measurement to be valid.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

6.3.7 ANT Inband Power - Peak Measurement Reset

:RF:ANALyzer:AIPower:HOLD:RESet

Description: Command clears and resets Peak ANT Inband Power measurement.

Parameter/Query: none

6.3.8 ANT Inband Power - Units

:CONFigure:RF:ANALyzer:AIPower:UNIts
:CONFigure:RF:ANALyzer:AIPower:UNIts?

Description: Set command defines the unit of measurement for Antenna Inband Power measurement.
Query command returns parameter setting.

Parameter: W | dBW | dBm | V | dBµV

Default Value: W

Set/Query Format: CPD | CRD

Example: :CONFigure:RF:ANALyzer:AIPower:UNIts V
Sets Antenna Inband Power measurement to Volts.

Query Response: :CONFigure:RF:ANALyzer:AIPower:UNIts?
V

6.3.9 ANT Inband Power - Upper Limit Enable

:LIMits:RF:AIPower:UPPer:ENABle
:LIMits:RF:AIPower:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for ANT Inband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:RF:AIPower:UPPer:ENABle ON
Enables Upper Limit for Antenna Inband Power measurement.

Query Response: :LIMits:RF:AIPower:UPPer:ENABle?
1

6.3.10 ANT Inband Power - Upper Limit Value

:LIMits:RF:AIPower:UPPer:VALue
:LIMits:RF:AIPower:UPPer:VALue?

Description: Set command defines Upper Limit Value for ANT Inband Power measurement.
Query command returns parameter setting.

Range: -140.0 to +70.0 dBm

Units: W | mW | µW | dBW | dBm | V | mV | µV | dBµV

Default Value: 0.0 dBm

Default Units: dBm

Set/Query Format: NRf | NR2 (dBm)

Example: :LIMits:RF:AIPower:UPPer:VALue -40dBm
Sets Upper Limit Value for Antenna Inband Power measurement to -40.0 dBm

Query Response: :LIMits:RF:AIPower:UPPer:VALue?
-40.0

6.4 FREQUENCY OFFSET MEASUREMENT

6.4.1 Frequency Offset - Averages

:CONFigure:RF:ANALyzer:FOFFset:AVERage
:CONFigure:RF:ANALyzer:FOFFset:AVERage?

Description: Set command defines number of readings taken to calculate Average RF Analyzer Frequency Offset measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:RF:ANALyzer:FOFFset:AVERage 75
Sets number of readings being taken to calculate Average Frequency Error measurement to 75.

Query Response: :CONFigure:RF:ANALyzer:FOFFset:AVERage?
75

6.4.2 Frequency Offset - Average Measurement Reset

:RF:ANALyzer:FOFFset:AVERage:RESet

Description: Command clears and resets Average Frequency Offset measurement.

Parameter/Query: none

6.4.3 Frequency Offset - Measurement Query

:FETCh:RF:ANALyzer:FOFFset?

Description: Command returns RF Frequency Offset measurement data.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>,<wc>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
4 = Worst Case upper failed limit

avgcount (NR1): value

avg, wc (NR2): <units>

Units: Hz | PPM

Query Response (Hz Units): :FETCh:RF:ANALyzer:FOFFset?
0,0,1,-6.0,2911105.0

6.4.4 Frequency Offset - Measurement Type

:CONFigure:RF:ANALyzer:FOFFset:MTYPe
:CONFigure:RF:ANALyzer:FOFFset:MTYPe?

Description: Set command defines RF Analyzer Frequency Offset measurement type.
Query command returns parameter setting.
Parameter: AVERage | WCASe
Default Value: AVERage
Set/Query Format: CPD | CRD
Example: :CONFigure:RF:ANALyzer:FOFFset:MTYPe WCASe
Sets Frequency Offset measurement to Worst Case.
Query Response: :CONFigure:RF:ANALyzer:FOFFset:MTYPe?
WCAS

6.4.5 Frequency Offset - Peak Measurement Enable

:RF:ANALyzer:FOFFset:HOLD:ENABle
:RF:ANALyzer:FOFFset:HOLD:ENABle?

Description: Set command Enables/Disables Peak Frequency Offset measurement.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :RF:ANALyzer:FOFFset:HOLD:ENABle ON
Enables Peak Frequency Offset measurement.
Query Response: :RF:ANALyzer:FOFFset:HOLD:ENABle?
1

6.4.6 Frequency Offset - Peak Measurement Query

:FETCh:RF:ANALyzer:FOFFset:HOLD?

Description: Command returns Peak RF Frequency Offset measurement data.
Query Data: <statusbyte>,<failbyte>,<avg>,<wc>
statusbyte (NR1): 0 = Valid
1 = Invalid
failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
4 = Worst Case upper failed limit
avg, wc (NR2): Hz
Query Response: :FETCh:RF:ANALyzer:FOFFset:HOLD?
0,0,-6.0,-6.0

NOTE Statusbyte and Failbyte may return more than one condition as a bitmask.
Peak measurement must be enabled to obtain valid Peak measurement data.

6.4.7 Frequency Offset - Peak Measurement Reset

:RF:ANALyzer:FOFFset:HOLD:RESet

Description: Command clears and resets Peak Frequency Offset measurement.
Parameter/Query: none

6.4.8 Frequency Offset - Units

:RF:ANALyzer:FOFFset:UNIts
:RF:ANALyzer:FOFFset:UNIts?

Description: Set command defines the units for Frequency Offset measurement.
Query command returns parameter setting.
Parameter: Hz | PPM
Default Value: Hz
Set/Query Format: CPD | CRD
Example: :RF:ANALyzer:FOFFset:UNIts PPM
Displays Frequency Offset in PPM (parts per million).
Query Response: :RF:ANALyzer:FOFFset:UNIts?
PPM

6.4.9 Frequency Offset - Upper Limit Enable

:LIMits:RF:FOFFset:UPPer:ENABle
:LIMits:RF:FOFFset:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for Frequency Offset measurement.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Set/Query Format: Boolean
Default Value: OFF
Example: :LIMits:RF:FOFFset:UPPer:ENABle ON
Enables Upper Limit for Frequency Offset measurement.
Query Response: :LIMits:RF:FOFFset:UPPer:ENABle?
1

6.4.10 Frequency Offset - Upper Limit Value

:LIMits:RF:FOFFset:UPPer:VALue
:LIMits:RF:FOFFset:UPPer:VALue?

Description: Set command defines the Upper Limit Value for Frequency Offset measurement.
Query command returns parameter setting.
Range: 0.0 Hz to 5000.0 kHz
Units: Hz | kHz | MHz
Set/Query Format: NRf | NR2 (Hz)
Default Value: 0.0 Hz
Example: :LIMits:RF:FOFFset:UPPer:VALue 1000kHz
Sets Upper Limit Value for Frequency Offset measurement to 1000.0 kHz.
Query Response: :LIMits:RF:FOFFset:UPPer:VALue?
1000000

6.4.11 Frequency Offset PPM - Upper Limit Enable

:LIMits:RF:FOFFset:PPM:UPPer:ENABle
:LIMits:RF:FOFFset:PPM:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for Frequency Offset measurement when PPM is selected unit of measure.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Set/Query Format: Boolean

Default Value: OFF

Example: :LIMits:RF:FOFFset:PPM:UPPer:ENABle ON
Enables Upper Limit for Frequency Offset PPM measurement.

Query Response: :LIMits:RF:FOFFset:PPM:UPPer:ENABle?
1

6.4.12 Frequency Offset PPM - Upper Limit Value

:LIMits:RF:FOFFset:PPM:UPPer:VALue
:LIMits:RF:FOFFset:PPM:UPPer:VALue?

Description: Set command defines the Upper Limit Value for Frequency Offset measurement when PPM is selected unit of measure.
Query command returns parameter setting.

Range: 0.0 to 1000.0 ppm

Units: ppm

Set/Query Format: NRf | NR2

Default Value: 0.0 ppm

Example: :LIMits:RF:FOFFset:PPM:UPPer:VALue 500
Sets Upper Limit Value for Frequency Offset PPM measurement to 500.0 ppm.

Query Response: :LIMits:RF:FOFFset:PPM:UPPer:VALue?
500

6.5 EXTERNAL POWER SENSOR

6.5.1 External Power Sensor - Bridge OEM Command

:EXTernal:POWer:SENSor:COMMand “<p>“
:EXTernal:POWer:SENSor:COMMand?

Description: The Set command sends the specified OEM remote command to the External Power Sensor.

Sending the Query command returns data according to the parameters defined by the previous OEM Set command.

<p>: OEM Remote Command (refer to OEM Programming Manual)

Set/Query Format: ascii string | See note

Example 1: :EXTernal:POWer:SENSor:COMMand “CALDATE”

Sends the CALDATE remote command to the External Power Sensor.

Query Response 1: :EXTernal:POWer:SENSor:COMMand?

03/01/2013

Returns the last calibration date of the External Power Sensor.

Example 2: :EXTernal:POWer:SENSor:COMMand “AVGCNT 500”

Sends the AVGCNT 500 remote command to the External Power Sensor

Query Response 2: :EXTernal:POWer:SENSor:COMMand?

OK

Example 3: :EXTernal:POWer:SENSor:COMMand “AVGCNT?”

Sends the AVGCNT query remote command to the External Power Sensor

Query Response 3: :EXTernal:POWer:SENSor:COMMand?

500

NOTE

Returned query data format is determined by the OEM Remote Command.
The :EXTernal:POWer:SENSor:COMMand “<p>” must be sent prior to each :EXTernal:POWer:SENSor:COMMand? command.

6.6 T/R BROADBAND POWER MEASUREMENT

6.6.1 T/R Broadband Power - Averages

:CONFigure:RF:ANALyzer:TRBPower:AVERage
:CONFigure:RF:ANALyzer:TRBPower:AVERage?

Description: Set command defines number of readings taken to calculate Average T/R Broadband Power measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:RF:ANALyzer:TRBPower:AVERage 25
Sets number of readings being taken to calculate Average T/R Broadband Power measurement to 25.

Query Response: :CONFigure:RF:ANALyzer:TRBPower:AVERage?
25

6.6.2 T/R Broadband Power - Lower Limit Enable

:LIMits:RF:TRBPower:LOWer:ENABle
:LIMits:RF:TRBPower:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for T/R Broadband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:RF:TRBPower:LOWer:ENABle ON
Enables Lower Limit for T/R Broadband Power measurement.

Query Response: :LIMits:RF:TRBPower:LOWer:ENABle?
1

6.6.3 T/R Broadband Power - Lower Limit Value

:LIMits:RF:TRBPower:LOWer:VALue
:LIMits:RF:TRBPower:LOWer:VALue?

Description: Set command defines the Lower Limit Value for T/R Broadband Power measurement
Query command returns parameter setting.

Range: -60 to +70 dBm

Units: W | mW | dBW | dBm

Default Value: 0.0 W

Default Units: Watts

Set/Query Format: NRf | NR2 (W)

Example: :LIMits:RF:TRBPower:LOWer:VALue -45dBm
Sets Lower Limit Value for T/R Broadband measurement to -45.0 dBm.

Query Response: :LIMits:RF:TRBPower:LOWer:VALue?
0.0

6.6.4 T/R Broadband Power - Measurement Query

:FETCh:RF:ANALyzer:TRBPower? <units>

Description: Command returns T/R Broadband Power measurement data in specified unit of measurement.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit
4 = Worst case upper failed limit
8 = Worst case lower failed limit

avgcount (NR1): value

avg (NR2): <units>

Units: **W | dBW | dBM**

Query Response: :FETCh:RF:ANALyzer:TRBPower? DBW
0,0,1,0.0013

NOTE
Statusbyte and Failbyte may return more than one condition as a bitmask.
RF Input must be TR for T/R Broadband Power measurement to be valid.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

6.6.5 T/R Broadband Power - Peak Measurement Enable

:RF:ANALyzer:TRBPower:HOLD:ENABle
:RF:ANALyzer:TRBPower:HOLD:ENABle?

Description: Set command Enables/Disables Peak T/R Broadband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :RF:ANALyzer:TRBPower:HOLD:ENABle ON
Enables Peak T/R Broadband Power measurement.

Query Response: :RF:ANALyzer:TRBPower:HOLD:ENABle?
1

NOTE
Peak measurements must be enabled to obtain valid Peak T/R Broadband measurement.

6.6.6 T/R Broadband Power - Peak Measurement Query

:FETCh:RF:ANALyzer:TRBPower:HOLD? <units>

Description: Command returns Peak T/R Broadband Power measurement data in specified unit of measurement.

Query Data: <statusbyte>,<failbyte>,<avg>

statusbyte (NR1):
0 = Valid
1 = Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit
4 = Worst case upper failed limit
8 = Worst case lower failed limit

avg (NR2): <units>

Units: **W | dBW | dBM**

Query Response: :FETCh:RF:ANALyzer:TRBPower:HOLD? DBM
0,0,35.0213

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
Peak measurement must be enabled to return valid Peak measurement data.
RF Input must be TR for T/R Broadband Power measurement to be valid.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

6.6.7 T/R Broadband Power - Peak Measurement Reset

:RF:ANALyzer:TRBPower:HOLD:RESet

Description: Command clears and resets Peak T/R Broadband Power measurement.

Parameter/Query: none

6.6.8 T/R Broadband Power - Units

:CONFigure:RF:ANALyzer:TRBPower:UNIts
:CONFigure:RF:ANALyzer:TRBPower:UNIts?

Description: Set command defines the unit of measurement for T/R BroadBand Power measurement.
Query command returns parameter setting.

Parameter: W | dBW | dBm

Default Value: W

Set/Query Format: CPD | CRD

Example: :CONFigure:RF:ANALyzer:TRBPower:UNIts W
Displays T/R Broadband Power measurement in Watts.

Query Response: :CONFigure:RF:ANALyzer:TRBPower:UNIts?
W

6.6.9 T/R Broadband Power - Upper Limit Enable

:LIMits:RF:TRBPower:UPPer:ENABle
:LIMits:RF:TRBPower:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for T/R Broadband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:RF:TRBPower:UPPer:ENABle ON
Enables Upper Limit for T/R Broadband Power measurement.

Query Response: :LIMits:RF:TRBPower:UPPer:ENABle?
1

6.6.10 T/R Broadband Power - Upper Limit Value

:LIMits:RF:TRBPower:UPPer:VALue
:LIMits:RF:TRBPower:UPPer:VALue?

Description: Set command defines the Upper Limit Value for T/R Broadband Power measurement.
Query command returns parameter setting.

Range: -60 to +70 dBm

Units: W | mW | dBW | dBm

Default Value: 0.0 W

Default Units: Watts

Set/Query Format: NRf | NR2 (W)

Example: :LIMits:RF:TRBPower:UPPer:VALue -25dBm
Sets Upper Limit Value for T/R Broadband measurement to -25.0 dBm.

Query Response: :LIMits:RF:TRBPower:UPPer:VALue?
-25.0

6.6.11 RF Power Meter - Zero Power Meter

:RF:POWer:DETector:ZERO

Description: Set command zeroes RF Power Detector.

Parameter: 1 = Initiate

Query: None

NOTE Command only applies to Broadband Power Meter.

6.7 T/R INBAND POWER MEASUREMENT

6.7.1 T/R Inband Power - Averages

:CONFigure:RF:ANALyzer:TRIPower:AVERage
:CONFigure:RF:ANALyzer:TRIPower:AVERage?

Description: Set command defines number of readings taken to calculate Average T/R Inband Power measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:RF:ANALyzer:TRIPower:AVERage 25
Sets number of readings being taken to calculate Average T/R Inband Power measurement to 25.

Query response: :CONFigure:RF:ANALyzer:TRIPower:AVERage?
25

6.7.2 T/R Inband Power - Lower Limit Enable

:LIMits:RF:TRIPower:LOWer:ENABle
:LIMits:RF:TRIPower:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for T/R Inband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:RF:TRIPower:LOWer:ENABle ON
Enables Lower Limit for T/R Inband Power measurement.

Query Response: :LIMits:RF:TRIPower:LOWer:ENABle?
1

6.7.3 T/R Inband Power - Lower Limit Value

:LIMits:RF:TRIPower:LOWer:VALue
:LIMits:RF:TRIPower:LOWer:VALue?

Description: Set command defines Lower Limit Value for T/R Inband Power measurement.
Query command returns parameter setting.

Range: -140.0 to +70.0 dBm

Units: W | mW | µW | dBW | dBm | V | mV | µV | dBµV

Default Value: 0.0 dBm

Default Unit: dBm

Set/Query Format: NRf | NR2 (dBm)

Example: :LIMits:RF:TRIPower:LOWer:VALue -25dBm
Sets Lower Limit Value for T/R Inband Power measurement to -25.0 dBm.

Query Response: :LIMits:RF:TRIPower:LOWer:VALue?
-25.0

6.7.4 T/R Inband Power - Measurement Query

:FETCh:RF:ANALyzer:TRIPower? <units>

Description: Command returns T/R Inband Power measurement data in specified unit of measurement.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avgcount (NR1): value

avg (NR2): Hz

Units: W | dBW | dBM

Query Response: :FETCh:RF:ANALyzer:TRIPower? DBM
0,0,50,-25.23

NOTE
Statusbyte and Failbyte may return more than one condition as a bitmask.
RF Input must be TR for T/R Inband Power measurement to be valid.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

6.7.5 T/R Inband Power - Peak Measurement Enable

:RF:ANALyzer:TRIPower:HOLD:ENABle
:RF:ANALyzer:TRIPower:HOLD:ENABle?

Description: Set command Enables/Disables Peak T/R Inband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :RF:ANALyzer:TRIPower:HOLD:ENABle ON
Enables Peak T/R Inband Power measurement.

Query Response: :RF:ANALyzer:TRIPower:HOLD:ENABle?
1

NOTE
Peak measurement must be enabled to obtain valid T/R Inband measurement.

6.7.6 T/R Inband Power - Peak Measurement Query

:FETCh:RF:ANALyzer:TRIPower:HOLD? <units>

Description: Command returns Peak T/R Inband Power measurement data in specified unit of measurement.

Query Data: <statusbyte>,<failbyte>,<avgcount>,<avg>

statusbyte (NR1): 0 = Valid
1 = Invalid

failbyte (NR1): 0 = All limit checks passed
1 = Average upper failed limit
2 = Average lower failed limit

avg (NR2): Hz

Units: W | dBW | dBM

Query Response: :FETCh:RF:ANALyzer:TRIPower:HOLD? DBM
0,0,-25.27

NOTE

Statusbyte and Failbyte may return more than one condition as a bitmask.
RF Input must be TR for T/R Inband Power measurement to be valid.
(*rci meter mode compatible: see :SYSTem:RCI :METER:MODE)

6.7.7 T/R Inband Power - Peak Measurement Reset

:RF:ANALyzer:TRIPower:HOLD:RESet

Description: Command clears and resets Peak T/R Inband Power measurement.

Parameter/Query: none

6.7.8 T/R Inband Power - Units

:CONFigure:RF:ANALyzer:TRIPower:UNIts
:CONFigure:RF:ANALyzer:TRIPower:UNIts?

Description: Set command defines the unit of measurement for T/R Inband Power measurement.
Query command returns parameter setting.

Parameter: dBm | V | dBµV

Default Value: 0.0 dBm

Set/Query Format: CPD | CRD

Example: :CONFigure:RF:ANALyzer:TRIPower:UNIts V
Displays T/R Inband Power measurement in Volts.

Query Response: :CONFigure:RF:ANALyzer:TRIPower:UNIts?
V

6.7.9 T/R Inband Power - Upper Limit Enable

:LIMits:RF:TRIPower:UPPer:ENABle
:LIMits:RF:TRIPower:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for T/R Inband Power measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:RF:TRIPower:UPPer:ENABle ON
Enables Upper Limit for T/R Inband Power measurement.

Query Response: :LIMits:RF:TRIPower:UPPer:ENABle?
1

NOTE RF Input must be TR for T/R Inband Power measurement to be valid.

6.7.10 T/R Inband Power - Upper Limit Value

:LIMits:RF:TRIPower:UPPer:VALue
:LIMits:RF:TRIPower:UPPer:VALue?

Description: Set command defines Upper Limit Value for T/R Inband Power measurement.
Query command returns parameter setting.

Range: -140.0 to +70.0 dBm

Units: W | mW | µW | dBW | dBm | V | mV | µV | dBµV

Default Value: 0.0 dBm

Default Units: dBm

Set/Query Format: NRf | NR2 (dBm)

Example: :LIMits:RF:TRIPower:UPPer:VALue 10dBm
Sets Upper Limit Value for T/R Inband Power measurement to 10.0 dBm.

Query Response: :LIMits:RF:TRIPower:UPPer:VALue?
10.0

Chapter 7 - DMM Remote Commands

7.1 INTRODUCTION

This chapter describes the DMM (Digital Multimeter) Remote Commands. Commands are listed alphabetically by measurement type.

7.2 DMM MEASUREMENTS - MEASUREMENT TYPE

7.2.1 DMM - Measurement Type

:DMM:METERs:TYPE
:DMM:METERs:TYPE?

Description: Set command defines DMM measurement type.
Query command returns parameter setting.

Parameter: 0 | 1 | 2 | 3 | 4

where: 0 = ACV
1 = DCV
2 = DCA
3 = ACA
4 = OHMS

Default Value: 0 (ACA)

Set/Query Format: NR1

Example: :DMM:METERs:TYPE 3
Selects AC Current measurement as DMM measurement type.

Query Response: :DMM:METERs:TYPE?
3

NOTE :DMM:METERs:TYPE must be defined properly to obtain valid measurement. DMM commands are only valid when DMM is installed in Test Set.

7.3 AC CURRENT MEASUREMENT

7.3.1 AC Current - Averages

:DMM:METERs:AMPS:AC:AVERaging
:DMM:METERs:AMPS:AC:AVERaging?

Description: Set command defines number of readings taken to calculate Average ACA measurement.
Query command returns parameter setting.

Range: 1 to 100,000

Default Value: 1

Set/Query Format: NR1

Example: :DMM:METERs:AMPS:AC:AVERaging 25
Sets number of readings taken to calculate Average AC Current measurement to 25.

Query Response: :DMM:METERs:AMPS:AC:AVERaging?
25

NOTE
:DMM:METERs:TYPE must be defined as 3 (ACA) to obtain valid ACA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.3.2 AC Current - Average Measurement Reset

:DMM:METERs:AMPS:AC:CLEar:AVG

Description: Command clears and resets Average ACA measurement.

Parameter/Query: none

7.3.3 AC Current - Lower Limit Enable

:LIMits:DMM:AMPS:AC:LOWer:ENABle
:LIMits:DMM:AMPS:AC:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for ACA measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:AMPS:AC:LOWer:ENABle ON
Enables Lower Limit for ACA measurement.

Query Response: :LIMits:DMM:AMPS:AC:LOWer:ENABle?
1

NOTE
:DMM:METERs:TYPE must be defined as 3 (ACA) to obtain valid ACA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.3.4 AC Current - Lower Limit Value

:LIMits:DMM:AMPS:AC:LOWer:VALue
:LIMits:DMM:AMPS:AC:LOWer:VALue?

Description: Set command defines Lower Limit Value for ACA measurement.
Query command returns parameter setting.

Range: 0.0 to 20.0 Amps

Units: Amps

Default Value: 0.0 Amps

Set/Query Format: NRf | NR2

Example: :LIMits:DMM:AMPS:AC:LOWer:VALue 2.5
Sets Lower Limit Value for AC Current measurement to 2.5 Amps.

Query Response: :LIMits:DMM:AMPS:AC:LOWer:VALue?
2.50

NOTE :DMM:METERs:TYPE must be defined as 3 (ACA) to obtain valid ACA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.3.5 AC Current - Measurement Query

:DMM:METERs:AMPS:AC:STATus?

Description: Command returns acquired measurement data.

Query Data: <statusbyte>,<failbyte>,<precision>,<complete>,<avg>,<max>,<min>,<avgcount>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

precision (NR1): Always returns 5

complete (NR2): %

avg, max, min (NR2): <units>

avgcount (NR1): value

units (NR1): 22 = AMPS

Query Response: :DMM:METERs:AMPS:AC:STATus?
1,0,5,0.0,0.00000,0.00000,0.00000,0,22

NOTE :DMM:METERs:TYPE must be defined as 3 (ACA) to obtain valid ACA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.3.6 AC Current - Peak Measurement Enable

:DMM:METERs:AMPS:AC:ENABle:PEAK
:DMM:METERs:AMPS:AC:ENABle:PEAK?

Description: Set command Enables/Disables Peak ACA measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :DMM:METERs:AMPS:AC:ENABle:PEAK ON
Enables Peak ACA measurement.

Query Response: :DMM:METERs:AMPS:AC:ENABle:PEAK?
1

NOTE
:DMM:METERs:TYPE must be defined as 3 (ACA) to obtain valid ACA measurement.
DMM commands are only valid when DMMis installed in Test Set.
Peak measurement must be enabled to obtain valid Peak measurement data.

7.3.7 AC Current - Peak Measurement Reset

:DMM:METERs:AMPS:AC:CLEar:PEAK

Description: Command clears and resets Peak ACA measurement.

Parameter/Query: none

7.3.8 AC Current - Top of Scale (Range) Setting

:DMM:METERs:AMPS:AC:TOS
:DMM:METERs:AMPS:AC:TOS?

Description: Set command defines AC Current top of scale (range) value.
Query command returns parameter setting.

Range: 0 to 3

where: 0 = Auto
1 = 20 A
2 = 2 A
3 = 200 mA

Default Value: 0 (Auto)

Set/Query Format: NR1

Example: :DMM:METERs:AMPS:AC:TOS 2
Sets AC Current top of scale (range) to 2 A.

Query Response: :DMM:METERs:AMPS:AC:TOS?
2

NOTE
DMM commands are only valid when DMM is installed in Test Set.

7.3.9 AC Current - Upper Limit Enable

:LIMits:DMM:AMPS:AC:UPPer:ENABle
:LIMits:DMM:AMPS:AC:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for ACA measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:AMPS:AC:UPPer:ENABle ON
Enables Upper Limit for ACA measurement.

Query Response: :LIMits:DMM:AMPS:AC:UPPer:ENABle?
1

NOTE :DMM:METERs:TYPE must be defined as 3 (ACA) to obtain valid ACA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.3.10 AC Current - Upper Limit Value

:LIMits:DMM:AMPS:AC:UPPer:VALue
:LIMits:DMM:AMPS:AC:UPPer:VALue?

Description: Set command defines Upper Limit Value for ACA measurement.
Query command returns parameter setting.

Range: 0.0 to 20.0 Amps

Units: Amps

Default Value: 0.0 Amps

Set/Query Format: NRf | NR2

Example: :LIMits:DMM:AMPS:AC:UPPer:VALue 5
Sets Upper Limit Value for ACA measurement to 5.0 Amps.

Query Response: :LIMits:DMM:AMPS:AC:UPPer:VALue?
5.00

NOTE :DMM:METERs:TYPE must be defined as 3 (ACA) to obtain valid ACA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.4 DC CURRENT MEASUREMENT

7.4.1 DC Current - Averages

:DMM:METERs:AMPS:DC:AVERaging
:DMM:METERs:AMPS:DC:AVERaging?

Description: Set command defines the number of readings taken to calculate Average DCA measurement.
Query command returns parameter setting.

Range: 1 to 100,000

Default Value: 1

Set/Query Format: NR1

Example: :DMM:METERs:AMPS:DC:AVERaging
Sets number of readings taken to calculate Average DCA measurement to 25.

Query Response: :DMM:METERs:AMPS:DC:AVERaging?
25

NOTE
:DMM:METERs:TYPE must be defined as 2 (DCA) to obtain valid DCA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.4.2 DC Current - Average Measurement Reset

:DMM:METERs:AMPS:DC:CLEar:AVG

Description: Command clears and resets Average DCA measurement.

Parameter/Query: none

7.4.3 DC Current - Lower Limit Enable

:LIMits:DMM:AMPS:DC:LOWer:ENABle
:LIMits:DMM:AMPS:DC:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for DCA measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:AMPS:DC:LOWer:ENABle ON
Enables Lower Limit for DCA measurement.

Query Response: :LIMits:DMM:AMPS:DC:LOWer:ENABle?
1

NOTE
:DMM:METERs:TYPE must be defined as 2 (DCA) to obtain valid DCA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.4.4 DC Current - Lower Limit Value

:LIMits:DMM:AMPS:DC:LOWer:VALue
:LIMits:DMM:AMPS:DC:LOWer:VALue?

Description: Set command defines Lower Limit Value for DCA measurement.
Query command returns parameter setting.

Range: -20.0 to +20.0 Amps

Units: Amps

Default Value: 0.0 Amps

Set/Query Format: NRf | NR2

Example: :LIMits:DMM:AMPS:DC:LOWer:VALue -20
Sets Lower Limit Value for DCA measurement to -20.0 Amps.

Query Response: :LIMits:DMM:AMPS:DC:LOWer:VALue?
-20.0

NOTE :DMM:METERs:TYPE must be defined as 2 (DCA) to obtain valid DCA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.4.5 DC Current - Measurement Query

:DMM:METERs:AMPS:DC:STATus?

Description: Command returns acquired measurement data.

Query Data: <statusbyte>,<failbyte>,<precision>,<complete>,<avg>,<max>,<min>,<avgcount>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

precision (NR1): Always returns 5

complete (NR2): %

avg, max, min (NR2): <units>

avgcount (NR1): value

units (NR1): 22 = AMPS

Query Response: :DMM:METERs:AMPS:DC:STATus?
1,0,5,0.0,0.00000,0.00000,0.00000,0,22

NOTE :DMM:METERs:TYPE must be defined as 2 (DCA) to obtain valid DCA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.4.6 DC Current - Peak Measurement Enable

:DMM:METERs:AMPS:DC:ENABle:PEAK
:DMM:METERs:AMPS:DC:ENABle:PEAK?

Description: Set command Enables/Disables Peak DCA measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :DMM:METERs:AMPS:DC:ENABle:PEAK ON
Enables Peak DCA measurement.

Query Response: :DMM:METERs:AMPS:DC:ENABle:PEAK?
1

NOTE
:DMM:METERs:TYPE must be defined as 2 (DCA) to obtain valid DCA measurement.
DMM commands are only valid when DMM is installed in Test Set.
Peak measurement must be enabled to obtain valid Peak measurement data.

7.4.7 DC Current - Peak Measurement Reset

:DMM:METERs:AMPS:DC:CLEar:PEAK

Description: Command clears and resets Peak DCA measurement.

Parameter/Query: none

7.4.8 DC Current - Top of Scale (Range) Setting

:DMM:METERs:AMPS:DC:TOS
:DMM:METERs:AMPS:DC:TOS?

Description: Set command defines DC Current top of scale (range) value.
Query command returns parameter setting.

Range: 0 to 3

where: 0 = Auto
1 = 20 A
2 = 2 A
3 = 200 mA

Default Value: 0 (Auto)

Set/Query Format: NR1

Example: :DMM:METERs:AMPS:DC:TOS 2
Selects DC Current top of scale (range) to 2 A.

Query Response: :DMM:METERs:AMPS:DC:TOS?
2

NOTE
DMM commands are only valid when DMM is installed in Test Set.

7.4.9 DC Current - Upper Limit Enable

:LIMits:DMM:AMPS:DC:UPPer:ENABle
:LIMits:DMM:AMPS:DC:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for DCA measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:AMPS:DC:UPPer:ENABle ON
Enables Upper Limit for DCA measurement.

Query Response: :LIMits:DMM:AMPS:DC:UPPer:ENABle?
1

NOTE :DMM:METERs:TYPE must be defined as 2 (DCA) to obtain valid DCA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.4.10 DC Current - Upper Limit Value

:LIMits:DMM:AMPS:DC:UPPer:VALue
:LIMits:DMM:AMPS:DC:UPPer:VALue?

Description: Set command defines Upper Limit Value for DCA measurement.
Query command returns parameter setting.

Range: -20.0 to +20.0 Amps

Units: Amps

Default Value: 0.0 Amps

Set/Query Format: NRf | NR2

Example: :LIMits:DMM:AMPS:DC:UPPer:VALue -10
Sets Upper Limit Value for DCA measurement to -10.0 Amps.

Query Response: :LIMits:DMM:AMPS:DC:UPPer:VALue?
-10.0

NOTE :DMM:METERs:TYPE must be defined as 2 (DCA) to obtain valid DCA measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.5 AC VOLTS MEASUREMENT

7.5.1 AC Volts - Averages

:DMM:METERs:VOLTs:AC:AVERaging
:DMM:METERs:VOLTs:AC:AVERaging?

Description: Set command defined number of readings taken to calculate Average ACV measurement.
Query command returns parameter setting.

Range: 1 to 100,000

Default Value: 1

Set/Query Format: NR1

Example: :DMM:METERs:VOLTs:AC:AVERaging
Sets number of readings taken to calculate Average ACV measurement to 25.

Query Response: :DMM:METERs:VOLTs:AC:AVERaging?
25

NOTE
:DMM:METERs:TYPE must be defined as 0 (ACV) to obtain valid ACV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.5.2 AC Volts - Average Measurement Reset

:DMM:METERs:VOLTs:AC:CLEar:AVG

Description: Command clears and resets Average ACV measurement.

Parameter/Query: none

7.5.3 AC Volts - Lower Limit Enable

:LIMits:DMM:VOLTs:AC:LOWer:ENABle
:LIMits:DMM:VOLTs:AC:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for ACV measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:VOLTs:AC:LOWer:ENABle ON
Enables Lower Limit for ACV measurement.

Query Response: :LIMits:DMM:VOLTs:AC:LOWer:ENABle?
1

NOTE
:DMM:METERs:TYPE must be defined as 0 (ACV) to obtain valid ACV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.5.4 AC Volts - Lower Limit Value

:LIMits:DMM:VOLTs:AC:LOWer:VALue
:LIMits:DMM:VOLTs:AC:LOWer:VALue?

Description: Set command defines Lower Limit Value for ACV measurement.
Query command returns parameter setting.

Range: 0.0 to 2000.0 V

Units: Volts

Default Value: 0.0 V

Set/Query Format: NRf | NR2

Example: :LIMits:DMM:VOLTs:AC:LOWer:VALue 50V
Sets Lower Limit for ACV measurement to 50.0 Volts.

Query Response: :LIMits:DMM:VOLTs:AC:LOWer:VALue?
50.00

NOTE :DMM:METERs:TYPE must be defined as 0 (ACV) to obtain valid ACV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.5.5 AC Volts - Measurement Query

:DMM:METERs:VOLTs:AC:STATus?

Description: Command returns acquired measurement data.

Query Data: <statusbyte>,<failbyte>,<precision>,<complete>,<avg>,<max>,<min>,<avgcount>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

precision (NR1): Always returns 5

complete (NR2): %

avg, max, min (NR2): <units>

avgcount (NR1): value

units (NR1): 15 = Vrms

Query Response: :DMM:METERs:VOLTs:AC:STATus?
1,0,5,0.0,0.00000,0.00000,0.00000,0,22

NOTE :DMM:METERs:TYPE must be defined as 0 (ACV) to obtain valid ACV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.5.6 AC Volts - Peak Measurement Enable

:DMM:METERs:VOLTs:AC:ENABle:PEAK
:DMM:METERs:VOLTs:AC:ENABle:PEAK?

Description: Set command Enables/Disables ACV Peak measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :DMM:METERs:VOLTs:AC:ENABle:PEAK ON
Enables ACV Peak measurement.

Query Response: :DMM:METERs:VOLTs:AC:ENABle:PEAK?
1

NOTE

:DMM:METERs:TYPE must be defined as 0 (ACV) to obtain valid ACV measurement.
DMM commands are only valid when DMM is installed in Test Set.
Peak measurement must be enabled to obtain valid Peak measurement data.

7.5.7 AC Volts - Peak Measurement Reset

:DMM:METERs:VOLTs:AC:CLEar:PEAK

Description: Command clears and resets Peak ACV measurement.

Parameter/Query: none

7.5.8 AC Volts - Top of Scale (Range) Setting

:DMM:METERs:VOLTS:AC:TOS
:DMM:METERs:VOLTS:AC:TOS?

Description: Set command defines AC Volts top of scale (range) value.
Query command returns parameter setting.

Range: 0 to 5

where: 0 = Auto
1 = 2000 V
2 = 200 V
3 = 20 V
4 = 2 V
5 = 200 mV

Default Value: 0 (Auto)

Set/Query Format: NR1

Example: :DMM:METERs:VOLTS:AC:TOS 2
Selects AC Volts top of scale (range) to 200 Volts.

Query Response: :DMM:METERs:VOLTS:AC:TOS?
2

NOTE

DMM commands are only valid when DMM is installed in Test Set.

7.5.9 AC Volts - Upper Limit Enable

:LIMits:DMM:VOLTs:AC:UPPer:ENABle
:LIMits:DMM:VOLTs:AC:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for ACV measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:VOLTs:AC:UPPer:ENABle ON
Enables Upper Limit for ACV measurement.

Query Response: :LIMits:DMM:VOLTs:AC:UPPer:ENABle?
1

NOTE :DMM:METERs:TYPE must be defined as 0 (ACV) to obtain valid ACV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.5.10 AC Volts - Upper Limit Value

:LIMits:DMM:VOLTs:AC:UPPer:VALue
:LIMits:DMM:VOLTs:AC:UPPer:VALue?

Description: Set command defines Upper Limit Value for ACV measurement.
Query command returns parameter setting.

Range: 0.0 to 2000.0 V

Units: Volts

Default Value: 0.0 V

Set/Query Format: NRf | NR2

Example: :LIMits:DMM:VOLTs:AC:UPPer:VALue 100V
Sets Upper Limit Value for ACV measurement to 100.0 Volts.

Query Response: :LIMits:DMM:VOLTs:AC:UPPer:VALue?
100.00

NOTE :DMM:METERs:TYPE must be defined as 0 (ACV) to obtain valid ACV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.6 DC VOLTS MEASUREMENT

7.6.1 DC Volts - Averages

:DMM:METERs:VOLTs:DC:AVERaging
:DMM:METERs:VOLTs:DC:AVERaging?

Description: Set command defines number of readings taken to calculate Average DCV measurement.
Query command returns parameter setting.

Range: 1 to 100,000

Default Value: 1

Set/Query Format: NR1

Example: :DMM:METERs:VOLTs:DC:AVERaging
Sets number of readings taken to calculate Average DCV measurement to 25.

Query Response: :DMM:METERs:VOLTs:DC:AVERaging?
25

NOTE :DMM:METERs:TYPE must be defined as 2 (DCA) to obtain valid DCA measurement.
DMM commands are only valid when the DMM is installed in the Test Set.

7.6.2 DC Volts - Average Measurement Reset

:DMM:METERs:VOLTs:DC:CLEar:AVG

Description: Command clears and resets Average DCV measurement.

Parameter/Query: none

7.6.3 DC Volts - Lower Limit Enable

:LIMits:DMM:VOLTs:DC:LOWer:ENABle
:LIMits:DMM:VOLTs:DC:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for DCV measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:VOLTs:DC:LOWer:ENABle ON
Enables Lower Limit for DCV measurement.

Query Response: :LIMits:DMM:VOLTs:DC:LOWer:ENABle?
1

NOTE :DMM:METERs:TYPE must be defined as 1 (DCV) to obtain valid DCV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.6.4 DC Volts - Lower Limit Value

:LIMits:DMM:VOLTs:DC:LOWer:VALue
:LIMits:DMM:VOLTs:DC:LOWer:VALue?

Description: Set command defines Lower Limit Value for DCV measurement.
Query command returns parameter setting.

Range: -2000.0 to +2000.0 V

Units: kV | V | mV

Default Value: 0.0 V

Set/Query Format: NRf | NR2 (V)

Example: :LIMits:DMM:VOLTs:DC:LOWer:VALue -1000V
Sets Lower Limit Value for DCV measurement to -1000.0 Volts.

Query Response: :LIMits:DMM:VOLTs:DC:LOWer:VALue?
-1000

NOTE :DMM:METERs:TYPE must be defined as 1 (DCV) to obtain valid DCV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.6.5 DC Volts - Measurement Query

:DMM:METERs:VOLTs:DC:STATus?

Description: Command returns acquired measurement data.

Query Data: <statusbyte>,<failbyte>,<precision>,<complete>,<avg>,<max>,<min>,<avgcount>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

precision (NR1): Always returns 5

complete (NR2): %

avg, max, min (NR2): <units>

avgcount (NR1): value

units (NR1): 7 = Volts

Query Response: :DMM:METERs:VOLTs:DC:STATus?
1,0,5,0.0,0.00000,0.00000,0.00000,0,7

NOTE :DMM:METERs:TYPE must be defined as 1 (DCV) to obtain valid DCV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.6.6 DC Volts - Peak Measurement Enable

:DMM:METERs:VOLTs:DC:ENABle:PEAK
:DMM:METERs:VOLTs:DC:ENABle:PEAK?

Description: Set command Enables/Disables Peak DCV measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :DMM:METERs:VOLTs:DC:ENABle:PEAK ON
Enables Peak DCV measurement.

Query Response: :DMM:METERs:VOLTs:DC:ENABle:PEAK?
1

NOTE
:DMM:METERs:TYPE must be defined as 1 (DCV) to obtain valid DCV measurement.
DMM commands are only valid when DMM is installed in Test Set.
Peak measurement must be enabled to obtain valid Peak measurement data.

7.6.7 DC Volts - Peak Measurement Reset

:DMM:METERs:VOLTs:DC:CLEar:PEAK

Description: Command clears and resets Peak DCV measurement.

Parameter/Query: none

7.6.8 DC Volts - Top of Scale (Range) Setting

:DMM:METERs:VOLTS:DC:TOS
:DMM:METERs:VOLTS:DC:TOS?

Description: Set command defines DC Volts top of scale (range) value.
Query command returns parameter setting.

Range: 0 to 5

where: 0 = Auto
1 = 2000 V
2 = 200 V
3 = 20 V
4 = 2 V
5 = 200 mV

Default Value: 0 (Auto)

Set/Query Format: NR1

Example: :DMM:METERs:VOLTS:DC:TOS 2
Selects DC Volts top of scale (range) to 200 Volts.

Query Response: :DMM:METERs:VOLTS:DC:TOS?
2

NOTE
DMM commands are only valid when DMM is installed in Test Set.

7.6.9 DC Volts - Upper Limit Enable

:LIMits:DMM:VOLTs:DC:UPPer:ENABle
:LIMits:DMM:VOLTs:DC:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for DCV measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:VOLTs:DC:UPPer:ENABle ON
Enables Upper Limit for DCV measurement.

Query Response: :LIMits:DMM:VOLTs:DC:UPPer:ENABle?
1

NOTE :DMM:METERs:TYPE must be defined as 1 (DCV) to obtain valid DCV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.6.10 DC Volts - Upper Limit Value

:LIMits:DMM:VOLTs:DC:UPPer:VALue
:LIMits:DMM:VOLTs:DC:UPPer:VALue?

Description: Set command defines Upper Limit Value for DCV measurement.
Query command returns parameter setting.

Range: -2000.0 to +2000.0 V

Units: kV | V | mV

Default Value: 0.0 V

Set/Query Format: NRf | NR2 (V)

Example: :LIMits:DMM:VOLTs:DC:UPPer:VALue -1000V
Sets Upper Limit value for DCV measurement to -1000.0 Volts.

Query Response: :LIMits:DMM:VOLTs:DC:UPPer:VALue?
-1000

NOTE :DMM:METERs:TYPE must be defined as 1 (DCV) to obtain valid DCV measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.7 OHMS MEASUREMENT

7.7.1 Ohms - Averages

:DMM:METERs:OHMS:AVERaging
:DMM:METERs:OHMS:AVERaging?

Description: Set command defines number of readings taken to calculate Average Ohms measurement.
Query command returns parameter setting.

Range: 1 to 100,000

Default Value: 1

Set/Query Format: NR1

Example: :DMM:METERs:OHMS:AVERaging
Sets number of readings taken to calculate Average Ohms measurement to 25.

Query Response: :DMM:METERs:OHMS:AVERaging?
25

NOTE
:DMM:METERs:TYPE must be defined as 4 (Ohms) to obtain valid Ohms measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.7.2 Ohms - Average Measurement Reset

:DMM:METERs:OHMS:CLEar:AVG

Description: Command clears and resets Average Ohms measurement.

Parameter/Query: none

7.7.3 Ohms - Compensation Value Acquisition Enable

:DMM:METERs:OHMS:COMPensation:CMD

Description: Command measures the resistance present in CONNECTED test leads and compensate for resistance when calculating Ohms measurements.

Parameter/Query: none

NOTE
:DMM:METERs:TYPE must be defined as 2 (OHMS) to obtain valid Ohms measurement.
Command must be sent prior to sending the following commands: (:DMM:METERs:OHMS:COMPensation:ACTive?) or (:DMM:METERs:OHMS:COMPensation:VALue?).
DMM commands are only valid when DMM is installed in Test Set.

7.7.4 Ohms - Compensation Status

:DMM:METERs:OHMS:COMPensation:ACTive?

Description: Command returns current Compensation setting for Resistance measurement.

Query Format: NR1

Query Data: 1 (when Test Leads are connected)
0 (when Test Leads are not connected)

7.7.5 Ohms - Compensation Value Query

:DMM:METERs:OHMS:COMPensation:VALue?

Description: Command returns current Compensation value for Resistance measurement.

Query Format: NR2 in Ohms

Query Data: 0.00 (when Test Leads are connected)
1.00 (when Test Leads are not connected)

7.7.6 Ohms - Lower Limit Enable

:LIMits:DMM:OHMS:LOWer:ENABle
:LIMits:DMM:OHMS:LOWer:ENABle?

Description: Set command Enables/Disables Lower Limit for Ohms measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:OHMS:LOWer:ENABle ON
Enables Lower Limit for Ohms measurement.

Query Response: :LIMits:DMM:OHMS:LOWer:ENABle?
1

NOTE :DMM:METERs:TYPE must be defined as 4 (Ohms) to obtain valid Ohms measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.7.7 Ohms - Lower Limit Value

:LIMits:DMM:OHMS:LOWer:VALue
:LIMits:DMM:OHMS:LOWer:VALue?

Description: Set command defines Lower Limit Value for Ohms measurement.
Query command returns parameter setting.

Range: 0.0 to 20000000.0 Ohms

Units: Ohms

Default Value: 0.0 Ohms

Set/Query Format: NRf | NR2

Example: :LIMits:DMM:OHMS:LOWer:VALue 500
Sets Lower Limit Value for Ohms measurement to 500.0 Ohms.

Query Response: :LIMits:DMM:OHMS:LOWer:VALue?
500

NOTE :DMM:METERs:TYPE must be defined as 4 (Ohms) to obtain valid Ohms measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.7.8 Ohms - Measurement Query

:DMM:METERs:OHMS:STATus?

Description: Command returns acquired measurement data.

Query Data: <statusbyte>,<failbyte>,<precision>,<complete>,<avg>,<max>,<min>,
<avgcount>,<units>

statusbyte (NR1):
0 = Valid
1 = Invalid
2 = Settling
4 = Inaccurate
6 = Settling and Inaccurate
7 = Settling, Inaccurate and Invalid

failbyte (NR1):
0 = All limit checks passed
1 = Average upper failed limit
4 = Worst case upper failed limit

precision: Always returns 1

complete (NR2): %

avg, max, min (NR2): <units>

avgcount (NR1): value

units (NR1): 25 = Ohms

Query Response: :DMM:METERs:OHMS:STATus?
0,0,1,100.0,2900440.9,42863600.0,10180.0,20,25

NOTE
:DMM:METERs:TYPE must be defined as 4 (Ohms) to obtain valid Ohms measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.7.9 Ohms - Peak Measurement Enable

:DMM:METERs:OHMS:ENABle:PEAK
:DMM:METERs:OHMS:ENABle:PEAK?

Description: Set command Enables/Disables Peak Ohms measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :DMM:METERs:OHMS:ENABle:PEAK ON
Enables Peak Ohms measurement.

Query Response: :DMM:METERs:OHMS:ENABle:PEAK?
1

NOTE
:DMM:METERs:TYPE must be defined as 4 (Ohms) to obtain valid Ohms measurement.
DMM commands are only valid when DMM is installed in Test Set.
Peak measurement must be enabled to obtain valid Peak measurement data.

7.7.10 Ohms - Peak Measurement Reset

:DMM:METERs:OHMS:CLEar:PEAK

Description: Command clears and resets Peak Ohms measurement.

Parameter/Query: none

7.7.11 Ohms - Top of Scale (Range) Setting

:DMM:METERs:OHMS:TOS
:DMM:METERs:OHMS:TOS?

Description: Set command defines Ohms top of scale (range) value.
Query command returns parameter setting.

Range: 0 to 6

where: 0 = Auto
1 = 20 M
2 = 2 M
3 = 200 k
4 = 20 k
5 = 2 K
6 = 200 Ohms

Default Value: 0 (Auto)

Set/Query Format: NR1

Example: :DMM:METERs:OHMS:TOS 2
Selects Ohms top of scale (range) to 2 M.

Query Response: :DMM:METERs:OHMS:TOS?
2

NOTE DMM commands are only valid when DMM is installed in Test Set.

7.7.12 Ohms - Upper Limit Enable

:LIMits:DMM:OHMS:UPPer:ENABle
:LIMits:DMM:OHMS:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for Ohms measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:DMM:OHMS:UPPer:ENABle ON
Enables Upper Limit for Ohms measurement.

Query Response: :LIMits:DMM:OHMS:UPPer:ENABle?
1

NOTE :DMM:METERs:TYPE must be defined as 4 (Ohms) to obtain valid Ohms measurement.
DMM commands are only valid when DMM is installed in Test Set.

7.7.13 Ohms - Upper Limit Value

:LIMits:DMM:OHMS:UPPer:VALue
:LIMits:DMM:OHMS:UPPer:VALue?

Description: Set command defines Upper Limit Value for Ohms measurement.
Query command returns Upper Limit Value defined for Ohms measurement.

Range: 0.0 to 20000000.0 Ohms

Units: Ohms

Default Value: 0.0 Ohms

Set/Query Format: NRf | NR2

Example: :LIMits:DMM:OHMS:UPPer:VALue 100
Sets Upper Limit Value for Ohms measurement to 100.0 Ohms.

Query Response: :LIMits:DMM:OHMS:UPPer:VALue?
100

NOTE

:DMM:METERs:TYPE must be defined as 4 (Ohms) to obtain valid Ohms measurement.
DMM commands are only valid when DMM is installed in Test Set.

Chapter 8 - Optional Test Functions Remote Commands

8.1 INTRODUCTION

This chapter describes Remote Commands that are available when optional test functions are installed in the Test Set. Remote commands are listed alphabetically under option headings.

8.2 HARMONICS & SPURIOUS MEASUREMENTS

8.2.1 Second Harmonics - Upper Limit Enable

:LIMits:HARMonic:HAR2:UPPer:ENABle
:LIMits:HARMonic:HAR2:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for 2nd Harmonic Frequency measurement.

Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:HARMonic:HAR2:UPPer:ENABle ON

Enables Upper Limit for 2nd Harmonic Frequency measurement.

Query Response: :LIMits:HARMonic:HAR2:UPPer:ENABle?

1

NOTE Harmonics and Spurious commands are only valid when the Harmonics and Spurious Measurements Option is installed in the Test Set.

8.2.2 Second Harmonics - Upper Limit Value

:LIMits:HARMonic:HAR2:UPPer:VALue
:LIMits:HARMonic:HAR2:UPPer:VALue?

Description: Set command defines Upper Limit Value for 2nd Harmonic Frequency measurement.
Query command returns parameter setting.

Range: -70.0 to 0.0 dBc

Units: dBc

Default Value: 0.0 dBc

Set/Query Format: NRf | NR2

Example: :LIMits:HARMonic:HAR2:UPPer:VALue -40dBc
Sets Upper Limit Value for 2nd Harmonic Frequency measurement to -40.0 dBc.

Query Response: :LIMits:HARMonic:HAR2:UPPer:VALue?
-40.0

NOTE Harmonics and Spurious commands are only valid when the Harmonics and Spurious Measurements Option is installed in the Test Set.

8.2.3 Spurious & Harmonics Measurements - Measurement Query

:SPURHARM:MEASure?

Description: Command returns detected Spurious and Harmonic measurement data.

Query Format: Number String
Number stream includes Fundamental Frequency, Fundamental Level, Second and Third Harmonic Levels and any detected Spurious data.

Query Data: Data for up to 6 spurious frequencies (separated by ";") if any are detected.
Spurious data is followed by fundamental and harmonic frequency data. Spurious data and fundamental data stream are separated by a "**:**"
If no spurious data is returned, data stream starts with a ":" which indicates beginning of Fundamental and harmonic data stream.

<spurious frequency (NR2)>,< spurious level (NR2)>,
<spurious threshold statusbyte (NR1) always 1>,<spurious threshold failbyte (NR1) always 1>:<fundamental frequency (MHz)>,
<fundamental level (dBm)>;<harmonic2 frequency (MHz)>,
<harmonic2 level (dBc)>,<harmonic2 upper limit statusbyte>,
<harmonic2 upper limit failbyte>;<harmonic3 frequency (MHz)>,
<harmonic3 level (dBc)>,<harmonic3 upper limit statusbyte>,
<harmonic3 upper limit failbyte>.

statusbyte (Boolean): 0 = OFF
1 = ON

failbyte (NR1): 0 = Pass
1 = Fail

Query Example: Contains 3 Spurious Frequencies
123.864043,-30.6,1,1;123.067525,-28.2,1,1;124.000250,-16.9,1,1:151.628086, 36.6:303.250625,-55.5,1,0;454.875492,-59.1,1,0

NOTE Harmonics and Spurious commands are only valid when the Harmonics and Spurious Measurements Option is installed in the Test Set.

8.2.4 Spurious Start Frequency

:SPURHARM:SPURious:START
:SPURHARM:SPURious:START?

Description: Set command defines Start Frequency for Spurious measurement sweeps.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz

Units: Hz | kHz | MHz | GHz

Default Value: 10.0 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :SPURHARM:SPURious:START 20MHz
Sets Start Frequency of Spurious measurement sweep to 20.0 MHz.

Query Response: :SPURHARM:SPURious:START?
20000000.00

NOTE Harmonics and Spurious commands are only valid when the Harmonics and Spurious Measurements Option is installed in the Test Set.

8.2.5 Spurious Stop Frequency

:SPURHARM:SPURious:STOP
:SPURHARM:SPURious:STOP?

Description: Set command defines Stop Frequency for Spurious measurement sweeps.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz

Units: Hz | kHz | MHz | GHz

Default Value: 10.0 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :SPURHARM:SPURious:STOP 500MHz
Sets Stop Frequency of Spurious measurement sweep to 500.0 MHz.

Query Response: :SPURHARM:SPURious:STOP?
500000000.00

NOTE Harmonics and Spurious commands are only valid when the Harmonics and Spurious Measurements Option is installed in the Test Set.

8.2.6 Spurious Threshold Value

:SPURHARM:SPURious:THREShold
:SPURHARM:SPURious:THREShold?

Description: Set command defines threshold for Spurious measurement.
Query command returns parameter setting.

Range: -65.0 to 0.0 dBc

Units: dBc

Default Value: -50.0 dBc

Set/Query Format: NRf | NR2

Example: :SPURHARM:SPURious:THREShold -35dBc
Sets Threshold for Spurious measurement to -35.0 dBc.

Query Response: :SPURHARM:SPURious:THREShold?
-35.000000

NOTE Harmonics and Spurious commands are only valid when the Harmonics and Spurious Measurements Option is installed in the Test Set.

8.2.7 Third Harmonics - Upper Limit Enable

:LIMits:HARMonic:HAR3:UPPer:ENABle
:LIMits:HARMonic:HAR3:UPPer:ENABle?

Description: Set command Enables/Disables Upper Limit for 3rd Harmonic Frequency measurement.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :LIMits:HARMonic:HAR3:UPPer:ENABle ON
Enables Upper Limit for 3rd Harmonic measurement.

Query Response: :LIMits:HARMonic:HAR3:UPPer:ENABle?
1

NOTE Harmonics and Spurious commands are only valid when the Harmonics and Spurious Measurements Option is installed in the Test Set.

8.2.8 Third Harmonics - Upper Limit Value

:LIMits:HARMonic:HAR3:UPPer:VALue
:LIMits:HARMonic:HAR3:UPPer:VALue?

Description: Set command defines Upper Limit Value for 3rd Harmonic Frequency measurement.
Query command returns parameter setting.

Range: -70.0 to 0.0 dBc

Units: dBc

Default Value: 0.0 dBc

Set/Query Format: NRf | NR2

Example: :LIMits:HARMonic:HAR3:UPPer:VALue -40dBc
Sets Upper Limit Value for 3rd Harmonic Frequency measurement to -40.0 dBc.

Query Response: :LIMits:HARMonic:HAR3:UPPer:VALue?
-40.0

NOTE Harmonics and Spurious commands are only valid when the Harmonics and Spurious Measurements Option is installed in the Test Set.

8.3 IQ GEN

8.3.1 IQ Generator - Load AIQ File

:LOAD:FILe:AIQ “XXX”
:LOAD:FILe:AIQ?

Description: Set command loads specified IQ Creator file.
Query command returns parameter setting.

Parameter: filename must be encased in double quotes

Example: :LOAD:FILe:AIQ “test_file”
Loads IQ Creator AIQ file titled test_file.

Query Response: :LOAD:FILe:AIQ?
test_file

NOTE IQ Creator File must be downloaded to the Test Set for command to be valid. Command is only valid when the IQ Gen Option is installed in the Test Set.

8.4 POCSAG DECODING

8.4.1 POCSAG Decode - Clear Data Log

:POCSAG:DECODE:LOG:CLEAR

Description: Command clears decoded POCSAG data log.

Set/Query Format: none

NOTE Command is only valid when POCSAG Option is installed in the Test Set.

8.4.2 POCSAG Decode - Data Log

:POCSAG:DECODE:LOG?

Description: Command logs decoded POCSAG data.

Query Response: :POCSAG:DECODE:LOG?
meeting_confirmed

NOTE Command is only valid when POCSAG Option is installed in the Test Set.
"no activity" is returned when no log data is available.

8.4.3 POCSAG Decode - Enable

:POCSAG:DECODE:STATe
:POCSAG:DECODE:STATe?

Description: Set command enables/disables decoding of received POCSAG message.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: ON

Set/Query Format: Boolean

Example: :POCSAG:DECODE:STATe ON
Enables decoding of received POCSAG message.

Query Response: :POCSAG:DECODE:STATe?
1

NOTE Command is only valid when POCSAG Option is installed in the Test Set.

8.4.4 POCSAG Decode - Message Format

:POCSAG:DECODE:FORMAT
:POCSAG:DECODE:FORMAT?

Description: Set command defines type of message being Encoded by the AF Generator.
Query command returns parameter setting.

Parameter: AUTOMATIC | NUMERIC | ALPHANUMERIC

Default: AUTOMATIC

Set/Query Format: CPD | CRD

Example: :POCSAG:DECODE:FORMAT NUMERIC
Sets format of encoded POCSAG message to Numeric.

Query Response: :POCSAG:DECODE:FORMAT?
numeric

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.4.5 POCSAG Decode - Message Filter

:POCSAG:DECODE:FILTer
:POCSAG:DECODE:FILTer?

Description: Set command defines the type of data that is filtered from the received POSCAG message.
Query command returns parameter setting.

Parameter: ALL | RIC | MESSAGE

Default: ALL

Set/Query Format: CPD | CRD

Example: :POCSAG:DECODE:FILTer RIC
Sets Test Set to filter and receive data received on the specified RIC.

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.4.6 POCSAG Decode - Polarity

:POCSAG:DECODE:POLArity
:POCSAG:DECODE:POLArity?

Description: Set command defines the polarity of the POCSAG signal being received by the Test Set.
Query command returns parameter setting.

Parameter: NORMAL | INVERTED

Default Value: NORMAL

Set/Query Format: NR1

Example: :POCSAG:DECODE:POLArity INVERTED
Inverts the polarity of the POCSAG signal being received by the Test Set.

Query Response: :POCSAG:DECODE:POLArity?
INVERTED

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.4.7 POCSAG Decode - RIC

:POCSAG:DECODE:RIC
:POCSAG:DECODE:RIC?

Description: Set command defines the RIC of the POCSAG signal.
Query command returns parameter setting.

Range: 0 to 2097151

Default: 0

Set/Query Format: NR1

Example: :POCSAG:DECODE:RIC 2150
Sets the RIC of the received POCSAG signal to 2150.

Query Response: :POCSAG:DECODE:RIC?
2150

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5 POCSAG ENCODING

8.5.1 POCSAG Encode - Address Alert

:POCSAG:ENCODE:ADDRess:ALERT
:POCSAG:ENCODE:ADDRess:ALERT?

Description: Set command defines Encode Message Address Alert.
Query command returns Encode Message Address Group.

Parameter: 0 | 1 | 2 | 3

where: 0 = 00-Numeric
1 = 01-Alert Only
2 = 10-Alert Only
3 = 11-Alphanumeric

Default Value: 3

Set Format: binary: value begins with #b (#b11)
octal: value begins with #q (#q3)
decimal: value is entered as a decimal value (3)
hex: value begins with #h (#h3)

Query Format: binary: query command ends with #b
octal: query command ends with #q
decimal: default format
hex: query command ends with #h

Example: :POCSAG:ENCODE:ADDRess:ALERT #q3
Sets Encode Message Address Group to 3 in octal format.

Query Response: :POCSAG:ENCODE:ADDRess:ALERT?
3

NOTE

Command is only valid when POCSAG Option is installed in Test Set.
Address Alert defines valid parameters for Encoded Message Type. Send :POCSAG:ENCODE:ADDRess:ALERT command before defining Message Type (:POCSAG:ENCODE:TYPE).

8.5.2 POCSAG Encode - Canned Message - State

:POCSAG:ENCODE:CANned:STATe?

Description: Query data indicates if received message contains a canned message.

Parameter: 0 = Not Canned
1 = Canned

Default Value: 1

Set/Query Format: NR1

Example: :POCSAG:ENCODE:CANned:STATe ON
Enables use of Canned POCSAG message.

Query Response: :POCSAG:ENCODE:CANned:STATe?
1

NOTE

Command is only valid when POCSAG Option is installed in Test Set.

8.5.3 POCSAG Encode - Canned Message - Data Query

:POCSAG:ENCODE:CANned:MESSage?

Description: Command returns Canned data to be encoded in POCSAG message.

Query Response: :POCSAG:ENCODE:CANned:MESSage?
0123456789 U-()

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.4 POCSAG Encode - Custom Alphanumeric Message

:POCSAG:ENCODE:CUSTOM:ALPHANUMeric
:POCSAG:ENCODE:CUSTOM:ALPHANUMeric?

Description: Set command defines the Encoded Alphanumeric Message.
Query command returns the Encoded Alphanumeric Message.

Parameters: A to Z, upper and lower case ! ” # $ % ^ & * ( ) + [ ] { } : ; ?

Default Value: “Aeroflex. The first name for Mobile Radio Test”

Set Format: “ascii string” maximum 100 characters

Query Format: ascii string

Example: :POCSAG:ENCODE:CUSTOM:ALPHANUMeric “Meeting is at 2:30pm”
Defines encoded alphanumeric message.

Query Response: :POCSAG:ENCODE:CUSTOM:ALPHANUMeric?
Meeting is at 2:30pm

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.5 POCSAG Encode - Custom Numeric Message

:POCSAG:ENCODE:CUSTOM:NUMeric
:POCSAG:ENCODE:CUSTOM:NUMeric?

Description: Set command defines the Encoded Numeric Message.
Query command returns the Encoded Numeric Message.

Parameters: 0 to 9 U - [ ]

Default Value: 01438-745045

Set Format: “string” maximum of 100 characters

Query Format: string

Example: :POCSAG:ENCODE:CUSTOM:NUMeric “555-123-4567”
Defines encoded numeric message.

Query Response: :POCSAG:ENCODE:CUSTOM:NUMeric?
555-123-4567

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.6 POCSAG Encode - Deviation

:POCSAG:ENCODE:DEViation
:POCSAG:ENCODE:DEViation?

Description: Set command defines the deviation of the POCSAG signal.
Query command returns parameter setting.

Range: 0 to 50000 Hz

Units: Hz

Default: 4500 Hz

Set/Query Format: NRf | NR1 (Hz)

Example: :POCSAG:ENCODE:DEViation 1500
Sets the deviation of the POCSAG signal to 1500 Hz.

Query Response: :POCSAG:ENCODE:DEViation?
1500

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.7 POCSAG Encode - Message Abort

:POCSAG:ABORT

Description: Stops transmitting POCSAG message.

Set/Query Format: none

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.8 POCSAG Encode - Message Type

:POCSAG:ENCODE:TYPE
:POCSAG:ENCODE:TYPE?

Description: Set command defines content of the message including the encoding format.
Query command returns parameter setting.

Parameter: 0 to 12 — Valid Address Alert Types

where:

0 = Custom Numeric	0
1 = Custom Alphanumeric	1
2 = Alert Only	0 | 1 | 2 | 3
3 = Numeric Message 1	0 | 1
4 = Alphanumeric Message 1	0 | 1
5 = Alphanumeric Message 2	0 | 1
6 = Alphanumeric Message 3	0 | 1
7 = Alphanumeric Message 4	0 | 1
8 = Alphanumeric Message 5	0 | 1
9 = Alphanumeric Message 6	0 | 1
10 = Alphanumeric Message 7	0 | 1
11 = Alphanumeric RIC	0 | 1
12 = Numeric RIC	0 | 1

Default: 1 (Custom Alphanumeric)

Set/Query Format: NR1

Example: :POCSAG:ENCODE:TYPE 3
Sends an encoded Numeric POCSAG Message.

Query Response: :POCSAG:ENCODE:TYPE?
3

NOTE

Valid Message Type is defined by the Address Alert setting. To avoid script errors define the Address Alert (:POCSAG:ENCODE:ADDRess:ALERT) prior to sending this command.
Command is only valid when POCSAG Option is installed in Test Set.

8.5.9 POCSAG Encode - Message Status

:POCSAG:SEND:STATe?

Description: Command indicates completion status of the encoded POCSAG message being generated by the Test Set.

Query Format: NR1

Query Data: 0 = Send incomplete
1 = Send Complete

Query Response: :POCSAG:SEND:STATe?
1

NOTE

Command is only valid when POCSAG Option is installed in Test Set.

8.5.10 POCSAG Encoding - Polarity

:POCSAG:ENCODE:POLArity
:POCSAG:ENCODE:POLArity?

Description: Set command defines the polarity of the POCSAG signal being generated by the Test Set.
Query command returns parameter setting.

Parameter: NORMAL | INVERTED

Default Value: NORMAL

Set/Query Format: CPD | CRD

Example: :POCSAG:ENCODE:POLArity INVERTED
Inverts the polarity of the POCSAG signal being generated by the Test Set.

Query Response: :POCSAG:ENCODE:POLArity?
INVERTED

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.11 POCSAG Encode - Rate

:POCSAG:ENCODE:RATE
:POCSAG:ENCODE:RATE?

Description: Set command defines rate at which POCSAG signal is generated.
Query command returns parameter setting.

Range: 400 to 4800 Hz

Units: Hz

Default: 2400 Hz

Set/Query Format: NRf | NR1

Example: :POCSAG:ENCODE:RATE 1900
Sets the rate of the generated POCSAG signal to 1900 Hz.

Query Response: :POCSAG:ENCODE:RATE?
1900

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.12 POCSAG Encode - Last RIC Address

:POCSAG:RIC:SENT?

Description: Returns the last generated RIC address.

Query Response: :POCSAG:RIC:SENT?
2150

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.13 POCSAG Encode - RIC Start Value

:POCSAG:ENCODE:RIC:STARt
:POCSAG:ENCODE:RIC:STARt?

Description: Set command defines the Start value of the RIC in the POCSAG message
Query command returns parameter setting.
Range: 0 to 2097150
Default: 0
Set/Query Format: NR1
Example: :POCSAG:ENCODE:RIC:STARt 5000
Sets the start value of the POCSAG RIC to 5000.
Query Response: :POCSAG:ENCODE:RIC:STARt?
5000

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.14 POCSAG Encode - RIC Stop Value

:POCSAG:ENCODE:RIC:STOP
:POCSAG:ENCODE:RIC:STOP?

Description: Set command defines the stop value of the RIC in the POCSAG message
Query command returns parameter setting.
Range: 1 to 2097150
Default: 1
Set/Query Format: NR1
Example: :POCSAG:ENCODE:RIC:STOP 5500
Sets the stop value of the POCSAG RIC to 5500.
Query Response: :POCSAG:ENCODE:RIC:STOP?
5500

NOTE Command is only valid when POCSAG Option is installed in Test Set.

8.5.15 POCSAG Encoding - Send

:POCSAG:SEND

Description: Sends the defined POCSAG message.
Parameter/Query: none

8.6 SITE MONITORING (SENSITIVITY SEARCH)

8.6.1 AF Measurements - Filter Type

:AF:ANALyzer:MFILter
:AF:ANALyzer:MFILter?

Description: Set command selects the Audio Analyzer Post Detection Filter.
Query command returns parameter setting.

Parameter: PSOPh | None | LP1 | LP2 | LP3 | LP4 | LP5 | LP6 | LP7 | HP1 | HP2 | HP3 | BP0 | BP1 | BP2 | BP3 | BP4 | BP5 | BP6 | BP7 | BP8 | BP9 | BP10 | BP11 | BP12 | BP13 | BP14 | BP15 | BP16

where:

NONE = No Filter	BP2 = 0.3 to 5.0 kHz BP
PSOPh = Psoph (CMESS or CCITT)	BP3 = 0.3 to 20.0 kHz BP
LP1 = 300.0 Hz LP	BP4 = 0.3 to 15.0 kHz BP
LP2 = 5.0 kHz LP	BP5 = 0.02 to 300.0 Hz BP
LP3 = 20.0 kHz LP	BP6 = 0.02 to 3.0 kHz BP
LP4 = 15.0 kHz LP	BP7 = 0.02 to 3.4 kHz BP
LP5 = 3.0 kHz LP	BP8 = 0.02 to 5.0 kHz BP
LP6 = 625.0 kHz LP*	BP9 = 0.02 to 15.0 kHz BP
LP7 = 10.0 kHz LP*	BP10 = 0.02 to 20.0 kHz BP
LP8 = 100.0 Hz LP*	BP11 = 0.05 to 300.0 Hz BP
HP1 = 300.0 Hz HP**	BP12 = 0.05 to 3.0 kHz BP
HP2 = 20.0 Hz HP	BP13 = 0.05 to 3.4 kHz BP
HP3 = 50.0 Hz HP	BP14 = 0.05 to 5.0 kHz BP
BP0 = 0.3 to 3.0 kHz BP	BP15 = 0.05 to 15.0 kHz BP
BP1 = 0.3 to 3.4 kHz BP	BP16 = 0.05 to 20.0 kHz BP

Default Value: NONE (No Filter)

Set/Query Format: CPD | CRD

Example: :AF:ANALyzer:MFILter LP3
Selects 20.0 kHz Low Pass Filter for AF measurements.

Query Response: :AF:ANALyzer:MFILter?
LP3

NOTE

Filter selected should be appropriate for signal received from UUT.

When PSOPH is selected, Filter weight is defined using :CONFigure:AF:MFILter command.

Test Set does not process any commands following this one until this command is completed.

*LP6, LP7 and LP8 are used by the Audio Analyzer Tracking Generator and can not be defined by user, but may be returned as query data.

**When HP1 (300 Hz HP) is selected, CONFigure:AF:HZ300FILter selects the type of 300 Hz filter being used.

8.6.2 AF Measurements - Source

:CONFigure:AF:ANALyzer:SOURce
:CONFigure:AF:ANALyzer:SOURce?

Description: Set command defines the Source for Audio Frequency Analyzer (Receiver) and Site Sensitivity Search (Option).
Query command returns parameter setting.

Parameter: AUD1 | AUD2 | BAL | MIC

Default Value: AUD1

Set/Query Format: CPD | CRD

Example: :CONFigure:AF:ANALyzer:SOURce MIC
Selects Microphone as the Audio Frequency Analyzer (Receiver) Source.

Query Response: :CONFigure:AF:ANALyzer:SOURce?
MIC

NOTE Test Set does not process any commands following this one until this command is completed.

8.6.3 AF Sinad - Averages

:CONFigure:AF:ANALyzer:SINad:AVERage
:CONFigure:AF:ANALyzer:SINad:AVERage?

Description: Set command defines the number of readings taken to calculate Average AF Sinad measurement.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :CONFigure:AF:ANALyzer:SINad:AVERage 25
Sets number of readings taken to calculate Average AF Sinad measurement to 75.

Query Response: :CONFigure:AF:ANALyzer:SINad:AVERage?
75

8.6.4 Site Sensitivity - Calibration

:AF:ANALyzer:SEARch:CALibration:ENABle
:AF:ANALyzer:SEARch:CALibration:ENABle?

Description: Set command Starts/Stops Sinad Search Calibration.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AF:ANALyzer:SEARch:CALibration:ENABle ON
Enables Site Monitoring Calibration.

Query Response: :AF:ANALyzer:SEARch:CALibration:ENABle?
1

NOTE Site Monitoring Calibration must be completed before Site Monitoring measurement can be obtained.
Command only valid when Site Monitoring option is installed in Test Set.

8.6.5 Site Sensitivity - Duration

:AF:ANALyzer:SEARch:DURation
:AF:ANALyzer:SEARch:DURation?

Description: Set command sets the time period over which a Sinad Search runs.
Query command returns parameter setting.

Range: 1 to 10,080 minutes

Units: minutes

Default Value: 10 minutes

Set/Query Format: NRf | NR1

Example: :AF:ANALyzer:SEARch:DURation 100
Sets reading Interval rate to 100 minutes.

Query Response: :AF:ANALyzer:SEARch:DURation?
100

NOTE Command only valid when Site Monitoring option is installed in Test Set.

8.6.6 Site Sensitivity - Enable Search

:AF:ANALyzer:SEARch:ENABle
:AF:ANALyzer:SEARch:ENABle?

Description: Set command Enables/Disables Sinad Search.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :AF:ANALyzer:SEARch:ENABle ON
Starts Sinad Search.
Query Response: :AF:ANALyzer:SEARch:ENABle?
1

NOTE Search Calibration must be completed before Search can be enabled.
Command only valid when Site Monitoring option is installed in Test Set.

8.6.7 Site Sensitivity - Filename

:AF:ANALyzer:SEARch:FILe
:AF:ANALyzer:SEARch:FILe?

Description: Set command defines the name of the Sinad Search data file.
Query command returns parameter setting.
Parameter: ascii-string, 120 character maximum
Set/Query Format: ascii-string
Example: :AF:ANALyzer:SEARch:FILe test_file
Names current test results file test_file.
Query Response: :AF:ANALyzer:SEARch:FILe?
test_file

NOTE Command only valid when Site Monitoring option is installed in Test Set.

8.6.8 Site Sensitivity - Interval

:AF:ANALyzer:SEARch:INTerval
:AF:ANALyzer:SEARch:INTerval?

Description: Set command sets the reading rate for Sinad Search measurement.
Query command returns parameter setting.
Range: 1 to 3600 seconds
Units: seconds
Default Value: 10 seconds
Set/Query Format: NR1
Example: :AF:ANALyzer:SEARch:INTerval 25
Sets reading Interval rate to 25 seconds.
Query response: :AF:ANALyzer:SEARch:INTerval?
25

NOTE Command only valid when Site Monitoring option is installed in Test Set.

8.6.9 Site Sensitivity - Sinad Level

:AF:ANALyzer:SEARch:LEVel
:AF:ANALyzer:SEARch:LEVel?

Description: Set command defines the Sinad Search level.
Query command returns parameter setting.
Range: 1.0 to 60.0 dB
Units: dB
Default Value: 12.0 dB
Set/Query Format: NRf | NR2
Example: :AF:ANALyzer:SEARch:LEVel 10dB
Sets Search Sinad Level to 10.0 dB.
Query Response: :AF:ANALyzer:SEARch:LEVel?
10.00

NOTE Command only valid when Site Monitoring option is installed in Test Set.

8.7 TRACKING GENERATOR

8.7.1 Tracking Generator - Enable

:SA:TRKGen:ENABle
:SA:TRKGen:ENABle?

Description: Set command Enables/Disables Tracking Generator on Spectrum Analyzer.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :SA:TRKGen:ENABle ON
Enables Tracking Generator.
Query Response: :SA:TRKGen:ENABle?
1

NOTE Command only valid when Tracking Generator Option is installed in Test Set.
RF Generator Output must also be defined (:RF:GENerator:PORT).

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Chapter 9 - Instrument Remote Commands

9.1 INTRODUCTION

This chapter describes the 3900 Instrument Remote Commands. These commands apply to all operating Test Systems with system specific information included when needed. Remote commands are listed alphabetically under the following headings:

9.2 AUDIO ANALYZER

9.2.1 Audio Analyzer - Averages

:AA:AVG:VALue
:AA:AVG:VALue?

Description: Set command defines the number of readings taken to calculate the Average Audio Analyzer trace data.
Query command returns parameter setting.

Range: 1 to 250

Default Value: 1

Set/Query Format: NR1

Example: :AA:AVG:VALue 50
Sets number of readings taken to calculate Average Audio Analyzer trace data to 50.

Query Response: :AA:AVG:VALue?
50

9.2.2 Audio Analyzer - Average Level at Marker Position

:AA:AVG:MKRn:LEVel?

Description: Command returns Average Audio Analyzer Level at Marker position.

Query Data: avg level (dBm)

Query Format: NR2

Query Response: :AA:AVG:MKR2:LEVel?
-73.11

NOTE

Average trace and Marker must be enabled to return valid Average trace data.
MKRn = 1 or 2 (Marker 1 or 2)

9.2.3 Audio Analyzer - Average Trace Enable

:AA:AVG:ENABle
:AA:AVG:ENABle?

Description: Set command Enables/Disables Average Audio Analyzer trace.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AA:AVG:ENABle ON
Enables Average Audio Analyzer trace.

Query Response: :AA:AVG:ENABle?
1

NOTE Average Trace must be enabled to return valid Average measurement data.

9.2.4 Audio Analyzer - Average Trace Query

:FETCh:AA:AVG:TRAce?

Description: Command returns Average Audio Analyzer Trace data.

Query Data: <data points>,<data>

data points (NR1): First element in the data stream indicates the number of data points present in data stream.

data (ascii string): trace data in dB, separated by ","

Query Response: :FETCh:AA:AVG:TRAce?
2048,-58.2,-62.7,-78.7,-109.5,-94.8,-89.4,-93.4,-96.1,-97.8,-94.2,-94.1,-93.9,
-92.5,-96.6,-92.7,-92.8,-92.2,-91.4,-94.0,-92.0,-95.1,-94.5,-95.1,-94.8,-93.8,
-95.5,-94.8,-95.4,-96.4,-97.5,-96.7,-95.5,-95.5,-96.2,-95.1,-94.1,-94.3,-95.6,
-96.6,-96.0,-94.1,-95.1,-95.6,-96.1,-98.2,-94.6,-95.0,-93.5,-95.0,-95.1,-95.4,
-94.2,-93.5,-95.3,-93.4,-92.6,-92.7,-95.8,-96.0,-94.4,-91.9,-93.4,-94.9,-92.6,
-91.5,-92.2,-92.9,-92.7,-93.7,-92.1,-91.5,-93.1,-92.9,-91.2,-90.7,-90.7,-90.0,
-92.1,-89.3,-86.9,-82.6,-78.7,-80.6,-49.0,-26.9,-19.2,-20.7,-32.1,-64.3,-77.0,
-80.5,-83.5,-86.4,-88.8,-89.1,-90.5,-88.8,-92.3,-92.2,-96.0,-92.5,-91.6,-88.3,
-87.0,-89.3,-89.2,-90.1,-90.0,-89.2,-88.9,-91.8,-91.4,-90.5,-90.9,-89.9,-90.6,
-89.0,-90.0,-89.8,-91.9,-92.8,-91.2,-87.7,.....

NOTE Average Trace must be enabled to return valid Average trace data.

9.2.5 Audio Analyzer - Average Trace Reset

:AA:AVG:CLEar

Description: Command clears and resets Average Audio Analyzer trace.

Parameter/Query: none

9.2.6 Audio Analyzer - Captured Trace Enable

:AA:CAPture
:AA:CAPture?

Description: Set command Captures/Clears current Audio Analyzer trace.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :AA:CAPture ON
Captures Audio Analyzer trace.
Query Response: :AA:CAPture?
1

NOTE OFF clears Captured Trace data.

9.2.7 Audio Analyzer - Captured Trace Query

:FETCh:AA:CAPture:TRAce?

Description: Command returns data from Captured Audio Analyzer trace data.
Query Data: <data points>,<data>
data points (NR1): First element in the data stream indicates the number of data points present in data stream.
data (ascii string): trace data in dB, separated by ","
Query Response: :FETCh:AA:CAPture:TRAce?
2048,-59.3,-62.7,-78.7,-109.5,-94.8,-89.4,-93.4,-96.1,-97.8,-94.2,-94.1,-93.9,
-92.5,-96.6,-92.7,-92.8,-92.2,-91.4,-94.0,-92.0,-95.1,-94.5,-95.1,-94.8,-93.8,
-95.5,-94.8,-95.4,-96.4,-97.5,-96.7,-95.5,-95.5,-96.2,-95.1,-94.1,-94.3,-95.6,
-96.6,-96.0,-94.1,-95.1,-95.6,-96.1,-98.2,-94.6,-95.0,-93.5,-95.0,-95.1,-95.4,
-94.2,-93.5,-95.3,-93.4,-92.6,-92.7,-95.8,-96.0,-94.4,-91.9,-93.4,-94.9,-92.6,
-91.5,-92.2,-92.9,-92.7,-93.7,-92.1,-91.5,-93.1,-92.9,-91.2,-90.7,-90.7,-90.0,
-92.1,-89.3,-86.9,-82.6,-78.7,-80.6,-49.0,-26.9,-19.2,-20.7,-32.1,-64.3,-77.0,
-80.5,-83.5,-86.4,-88.8,-89.1,-90.5,-88.8,-92.3,-92.2,-96.0,-92.5,-91.6,-88.3,
-87.0,-89.3,-89.2,-90.1,-90.0,-89.2,-88.9,-91.8,-91.4,-90.5,-90.9,-89.9,-90.6,
-89.0,-90.0,-89.8,-91.9,-92.8,-91.2,-87.7,.....

NOTE Trace must be captured to return valid trace data (:AA:CAPture:ENABle).

9.2.8 Audio Analyzer - Live Level at Marker Position

:AA:LIVE:MKRn:LEVel?

Description: Command returns Live Audio Analyzer Level at Marker position.
Query Data: Live level reading at marker (dBm)
Query Format: NR2
Query Response: :AA:LIVE:MKR2:LEVel?
-78.64

NOTE Live trace must be enabled to return valid data.
MKRn = 1 or 2 (Marker 1 or 2). Marker must be enabled to return valid data.

9.2.9 Audio Analyzer - Live Trace Enable

:AA:LIVE:ENABle
:AA:LIVE:ENABle?

Description: Set command Enables/Disables Live Audio Analyzer Trace.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AA:LIVE:ENABle ON
Enables Live Audio Analyzer Trace.

Query Response: :AA:LIVE:ENABle?
1

9.2.10 Audio Analyzer - Live Trace Query

:FETCh:AA:LIVe:TRAce?

Description: Command returns Live Audio Analyzer Trace data.

Query Data: <data points>,<data>

data points (NR1): First element in the data stream indicates the number of data points present in data stream.

data (ascii string): trace data in dB, separated by ","

Query Response: :FETCh:AA:LIVe:TRAce?
2048,-45.0,-49.5,-65.4,-116.3,-96.1,-89.9,-91.4,-94.4,-98.0,-108.1,-101.3,
-92.7,-90.9,-94.5,-88.1,-88.4,-90.7,-96.5,-98.9,-91.6,-93.9,-92.4,-91.7,-93.9,
-103.1,-99.8,-94.7,-95.2,-89.5,-89.2,-93.3,-93.8,-114.8,-95.4,-93.5,-92.3,-91.0,
-91.3,-92.6,-96.5,-110.4,-102.0,-97.0,-91.0,-90.5,-103.6,-91.1,-88.4,-90.4,
-93.0,-90.4,-94.1,-100.2,-103.8,-96.1,-95.8,-92.9,-90.9,-90.1,-86.3,-85.7,-88.1,
-91.0,-91.1,-90.8,-97.2,-94.6,-91.2,-89.6,-92.1,-89.6,-90.4,-92.9,-102.3,-96.3,
-87.0,-87.6,-90.1,-89.4,-87.4,-82.2,-77.0,-85.8,-49.0,-27.0,-19.2,-20.7,-32.1,
-64.1,-77.6,-76.9,-85.8,-82.5,-88.9,-93.4,-87.3,-86.9,-85.2,-85.3,-92.8,-90.5,
-90.1,-91.6,-93.7,-94.4,-94.4,-86.6,-86.1,-89.1,-88.0,-88.9,-96.4,-90.7,-82.4,
-82.6,-84.1,-80.9,-83.0,-95.3,-87.4,.....

NOTE Live trace must be enabled to return valid trace data.

9.2.11 Audio Analyzer - Peak Level at Marker Position

:AA:PEAK:MKRn:LEVel?

Description: Command returns Audio Analyzer Peak Level reading at Marker position.

Query Data: Peak Level reading at Marker (dBm)

Query Format: NR2

Query Response: :AA:PEAK:MKR2:LEVel?
-75.59

NOTE Peak trace must be enabled to return valid trace data.
MKRn = 1 or 2 (Marker 1 or 2). Marker must be enabled to return valid data.

9.2.12 Audio Analyzer - Peak Trace Enable

:AA:PEAK:ENABle
:AA:PEAK:ENABle?

Description: Set command Enables/Disables Peak Audio Analyzer trace.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AA:PEAK:ENABle ON
Enables Peak Audio Analyzer trace.

Query Response: :AA:PEAK:ENABle?
1

NOTE Peak trace must be enabled to return valid trace data.

9.2.13 Audio Analyzer - Peak Trace Query

:FETCh:AA:PEAK:TRAce?

Description: Command returns Peak Audio Analyzer Trace data.

Query Data: <data points>,<data>

data points (NR1): First element in the data stream indicates the number of data points present in data stream.

data (ascii string): trace data in dB, separated by ","

Query Response: :FETCh:AA:PEAK:TRAce?
2048,-45.0,-49.5,-65.4,-116.3,-96.1,-89.9,-91.4,-94.4,-98.0,-108.1,-101.3,
-92.7,-90.9,-94.5,-88.1,-88.4,-90.7,-96.5,-98.9,-91.6,-93.9,-92.4,-91.7,-93.9,
-103.1,-99.8,-94.7,-95.2,-89.5,-89.2,-93.3,-93.8,-114.8,-95.4,-93.5,-92.3,-91.0,
-91.3,-92.6,-96.5,-110.4,-102.0,-97.0,-91.0,-90.5,-103.6,-91.1,-88.4,-90.4,
-93.0,-90.4,-94.1,-100.2,-103.8,-96.1,-95.8,-92.9,-90.9,-90.1,-86.3,-85.7,-88.1,
-91.0,-91.1,-90.8,-97.2,-94.6,-91.2,-89.6,-92.1,-89.6,-90.4,-92.9,-102.3,-96.3,
-87.0,-87.6,-90.1,-89.4,-87.4,-82.2,-77.0,-85.8,-49.0,-27.0,-19.2,-20.7,-32.1,
-64.1,-77.6,-76.9,-85.8,-82.5,-88.9,-93.4,-87.3,-86.9,-85.2,-85.3,-92.8,-90.5,
-90.1,-91.6,-93.7,-94.4,-94.4,-86.6,-86.1,-89.1,-88.0,-88.9,-96.4,-90.7,-82.4,
-82.6,-84.1,-80.9,-83.0,-95.3,-87.4,.....

NOTE Peak trace must be enabled to return valid trace data.

9.2.14 Audio Analyzer - Peak Trace Reset

:AA:PEAK:CLEar

Description: Command clears and resets Peak Audio Analyzer trace.

Parameter/Query: none

9.2.15 Audio Analyzer - Marker Enable

:AA:MKRn:ENABle
:AA:MKRn:ENABle?

Description: Set command Enables/Disables the Audio Analyzer Marker(s).
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: OFF
Set/Query Format: Boolean
Example: :AA:MKR2:ENABle ON
Enables Marker 2 on the Audio Analyzer Tile.
Query Response: :AA:MKR2:ENABle?
1

NOTE
MKRn = 1 or 2 (Marker 1 or 2)
Markers remain at default positions unless positions are defined (:AA:MKRn:POSition).

9.2.16 Audio Analyzer - Marker Position

:AA:MKRn:POSition
:AA:MKRn:POSition?

Description: Set command defines Audio Analyzer Marker Position.
Query command returns parameter setting.
Range: 0.0 Hz t0 24.0 kHz (Start - Stop Span)
Units: kHz | Hz
Default Value: 0.0 Hz
Set/Query Format: NRf | NR2 (Hz)
Example: :AA:MKR2:POSition 15kHz
Sets Marker 1 to 15.0 kHz.
Query Response: :AA:MKR2:POSition?
15000.000000 Hz

NOTE
MKRn = 1 or 2 (Marker 1 or 2)

9.2.17 Audio Analyzer - Scaling

:AA:VERTical:SCAle
:AA:VERTical:SCAle?

Description: Set command defines the Vertical Scale for the Audio Analyzer.
Query command returns parameter setting.
Parameters: .1 | .2 | .5 | 1.0 | 2.0 | 5.0 | 10.0 | 20.0 | 25.0
Units: dB
Default Value: 20 dB
Set/Query Format: NRf | NR1
Example: :AA:VERTical:SCAle 5dB
Sets Audio Analyzer Scaling to 5 dB/div.
Query Response: :AA:VERTical:SCAle?
5dB

9.2.18 Audio Analyzer - Source

:AA:SOURce
:AA:SOURce?

Description: Set command defines the Source for the Audio Analyzer.
Query command returns parameter setting.
Parameter: DEMod | AUDio
Default Value: DEMod
Set/Query Format: CPD | CRD
Example: :AA:SOURce DEMod
Selects Demod as Audio Analyzer Audio Source.
Query Response: :AA:SOURce?
DEM

9.2.19 Audio Analyzer - Start Frequency

:AA:HORizontal:FREQuency:STARt
:AA:HORizontal:FREQuency:STARt?

Description: Set command defines the Start Frequency for Audio Analyzer sweeps.
Query command returns parameter setting.
Range: 24.0 kHz to 0.0 Hz
Default Value: 1.0 Hz
Units: Hz | kHz
Set/Query Format: NRf | NR1 (Hz)
Example: :AA:HORizontal:FREQuency:STARt 2.5Hz
Sets Audio Analyzer Start Frequency to 2.5 Hz.
Query Response: :AA:HORizontal:FREQuency:STARt?
2.500000 Hz

NOTE Minimum space between Start and Stop frequency is 2.0 kHz.

9.2.20 Audio Analyzer - Stop Frequency

:AA:HORizontal:FREQuency:STOP
:AA:HORizontal:FREQuency:STOP?

Description: Set command defines the Stop Frequency for Audio Analyzer sweeps.
Query command returns parameter setting.
Range: 4.0 Hz to 24.0 kHz
Units: Hz | kHz
Default Value: 24.0 kHz
Set/Query Format: NRf | NR1 (Hz)
Example: :AA:HORizontal:FREQuency:STOP 20kHz
Sets Audio Analyzer Stop Frequency to 20.0 kHz.
Query Response: :AA:HORizontal:FREQuency:STOP?
20000.000000

NOTE Minimum space between Start and Stop frequency is 2.0 kHz.

9.2.21 Audio Analyzer - Tracking Generator Enable

:AA:TRKGen:ENABle
:AA:TRKGen:ENABle?

Description: Set command Enables/Disables Tracking Generator on Audio Analyzer.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :AA:TRKGen:ENABle ON
Enables Tracking Generator on Audio Analyzer.

Query Response: :AA:TRKGen:ENABle?
1

NOTE Command only valid when Simulcast Analysis Option is installed in Test Set.

9.2.22 Audio Analyzer - Tracking Generator Level (AF)

:AA:TRKGen:AF:LEVel
:AA:TRKGen:AF:LEVel? <units>

Description: Set command defines the Audio Analyzer Tracking Generator AF Output Level.
Query command returns parameter setting in specified units.

Range:

Span 625 Hz: 1.0 mV to 1.0 V

Span 1000 Hz: 1 mV to 2.0 V

Units: dBm | V | mV | µV | nV | dBµV

Default Value: 1.0 V

Default Units: mV

Set/Query Format: NRf | NR2 <units>

Example: :AA:TRKGen:AF:LEVel 1V
Sets Audio Analyzer Tracking Generator AF Output Level to 1.0 Volt.

Query Response: :AA:TRKGen:AF:LEVel? dBm
2.2

NOTE Command only valid when Simulcast Analysis Option is installed in Test Set.

9.2.23 Audio Analyzer - Tracking Generator Level (Mod)

:AA:TRKGen:MOD:LEVel
:AA:TRKGen:MOD:LEVel? <units>

Description: Set command defines the Audio Analyzer Tracking Generator Mod Output Level.
Query command returns parameter setting in specified units.

Range: 0.0 to 5000 Hz

Units: Hz | kHz

Default Value: 625 Hz

Set/Query Format: NRf | NR2 (Hz)

Example: :AA:TRKGen:MOD:LEVel 1 kHz
Sets Audio Analyzer Tracking Generator Mod Output Level to 1.0 kHz.

Query Response: :AA:TRKGen:MOD:LEVel?
1000.0

NOTE Command only valid when Simulcast Analysis Option is installed in Test Set.

9.2.24 Audio Analyzer - Tracking Generator Output Source

:AA:TRKGen:SOURce
:AA:TRKGen:SOURce?

Description: Set command defines the Output Source for the Audio Analyzer Tracking Generator.
Query command returns parameter setting.

Parameter: AF | MOD

Default Value: MOD

Set/Query Format: CPD | CRD

Example: :AA:TRKGen:SOURce AF
Selects Mod as Audio Analyzer Tracking Generator Output Source.

Query Response: :AA:TRKGen:SOURce?
AF

NOTE Command only valid when Simulcast Analysis Option is installed in Test Set.

9.2.25 Audio Analyzer - Tracking Generator Span

:AA:TRKGen:SPAN
:AA:TRKGen:SPAN?

Description: Set command defines the Audio Analyzer Tracking Generator Span.
Query command returns parameter setting.

Parameter: 0 = 625 Hz
1 = 10 kHz
2 = 100 Hz

Default Value: 625 Hz

Set/Query Format: CPD | CRD

Example: :AA:TRKGen:SPAN 1
Sets Audio Analyzer Tracking Generator Span to 10 kHz.

Query Response: :AA:TRKGen:SPAN?
1

NOTE Command only valid when Simulcast Analysis Option is installed in Test Set.

9.2.26 Audio Analyzer - Vertical Top of Scale

:AA:VERTical:TOS
:AA:VERTical:TOS?

Description: Set command defines the Top of Scale (v/div) for the Audio Analyzer.
Query command returns parameter setting.

Range: -150.0 to 0.0 dBm

Units: dBm

Default Value: 0.0 dBm

Set/Query Format: NRf | NR2

Example: :AA:VERTical:TOS -100dBm
Sets Top of Scale to -100.0 dBm.

Query Response: :AA:VERTical:TOS?
-100.000000 dBm

9.3 CHANNEL ANALYZER

9.3.1 Channel Analyzer - Averages

:CA:TRACe:AVERage:VALue
:CA:TRACe:AVERage:VALue?

Description: Set command defines the number of readings taken to calculate the Average Channel Analyzer trace.
Query command returns parameter setting.

Parameter: 1 to 200

Default Value: 10

Set/Query Format: NR1

Example: :CA:TRACe:AVERage:VALue 25
Sets number of readings taken to calculate the Average Channel Analyzer trace to 25.

Query Response: :CA:TRACe:AVERage:VALue?
25

9.3.2 Channel Analyzer - Average Peak Trace Between Markers

:CA:MARKer:PPKAV?

Description: Query command returns average of Peak Average Trace between Mkr1 and Mkr2 data.

Query Format: NR2 (dBm)

Query Response: :CA:MARKer:PPKAV?
-29.2

NOTE
Both markers must be enabled to return valid data.
Peak and Average measurements must be enabled to return valid data.

9.3.3 Channel Analyzer - Average Trace Enable

:CA:TRACe:AVERage:ENABle
:CA:TRACe:AVERage:ENABle?

Description: Set command Enables/Disables Average Channel Analyzer trace.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :CA:TRACe:AVERage:ENABle ON
Enables Average Channel Analyzer trace.

Query Response: :CA:TRACe:AVERage:ENABle?
1

9.3.4 Channel Analyzer - Average Trace Query

:CA:TRACe:AVG?

Description: Command returns Average Channel Analyzer trace data.

Query Data: Returns 560 data points in form of a data stream

data (NR2): trace data in dB, separated by ","

Query Response: :CA:TRACe:AVG?

-55.8,-55.6,-54.7,-55.1,-55.4,-56.0,-56.1,-55.6,-55.4,-55.9,-56.1,-55.4,-55.9,
-55.3,-55.7,-56.1,-55.8,-56.2,-55.2,-55.9,-55.8,-56.0,-55.8,-55.6,-55.7,-55.9,
-55.7,-55.9,-55.8,-55.7,-55.2,-55.3,-55.4,-56.0,-56.2,-56.4,-55.4,-56.0,-55.5,
-55.7,-55.7,-56.2,-55.8,-55.7,-55.6,-56.4,-55.5,-55.8,-55.9,-56.2,-55.6,-55.5,
-55.4,-5 5.7,-55.9,-55.5,-55.4,-55.4,-55.6,-55.3,-55.7,-55.9,-55.9,-55.9,-55.8,
-55.4,-55.4,-55.4,-56.1,-56.1,-55.4,-55.9,-56.1,-56.4,-55.9,-55.6,-55.6,-55.8,
-55.2,-55.9,-55.5,-56.0,-55.9,-55.6,-55.7,-55.2,-55.6,-55.8,-55.3,-55.9,-55.8,
-55.2,-55.9,-55.8,-56.0,-55.1,-56.0,-55.4,-55.4,-55.6,-54.9,-55.3,-55.4,-55.6,
-54.9,-54.3,-54.4,-54.1,-53.9,-53.5,-54.0,-53.8,-53.5,-53.8,-53.8,-54.0,-54.7,
-54.2,-54.5,-54.3,.....

NOTE Average Trace must be enabled to return valid trace data.

9.3.5 Channel Analyzer - Average Trace Status

:CA:TRACe:AVERage:CURRent?

Description: Command returns the number of readings that have been acquired to calculate the Average Channel Analyzer trace.

Query Format: NR1

Query Response: :CA:TRACe:AVERage:CURRent?

25

NOTE Average Trace must be enabled to return valid data.

9.3.6 Channel Analyzer - Coupling Status

:CA:COUPling:STATus?

Description: Command returns Channel Analyzer Coupling setting status.

Query Data: <statusbyte>

statusbyte (NR1): 0 = Valid
1 = Invalid
2 = Uncalibrated configuration

Query Response: :CA:COUPling:STATus?

1

9.3.7 Channel Analyzer - Center Frequency

:CA:HORizontal:FREQuency:CENTer
:CA:HORizontal:FREQuency:CENTer?

Description: Set command defines Channel Analyzer Center Frequency.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz within ±2.5 MHz of System Receive Frequency

Units: Hz | kHz | MHz | GHz

Default Value: 150.0 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :CA:HORizontal:FREQuency:CENTer 625MHz
Sets Center Frequency to 625.0 MHz.

Query Response: :CA:HORizontal:FREQuency:CENTer?
625000000.0

NOTE Applies to Start-Stop or Center-Span mode of operation (:CA:HORizontal:MODE SS or CS).

9.3.8 Channel Analyzer - Center Frequency Set to Relative

:CA:HORizontal:FREQuency:CENTer:RELative
:CA:HORizontal:FREQuency:CENTer:RELative?

Description: Set command Offsets the Channel Analyzer Center Frequency relative to Analyzer RF Frequency by user defined value.
Query command returns parameter setting.

Range: -2.5 to +2.5 MHz from receive frequency

Default Value: -1000000.0

Units: Hz | kHz | MHz

Set/Query Format: NRf | NR1 (Hz)

Example: :CA:HORizontal:FREQuency:CENTer:RELative 5kHz
Sets Center Frequency 5.0 kHz relative to Received Frequency.

Query Response: :CA:HORizontal:FREQuency:CENTer:RELative?
5000

NOTE Applies to Start-Stop or Center-Span mode of operation (:CA:HORizontal:MODE SS or CS).

9.3.9 Channel Analyzer - Frequency Mode of Operation

:CA:FREQuency:MODE
:CA:FREQuency:MODE?

Description: Set command defines Channel Analyzer Frequency mode of operation.
Query command returns parameter setting.

Parameter: LOCKed | UNLocked

Default Value: UNLocked

Set/Query Format: CPD | CRD

Example: :CA:FREQuency:MODE UNLocked
Sets Channel Analyzer Frequency Mode to Unlocked.

Query Response: :CA:FREQuency:MODE?
UNL

9.3.10 Channel Analyzer - Frequency Span

:CA:HORizontal:FREQuency:SPAN
:CA:HORizontal:FREQuency:SPAN?

Description: Set command defines the Channel Analyzer Frequency Span.
Query command returns parameter setting.
Range: 2.0 kHz to 5.0 MHz
Units: Hz | kHz | MHz
Default Value: 2.0 MHz
Set/Query Format: NRf | NR2 (Hz)
Example: :CA:HORizontal:FREQuency:SPAN 1MHz
Sets Channel Analyzer Frequency Span to 1.0 MHz.
Query Response: :CA:HORizontal:FREQuency:SPAN?
1000000

NOTE Applies to Start-Stop or Center-Span mode of operation (:CA:HORizontal:MODE SS or CS).

9.3.11 Channel Analyzer - Live Trace Between Markers

:CA:MARKer:PLIVe?

Description: Command returns Live reading between Marker 1 and Marker 2 data.
Query Format: NR2 (dBm)
Query Response: :CA:MARKer:PLIVe?
-41.64

NOTE Both Markers must be enabled to return valid data.

9.3.12 Channel Analyzer - Live Trace Query

:CA:TRACe:LIVE?

Description: Command returns Live Channel Analyzer trace data.
Query Data: Returns 560 data points in form of a data stream
data (NR2): trace data in dB, separated by ","
Query Response: :CA:TRACe:LIVE?
-52.7,-58.2,-57.0,-54.0,-54.2,-58.7,-55.3,-57.4,-55.0,-57.2,-54.2,-59.0,-55.6,
-54.4,-56.1,-56.7,-58.6,-57.7,-54.8,-55.6,-55.5,-55.6,-55.2,-57.7,-56.0,-55.1,
-56. 4,-54.8,-57.3,-55.0,-57.9,-57.4,-58.0,-56.2,-57.3,-57.5,-57.9,-57.3,-54.0,
-58.9,-55.9,-56.1,-57.1,-55.2,-58.8,-57.1,-56.2,-55.7,-55.8,-55.8,-55.9,-57.7,
-58.1,-56.5,-54.8,-54.3,-54.6,-54.8,-54.5,-54.7,-57.0,-57.7,-56.2,-54.4,-57.9,
-57.5,-55.0,-54.2,-54.7,-52.9,-55.7,-55.5,-52.2,-56.3,-55.5,-55.6,-57.5,-55.6,
-56.0,-55.1,-58.5,-52.8,-56.2,-56.1,-55.0,-56.1,-56.8,-56.0,-55.0,-56.8,-56.0,
-54.0,-56.5,-5 6.8,-54.6,-54.3,-56.8,-56.4,-53.0,-54.9,-56.8,-57.3,-52.1,-57.5,
-56.2,-56.7,-57.8,-54.6,-55.4,-55.5,-57.5,-56.7,-56.1,-55.6,-53.7,-55.7,-53.9,
-57.6,-56.8,-58.0,-54.3,-56.2,-56.2,-57.8,-53.6,-54.3,-53.9,-56.4,-54.8,-57.0,
-56.9,-55.5,-54.6,.....

9.3.13 Channel Analyzer - Marker Enable

:CA:MARKer:MKRn:ENABle
:CA:MARKer:MKRn:ENABle?

Description: Set command Enables/Disables Channel Analyzer Marker.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :CA:MARKer:MKR2:ENABle ON
Enables Marker 2 on Channel Analyzer.

Query Response: :CA:MARKer:MKR2:ENABle?
1

NOTE MKRn = 1 or 2 (Marker 1 or 2)

9.3.14 Channel Analyzer - Marker Delta Level

:CA:MARKer:DELTa:LEVel?

Description: Command returns difference in Level measurements between Marker 1 and Marker 2 level values.

Query Data: <statusbyte> <level value>

statusbyte (NR1): 1 = Unlocked (Marker Mode of Operation)
2 = Locked (Marker Mode of Operation)

value (NR1): dB

Query Response: :CA:MARKer:DELTa:LEVel?
1 1.6

NOTE Both markers must be enabled to return valid data.

9.3.15 Channel Analyzer - Marker Delta Position

:CA:MARKer:DELTa:POSition?

Description: Command returns distance between Marker 1 and Marker 2 on Channel Analyzer.

Stop-Start Query: NR1 (Hz)

Center-Span Query: NR1 (Hz)

Zero-Span Query: NR2 (ms)

Query Response: :CA:MARKer:DELTa:POSition?
1.0

NOTE Both markers must be enabled to return valid data.

9.3.16 Channel Analyzer - Marker Level

:CA:MARKer:MKRn:LEVel?

Description: Command returns Level at Channel Analyzer Marker position.

Query Data: <statusbyte> <level>

statusbyte (NR1): always 2 (Locked)

level (NR2): dBm

Query Response: :CA:MARKer:MKRn:LEVel?
2 -57.3

NOTE
Marker must be enabled to return valid data.
MKRn = 1 or 2 (Marker 1 or 2)

9.3.17 Channel Analyzer - Marker Mode of Operation

:CA:MARKer:MODE
:CA:MARKer:MODE?

Description: Set command defines Channel Analyzer Marker mode of operation.
Query command returns parameter setting.

Parameter: UNLOCKed | LOCKed

Default Value: UNLOCK

Set/Query Format: CPD | CRD

Example: :CA:MARKer:MODE LOCKED
Sets Channel Analyzer Marker mode of operation to LOCKED.

Query Response: :CA:MARKer:MODE?
LOCK

NOTE
Enable both Markers before sending LOCKED command.

9.3.18 Channel Analyzer - Marker Move to Highest Peak

:CA:MARKer:MKRn:PEAK

Description: Command moves Channel Analyzer Marker to Peak point.

Parameter/Query: none

NOTE
Marker must be enabled before command is sent.
MKRn = 1 or 2 (Marker 1 or 2)

9.3.19 Channel Analyzer - Marker Move Left to Next Peak

:CA:MARKer:MKRn:LEFT

Description: Command moves Channel Analyzer Marker Left to next peak.

Parameter/Query: none

NOTE
Marker must be enabled before command is sent.
MKRn = 1 or 2 (Marker 1 or 2)

9.3.20 Channel Analyzer - Marker Move to Lowest Peak

:CA:MARKer:MKRn:MINimum

Description: Command moves Channel Analyzer Marker to Lowest point.

Parameter/Query: none

NOTE

Only valid when Zero-Span Mode of operation is selected.
MKRn = 1 or 2 (Marker 1 or 2)

9.3.21 Channel Analyzer - Marker Move Right to Next Peak

:CA:MARKer:MKRn:RIGHt

Description: Command moves Channel Analyzer Marker Right to next peak.

Parameter/Query: none

NOTE

Marker must be enabled prior to sending command.
MKRn = 1 or 2 (Marker 1 or 2)

9.3.22 Channel Analyzer - Marker Position

:CA:MARKer:MKRn:POSition
:CA:MARKer:MKRn:POSition?

Description: Set command defines Marker Position on Channel Analyzer.
Query command returns parameter setting.

9.3.22.A Start-Stop and Center-Span Mode

Range: Between Start and Stop frequencies

Units: Hz | kHz | MHz | GHz

Default Value: Start Frequency

Set/Query Format: NRf | NR1 (Hz)

Example: :CA:MARKer:MKR1:POSition 150.5MHz
Sets Marker 1 to 150.5 MHz on Channel Analyzer.

Query Response: :CA:MARKer:MKR1:POSition?
150500000

9.3.22.B Zero-Span Mode

Range: Between Zero and Sweep value

Units: ms | s

Default Value: 100 ms

Set/Query Format: NRf | NR1 (ms)

Example: :CA:MARKer:MKR1:POSition 150ms
Sets Marker 1 to 150 ms.

Query Response: :CA:MARKer:MKR1:POSition?
150

NOTE

MKRn = 1 or 2 (Marker 1 or 2)

9.3.23 Channel Analyzer - Marker Set Center Frequency

:CA:MARKer:MKRn:SCF

Description: Command sets Center Frequency to Channel Analyzer Marker Position.

Parameter/Query: none

NOTE

Marker must be enabled before sending command.
MKRn = 1 or 2 (Marker 1 or 2)

9.3.24 Channel Analyzer - Marker Set Nearest Vertical Range

:CA:MARKer:SVERtical

Description: Set command sets Channel Analyzer Marker to (Nearest) Vertical Range.

Parameter/Query: none

NOTE

Markers must be enabled before sending command.
Applies to Zero-Span Mode of Operation.

9.3.25 Channel Analyzer - Marker Set Reference Level

:CA:MARKer:MKRn:SREF

Description: Set command sets Ref Level to Level at Channel Analyzer Marker Position.

Parameter/Query: none

NOTE

Marker must be enabled before sending command.
MKRn = 1 or 2 (Marker 1 or 2)

9.3.26 Channel Analyzer - Markers Set to Start-Stop Span

:CA:MARKer:SSS

Description: Set command sets Channel Analyzer Markers to Start - Stop Span values.

Parameter/Query: none

NOTE

Markers must be enabled before sending command.
Applies to Start-Stop and Center-Span Modes of operation (CA:HORizontal:MODE SS or CS).

9.3.27 Channel Analyzer - Occupied Bandwidth Enable

:CA:OBW:ENABle
:CA:OBW:ENABle?

Description: Set command Enables/Disables Channel Analyzer Occupied Bandwidth meter.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :CA:OBW:ENABle ON
Enables Channel Analyzer Occupied Bandwidth measurement.

Query Response: :CA:OBW:ENABle?
1

9.3.28 Channel Analyzer - Occupied Bandwidth Frequency

:CA:OBW:FREQ?

Description: Command returns Channel Analyzer OCB Frequency.
Query Format: NRf (Hz)
Query Response: :CA:OBW:FREQ?
8.79

9.3.29 Channel Analyzer - Occupied Bandwidth Power

:CA:OBW:POWer?

Description: Command returns Channel Analyzer OCB Power measurement.
Query Format: NRf (dBm)
Query Response: :CA:OBW:POWer?
5.06

NOTE Measurement is also referred to as Power Between Markers.

9.3.30 Channel Analyzer - Occupied Bandwidth Setting

:CA:OBW:SETting
:CA:OBW:SETting?

Description: Set command defines the Channel Analyzer Occupied Bandwidth setting
Query command returns parameter setting.
Range: 1.00 to 99.99%
Default Value: 99.00 %
Set/Query Format: NRf | NR2
Example: :CA:OBW:SETting 75
Sets Channel Analyzer Occupied Bandwidth to 75.0 %.
Query Response: :CA:OBW:SETting?
75.00

9.3.31 Channel Analyzer - Peak Average Trace Between Markers

:CA:MARKer:PAVG?

Description: Set command returns Peak Average of readings between Mkr1 and Mkr2 data.
Query Format: NR2 (dBm)
Query Response: :CA:MARKer:PAVG?
-41.71

NOTE Both Markers must be enabled to obtain valid measurement data.
Peak and Average Trace must be enabled to obtain valid measurement data.

9.3.32 Channel Analyzer - Peak Average Trace Query

:CA:TRACe:PKAV?

Description: Query command returns Peak Average Channel Analyzer trace data.

Query Data: Returns 560 data points in form of a data stream

data (NR2): trace data in dB, separated by ","

Query Response: :CA:TRACe:PKAV?
-52.7,-58.2,-57.0,-54.0,-54.2,-58.7,-55.3,-57.4,-55.0,-57.2,-54.2,-59.0,-55.6,
-54.4,-56.1,-56.7,-58.6,-57.7,-54.8,-55.6,-55.5,-55.6,-55.2,-57.7,-56.0,-55.1,
-56. 4,-54.8,-57.3,-55.0,-57.9,-57.4,-58.0,-56.2,-57.3,-57.5,-57.9,-57.3,-54.0,
-58.9,-55.9,-56.1,-57.1,-55.2,-58.8,-57.1,-56.2,-55.7,-55.8,-55.8,-55.9,-57.7,
-58.1,-56.5,-54.8,-54.3,-54.6,-54.8,-54.5,-54.7,-57.0,-57.7,-56.2,-54.4,-57.9,
-57.5,-55.0,-54.2,-54.7,-52.9,-55.7,-55.5,-52.2,-56.3,-55.5,-55.6,-57.5,-55.6,
-56.0,-55.1,-58.5,-52.8,-56.2,-56.1,-55.0,-56.1,-56.8,-56.0,-55.0,-56.8,-56.0,
-54.0,-56.5,-56.8,-54.6,-54.3,-56.8,-56.4,-53.0,-54.9,-56.8,-57.3,-52.1,-57.5,
-56.2,-56.7,-57.8,-54.6,-55.4,-55.5,-57.5,-56.7,-56.1,-55.6,-53.7,-55.7,-53.9,
-57.6,-56.8,-58.0,.....

NOTE Peak and Average Trace must be enabled to obtain valid Peak Average trace data.

9.3.33 Channel Analyzer - Peak Trace Between Markers

:CA:MARKer:PPEAK?

Description: Query command returns Peak reading between Mkr1 and Mkr2 data.

Query Format: NR2 (dBm)

Query Response: :CA:MARKer:PPEAK?
-41.42

NOTE Both markers must be enabled to obtain valid data.
Peak Trace must be enabled to obtain valid Peak Trace data.

9.3.34 Channel Analyzer - Peak Trace Enable

:CA:TRACe:MAXimum
:CA:TRACe:MAXimum?

Description: Set command Enables/Disables Channel Analyzer Peak trace.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :CA:TRACe:MAXimum ON
Enables Channel Analyzer Peak Trace.

Query Response: :CA:TRACe:MAXimum?
1

NOTE Peak Trace must be enabled to return valid trace data.

9.3.35 Channel Analyzer - Peak Trace Query

:CA:TRACe:PEAK?

Description: Command returns Peak Channel Analyzer trace data.

Query Data: Returns 560 data points in form of a data stream

data (NR2): trace data in dB, separated by ","

Query Response: :CA:TRACe:PEAK?

-52.7,-58.2,-57.0,-54.0,-54.2,-58.7,-55.3,-57.4,-55.0,-57.2,-54.2,-59.0,-55.6,
-54.4,-56.1,-56.7,-58.6,-57.7,-54.8,-55.6,-55.5,-55.6,-55.2,-57.7,-56.0,-55.1,
-56. 4,-54.8,-57.3,-55.0,-57.9,-57.4,-58.0,-56.2,-57.3,-57.5,-57.9,-57.3,-54.0,
-58.9,-55.9,-56.1,-57.1,-55.2,-58.8,-57.1,-56.2,-55.7,-55.8,-55.8,-55.9,-57.7,
-58.1,-56.5,-54.8,-54.3,-54.6,-54.8,-54.5,-54.7,-57.0,-57.7,-56.2,-54.4,-57.9,
-57.5,-55.0,-54.2,-54.7,-52.9,-55.7,-55.5,-52.2,-56.3,-55.5,-55.6,-57.5,-55.6,
-56.0,-55.1,-58.5,-52.8,-56.2,-56.1,-55.0,-56.1,-56.8,-56.0,-55.0,-56.8,-56.0,
-54.0,-56.5,-56.8,-54.6,-54.3,-56.8,-56.4,-53.0,-54.9,-56.8,-57.3,-52.1,-57.5,
-56.2,-56.7,-57.8,-54.6,-55.4,-55.5,-57.5,-56.7,-56.1,-55.6,-53.7,-55.7,-53.9,
-57.6,-56.8,-58.0,.....

NOTE

Peak Trace must be enabled to return valid data.

9.3.36 Channel Analyzer - Resolution Bandwidth Mode of Operation

:CA:COUPling:RBW:AUTO
:CA:COUPling:RBW:AUTO?

Description: Set Enables/Disables Channel Analyzer Auto Coupling mode of operation for Resolution Bandwidth.

Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: ON

Set/Query Format: Boolean

Example: :CA:COUPling:RBW:AUTO OFF

Disables Channel Analyzer Resolution Bandwidth Auto Coupling Mode (sets to Manual mode).

Query Response: :CA:COUPling:RBW:AUTO?

0

NOTE

Applies to Start-Stop and Center-Span Horizontal Modes of operation.

OFF indicates Manual Mode; ON indicates Auto Mode.

In Manual Mode, RBW is defined with :CA:COUPling:RBW:VAlue command.

9.3.37 Channel Analyzer - Resolution Bandwidth Value

:CA:COUPling:RBW:VALue
:CA:COUPling:RBW:VALue?

Description: Set command defines Channel Analyzer Resolution Bandwidth setting when in Manual Mode of operation.
Query command returns parameter setting.

Parameter: H300 | KH3 | KH60

Default Value: 60 kHz

Set/Query Format: CPD | data string

Zero-Span Query Data: <statusbyte> always 0

Start-Stop Query Data: <statusbyte>

Center-Span Query Data: <statusbyte>

statusbyte (NR1): 0 = Default value (Auto or Manual Mode)
1 = Other value (Manual Mode)

Example: :CA:COUPling:RBW:VALue KH3
Sets Channel Analyzer RBW Value to 3 kHz.

Query Response: :CA:COUPling:RBW:VALue?
(CS Mode) 1 KH3

NOTE Query only when AUTO is ON (Auto Mode of Operation).
Set commands only valid when AUTO is OFF (Manual Mode of operation).

9.3.38 Channel Analyzer - Span Full (Set to Full Span)

:CA:HORizontal:SPAN:FULL

Description: Command sets the Channel Analyzer Horizontal span to Full Span.

Parameter/Query: none

NOTE Applies to Start-Stop and Center-Span Modes of operation.

9.3.39 Channel Analyzer - Span Mode of Operation

:CA:HORizontal:MODE
:CA:HORizontal:MODE?

Description: Set command defines the Channel Analyzer horizontal mode of operation.
Query command returns parameter setting.

Parameter: SS = Start-Stop
CS = Center-Span
ZS = Zero-Span

Default Value: CS

Set/Query Format: CPD | CRD

Example: :CA:HORizontal:MODE ZS
Sets Channel Analyzer Span Mode to Zero-Span.

Query Response: :CA:HORizontal:MODE?
ZS

NOTE Correct Mode of Operation must be selected to define other Channel Analyzer parameters such as Start and Stop Frequencies and Span settings.

9.3.40 Channel Analyzer - Start Frequency

:CA:HORizontal:FREQuency:STARt
:CA:HORizontal:FREQuency:STARt?

Description: Set command defines the Channel Analyzer Start Frequency.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz within ±2.5 MHz of System Receive Frequency

Units: Hz | kHz | MHz | GHz

Default Value: 150.0 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :CA:HORizontal:FREQuency:STARt 165MHz
Sets Channel Analyzer Start Frequency to 165.0 MHz.

Query Response: :CA:HORizontal:FREQuency:STARt?
165000000

NOTE Applies to Start-Stop or Center-Span mode of operation (:CA:HORizontal:MODE SS or CS).

9.3.41 Channel Analyzer - Start Frequency Set to Relative

:CA:HORizontal:FREQuency:STARt:RELative
:CA:HORizontal:FREQuency:STARt:RELative?

Description: Set command Offsets the Channel Analyzer Start Frequency relative to Analyzer RF Frequency by user defined value.
Query command returns parameter setting.

Range: -2.5 to +2.5 MHz from receive frequency

Units: Hz | kHz | MHz

Default Value: -1.0 MHz

Set/Query Format: NRf | NR1 (Hz)

Example: :CA:HORizontal:FREQuency:STARt:RELative 2MHz
Sets Channel Analyzer Start Frequency 2.0 MHz relative to Receive Frequency.

Query Response: :CA:HORizontal:FREQuency:STARt:RELative?
2000000

NOTE Applies to Start-Stop or Center-Span mode of operation (:CA:HORizontal:MODE SS or CS).

9.3.42 Channel Analyzer - Stop Frequency

:CA:HORizontal:FREQuency:STOP
:CA:HORizontal:FREQuency:STOP?

Description: Set command defines the Stop Frequency of Channel Analyzer.
Query command returns parameter setting.
Range: 100.0 kHz to 2.71 GHz within ±2.5 MHz of System Receive Frequency
Units: Hz | kHz | MHz | GHz
Default Value: 150.0 MHz
Set/Query Format: NRf | NR2 (Hz)
Example: :CA:HORizontal:FREQuency:STOP 650.625MHz
Sets Channel Analyzer Stop Frequency to 650.625 MHz.
Query Response: :CA:HORizontal:FREQuency:STOP?
650625000

NOTE Applies to Start-Stop mode of operation (:CA:HORizontal:MODE SS).

9.3.43 Channel Analyzer - Stop Frequency Set to Relative

:CA:HORizontal:FREQuency:STOP:RELative
:CA:HORizontal:FREQuency:STOP:RELative?

Description: Set command Offsets Stop Frequency of Channel Analyzer relative to Analyzer RF Frequency by user defined value.
Query command returns parameter setting.
Range: -2.5 to +2.5 MHz from receive frequency
Units: Hz | kHz | MHz
Default Value: +2.5 MHz
Set/Query Format: NRf | NR1 (Hz)
Example: :CA:HORizontal:FREQuency:STOP:RELative 1.5MHz
Sets Stop Frequency 2.5 MHz relative to Receive Frequency.
Query Response: :CA:HORizontal:FREQuency:STOP:RELative?
150000000

NOTE Applies to Start-Stop mode of operation (:CA:HORizontal:MODE SS).

9.3.44 Channel Analyzer - Sweep Continuous

:INITiate:CONTinuous:CA
:INITiate:CONTinuous:CA?

Description: Set command Starts continuous Channel Analyzer Sweep.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: ON
Set/Query Format: Boolean
Example: :INITiate:CONTinuous:CA ON
Enables Continuous Channel Analyzer sweeps.
Query Response: :INITiate:CONTinuous:CA?
1

9.3.45 Channel Analyzer - Sweep Single

:INITiate:IMMediate:CA

Description: Command Starts single Channel Analyzer Sweep.

Parameter/Query: none

9.3.46 Channel Analyzer - Sweep Stop

:ABORt:CA

Description: Command stops Channel Analyzer Sweeps when in Continuous Sweep mode.

Parameter/Query: none

9.3.47 Channel Analyzer - Sweep Time Mode of Operation

:CA:COUPling:SWEep:AUTO
:CA:COUPling:SWEep:AUTO?

Description: Set command Enables/Disables Channel Analyzer Auto Sweep Time mode of operation.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: ON

Set/Query Format: Boolean

Example: :CA:COUPling:SWEep:AUTO OFF
Disables Auto Sweep Mode of operation.

Query Response: :CA:COUPling:SWEep:AUTO?
0

NOTE

Applies to Start-Stop and Center-Span Horizontal Modes of operation.
OFF indicates Manual Mode; ON indicates Auto Mode.
In Manual Mode, Sweep Time is defined with :CA:COUPling:SWEep:VAlue command.

9.3.48 Channel Analyzer - Sweep Time Status

:CA:COUPling:SWEep:COMPlete?

Description: Command returns completion status of the Channel Analyzer Trace.

Query Data: <statusbyte>

statusbyte (NR1): 0 = Trace Incomplete
1 = Trace Complete

Query Response: :CA:COUPling:SWEep:COMPlete?
0

9.3.49 Channel Analyzer - Sweep Time Value

:CA:COUPling:SWEep:VALue
:CA:COUPling:SWEep:VALue?

Description: Set command defines the Channel Analyzer Sweep Time Setting when in Manual Mode of operation.
Query command returns parameter setting.

Range: 50 ms | 100 ms | 200 ms | 500 ms | 1 s | 2 s | 5 s | 10 s | 20 s | 50 s | 100 s

Units: ms | s

Default Value: 100 ms

Set/Query Format: NRf | data string

Query Data: <statusbyte> <value>

statusbyte (NR1): 0 = Default value (Auto or Manual Mode)
1 = Other value (Manual Mode)

value (NR1): ms

Example: :CA:COUPling:SWEep:VALue 10s
Sets Sweep Time to 10 seconds.

Query Response: :CA:COUPling:SWEep:VALue?
0 10000

NOTE
Applies to Start-Stop and Center-Span Horizontal Modes of operation.
Auto Coupling must be set to ON for query to return valid data.
Set command only valid when Auto Coupling is OFF (Manual Mode).

9.3.50 Channel Analyzer - Trace - Capture a Trace

:CA:TRACe:CAPture

Description: Sending command captures displayed trace.

NOTE
Traces are captured in the following priority: Peak, Average, Live.
- Peak Trace: Enable Peak Trace.
- Average Trace: Enable Average Trace; Peak Trace must be OFF.
- Live Trace: Average and Peak Trace must be OFF.

9.3.51 Channel Analyzer - Trace - Clears a Captured Trace

:CA:TRACe:CLEar

Description: Sending command clears captured trace and resumes sweep mode.

9.3.52 Channel Analyzer - Trace - Recall a Stored Trace

:CA:TRACe:RECALL “filename”

Description: Command recalls a stored signal trace.

NOTE
Beginning and ending quotation marks are required.
Do not include file extension in filename.

9.3.53 Channel Analyzer - Trace - Store Trace

:CA:TRACe:STORe “filename”

Description: Command stores signal trace data.

Parameter: “filename”

Set Format: ascii string, max 251 characters

NOTE

Saves file to Test Set’s internal database (Channel Anlz Traces:// directory).

Beginning and ending quotation marks are required.

Do not include file extension in filename (system saves as .csv file).

If more than one type of trace is enabled the traces are stored in the following priority: Peak, Average, Live.

9.3.54 Channel Analyzer - Trigger Mode of Operation

:CA:TRIGger:MODE
:CA:TRIGger:MODE?

Description: Set command defines the Channel Analyzer Trigger Gate Mode.
Query command returns parameter setting.

Parameter: FRUN

Default Value: FRUN

Set/Query Format: CPD | CRD

Example: :CA:TRIGger:MODE FRUN
Sets Channel Analyzer to Free Run.

Query Response: :CA:TRIGger:MODE?
FRUN

NOTE

Free Run is currently the only Trigger Mode supported on the Channel Analyzer.

9.3.55 Channel Analyzer - Vertical /div

:CA:VERTical:VDIV
:CA:VERTical:VDIV?

Description: Set command defines the Channel Analyzer Vertical / div setting.
Query command returns parameter setting.

Parameter: 1 | 2 | 5 | 10

Default Value: 10 dB/div

Set/Query Format: NR1

Example: :CA:VERTical:VDIV 5
Sets Channel Analyzer dB/div to 5.

Query Response: :CA:VERTical:VDIV?
5

9.3.56 Channel Analyzer - Vertical Level

:CA:VERTical:LEVel
:CA:VERTical:LEVel?

Description: Set command defines the Channel Analyzer Reference Level.
Query command returns parameter setting.

Range: **T/R:** -60.0 to +60.0 dBm
ANT: -100.0 to +10.0 dBm

Default Value: 10.0 dBm

Set/Query Format: NRf | NR2

Example: :CA:VERTical:LEVel -30dBmSets Channel Analyzer Reference Level to -30.0 dBm.

Query Response: :CA:VERTical:LEVel?
-30.00

9.3.57 Channel Analyzer - Video Bandwidth Mode of Operation

:CA:COUPling:VBW:AUTO
:CA:COUPling:VBW:AUTO?

Description: Set Enables/Disables Channel Analyzer Auto Coupling mode of operation for Video Bandwidth.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: ON (Auto)

Set/Query Format: Boolean

Example: :CA:COUPling:VBW:AUTO OFF
Disables VBW Auto Mode (sets to Manual mode).

Query Response: :CA:COUPling:VBW:AUTO?
0

NOTE
Applies to selected Horizontal Mode of operation.
OFF indicates Manual Mode; ON indicates Auto Mode.
In Manual Mode, VBW is defined with :CA:COUPling:VBW:VAlue command.

9.3.58 Channel Analyzer - Video Bandwidth Value

:CA:COUPling:VBW:VALue
:CA:COUPling:VBW:VALue?

Description: Set command defines the Channel Analyzer Video Bandwidth setting when in Manual Mode of operation.
Query command returns parameter setting.

Parameter: H10 | H30 | H100 | H300 | KH1 | KH3 | KH10 | KH30 | KH100 | KH300 | MH1 | MH3 | NONE

Default Value: 30 kHz

Set/Query Format: CPD | data string

Query Data: <statusbyte> <value>

statusbyte (NR1): 0 = Default value (Auto or Manual Mode)
1 = Other value (Manual Mode)

value (CRD): parameter setting

Example: :CA:COUPling:VBW:VALue H100
Sets Channel Analyzer Video Bandwidth to 100 Hz.

Query Response: :CA:COUPling:VBW:VALue?
1 H100

NOTE
Query only when AUTO is ON (Auto Mode of Operation).
Set command only valid when AUTO is OFF (Manual Mode of operation).

9.3.59 Channel Analyzer - Zero Span Center Frequency

:CA:HORizontal:ZERO:CENTer
:CA:HORizontal:ZERO:CENTer?

Description: Set command defines Channel Analyzer Center Frequency.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz within ±2.5 MHz of System Receive Frequency

Units: Hz | kHz | MHz | GHz

Default Value: 150.0 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :CA:HORizontal:ZERO:CENTer 151.0MHz
Sets Zero Span Center Frequency to 151.0 MHz.

Query Response: :CA:HORizontal:ZERO:CENTer?
151000000

NOTE
Applies to Zero-Span mode of operation (:CA:HORizontal:MODE ZS).

9.3.60 Channel Analyzer - Zero Span Center Frequency Set to Relative

:CA:HORizontal:ZERO:CENTer:RELative
:CA:HORizontal:ZERO:CENTer:RELative?

Description: Set command sets Channel Analyzer Center Frequency relative to Analyzer.
Query command returns parameter setting.

Range: -2.5 to +2.5 MHz from Receive Frequency

Units: Hz | kHz | MHz

Default Value: 0.0 Hz

Set/Query Format: NRf | NR1 (Hz)

Example: :CA:HORizontal:ZERO:CENTer:RELative 5kHz
Sets Zero Span Center Frequency 5.0 kHz relative to Receive Frequency.

Query Response: :CA:HORizontal:ZERO:CENTer:RELative?
150005000

NOTE Applies to Zero-Span mode of operation (:CA:HORizontal:MODE ZS).

9.3.61 Channel Analyzer - Zero Span Sweep Time

:CA:HORizontal:ZERO:SWEep
:CA:HORizontal:ZERO:SWEep?

Description: Set command defines Channel Analyzer Sero-Span Sweep Time.
Query command returns parameter setting.

Range: 50 ms to 100 s

Units: ms | s

Default Value: 100 ms

Set/Query Format: NRf | NR1 (ms)

Example: :CA:HORizontal:ZERO:SWEep 50ms
Sets Sweep Time value to 50 ms.

Query Response: :CA:HORizontal:ZERO:SWEep?
100

NOTE Applies to Zero-Span mode of operation (:CA:HORizontal:MODE ZS).

9.4 OSCILLOSCOPE

9.4.1 Oscilloscope - Coupling Setting

:SCOPe:nTRace:COUPling
:SCOPe:nTRace:COUPling?

Description: Set command defines Scope Trace Coupling.
Query command returns parameter setting.

Parameter: AC | DC | GND

Default Value: AC

Set/Query Format: CPD | CRD

Example: :SCOPe:ATRace:COUPling GND
Sets Trace A Coupling to GND (Ground).

Query Response: :SCOPe:ATRace:COUPling?
GND

NOTE nTRace = Trace A or B

9.4.2 Oscilloscope - Horizontal Division

:SCOPe:HDIV
:SCOPe:HDIV?

Description: Set command defines Scope Horizontal /div.
Query command returns parameter setting.

Parameter: 1µs | 2µs | 5µs | 10µs | 2µs | 50µs | 100µs | 200µs | 500µs | 1ms | 2ms | 5ms | 10ms | 20ms | 50ms | 100ms | 500ms | 1s

Default Value: 1 ms

Set/Query Format: NRf | NR1 (µs)

Example: :SCOPe:HDIV 2ms
Sets Scope Horizontal Division to 2 ms.

Query Response: :SCOPe:HDIV?
2000

9.4.3 Oscilloscope - Marker Enable

:SCOPe:MKRn:ENABle
:SCOPe:MKRn:ENABle?

Description: Set command Enables/Disables Scope Marker.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :SCOPe:MKR1:ENABle ON
Enables Marker 1 on Scope.

Query Response: :SCOPe:MKR1:ENABle?
1

NOTE MKRn = 1 | 2 | 3 | 4 (Marker 1 through 4)

9.4.4 Oscilloscope - Marker 3 and 4 Position (Level)

:SCOPe:MKRn:LEVel
:SCOPe:MKRn:LEVel?

Description: Set command defines position of Marker 3 or 4.
Query command returns marker position for Marker 3 or 4.
Range: vertical scale, default value of -80.0 to +80.0 dBm
Units: dBm
Default Value:
Marker 3: 1.0 dBm
Marker 4: -1.0 dBm
Set/Query Format: NRf | NR2
Example: :SCOPeMKR3:LEVel -45
Sets Marker 3 at -45.0 dBm on Oscilloscope display.
Query Response: :SCOPeMKR3:LEVel?
-45.0

NOTE
MKRn = 3 or 4 (Marker 3 or 4)

9.4.5 Oscilloscope - Marker Mode

:SCOPe:MKR
:SCOPe:MKR?

Description: Set command defines Scope Marker mode of operation.
Query command returns parameter setting.
Parameter: LOCKed | UNLOCKed
Default Value: UNLOCKed
Set/Query Format: CPD | CRD
Example: :SCOPe:MKR LOCKED
Sets Scope Markers to Locked Mode.
Query Response: :SCOPe:MKR?
LOCK

NOTE
Enable both markers before sending LOCKED command.

9.4.6 Oscilloscope - Marker Query

:SCOPe:nTRace:MKRn? p

Description: Command returns Scope reading at user defined Marker Position.
Parameter: NRf
Query Data: <statusbyte>,<value>
statusbyte (NR1): 0 = valid (always 0)
value (NR2): mV | % | Hz
Query Response: :SCOPe:ATRace:MKR1? 2.0ms
0, -107.711998

NOTE
MKRn = 1 or 2 (Marker 1 or 2)
nTRace = A or B (Trace A or B)
Must define Marker Position at end of query command for command to be valid.

9.4.7 Oscilloscope - Source

:SCOPe:nTRace:SOURce
:SCOPe:nTRace:SOURce?

Description: Set command selects Scope Trace Source.
Query command returns parameter setting.

Parameter:

ANDX: OFF | CH1 | CH2 | AUD | FAUD | DEMod | FDEMod | MODulator

P25/NXDN/DMR/ dPMR/ARIB: OFF | CH1 | CH2 | AUD | FAUD | DEMod | FDEMod

TBS/TBST/TMS/TMST: OFF | CH1 | CH2 | AUD | FAUD

HPD/TDM/BST4/MST4: OFF | CH1 | CH2

Default Value: OFF

Set/Query Format: CPD | CRD

Example: :SCOPe:ATRace:SOURce FDEMOD
Sets Trace A Source to Filtered Demod.

Query Response: :SCOPe:ATRace:SOURce?
FDEM

NOTE Only one internal source (Demod or Audio) can be selected at any given time.
nTRace = A or B (Trace A or B)

9.4.8 Oscilloscope - Sweep Continuous

:INITiate:CONTinuous:SCOPe
:INITiate:CONTinuous:SCOPe?

Description: Set command Starts continuous Scope Sweep.
Query command returns parameter setting.

Parameters: OFF | ON | 0 | 1

Default Value: ON

Set/Query Format: Boolean

Example: :INITiate:CONTinuous:SCOPe OFF
Disables Continuous Sweep on Scope.

Query Response: :INITiate:CONTinuous:SCOPe?
0

9.4.9 Oscilloscope - Sweep Single

:INITiate:IMMediate:SCOPe

Description: Command acquires single Scope Sweep.

Parameter/Query: none

9.4.10 Oscilloscope - Trigger Horizontal Position

:SCOPe:TRIGger:HORizontal:POSition
:SCOPe:TRIGger:HORizontal:POSition?

Description: Set command defines Scope Trigger Horizontal Position.
Query command returns parameter setting.
Range: 0 to 99%
Default Value: o
Set/Query Format: NR1
Example: :SCOPe:TRIGger:HORizontal:POSition 50
Sets Scope Trigger Horizontal Delay to 50%
Query Response: :SCOPe:TRIGger:HORizontal:POSition?
50

NOTE Applies to only Channel 1 or Channel 2 Sources.

9.4.11 Oscilloscope - Trigger Edge

:SCOPe:TRIGger:EDGE
:SCOPe:TRIGger:EDGE?

Description: Set command selects Scope Trigger Edge.
Query command returns parameter setting.
Parameter: RISE | FALL
Default Value: RISE
Set/Query Format: CPD | CRD
Example: :SCOPe:TRIGger:EDGE Rise
Sets Trigger Edge to trace rising edge.
Query Response: :SCOPe:TRIGger:EDGE?
RISE

9.4.12 Oscilloscope - Trigger Filter

:SCOPe:TRIGger:FILTer
:SCOPe:TRIGger:FILTer?

Description: Set command selects Scope Trigger Filter.
Query command returns parameter setting.
Parameter: 0 | 1 | 2
where: 0 = No Reject
1 = Noise Reject
2 = HF Reject
Default Value: 0 (No Reject)
Set/Query Format: NR1
Example: :SCOPe:TRIGger:FILTer 1
Sets Scope Trigger Filter to Noise Reject.
Query Response: :SCOPe:TRIGger:FILTer?
1

9.4.13 Oscilloscope - Trigger Level

:SCOPe:TRIGger:LEVel
:SCOPe:TRIGger:LEVel?

Description: Set command defines Scope Trigger Level.
Query command returns parameter setting.
Range: ±8 times the vertical/div setting
Units: mV | V
Default Value: 0 mV
Set/Query Format: NRf | NR2 (mV)
Example: :SCOPe:TRIGger:LEVel 5V
Sets Trigger Level to 5 Volts.
Query Response: :SCOPe:TRIGger:LEVel?
5000.000000

9.4.14 Oscilloscope - Trigger Mode

:SCOPe:TRIGger:MODE
:SCOPe:TRIGger:MODE?

Description: Set command selects Scope Trigger Mode.
Query command returns parameter setting.
Parameter: AUTO | NORMal
Default Value: AUTO
Set/Query Format: CPD | CRD
Example: :SCOPe:TRIGger:MODE NORMAL
Sets Trigger Mode to Normal.
Query Response: :SCOPe:TRIGger:MODE?
NORM

9.4.15 Oscilloscope - Trigger Source

:SCOPe:TRIGger:SOURce
:SCOPe:TRIGger:SOURce?

Description: Set command selects Scope Trigger Source.
Query command returns parameter setting.
Parameter: ATRace | BTRace | EXT
Default Value: ATRace
Set/Query Format: CPD | CRD
Example: :SCOPe:TRIGger:SOURce EXT
Selects External source as Trigger Source.
Query Response: :SCOPe:TRIGger:SOURce?
EXT

9.4.16 Oscilloscope - Vertical Division - Source AM

:SCOPe:nTRace:VDIV:AM
:SCOPe:nTRace:VDIV:AM?

Description: Set command defines Scope Trace A vertical setting in % .
Query command returns parameter setting.

Parameter: 5% | 10% | 20% | 50%

Units: % (percent)

Default Value: 20%

Set/Query Format: NRf | NR1

Example: :SCOPe:nTRace:VDIV:AM 10%
Sets AM Scope Trace A Vertical Division to 5%.

Query Response: :SCOPe:nTRace:VDIV:AM?
5

NOTE
nTrace = A or B (ATrace or BTrace)
Source must be set to Demod AM for command to be valid.
Applies to ANDX system only.

9.4.17 Oscilloscope - Vertical Division - Source FM

:SCOPe:nTRace:VDIV:FM
:SCOPe:nTRace:VDIV:FM?

Description: Set command sets Scope Trace A vertical setting in Hz.
Query command returns parameter setting.

Parameter: 500Hz | 1kHz | 2kHz | 5kHz | 1kHz | 20kHz | 50kHz

Units: Hz | kHz

Default Value: 500 Hz

Set/Query Format: NRf | NR1 (Hz)

Example: :SCOPe:nTRace:VDIV:FM 20kHz
Sets Scope Trace A Vertical Division to 20.0 kHz.

Query Response: :SCOPe:nTRace:VDIV:FM?
20000

NOTE
nTrace = A or B (ATrace or BTrace)
Source must be set to Demod FM for command to be valid.
Applies to ANDX System only.

9.4.18 Oscilloscope - Vertical Division - Source Volts

:SCOPe:nTRace:VDIV:VOLT
:SCOPe:nTRace:VDIV:VOLT?

Description: Set command sets Scope Trace A vertical setting in Volts.
Query command returns parameter setting.

Parameter: 2mV | 5mV | 10mV | 20mV | 50mV | 100mV | 200mV | 500mV | 1V | 2V | 5V | 10V | 20V

Units: mV | V

Default Value: 1 V

Set/Query Format: NRf | NR1 (mV)

Example: :SCOPe:nTRace:VDIV:VOLT 2V
Sets Scope Trace A Vertical Division to 2 Volts.

Query Response: :SCOPe:nTRace:VDIV:VOLT?
2000

NOTE
nTrace = A or B (ATrace or BTrace)
Applies to ANDX, P25, HPD, DMR and all TETRA Systems.

9.4.19 Oscilloscope - Vertical Position

:SCOPe:nTRace:VPOSition
:SCOPe:nTRace:VPOSition?

Description: Set command defines Scope Trace Vertical Position /div.
Query command returns parameter setting.

Range: -8.0 to +8.0 div

Units: divisions

Default Value: 0.00 div

Set/Query Format: NRf | NR1

Example: :SCOPe:ATRace:VPOSition 2.0
Sets Scope Trace A Vertical Position to 2.0.

Query Response: :SCOPe:nTRace:VPOSition?
2

NOTE
nTRace = Trace A or B

9.4.20 Oscilloscope - XTrace Data Query

:SCOPe:nTRace:XTRAce?

Description: Command returns Scope Trace time data.

Query Data: <data points>,<trace data>

data points (NR1): Query data contains Trace time data at trace points where first element indicates number of data points to follow in data stream.

data (NR2): CH1, CH2, Audio Sources return data point values (NR2)

Demod and Modulator sources return data point values (NR2) in kHz or as a percent

Query Response: :SCOPe:ATRace:XTRAce?

1024,0.000,20.833,41.667,62.500,83.333,104.167,125.000,145.833,166.667,
187.500,208.333,229.167,250.000,270.833,291.667,312.500,333.333,354.167,
375.000,395.833,416.667,437.500,458.333,479.167,500.000,520.833,541.667,
562.500,583.333,604.167,625.000,645.833,666.667,687.500,708.333,729.167,
750.000,770.833,791.667,812.500,833.333,854.167,875.000,895.833,916.667,
937.500,958.333,979.167,1000.000,1020.833,1041.667,1062.500,1083.333,
1104.167,1125.000,1145.833,1166.667,1187.500,1208.333,1229.167,1250.000,
1270.833,1291.667,1312.500,1333.333,1354.167,1375.000,1395.833,1416.667,
1437.500,1458.333,1479.167,1500.000,1520.833,1541.667,1562.500,1583.333,
1604.167,1625.000,1645.833,1666.667,.....

NOTE nTRace = Trace A or B

9.4.21 Oscilloscope - YTrace Data Query

:SCOPe:nTRace:YTRAce?

Description: Command returns Scope Trace vertical data.

Query Data: <data points>,<trace data>

data points (NR1): Trace A Vertical Data trace points where first element indicates then umber of data points to follow in the data stream

data (NR2): CH1, CH2, Audio Sources return data point values (NR2)

Demod and Modulator sources return data point values (NR2) in kHz or as a percent

Query Response: :SCOPe:ATRace:YTRAce?

1024,-0.005000,0.166000,-0.045000,-0.161000,0.071000,0.082000,-0.051000,
0.058000,0.043000,-0.169000,-0.139000,-0.028000,-0.044000,0.076000,
0.186000,0.031000,-0.056000,0.033000,0.007000,-0.090000,-0.099000,
-0.043000,0.090000,0.163000,0.025000,-0.071000,-0.002000,0.000000,
-0.005000,0.091000,0.019000,-0.157000,-0.064000,0.099000,0.029000,
-0.050000,-0.050000,-0.089000,0.017000,0.193000,0.020000,-0.216000,
-0.016000,0.218000,0.079000,-0.074000,-0.067000,-0.057000,0.062000,
0.184000,-0.035000,-0.280000,-0.073000,0.193000,0.048000,-0.140000,
0.001000,0.146000,0.014000,-0.101000,-0.008000,0.044000,-0.002000,
0.070000,0.141000,0.002000,-0.089000,....

NOTE nTRace = Trace A or B

9.5 SPECTRUM ANALYZER

9.5.1 Spectrum Analyzer - Averages

:SA:TRACe:AVERage:VALue
:SA:TRACe:AVERage:VALue?

Description: Set command defines number of readings taken to calculate the Average Spectrum Analyzer trace.
Query command returns parameter setting.

Parameter: 1 to 250

Default Value: 10

Set/Query Format: NR1

Example: :SA:TRACe:AVERage:VALue 25
Sets number of readings taken to calculate the Average Spectrum Analyzer trace to 25.

Query Response: :SA:TRACe:AVERage:VALue?
25

9.5.2 Spectrum Analyzer - Average Trace Between Markers

:SA:MARKer:PAVG?

Description: Command returns average of readings between Mkr1 and Mkr2 data.

Query Format: NR2 (dBm)

Query Response: :SA:MARKer:PAVG?
-41.71

NOTE
Average Trace must be enabled to return valid data.
Marker 1 and Marker 2 must be enabled to return valid data.

9.5.3 Spectrum Analyzer - Average Trace Enable

:SA:TRACe:AVERage:ENABle
:SA:TRACe:AVERage:ENABle?

Description: Set command Enables/Disables Average Spectrum Analyzer trace.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :SA:TRACe:AVERage:ENABle ON
Enables Average Spectrum Analyzer trace.

Query Response: :SA:TRACe:AVERage:ENABle?
1

NOTE
Average trace must be enabled to return valid trace data.

9.5.4 Spectrum Analyzer - Average Trace Query

:SA:TRACe:AVG?

Description: Command returns Average Spectrum Analyzer trace data.

Query Data: Returns 560 data points in form of a data stream

data (NR2): trace data in dB, separated by ","

Query Response: :SA:TRACe:AVG?
-60.0,-60.1,-60.5,-60.5,-60.8,-60.5,-60.3,-60.3,-60.4,-59.6,-59.9,-60.1,-60.4,
-60.7,-60.3,-59.5,-60.8,-60.8,-60.6,-60.2,-59.9,-60.2,-60.2,-60.1,-60.3,-59.8,
-60.8,-60.7,-60.1,-60.1,-60.1,-60.0,-60.8,-60.5,-60.1,-60.0,-60.8,-59.7,-60.5,
-60.7,-61.2,-60.6,-60.2,-60.1,-60.3,-59.7,-60.1,-60.0,-60.8,-60.1,-60.5,-60.1,
-59.7,-60.0,-60.2,-60.3,-60.6,-60.9,-60.0,-60.1,-59.9,-60.3,-60.8,-60.4,-60.9,
-60.9,-60.6,-60.3,-60.4,-60.3,-59.6,-60.6,-60.5,-60.3,-60.4,-60.2,-60.1,-59.8,
-60.9,-60.0,-60.1,-60.2,-60.4,-60.5,-60.5,-60.1,-60.3,-60.1,-60.1,-60.1,-60.5,
-60.3,-60.9,-60.4,-59.8,-60.1,-60.4,-60.3,-60.4,-60.1,-59.6,-60.5,-60.5,-60.3,
-60.5,-60.0,-60.7,-60.1,-59.7,-60.2,-60.1,-60.2,-60.4,-59.8,-59.9,-59.4,-61.4,
-60.1,-60.8,-61.1,-60.4,.....

NOTE Average Trace must be enabled to return valid trace data.

9.5.5 Spectrum Analyzer - Average Trace Status

:SA:TRACe:AVERage:CURRent?

Description: Command returns progress of Average Spectrum Analyzer trace.

Query Data: <statusbyte>

statusbyte (NR1): 0 to 250 when Averaging On
0 when Averaging Off

Query Response: :SA:TRACe:AVERage:CURRent?
25

9.5.6 Spectrum Analyzer - Center Frequency

:SA:HORizontal:FREQuency:CENTer
:SA:HORizontal:FREQuency:CENTer?

Description: Set command defines the Spectrum Analyzer Center Frequency.
Query command returns parameter setting.

Range: 100 kHz to 2.71 GHz within ±2.5 MHz of System Receive Frequency

Units: Hz | kHz | MHz | GHz

Default Value: 150.0 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :SA:HORizontal:FREQuency:CENTer 650MHz
Sets Spectrum Analyzer Center Frequency to 650.0 MHz.

Query Response: :SA:HORizontal:FREQuency:CENTer?
6500000000.0

NOTE Applies to Start-Stop and Center Span mode of operation (SA:MODE SS or CS).

9.5.7 Spectrum Analyzer - Coupling Status

:SA:COUPling:STATus?

Description: Command returns Spectrum Analyzer Coupling setting status.

Query Data: <statusbyte>

statusbyte (NR1): 0 = Valid
1 = Invalid
2 = Uncalibrated configuration

Query Response: :SA:COUPling:STATus?
1

9.5.8 Spectrum Analyzer - Display Sweep Mode

:SA:MODE
:SA:MODE?

Description: Set command displays Spectrum Analyzer (Full) or Channel Analyzer.
Query command returns parameter setting.

Parameter: CHANnel | FULL

Default Value: CHANnel

Set/Query Format: Boolean

Example: :SA:MODE FULL
Displays the Spectrum Analyzer on the Test Set.

Query Response: :SA:MODE?
FULL

NOTE Full Mode must be enabled to return valid trace data.

9.5.9 Spectrum Analyzer - Frequency Span

:SA:HORizontal:FREQuency:SPAN
:SA:HORizontal:FREQuency:SPAN?

Description: Set command defines the Spectrum Analyzer Span.
Query command returns parameter setting.

Range: 2.0 kHz to 5.0 MHz

Units: Hz | kHz | MHz

Default Value: 2.0 MHz

Set/Query Format: NRf | NR1 (Hz)

Example: :SA:HORizontal:FREQuency:SPAN 5MHz
Sets Spectrum Analyzer Frequency Span to 5.0 MHz.

Query Response: :SA:HORizontal:FREQuency:SPAN?
5000000

NOTE Applies to Start-Stop or Center-Span mode of operation (:SA:MODE CS or SS).

9.5.10 Spectrum Analyzer - Live Trace Between Markers

:SA:MARKer:PLIVe?

Description: Command returns average of Live readings between Marker 1 and Marker 2 data.

Query Format: NR2 (dBm)

Query Response: :SA:MARKer:PLIVe?
-41.64

NOTE Marker 1 and Marker 2 must be enabled to return valid data.

9.5.11 Spectrum Analyzer - Live Trace Query

:SA:TRACe:LIVE?

Description: Command returns Live Spectrum Analyzer trace data.

Query Data: Returns 560 data points in form of a data stream.

data (NR2): trace data in dB, separated by ","

Query Response: :SA:TRACe:LIVE?
-61.6,-62.6,-57.7,-63.1,-63.4,-62.3,-59.2,-59.7,-59.1,-61.9,-62.0,-58.5,-59.7,
-60.2,-62.2,-59.3,-61.9,-56.9,-61.7,-61.1,-59.8,-61.1,-60.3,-61.6,-61.4,-61.5,
-58.1,-56.8,-59.2,-60.9,-56.4,-61.5,-57.7,-59.3,-58.2,-60.8,-55.5,-57.4,-61.5,
-59.9,-61.3,-60.4,-61.5,-60.9,-59.3,-62.7,-57.3,-58.7,-60.3,-59.8,-60.3,-60.3,
-61.1,-61.7,-58.8,-57.9,-62.1,-60.1,-62.4,-58.5,-61.1,-62.3,-57.4,-60.7,-61.8,
-62.1,-59.8,-57.6,-60.9,-60.7,-59.1,-60.2,-60.3,-63.2,-60.8,-57.9,-64.4,-59.3,
-61.8,-57.5,-59.9,-61.2,-57.9,-58.9,-59.7,-60.2,-62.8,-60.7,-62.4,-59.5,-60.2,
-61.2,-62.3,-59.9,-60.1,-60.1,-57.1,-59.3,-58.9,-59.9,-60.5,-55.6,-57.3,-59.7,
-58.9,-57.2,-58.1,-59.7,-59.1,-61.7,-61.2,-62.2,-59.0,-58.2,-61.1,-60.2,-60.9,
-62.4,-62.1,-59.1,-62.5,.....

9.5.12 Spectrum Analyzer - Marker Delta Level

:SA:MARKer:DELTa:LEVel?

Description: Command returns Level between Spectrum Analyzer Mkr1 and Mkr2 level values.

Query Data: <statusbyte> <level>

statusbyte (NR1): 1 = Unlocked
2 = Locked

level (NR2): dBm

Query Response: :SA:MARKer:DELTa:LEVel?
2 -57.3

NOTE Marker 1 and Marker 2 must be enabled to return valid data.

9.5.13 Spectrum Analyzer - Marker Delta Position

:SA:MARKer:DELTa:POSition?

Description: Command returns distance between Spectrum Analyzer Marker 1 and Marker 2.

Stop-Start Query: NR1 (Hz)

Center-Span Query: NR1 (Hz)

Zero-Span Query: NR2 (ms)

Query Response: :SA:MARKer:DELTa:POSition?
1.00

NOTE Marker 1 and Marker 2 must be enabled to return valid data.

9.5.14 Spectrum Analyzer - Marker Enable

:SA:MARKer:MKRn:ENABle
:SA:MARKer:MKRn:ENABle?

Description: Set command Enables/Disables Spectrum Analyzer Marker.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :SA:MARKer:MKR2:ENABle ON
Enables Marker 2.

Query Response: :SA:MARKer:MKR2:ENABle?
1

NOTE MKRn = 1 to 8 (Marker 1 through 8)

9.5.15 Spectrum Analyzer - Marker Level

:SA:MARKer:MKRn:LEVel
:SA:MARKer:MKRn:LEVel?

Description: Set command defines position of Marker 7 or 8.
Query command returns marker position for Marker 7 and 8.
Query command returns stalebit and level reading for Marker 1 through 6.

Range: vertical scale, default value of -70.0 to +10.0 dBm

Units: dBm

Default Value: 10.0 dBm

Set/Query Format: NRf | NR2

Mkr 7/8 Query Data: <value>

value (NR2): marker position

Example: :SA:MARKer:MKR8:LEVel -65dBm
Sets Marker 8 at -65.0 dBm on Spectrum Analyzer display.

Query Response: :SA:MARKer:MKR8:LEVel?
-65.0

Mkr 1-6 Query Data: <stalebit> <value>

stalebit (NR1): 0 = update has occurred since last query
1 = no update since last query

value (NR2): level reading

Query Response: :SA:MARKer:MKR6:LEVel?
1 -62.1

NOTE
MKRn = 1 to 8 (Marker 1 through 8)
Set command not valid for Marker 1 through 6.
Query command applies to all markers.

9.5.16 Spectrum Analyzer - Marker Mode of Operation

:SA:MARKer:MODE
:SA:MARKer:MODE?

Description: Set command defines Spectrum Analyzer Marker 1 and 2 mode of operation.
Query command returns parameter setting.

Parameter: UNLOCKed | LOCKed

Default Value: UNLOCK

Set/Query Format: CPD | CRD

Example: :SA:MARKer:MODE LOCKED
Sets Marker 1 and 2 to LOCKED mode.

Query Response: :SA:MARKer:MODE?
LOCK

NOTE
Enable Marker 1 and 2 before sending LOCK command.

9.5.17 Spectrum Analyzer - Marker Move to Highest Peak

:SA:MARKer:MKRn:PEAK

Description: Command moves Spectrum Analyzer Marker to Peak point.

Parameter/Query: none

NOTE

MKRn = 1 or 2 (Marker 1 or 2). Marker must be enabled before command is sent.

Command not valid for Marker 3 through 8.

9.5.18 Spectrum Analyzer - Marker Move Left to Next Peak

:SA:MARKer:MKRn:LEFT

Description: Command moves Spectrum Analyzer Marker Left to next peak.

Parameter/Query: none

NOTE

Marker must be enabled before command is sent.

MKRn = 1 or 2 (Marker 1 or 2)

Command not valid for Marker 3 through 8.

9.5.19 Spectrum Analyzer - Marker Move to Lowest Peak

:SA:MARKer:MKRn:MINimum

Description: Command moves Spectrum Analyzer Marker to minimum point.

Parameter/Query: none

NOTE

Applies to Zero-Span Mode of operation.

MKRn = 1 or 2 (Marker 1 or 2). Marker must be enabled before command is sent.

Command not valid for Marker 3 through 8.

9.5.20 Spectrum Analyzer - Marker Move Right to Next Peak

:SA:MARKer:MKRn:RIGHt

Description: Command moves Spectrum Analyzer Marker right to next peak.

Parameter/Query: none

NOTE

MKRn = 1 or 2 (Marker 1 or 2). Marker must be enabled before command is sent.

Command not valid for Marker 3 through 8.

9.5.21 Spectrum Analyzer - Marker Position

:SA:MARKer:MKRn:POSition
:SA:MARKer:MKRn:POSition?

Description: Set command defines Spectrum Analyzer Marker Position.
Query command returns parameter setting.

9.5.21.A Start-Stop and Center-Span Mode

Range: Between Start and Stop frequencies
Units: Hz | kHz | MHz | GHz
Default Value: 0.0 MHz
Set/Query Format: NRf | NR1 (Hz)
Example: :SA:MARKer:MKR1:POSition 149.9MHz
Sets Marker 1 to 149.9 MHz
Query Response: :SA:MARKer:MKR1:POSition?
149900000

9.5.21.B Zero-Span Mode

Range: Between Zero and Sweep value
Units: ms | s
Default Value: 0.0 ms
Set/Query Format: NRf | NR1 (ms)
Example: :SA:MARKer:MKR1:POSition 75ms
Sets Marker 1 to 75.0 ms.
Query Response: :SA:MARKer:MKR1:POSition?
75000000

NOTE
MKRn = 1 to 6 (Marker 1 through 6)
Command not valid for Marker 7 and 8.

9.5.22 Spectrum Analyzer - Marker Set to Start-Stop Span

:SA:MARKer:SSS

Description: Command sets Marker 1 and Marker 2 to Spectrum Analyzer Start - Stop Span values.
Parameter/Query: none

NOTE
Marker 1 and Marker 2 must be enabled before sending command.
Applies to Start-Stop or Center-Span mode of operation (:SA:MODE SS or CS).

9.5.23 Spectrum Analyzer - Marker Set to Nearest Vertical Range

:SA:MARKer:SVERtical

Description: Command sets Spectrum Analyzer Marker 1 position to (Nearest) Vertical Range.
Parameter/Query: none

NOTE
Marker must be enabled before sending command.
Applies to Zero-Span Mode of operation.

9.5.24 Spectrum Analyzer - Marker Sets Center Frequency

:SA:MARKer:MKRn:SCF

Description: Command sets Center Frequency to Spectrum Analyzer Marker Position.

Parameter/Query: none

NOTE

MKRn = 1 or 2 (Marker 1 or 2). Marker must be enabled before command is sent.

Command not valid for Marker 3 through 8.

9.5.25 Spectrum Analyzer - Marker Sets Reference Level

:SA:MARKer:MKRn:SREF

Description: Command sets Command sets Spectrum Analyzer Ref Level to Marker Position Level.

Parameter/Query: none

NOTE

MKRn = 1 or 2 (Marker 1 or 2). Marker must be enabled before command is sent.

Command not valid for Marker 3 through 8.

9.5.26 Spectrum Analyzer - Occupied Bandwidth Enable

:SA:OBW:ENABle
:SA:OBW:ENABle?

Description: Set command Enables/Disables Spectrum Analyzer Occupied Bandwidth meter.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :SA:OBW:ENABle ON
Enables Spectrum Analyzer Occupied Bandwidth measurement.

Query Response: :SA:OBW:ENABle?
1

9.5.27 Spectrum Analyzer - Occupied Bandwidth Frequency

:SA:OBW:FREQ?

Description: Command returns Spectrum Analyzer OCB Frequency.

Query Format: NRf (Hz)

Query Response: :SA:OBW:FREQ?
8.79

9.5.28 Spectrum Analyzer - Occupied Bandwidth Power

:SA:OBW:POWer?

Description: Command returns Spectrum Analyzer OCB Power measurement.

Query Format: NRf (dBm)

NOTE

Measurement is also referred to as Power Between Markers.

9.5.29 Spectrum Analyzer - Occupied Bandwidth Setting

:SA:OBW:SETting
:SA:OBW:SETting?

Description: Set command defines the Spectrum Analyzer Occupied Bandwidth setting
Query command returns parameter setting.

Range: 1.00 to 99.99%

Default Value: 99.00 %

Set/Query Format: NRf | NR2

Example: :SA:OBW:SETting 75
Sets Spectrum Analyzer Occupied Bandwidth to 75.0 %.

Query Response: :SA:OBW:SETting?
75.00

9.5.30 Spectrum Analyzer - Peak Average Trace Between Markers

:SA:MARKer:PPKAV?

Description: Command returns Average of Peak Average data between Marker 1 and Marker 2.

Query Format: NR2 (dBm)

Query Response: :SA:MARKer:PPKAV?
-42.65

NOTE Peak and Average measurements must be enabled to return valid data.
Marker 1 and Marker 2 must be enabled to return valid data.

9.5.31 Spectrum Analyzer - Peak Average Trace Query

:SA:TRACe:PKAV?

Description: Command returns Average Peak Spectrum Analyzer trace data.

Query Data: Returns 560 data points in form of a data stream

data (NR2): trace data in dB, separated by ","

Query Response: :SA:TRACe:PKAV?
-58.4,-55.6,-57.6,-57.8,-56.9,-57.4,-55.6,-58.3,-56.2,-56.0,-58.3,-56.3,-57.5,
-58.1,-58.9,-56.3,-57.8,-59.4,-56.8,-58.2,-56.9,-56.2,-56.7,-58.6,-58.1,-57.4,
-58.8,-56.7,-56.8,-56.6,-57.1,-57.4,-56.7,-58.9,-56.9,-57.1,-55.7,-58.4,-57.2,
-56.9,-58.5,-57.1,-57.8,-57.9,-58.2,-57.2,-56.3,-58.2,-58.0,-57.0,-58.2,-58.3,
-58.0,-58.2,-57.9,-57.5,-58.3,-58.8,-58.6,-55.8,-58.3,-59.2,-57.7,-57.2,-57.3,
-57.6,-58.3,-58.0,-57.9,-57.6,-56.6,-57.1,-57.4,-56.6,-58.2,-57.1,-57.5,-59.3,
-57.0,-57.4,-57.5,-55.9,-57.3,-58.1,-57.6,-58.0,-58.3,-57.5,-56.1,-58.3,-56.9,
-57.3,-57.3,-57.7,-57.6,-57.6,-57.2,-57.0,-58.7,-58.2,-57.5,-57.4,-57.9,-58.0,
-56.9,-57.6,-56.4,-58.0,-57.3,-57.3,-58.4,-57.2,-56.4,-58.4,-57.2,-57.5,-58.7,
-58.4,-57.9,-58.1,-57.2.....

NOTE Peak and Average traces must be enabled to return valid trace data.

9.5.32 Spectrum Analyzer - Peak Trace Between Markers

:SA:MARKer:PPEAK?

Description: Command returns Average of Peak data between Marker 1 and Marker 2.

Query Format: NR2 (dBm)

Query Response: :SA:MARKer:PPEAK?
-65.84

NOTE Peak measurements must be enabled to return valid measurement data.
Marker 1 and Marker 2 must be enabled to return valid measurement data.

9.5.33 Spectrum Analyzer - Peak Trace Enable

:SA:TRACe:MAXimum
:SA:TRACe:MAXimum?

Description: Set command Enables/Disables Peak Spectrum Analyzer trace.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :SA:TRACe:MAXimum ON
Enables Peak Spectrum Analyzer trace.

Query Response: :SA:TRACe:MAXimum?
1

NOTE Peak Trace must be enabled to return valid trace data.

9.5.34 Spectrum Analyzer - Peak Trace Query

:SA:TRACe:PEAK?

Description: Command returns Peak Spectrum Analyzer trace data.

Query Data: data stream with elements separated by “‘”

Query Format: NR2

Query Response: :SA:TRACer:PEAK?
-58.1,-57.4,-56.4,-58.7,-57.8,-56.2,-57.9,-57.7,-57.3,-57.6,-56.8,-57.3,-58.1,
-57.3,-56.6,-57.4,-57.1,-56.6,-56.3,-57.1,-56.8,-58.0,-57.4,-58.0,-57.1,-57.6,
-57.4,-57.7,-57.6,-57.8,-57.0,-57.3,-57.6,-57.2,-57.2,-55.9,-57.5,-56.6,-56.4,
-55.5,-56.0,-58.2,-56.1,-56.5,-58.3,-57.7,-57.2,-57.5,-56.8,-57.5,-57.7,-54.9,
-57.0,-55.1,-56.5,-55.9,-58.2,-57.4,-56.4,-58.6,-55.8,-57.5,-57.0,-58.4,-57.3,
-56.7,-57.2,-58.3,-58.5,-58.4,-59.0,-57.5,-58.6,-57.2,-57.1,-56.3,-57.6,-56.9,
-57.3,-57.9,-58.1,-57.6,-58.1,-57.2,-58.2,-56.8,-56.9,-57.2,-57.5,-57.3,-57.4,
-56.3,-55.8,-58.4,-56.0,-57.8,-56.8,-58.7,-55.9,-57.7,-58.2,-57.0,-58.3,-58.0,
-57.6,-57.3,-57.5,-57.4,-57.1,-57.7,-56.3,-57.8,-57.5,-57.7,-57.3,-55.3,-58.0,
-57.6,-57.7,-57.3,-56.0,-58.1,-57.9,.....

NOTE Peak trace must be enabled to return valid trace data.

9.5.35 Spectrum Analyzer - Trace Precision

:SA:TRACe:PRECision
:SA:TRACe:PRECision?

Description: Set command defines the precision value of trace readings.
Query command returns parameter setting.
Parameter: 1 | 2
Default Value: 1
Set/Query Format: NR1
Example: :SA:TRACe:PRECision 2
Sets Spectrum Analyzer Precision value to 2.
Query Response: :SA:TRACe:PRECision?
2

NOTE This is a remote only function. Not supported on the user interface.

9.5.36 Spectrum Analyzer - Reference Mode of Operation

:SA:TRACe:REFMode
:SA:TRACe:REFMode?

Description: Set command Enables/Disables Reference mode of operation.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: ON (Auto)
Set/Query Format: Boolean
Example: :SA:TRACe:REFMode OFF
Disables Auto Reference Mode of Operation (sets mode to Manual).
Query Response: :SA:TRACe:REFMode?
0

9.5.37 Spectrum Analyzer - Reference Set

:SA:TRACe:SETReference
:SA:TRACe:SETReference?

Description: Set command sets Generator trace to trace that is active when command is issued.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Default Value: ON (Auto)
Set/Query Format: Boolean
Example: :SA:TRACe:SETReference ON
Sets Reference for Spectrum Analyzer.
Query Response: :SA:TRACe:SETReference?
1

9.5.38 Spectrum Analyzer - Resolution Bandwidth Mode of Operation

:SA:COUPling:RBW:AUTO
:SA:COUPling:RBW:AUTO?

Description: Set command defines the Spectrum Analyzer Resolution Bandwidth mode of operation.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: ON

Set/Query Format: Boolean

Example: :SA:COUPling:RBW:AUTO OFF
Disables Auto Mode of Operation (sets mode to Manual).

Query Response: :SA:COUPling:RBW:AUTO?
0

NOTE
Applies to Start-Stop and Center-Span Horizontal Modes of operation.
OFF indicates Manual Mode; ON indicates Auto Mode.
In Manual Mode, RBW is defined with :SA:COUPling:RBW:VAlue command.

9.5.39 Spectrum Analyzer - Resolution Bandwidth Value

:SA:COUPling:RBW:VALue
:SA:COUPling:RBW:VALue?

Description: Set command defines Spectrum Analyzer Resolution Bandwidth setting when in Manual Mode of operation.
Query command returns parameter setting.

Parameters: H300 | KH3 | KH30 | KH60 | KH 300 | MH6

Default Value: KH30

Set/Query Format: CPD | data string

Zero-Span Data: <statusbyte> always 0 <value>

Start-Stop Data: <statusbyte> <value>

Center-Span Data: <statusbyte> <value>

statusbyte (NR1): 0 = Default value (Auto or Manual Mode)
1 = Other value (Manual Mode)

value (CRD): parameter setting

Example: :SA:COUPling:RBW:VALue KH60
Sets Spectrum Analyzer Resolution Bandwidth to 60 kHz.

Query Response: :SA:COUPling:RBW:VALue?
1 KH60

NOTE
Query only when AUTO is ON (Auto Mode of Operation).
Set commands only valid when AUTO is OFF (Manual Mode of operation).

9.5.40 Spectrum Analyzer - Source

:SA:SOURce
:SA:SOURce?

Description: Set command defines Spectrum Analyzer Source.
Query command returns selected Spectrum Analyzer Source.
Parameter: TR | ANT
Default Value: TR
Set/Query Format: CPD | CRD
Example: :SA:SOURce ANT
Selects ANT Connector as Spectrum Analyzer signal source.
Query Response: :SA:SOURce?
ANT

9.5.41 Spectrum Analyzer - Span Full (Set to Full Span)

:SA:HORizontal:SPAN:FULL

Description: Command sets the Spectrum Analyzer Horizontal span to Full Span.
Parameter/Query: none

NOTE — Applies to Start-Stop or Center-Span mode of operation (:SA:MODE CS or SS).

9.5.42 Spectrum Analyzer - Span Mode of Operation

:SA:HORizontal:MODE
:SA:HORizontal:MODE?

Description: Set command defines Spectrum Analyzer Sweep mode.
Query command returns parameter setting.
Parameter: SS | CS | ZS
where: SS = Start-Stop
CS = Center-Span
ZS = Zero-Span
Default Value: CS
Set/Query Format: CPD | CRD
Example: :SA:HORizontal:MODE ZS
Sets Spectrum Analyzer Span Mode to Zero-Span.
Query Response: :SA:HORizontal:MODE?
ZS

NOTE — Correct Mode of Operation must be selected to define other Spectrum Analyzer parameters such as Start and Stop Frequencies and Span settings.

9.5.43 Spectrum Analyzer - Start Frequency

:SA:HORizontal:FREQuency:STARt
:SA:HORizontal:FREQuency:STARt?

Description: Set command defines the Spectrum Analyzer Start Frequency.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz within ±2.5 MHz of System Receive Frequency

Units: Hz | kHz | MHz | GHz

Default Value: 150.0 MHz

Set/Query Format: NRf | NR1 (Hz)

Example: :SA:HORizontal:FREQuency:STARt 147.5MHz
Sets Spectrum Analyzer Start frequency to 147.5 MHz.

Query Response: :SA:HORizontal:FREQuency:STARt?
147500000

NOTE Applies to Start-Stop and Center Span mode of operation (SA:MODE SS or CS).

9.5.44 Spectrum Analyzer - Stop Frequency

:SA:HORizontal:FREQuency:STOP
:SA:HORizontal:FREQuency:STOP?

Description: Set command defines the Stop Frequency of Spectrum Analyzer.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz within ±2.5 MHz of System Receive Frequency

Units: Hz | kHz | MHz | GHz

Default Value: 150.0 MHz

Set/Query Format: NRf | NR2 (Hz)

Example: :SA:HORizontal:FREQuency:STOP 152.5MHz
Sets Spectrum Analyzer Stop frequency to 152.5 MHz.

Query Response: :SA:HORizontal:FREQuency:STOP?
152500000

NOTE Applies to Start-Stop and Center Span mode of operation (SA:MODE SS or CS).

9.5.45 Spectrum Analyzer - Sweep Time Mode of Operation

:SA:COUPling:SWEep:AUTO
:SA:COUPling:SWEep:AUTO?

Description: Set command defines the Spectrum Analyzer Sweep Time mode of operation.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: ON (Auto)

Set/Query Format: Boolean

Example: :SA:COUPling:SWEep:AUTO OFF
Disables Auto Mode of Operation (sets mode to Manual).

Query Response: :SA:COUPling:SWEep:AUTO?
0

NOTE
Applies to Start-Stop and Center-Span Horizontal Modes of operation.
OFF indicates Manual Mode; ON indicates Auto Mode.
In Manual Mode, Sweep Time is defined with :SA:COUPling:SWEep:VAlue command.

9.5.46 Spectrum Analyzer - Sweep Time Trace Status

:SA:COUPling:SWEep:COMPlete?

Description: Command returns completion status of the Spectrum Analyzer Trace.

Query Data: <statusbyte>

statusbyte (NR1): 0 = Trace Incomplete
1 = Trace Complete

Query Response: :SA:COUPling:SWEep:COMPlete?
0

9.5.47 Spectrum Analyzer - Sweep Time Value

:SA:COUPling:SWEep:VALue
:SA:COUPling:SWEep:VALue?

Description: Set command defines the Spectrum Analyzer Sweep Time Setting.
Query command returns parameter setting.

Parameters: 50 ms | 100 ms | 200 ms | 500 ms | 1 s | 2 s | 5 s | 10 s | 20 s | 50 s | 100 s

Units: ms | s

Default Value: 100 ms

Set/Query Format: NRf | NR1 (ms)

Query Data: <statusbyte> <value>

statusbyte (NR1): 0 = Default value (Auto or Manual Mode)
1 = Other value (Manual Mode)

value (NR1): ms

Example: :SA:COUPling:SWEep:VALue 100ms
Sets Sweep Time to 100 ms.

Query Response: :SA:COUPling:SWEep:VALue?
0 100

NOTE
Applies to Start-Stop and Center-Span Horizontal Modes of operation.
Auto Coupling must be set to ON for query to return valid data.
Set command only valid when Auto Coupling is OFF (Manual Mode).

9.5.48 Spectrum Analyzer - Start Continuous Sweep

:INITiate:CONTinuous:SA
:INITiate:CONTinuous:SA?

Description: Set command Starts continuous Spectrum Analyzer Sweep.
Query command returns parameter setting.
Parameter: OFF | ON | 0 | 1
Set/Query Format: Boolean
Default Value: ON
Example: :INITiate:CONTinuous:SA ON
Enables Continuous Spectrum Analyzer sweeps.
Query Response: :INITiate:CONTinuous:SA?
1

9.5.49 Spectrum Analyzer - Start Single Sweep

:INITiate:IMMediate:SA

Description: Command acquires single Spectrum Analyzer Sweep.
Parameter/Query: none

9.5.50 Spectrum Analyzer - Stop Sweeps

:ABORt:SA

Description: Command stops Spectrum Analyzer Sweeps.
Parameter/Query: none

9.5.51 Spectrum Analyzer - Trace Precision

:SA:TRACe:PRECision
:SA:TRACe:PRECision?

Description: Set command defines the precision value of trace readings.
Query command returns parameter setting.
Parameter: 1 | 2
Default Value: 1
Set/Query Format: NR1
Example: :SA:TRACe:PRECision 2
Sets Spectrum Analyzer Precision value to 2.
Query Response: :SA:TRACe:PRECision?
2

NOTE This is a remote only function. Not supported on the user interface.

9.5.52 Spectrum Analyzer - Trace - Capture a Trace

:SA:TRACe:CAPture

Description: Sending command captures displayed trace.

NOTE

Traces are captured in the following priority: Peak, Average, Live.

- Peak Trace: Enable Peak Trace.
- Average Trace: Enable Average Trace; Peak Trace must be OFF.
- Live Trace: Average and Peak Trace must be OFF.

9.5.53 Spectrum Analyzer - Trace - Clears a Captured Trace

:SA:TRACe:CLEar

Description: Sending command clears captured trace and resumes sweep mode.

9.5.54 Spectrum Analyzer - Trace - Recall a Stored Trace

:SA:TRACe:RECALL “filename”

Description: Command recalls a stored signal trace.

NOTE

Beginning and ending quotation marks are required.
Do not include file extension in filename.

9.5.55 Spectrum Analyzer - Trace - Store Trace

:SA:TRACe:STORe “filename”

Description: Command stores signal trace data.

Parameter: “filename”

Set Format: ascii string, max 251 characters

NOTE

Saves file to Test Set’s internal database (Spectrum Anlz Traces:// directory).
Beginning and ending quotation marks are required.
Do not include file extension in filename (system saves as .csv file).
Test Set does not process any commands following this one until file is stored.
If more than one type of trace is enabled the traces are stored in the following priority: Peak, Average, Live.

9.5.56 Spectrum Analyzer - Trigger Mode

:SA:TRIGger:MODE
:SA:TRIGger:MODE?

Description: Set command selects Spectrum Analyzer Trigger Mode.
Query command returns parameter setting.

Parameter: FRUN

Default Value: FRUN

Set/Query Format: CPD | CRD

Example: :SA:TRIGger:MODE FRUN
Sets Trigger Mode to Free Run.

Query Response: :SA:TRIGger:MODE?
FRUN

9.5.57 Spectrum Analyzer - Vertical/div

:SA:VERTical:VDIV
:SA:VERTical:VDIV?

Description: Set command defines the Spectrum Analyzer Vertical/div setting.
Query command returns parameter setting.

Parameter: 1 | 2 | 5 | 10

Default Value: 10

Set/Query Format: NR1

Example: :SA:VERTical:VDIV 5
Sets Spectrum Analyzer vertical scale to 5 dB/div.

Query Response: :SA:VERTical:VDIV?
5

9.5.58 Spectrum Analyzer - Vertical Level

:SA:VERTical:LEVel
:SA:VERTical:LEVel?

Description: Set command defines the Reference Level for the Spectrum Analyzer.
Query command returns parameter setting.

Range: **T/R:** -60.0 to +60.0 dBm
ANT: -100.0 to +10.0 dBm

Default Value: 10.0 dBm

Set/Query Format: NRf | NR2

Example: :SA:VERTical:LEVel -20dBm
Sets Spectrum Analyzer Reference Level to -20.0 dBm.

Query Response: :SA:VERTical:LEVel?
-20.00

9.5.59 Spectrum Analyzer - Video Bandwidth Mode of Operation

:SA:COUPling:VBW:AUTO
:SA:COUPling:VBW:AUTO?

Description: Set command selects the Spectrum Analyzer Video Bandwidth mode of operation.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: ON (Auto)

Set/Query Format: Boolean

Example: :SA:COUPling:VBW:AUTO OFF
Disables VBW Auto mode (sets mode to Manual).

Query Response: :SA:COUPling:VBW:AUTO?
0

NOTE

Applies to selected Horizontal Mode of operation.
OFF indicates Manual Mode; ON indicates Auto Mode.
In Manual Mode, VBW is defined with :SA:COUPling:VBW:VAlue command.

9.5.60 Spectrum Analyzer - Video Bandwidth Value

:SA:COUPling:VBW:VALue
:SA:COUPling:VBW:VALue?

Description: Set command defines Spectrum Analyzer Video Bandwidth.
Query command returns parameter setting.

Parameters: H10 | H30 | H100 | H300 | KH1 | KH3 | KH10 | KH30 | KH100 | KH300 | MH1 | MH3 | NONE

Default Value: KH30

Set/Query Format: CPD | string data

Query Data: <statusbyte> <value>

statusbyte (NR1): 0 = Default value (Auto or Manual Mode)
1 = Other value (Manual Mode)

value (CRD): parameter setting

Example: :SA:COUPling:VBW:VALue KH100
Sets RBW to 100 kHz.

Query Response: :SA:COUPling:VBW:VALue?
1 KH100

NOTE
Query only when AUTO is ON (Auto Mode of Operation).
Set commands only valid when AUTO is OFF (Manual Mode of operation).

9.5.61 Spectrum Analyzer - Zero Span Center Frequency

:SA:HORizontal:ZERO:CENTer
:SA:HORizontal:ZERO:CENTer?

Description: Set command defines Spectrum Analyzer Zero-Span Center Frequency.
Query command returns parameter setting.

Range: 100.0 kHz to 2.71 GHz within ±2.5 MHz of System Receive Frequency

Units: Hz | kHz | MHz | GHz

Default Value: 150.0 MHz

Set/Query Format: NRf | NR1 (Hz)

Example: :SA:HORizontal:ZERO:CENTer 150MHz
Sets Spectrum Analyzer Center frequency to 150.0 MHz.

Query Response: :SA:HORizontal:ZERO:CENTer?
150000000

NOTE
Applies to Zero-Span mode of operation (SA:MODE ZS).

9.5.62 Spectrum Analyzer - Zero Span Sweep Time

:SA:HORizontal:ZERO:SWEep
:SA:HORizontal:ZERO:SWEep?

Description: Set command defines Spectrum Analyzer Zero-Span Sweep Time when in Manual mode of operation.
Query command returns parameter setting.

Range: 50 ms to 100 s

Units: ms | s

Default Value: 100 ms

Set/Query Format: NRf | NR1 (ms)

Example: :SA:HORizontal:ZERO:SWEep 100ms
Sets Sweep Time value for Zero-Span Mode of operation.

Query Response: :SA:HORizontal:ZERO:SWEep?
100

NOTE Sweep Time must be in Manual mode of operation for command to be valid.
Applies to Zero-Span mode of operation (SA:MODE ZS).

9.5.63 Tracking Generator - Enable

:SA:TRKGen:ENABle
:SA:TRKGen:ENABle?

Description: Set command Enables/Disables Tracking Generator on Spectrum Analyzer.
Query command returns parameter setting.

Parameter: OFF | ON | 0 | 1

Default Value: OFF

Set/Query Format: Boolean

Example: :SA:TRKGen:ENABle ON
Enables Tracking Generator.

Query Response: :SA:TRKGen:ENABle?
1

NOTE Command only valid when Tracking Generator Option is installed in Test Set.

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Chapter 10 - 3900 Series Compatibility Commands

10.1 INTRODUCTION

This chapter describes 3900 Series Compatibility Commands developed by Aeroflex to support commands utilized by other service monitors being used in the industry. The Detailed Remote Command listings include parameter inputs and responses. The commands in each of these listings are arranged alphabetically within the hierarchy.

NOTE	Optional test systems which support Compatibility Commands only support commands and command parameters supported in the optional system. For example, P25 Test Systems would not support AM Measurement commands because the system does not support AM functionality.

10.2 FORMAT

The following variables are included in 3900 Compatibility Command structure:

10.2.1 (_)

Indicates a space is to be included in the command string.

For example, :AFGenerator1:AM:STATe(_), followed by defined parameter would appear as :AFGenerator1:AM:STATe ON.

10.2.2 'p'

'p´ is used to represent a user defined parameter.

For example, :AFGenerator1:DESTination(_)'p' would appear as :AFGenerator1:DESTination 'AM'.

10.2.3 'u'

'u´ is used to represent a user defined unit of measure.

For example, :OSCilloscope:SCALe:VERTical:OFFset(_)p(_)u would appear as :OSCilloscope:SCALe:VERTical:OFFset 1(_)dB.

10.2.4 PCT

PCT is used to indicate a measurement which is displayed as a percent (%).

10.2.5 Command Place Holder. No Op.

Command Place Holder. No Op. indicates a non-operational command. Commands with this designation are intended to serve as "place holders" in existing command scripts. Non-operational commands must be configured with required parameter(s) to maintain script integrity. Query commands that are non-operational do not return valid information.

10.2.6 AF Generator Commands

AF Generator Commands must adhere to the following guidelines:

- Define Destination first, then Modulation if AM or FM is the defined Destination, followed by the modulation rate or audio output frequency.
- Increment value must follow the numeric field to which it applies: e.g., :AFGenerator2:FREQuency:INCRement 10.
- INCRement value must be defined prior to INCRement UP or DOWN command.

10.3 CONFIGURE COMMANDS

10.3.1 Antenna Input Offset Level

:CONFigure:OFLevel:ANTenna(_)p(_)u
:CONFigure:OFLevel:ANTenna?

Description: Sets Offset Level value for Antenna in dB.
Returns parameter setting in dB.

Parameter: p = Level value in dB
u = DB

Example: :CONFigure:OFLevel:ANTenna -35 DB

Query Response: :CONFigure:OFLevel:ANTenna?
-3.500000E+01

:CONFigure:OFLevel:ANTenna:DUNits(_)u
:CONFigure:OFLevel:ANTenna:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:CONFigure:OFLevel:ANTenna:INCRement(_)p
:CONFigure:OFLevel:ANTenna:INCRement?

Description: Sets Increment value in dB.
Returns parameter setting in dB.

Example: :CONFigure:OFLevel:ANTenna:INCRement 1

Query Response: :CONFigure:OFLevel:ANTenna:INCRement?
+1.000000E+00

:CONFigure:OFLevel:ANTenna:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:CONFigure:OFLevel:ANTenna:INCRement(_)UP

Description: Increases Offset Level by value defined in :INCRement(_)p command.

Parameter/Query: none

:CONFigure:OFLevel:ANTenna:INCRement(_)DOWN

Description: Decreases Offset Level by value defined in :INCRement(_)p command.

Parameter/Query: none

:CONFigure:OFLevel:ANTenna:INCRement:DUNits?
:CONFigure:OFLevel:ANTenna:INCRement:DUNits(_)u

Description: Command Place Holder. No Op.

Parameter: u = DB

:CONFigure:OFLevel:ANTenna:INCRement:MODE(_)p
:CONFigure:OFLevel:ANTenna:INCRement:MODE?

Description: Set command defines Increment Mode of operation.
Returns parameter setting.
Parameter: LINear | LOGarithm
Example: :CONFigure:OFLevel:ANTenna:INCRement:MODE LOGarithm
Query Response: :CONFigure:OFLevel:ANTenna:INCRement:MODE?
LOG

:CONFigure:OFLevel:ANTenna:INCRement:MULTiply

Description: Set command Multiplies Increment value by 10.
Parameter/Query: none

:CONFigure:OFLevel:ANTenna:UNITs(_)u
:CONFigure:OFLevel:ANTenna:UNITs?

Description: Set command defines Offset Level units as dB.
Returns parameter setting.
Parameter: u = DB

10.3.2 Beeper

:CONFigure:BEEPer(_)'p'
:CONFigure:BEEPer?

Description: Command Place Holder. No Op.
Parameter: OFF | QUIET | LOUD

:CONFigure:BMODe(_)'p'
:CONFigure:BMODe?

Description: Command Place Holder. No Op.
Parameter: TALK&LSTN

10.3.3 Date

:CONFigure:DATE
:CONFigure:DATE?

Description: Command Place Holder. No Op.
Parameter: MMDDYYYY (Month Day Year)

10.3.4 Display Intensity

:CONFigure:INTensity(_)p
:CONFigure:INTensity?

Description: Set command defines Screen Intensity level.
Returns parameter setting.
Parameter: p = 1 to 8 where 1 = Dim... and 8 = Bright
Example: :CONFigure:INTensity 7
Query Response: :CONFigure:INTensity?
7.0

:CONFigure:INTensity:INCRement?

Description: Returns parameter setting. Always 1.

:CONFigure:INTensity:INCRement(_)UP

Description: Increases Intensity setting by default increment value (1).

Parameter/Query: none

:CONFigure:INTensity:INCRement(_)DOWN

Description: Decreases Intensity setting by default increment value (1).

Parameter/Query: none

10.3.5 Display Switch

:CONFigure:ARTSwitching(_)'p'
:CONFigure:ARTSwitching?

Description: Command Place Holder. No Op.

Parameter: AUTO | Manual

10.3.6 Duplex (T/R) Offset Level

:CONFigure:OFLevel:DUPLex(_)p(_)u
:CONFigure:OFLevel :DUPLex?

Description: Sets Duplex Offset Level in dB.
Returns parameter setting.

Parameter: p = Level value in dB
u = DB

Example: :CONFigure:OFLevel:DUPLex 10 DB

Query Response: :CONFigure:OFLevel:DUPLex?
+1.000000E+01

:CONFigure:OFLevel:DUPLex:DUNits(_)u
:CONFigure:OFLevel:DUPLex:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:CONFigure:OFLevel:DUPLex:INCRement(_)p
:CONFigure:OFLevel:DUPLex:INCRement?

Description: Sets Increment value in dB.
Returns parameter setting.

Parameter: p = Increment value in dB

Example: :CONFigure:OFLevel:DUPLex:INCRement 2

Query Response: :CONFigure:OFLevel:DUPLex:INCRement?
+2.000000E+00

:CONFigure:OFLevel:DUPLex:INCRement(_)UP

Description: Increases Offset Level by value defined in :INCRement(_)p command.

Parameter/Query: none

:CONFigure:OFLevel:DUPLex:INCRement(_)DOWN

Description: Decreases Offset Level by value defined in :INCRement(_)p command.

Parameter/Query: none

:CONFigure:OFLevel:DUPLex:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:CONFigure:OFLevel:DUPLex:INCRement:DUNits(_)u
:CONFigure:OFLevel:DUPLex:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:CONFigure:OFLevel:DUPLex:INCRement:MODE(_)p
:CONFigure:OFLevel:DUPLex:INCRement:MODE?

Description: Defines Increment Mode.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :CONFigure:OFLevel:DUPLex:INCRement:MODE LOGarithm

Query Response: :CONFigure:OFLevel:DUPLex:INCRement:MODE?
LOG

:CONFigure:OFLevel:DUPLex:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:CONFigure:OFLevel:DUPLex:UNITs(_)DB
:CONFigure:OFLevel:DUPLex:UNITs?

Description: Sets Offset Level units in dB.
Returns parameter setting.

Parameter: DB

10.3.7 Offset Level Mode

:CONFigure:OFLevel:MODE(_)'p'
:CONFigure:OFLevel:MODE?

Description: Enables/Disables Offset Frequency Level.
Returns parameter setting.

Parameter: OFF | ON

Example: :CONFigure:OFLevel:MODE 'ON'

Query Response: :CONFigure:OFLevel:MODE?
"ON"

10.3.8 External Disk

:CONFigure:EDISk(_)p
:CONFigure:EDISk?

Description: Command Place Holder. No Op.
Parameter: p = average value

10.3.9 GPIB Address

:CONFigure:BADDress(_)p
:CONFigure:BADDress?

Description: Sets GPIB address of Test Set.
Returns parameter setting.
Parameter: 1 to 30
Example: :CONFigure:BADDress 5
Query Response: :CONFigure:BADDress?
5.0

:CONFigure:BADDress:INCRement?

Description: Returns parameter setting. Always 1.
Query Response: 1

:CONFigure:BADDress:INCRement(_)UP

Description: Increases Address setting by default increment value (1).
Parameter/Query: none

:CONFigure:BADDress:INCRement(_)DOWN

Description: Decreases Address setting by default increment value (1).
Parameter/Query: none

10.3.10 Notch Coupling Mode of Operation

:CONFigure:NOTChmode(_)'p'
:CONFigure:NOTChmode?

Description: Set command defines Notch Coupling mode of operation.
Returns parameter setting.
Parameter: AFGEN1 (Always AFGEN1)

10.3.11 Offset Frequency

:CONFigure:OFRequency(_)p(_)u
:CONFigure:OFRequency?

Description: Set command defines Offset Frequency in Hz, kHz or MHz.
Returns parameter setting in Hz.
Parameter: p = Frequency value in MHz
u = HZ | KHZ | MHZ
Example: :CONFigure:OFRequency 5 HZ
Query Response: :CONFigure:OFRequency?
+5.000000E+00

:CONFigure:OFRequency:DUNits(_)u
:CONFigure:OFRequency:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = MHZ

:CONFigure:OFRequency:UNITs(_)u
:CONFigure:OFRequency:UNITs?

Description: Set command defines Offset Frequency unit of measure as Hz.
Returns parameter setting.
Parameter: u = HZ

10.3.12 Offset Level RF Input

:CONFigure:OFLevel:RFINout(_)p(_)u
:CONFigure:OFLevel:RFINout?

Description: Sets Offset Level for RF In/Out.
Returns parameter setting in dB.
Parameter: p = Level value in dB
u = DB
Example: :CONFigure:OFLevel:RFINout 5 DB
Query Response: :CONFigure:OFLevel:RFINout?
+5.000000E+00

:CONFigure:OFLevel:RFINout:DUNits(_)
:CONFigure:OFLevel:RFINout:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = DB

:CONFigure:OFLevel:RFINout:INCRement(_)p
:CONFigure:OFLevel:RFINout:INCRement?

Description: Set command defines Increment value in dB.
Returns parameter setting in dB.
Parameter: p = Increment value in dB.
Example: :CONFigure:OFLevel:RFINout:INCRement 2 DB
Query Response: :CONFigure:OFLevel:RFINout:INCRement?
+2.000000E+00

:CONFigure:OFLevel:RFINout:INCRement(_)UP

Description: Increases Offset Level by value defined in :INCRement(_)p command.
Parameter/Query: none

:CONFigure:OFLevel:RFINout:INCRement(_)DOWN

Description: Decreases Offset Level by value defined in :INCRement(_)p command.
Parameter/Query: none

:CONFigure:OFLevel:RFINout:INCRement:DIVide

Description: Divides Increment value by 10.
Parameter/Query: none

:CONFigure:OFLevel:RFINout:INCRement:DUNits(_)u
:CONFigure:OFLevel:RFINout:INCRement:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = DB

:CONFigure:OFLevel:RFINout:INCRement:MODE(_)p
:CONFigure:OFLevel:RFINout:INCRement:MODE?

Description: Set command defines Increment Mode of operation.
Returns parameter setting.
Parameter: LINear | LOGarithm
Example: :CONFigure:OFLevel:RFINout:INCRement:MODE LOGarithm
Query Response: :CONFigure:OFLevel:RFINout:INCRement:MODE?
LOG

:CONFigure:OFLevel:RFINout:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:CONFigure:OFLevel:RFINout:UNITs(_)u
:CONFigure:OFLevel:RFINout:UNITs?

Description: Set command defines Offset Level units as dB.
Returns parameter setting.
Parameter: u = DB

10.3.13 Offset Mode of Operation

:CONFigure:OMODe(_)'p'
:CONFigure:OMODe?

Description: Set command Enables/Disables defined Offset Frequency.
Returns parameter setting.
Parameter: OFF | ON
Example: :CONFigure:OMODe ‘ON’
Query Reponse: :CONFigure:OMODe?
“ON”

:CONFigure:OPERation:AUTO

Description: Command Place Holder. No Op.

Parameter/Query: none

:CONFigure:OPERation:HOLD

Description: Command Place Holder. No Op.

Parameter/Query: none

10.3.14 Printer

:CONFigure:PDOWn(_)'p'
:CONFigure:PDOWn?

Description: Command Place Holder. No Op.

Parameter: 1(_)min | 2(_)min | 5(_)min | 10(_)min | Disable

:CONFigure:PRINt:ADDRess(_)p
:CONFigure:PRINt:ADDRess?

Description: Command Place Holder. No Op.

Parameter: p is print address

:CONFigure:PRINt:ADDRess:INCRement?

Description: Command Place Holder. No Op.

Parameter/Query: none

:CONFigure:PRINt:ADDRess:INCRement(_)UP

Description: Command Place Holder. No Op.

Parameter/Query: none

:CONFigure:PRINt:ADDRess:INCRement(_)DOWN

Description: Command Place Holder. No Op.

Parameter/Query: none

:CONFigure:PRINt:DESTination(_)'p'
:CONFigure:PRINt:DESTination?

Description: Command Place Holder. No Op.

Parameter: Serial | HPIN | Parallel

:CONFigure:PRINt:FFEnd(_)'p'
:CONFigure:PRINt:FFEnd?

Description: Command Place Holder. No Op.

Parameter: YES | NO

:CONFigure:PRINt:FFSTart(_)'p'
:CONFigure:PRINt:FFSTart?

Description: Command Place Holder. No Op.

Parameter: YES | NO

:CONFigure:PRINt:HPModel(_)'p'
:CONFigure:PRINt:HPMOdel(_)'p'
:CONFigure:PRINt:HPModel?
:CONFigure:PRINt:HPMOdel?

Description: Command Place Holder. No Op.

Parameter: DeskJet | Epson(_)FX-80 | Epson(_)LQ-850 | LaserJet | QuietJet | PaintJet | ThinkJet

:CONFigure:PRINt:LINes(_)p
:CONFigure:PRINt:LINEs(_)p
:CONFigure:PRINt:LINes?
:CONFigure:PRINt:LINEs?

Description: Command Place Holder. No Op.

Parameter: p = number of lines

:CONFigure:PRINt:LINes:INCREment(_)p
:CONFigure:PRINt:LINES:INCREment(_)p
:CONFigure:PRINt:LINes:INCREment?
:CONFigure:PRINt:LINEs:INCREment?

Description: Command Place Holder. No Op.

Parameter: p = average value

:CONFigure:PRINt:LINes:INCRement(_)UP
:CONFigure:PRINt:LINEs:INCRement(_)UP

Description: Command Place Holder. No Op.

Parameter/Query: none

:CONFigure:PRINt:LINes:INCRement(_)DOWN
:CONFigure:PRINt:LINEs:INCRement(_)DOWN

Description: Command Place Holder. No Op.

Parameter/Query: none

:CONFigure:PRINt:PRINter(_)'p'
:CONFigure:PRINt:PRINter?

Description: Command Place Holder. No Op.

Parameter: DeskJet | Epson(_)FX-80 | Epson(_)LQ-850 | LaserJet | QuietJet | PaintJet | ThinkJet

:CONFigure:PRINt:TITLe(_)'pppppppp'
:CONFigure:PRINt:TITLe?

Description: Command Place Holder. No Op.

Parameter: max of 50 characters

:CONFigure:RFIMpedance(_)'p'
:CONFigure:RFIMpedance?

Description: Command Place Holder. No Op.

Parameter: 50(_)OHM | EMF

:CONFigure:RTSWitching(_)'p'
:CONFigure:RTSWitching?

Description: Command Place Holder. No Op.

Parameter: Carrier | PTT

10.3.15 Rotary Control Knob

:CONFigure:KNOB(_)'ON'
:CONFigure:KNOB?

Description: Command Place Holder. No Op.

Parameter: ON

10.4 AF ANALYZER COMMANDS

NOTE To reset measurement on Detector HOLD commands send :MEAS:RESet or :SELect detector.

:AFANalyzer:AIN(_)'p'
:AFANalyzer:AIN?

Description: Set command selects AF Analyzer Input.
Returns parameter setting.

Parameter: GND = Ground (Audio 1)
FLOAT = Hi Z (Audio 2)
600(_)To(_)Hi = 600 Balanced

Example: :AFANalyzer:AIN 'FLOAT'

Query Response: :AFANalyzer:AIN?
"FLOAT"

:AFANalyzer:DEMPhasis(_)'p'
:AFANalyzer:DEMPhasis?

Description: Command Place Holder. No Op.

Parameter: 750µs = Enable
OFF = Disables

:AFANalyzer:DEMPhasis:GAIN(_)'p'
:AFANalyzer:DEMPhasis:GAIN?

Description: Command Place Holder. No Op.

Parameter: 0(_)DB | 10(_)DB | 20(_)DB | 30(_)DB

:AFANalyzer:DETector(_)'p'
:AFANalyzer:DETector?

Description: Set command selects Detector types when measuring and displaying AF signal levels.
Returns parameter setting.

Parameter: RMS | RMS*SQRT2 | PK+ | PK- | PK+-/2 | PK+-MAX | PK+(_)HOLD | PK-(_)HOLD | PK+-/2(_)HD | PK+-MX(_)HD

Example: :AFANalyzer:DETector 'PK-'

Query Response: :AFANalyzer:DETector?
"PK-"

NOTE Applies to :MEAS:AFR:AM, :MEAS:AFR:FM, and :MEAS:AFR:ACLevel meters.

:AFANalyzer:DETector:PKLocation(_)'Filters'
:AFANalyzer:DETector:PKLocation?

Description: Command Place Holder. No Op.

Parameter: Filters | De-emp

:AFANalyzer:DETector:SETTling?
:AFANalyzer:DETector:SETTling(_)'p'

Description: Command Place Holder. No Op.
Parameter: FAST | SLOW

:AFANalyzer:ELResistor?
:AFANalyzer:ELResistor(_)p(_)u

Description: Command Place Holder. No Op.
Parameter: p = value
u = OHMS

:AFANalyzer:ELResistor:DUNits?
:AFANalyzer:ELResistor:DUNits(_)u

Description: Command Place Holder. No Op.
Parameter: u = OHM

:AFANalyzer:ELResistor:INCRement(_)p(_)u
:AFANalyzer:ELResistor:INCRement?

Description: Command Place Holder. No Op.
Parameter: p = a value
u = OHMS

:AFANalyzer:ELResistor:INCRement(_)UP

Description: Command Place Holder. No Op.
Parameter/Query: none

:AFANalyzer:ELResistor:INCRement(_)DOWN

Description: Command Place Holder. No Op.
Parameter/Query: none

:AFANalyzer:ELResistor:INCRement:DIVide

Description: Command Place Holder. No Op.
Parameter/Query: none

:AFANalyzer:ELResistor:INCRement:DUNits?
:AFANalyzer:ELResistor:INCRement:DUNits(_)u

Description: Command Place Holder. No Op.
Parameter: u = OHMS

:AFANalyzer:ELResistor:INCRement:MODE?
:AFANalyzer:ELResistor:INCRement:MODE(_)p

Description: Command Place Holder. No Op.
Parameter: LINear | LOGarithm

:AFANalyzer:ELResistor:INCRement:MULTiply

Description: Command Place Holder. No Op.

Parameter/Query: none

:AFANalyzer:ELResistor:UNITs(_)u
:AFANalyzer:ELResistor:UNITs?

Description: Command Place Holder. No Op.

Parameter: u = OHMS

:AFANalyzer:FILTer1(_)'p'
:AFANalyzer:FILTer1?

Description: Set command selects AF Analyzer Filter.
Returns parameter setting.

Parameter: <20Hz(_)HPF | 50Hz(_)HPF | 300Hz(_)HPF | PSOPh | Optional Filters

Example: :AFANalyzer:FILTer1 '50HZ HPF'

Query Response: :AFANalyzer:FILTer1?
"50HZ HPF"

:AFANalyzer:FILTer2(_)'p'
:AFANalyzer:FILTer2?

Description: Set command selects AF Analyzer Filter.
Returns parameter setting.

Parameter: 300Hz(_)LPF | 3kHz(_)LPF | 15kHz(_)LPF | >99kHz(_)LP | Optional(_)Filters

Example: :AFANalyzer:FILTer2 300Hz'

Query Response: :AFANalyzer:FILTer2?
"3000HZ"

:AFANalyzer:GTIMe?
:AFANalyzer:GTIMe(_)p(_)u

Description: Command Place Holder. No Op.

Parameter: p = value
u = MS

:AFANalyzer:GTIMe:DUNits?
:AFANalyzer:GTIMe:DUNits(_)u

Description: Command Place Holder. No Op.

Parameter: u = MS

:AFANalyzer:GTIMe:INCRement(_)p(_)u
:AFANalyzer:GTIMe:INCRement?

Description: Command Place Holder. No Op.

Parameter: p = value
u = MS

:AFANalyzer:GTIMe:INCRement UP

Description: Command Place Holder. No Op.
Parameter/Query: none

:AFANalyzer:GTIMe:INCRement DOWN

Description: Command Place Holder. No Op.
Parameter/Query: none

:AFANalyzer:GTIMe:INCRement:DIVide

Description: Command Place Holder. No Op.
Parameter/Query: none

:AFANalyzer:GTIMe:INCRement:DUNits?
:AFANalyzer:GTIMe:INCRement:DUNits(_)u

Description: Command Place Holder. No Op.
Parameter: u = MS

:AFANalyzer:GTIMe:INCRement:MODE(_)p
:AFANalyzer:GTIMe:INCRement:MODE?

Description: Command Place Holder. No Op.
Parameter: LINear | LOGarithm

:AFANalyzer:GTIMe:INCRement:MULTiply

Description: Command Place Holder. No Op.
Parameter/Query: none

:AFANalyzer:GTIMe:UNITs(_)u
:AFANalyzer:GTIMe:UNITs?

Description: Command Place Holder. No Op.
Parameter: u = S

:AFANalyzer:INPut(_)'p'
:AFANalyzer:INPut?

Description: Sets AF Analyzer Input source.
Returns parameter setting.
Parameter: FM(_)DEMOD | AM(_)DEMOD | SSB(_)DEMOD | AUDIO(_)IN
Example: :AFANalyzer:INPut 'FM Demod”
Query Response: :AFANalyzer:INPut?
“FM DEMOD”

:AFANalyzer:INPut:GAIN(_)'p'
:AFANalyzer:INPut:GAIN?

Description: Command Place Holder. No Op.
Parameter: 0(_)DB | 20(_)DB | 40(_)DB

10.5 RF ANALYZER COMMANDS

:RFANalyzer:ATTenuator(_)'p'
:RFANalyzer:ATTenuator?

Description: Sets attenuator value in dB.
Returns parameter setting.

Parameter: 40(_)dB | 20(_)dB | 0(_)dB

Example: :RFANalyzer:ATTenuator '40 DB'

Query Response: :RFANalyzer:ATTenuator?
"40 DB"

:RFANalyzer:ATTenuator:MODE(_)'p'
:RFANalyzer:ATTenuator:MODE?

Description: Sets Attenuator Mode.
Returns parameter setting.

Parameter: Auto | Hold

Example: :RFANalyzer:ATTenuator:MODE 'AUTO'

Query Response: :RFANalyzer:ATTenuator:MODE?
"AUTO"

:RFANalyzer:FREQuency(_)pp.ppp(_)u
:RFANalyzer:FREQuency?

Description: Sets Frequency in Hz/kHz/MHz.
Returns parameter setting in Hz.

Parameter: p = frequency value
u = HZ | KHZ | MHZ

Example: :RFANalyzer:FREQuency 175.00 MHZ

Query Response: :RFANalyzer:FREQuency?
+1.750000E+08

:RFANalyzer:FREQuency:DUNits(_)u
:RFANalyzer:FREQuency:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MHZ

:RFANalyzer:FREQuency:INCRement(_)p(_)u
:RFANalyzer:FREQuency:INCRement?

Description: Sets Increment value in Hz/kHz/MHz.
Returns parameter setting in Hz.

Parameter: p = increment value
u = HZ | KHZ | MHZ

Example: :RFANalyzer:FREQuency:INCRement 5 MHZ

Query Response: :RFANalyzer:FREQuency:INCRement?
+5.000000E+06

:RFANalyzer:FREQuency:INCRement(_)UP

Description: Increases frequency by value defined in :INCRement(_)p command.
Parameter/Query: none

:RFANalyzer:FREQuency:INCRement(_)DOWN

Description: Decreases frequency by value defined in :INCRement(_)p command.
Parameter/Query: none

:RFANalyzer:FREQuency:INCRement:DIVide

Description: Divides Increment value by 10.
Parameter/Query: none

:RFANalyzer:FREQuency:INCRement:DUNits(_)u
:RFANalyzer:FREQuency:INCRement:DUNits?

Description: Sets parameter display units in MHz.
Returns parameter setting.
Parameter: u = MHZ

:RFANalyzer:FREQuency:INCRement:MODE(_)p
:RFANalyzer:FREQuency:INCRement:MODE?

Description: Defines Increment Mode.
Returns parameter setting.
Parameter: LINear | LOGarithm
Example: :RFANalyzer:FREQuency:INCRement:MODE LINEAR
Query Response: :RFANalyzer:FREQuency:INCRement:MODE?
LIN

:RFANalyzer:FREQuency:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:RFANalyzer:FREQuency:UNITs(_)u
:RFANalyzer:FREQuency:UNITs?

Description: Sets GPIB units of measurement.
Returns parameter setting.
Parameter: u = HZ

:RFANalyzer:GTIMe(_)300(_)ms
:RFANalyzer:GTIMe?

Description: Command Place Holder. No Op.
Parameter: 300 MS

:RFANalyzer:GTIMe:DUNits(_)u
:RFANalyzer:GTIMe:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = MS

:RFANalyzer:GTIMe:UNITs(_)
:RFANalyzer:GTIMe:UNITs?

Description: Command Place Holder. No Op.

Parameter: u = S

:RFANalyzer:IFBW(_)'p'
:RFANalyzer:IFBW?

Description: Sets IF Bandwidth.
Returns parameter setting.

Parameter: 15(_)kHz | 230(_)kHz

Example: :RFANalyzer:IFBW '15 KHZ'

Query Response: :RFANalyzer:IFBW?
"15 KHZ"

:RFANalyzer:INPut(_)'p'
:RFANalyzer:INPut?

Description: Sets RF Analyzer Input port.
Returns parameter setting.

Parameter: RF(_)In | ANT

Example: :RFANalyzer:INPut 'ANT'

Query Response: :RFANalyzer:INPut?
"ANT"

:RFANalyzer:PMEasurement:DETector(_)'p'
:RFANalyzer:PMEasurement:DETector?

Description: Command Place Holder. No Op.

Parameter: Peak | Sample

:RFANalyzer:SENSitivity(_)'p'
:RFANalyzer:SENSitivity?

Description: Command Place Holder. No Op.

Parameter: Normal | High

:RFANalyzer:SQUelch(_)'p'
:RFANalyzer:SQUelch?

Description: Command Place Holder. No Op.

Parameter: Pot | Open | Fixed

:RFANalyzer:SRLocation(_)'p'
:RFANalyzer:SRLocation?

Description: Command Place Holder. No Op.

Parameter: INTERNAL | CARD | RAM | DISK

:RFANalyzer:TMODe(_)'p'
:RFANalyzer:TMODe?

Description: Sets RF Analyzer Tune Mode of operation.
Returns parameter setting.

Parameter: Auto | Manual

Example: :RFANalyzer:TMODe ‘Auto’

Query Response: :RFANalyzer:TMODe?
“AUTO”

:RFANalyzer:TKEY(_)'p'
:RFANalyzer:TKEY?

Description: Enables/Disables out PTT.
Returns parameter setting.

Parameter: ON | OFF

Example: :RFANalyzer:TKEY ‘OFF’

Query Response: :RFANalyzer:TKEY?
“OFF”

10.6 AF FREQUENCY - NOTCH FILTER

:AFANalyzer:NOTCh:FREQuency(_)p(_)u
:AFANalyzer:NOTCh:FREQuency?

Description: Sets center frequency of Frequency Notch Filter.
Returns parameter setting in Hz.

Parameter: p = frequency value
u = HZ | KHZ

Example: :AFANalyzer:NOTCh:FREQuency 1 HZ

Query Response: :AFANalyzer:NOTCh:FREQuency?
+1.000000E+00

NOTE Based on :AFAN:INPUT setting.

:AFANalyzer:NOTCh:FREQuency:DUNits(_)u
:AFANalyzer:NOTCh:FREQuency:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:AFANalyzer:NOTCh:FREQuency:INCRement(_)p(_)u
:AFANalyzer:NOTCh:FREQuency:INCRement?

Description: Sets Increment value in Hz | kHz.
Returns value in kHz. Always 1.

Parameter: p = increment value
u = HZ | KHZ

Example: :AFANalyzer:NOTCh:FREQuency:INCRement 5 KHZ

Query Response: :AFANalyzer:NOTCh:FREQuency:INCRement?
+5.000000E+03

:AFANalyzer:NOTCh:FREQuency:INCRement UP

Description: Increases Gate Time setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFANalyzer:NOTCh:FREQuency:INCRement DOWN

Description: Decreases Gate Time setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFANalyzer:NOTCh:FREQuency:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:AFANalyzer:NOTCh:FREQuency:INCRement:DUNits(_)u
:AFANalyzer:NOTCh:FREQuency:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:AFANalyzer:NOTCh:FREQuency:INCRement:MODE(_)p
:AFANalyzer:NOTCh:FREQuency:INCRement:MODE?

Description: Set command defines Notch Frequency Increment mode of operation.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :AFANalyzer:NOTCh:FREQuency:INCRement:MODE LOGarithm

Query Response: :AFANalyzer:NOTCh:FREQuency:INCRement?
LOG

:AFANalyzer:NOTCh:FREQuency:INCRement:MODE:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:AFANalyzer:NOTCh:FREQuency:UNITs(_)u
:AFANalyzer:NOTCh:FREQuency:UNITs?

Description: Set command defines GPIB units in HZ.
Returns parameter setting.

Parameter: u = HZ

:AFANalyzer:NOTCh:GAIN(_)'p'
:AFANalyzer:NOTCh:GAIN?

Description: Command Place Holder. No Op.

Parameter: 0(_)DB | 10(_)DB | 20(_)DB | 30(_)DB | 40(_)DB

:AFANalyzer:RANGing(_)'p'
:AFANalyzer:RANGing?

Description: Command Place Holder. No Op.

Parameter: AUTO | HOLD

:AFANalyzer:SMPoint(_)'p'
:AFANalyzer:SMPoint?

Description: Command Place Holder. No Op.

Parameter: De-emp | Filters | Input | Notch

:AFANalyzer:SPEaker:MODE(_)'p'
:AFANalyzer:SPEaker:MODE?

Description: Set command Enables/Disables speaker.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :AFANalyzer:SPEaker:MODE 'ON'

Query Response: :AFANalyzer:SPEaker:MODE?
"ON"

:AFANalyzer:SPEaker:VOLume(_)'p'
:AFANalyzer:SPEaker:VOLume?

Description: Set command defines speaker volume.
Returns parameter setting.

Parameter: OFF (Sets volume to 0)
Pot (Sets volume to 90 PCT)

Example: :AFANalyzer:SPEaker:VOLume 'OFF'

Query Response: :AFANalyzer:SPEaker:VOLume?
"OFF"

10.7 AF FREQUENCY - CURRENT COMMANDS

:MEASure:AFRequency:CURRent?

Description: Returns measurement data.

:MEASure:AFRequency:CURRent:AUNits(_)u
:MEASure:AFRequency:CURRent:AUNits?

Description: Set command defines AMPS as unit of measure for Current measurements.
Returns parameter setting.

Parameter: u = A

:MEASure:AFRequency:CURRent:AVERage(_)p
:MEASure:AFRequency:CURRent:AVERage?

Description: Set command defines number of readings taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:CURRent:AVERage 25

Query Response: :MEASure:AFRequency:CURRent:AVERage?
+2.500000E+01

:MEASure:AFRequency:CURRent:AVERage:RESet

Description: Resets Average measurement.

Parameter/Query: none

:MEASure:AFRequency:CURRent:AVERage:STATe(_)p
:MEASure:AFRequency:CURRent:AVERage:STATe?

Description: Set command Enables/Disables average measurement.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:CURRent:AVERage:STATe ON

Query Response: :MEASure:AFRequency:CURRent:AVERage:STATe?
1

:MEASure:AFRequency:CURRent:AVERage:VALue(_)p
:MEASure:AFRequency:CURRent:AVERage:VALue?

Description: Set command defines number of readings taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:CURRent:AVERage:VALue 25

Query Response: :MEASure:AFRequency:CURRent:AVERage:VALue?
+2.500000E+01

:MEASure:AFRequency:CURRent:DUNits(_)u
:MEASure:AFRequency:CURRent:DUNits?

Description: Sets parameter display units in Amps.
Returns parameter setting.

Parameter: u = A

:MEASure:AFRequency:CURRent:HLIMit(_)p(_)u
:MEASure:AFRequency:CURRent:HLIMit?

Description: Sets High Limit value in Amps.
Returns parameter setting.

Parameter: p = Limit value
u = A (Amps)

Example: :MEASure:AFRequency:CURRent:HLIMit 10 A

Query Response: :MEASure:AFRequency:CURRent:HLIMit?
+1.000000E+01

:MEASure:AFRequency:CURRent:HLIMit:DUNits(_)u
:MEASure:AFRequency:CURRent:HLIMit:DUNits?

Description: Sets parameter display units in Amps.
Returns parameter setting.

Parameter: u = A

:MEASure:AFRequency:CURRent:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:CURRent:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:CURRent:HLIMit:STATe(_)p
:MEASure:AFRequency:CURRent:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:CURRent:HLIMit:STATe OFF

Query Response: :MEASure:AFRequency:CURRent:HLIMit:STATe?
0

:MEASure:AFRequency:CURRent:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:CURRent:HLIMit:VALue?

Description: Sets High Limit value in Amps.
Returns parameter setting.

Parameter: p = Limit value
u = A (Amps)

Example: :MEASure:AFRequency:CURRent:HLIMit:VALue 10 A

Query Response: :MEASure:AFRequency:CURRent:HLIMit:VALue?
+1.000000E+01

:MEASure:AFRequency:CURRent:LLIMit(_)p(_)u
:MEASure:AFRequency:CURRent:LLIMit?

Description: Sets Low Limit value in Amps.
Returns parameter setting.

Parameter: p = Limit value
u = A (Amps)

Example: :MEASure:AFRequency:CURRent:LLIMit:VALue 5 A

Query Response: :MEASure:AFRequency:CURRent:LLIMit:VALue?
+5.000000E+00

:MEASure:AFRequency:CURRent:LLIMit:DUNits(_)u
:MEASure:AFRequency:CURRent:LLIMit:DUNits?

Description: Sets parameter display units to Amps.
Returns parameter setting.

Parameter: u = A

:MEASure:AFRequency:CURRent:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:AFRequency:CURRent:LLIMit:EXCeeded?
1

:MEASure:AFRequency:CURRent:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:CURRent:LLIMit:STATe(_)p
:MEASure:AFRequency:CURRent:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:CURRent:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:CURRent:LLIMit:STATe?
1

:MEASure:AFRequency:CURRent:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:CURRent:LLIMit:VALue?

Description: Sets Low Limit value in A.
Returns parameter setting.

Parameter: p = Limit value
u = A (Amps)

Example: :MEASure:AFRequency:CURRent:LLIMit:VALue 5 A

Query Response: :MEASure:AFRequency:CURRent:LLIMit:VALue?
+5.000000E+00

:MEASure:AFRequency:CURRent:METer(_)p
:MEASure:AFRequency:CURRent:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:CURRent:METer:STATe(_)p
:MEASure:AFRequency:CURRent:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:CURRent:METer:HEND(_)p(_)u
:MEASure:AFRequency:CURRent:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = Limit value
u = A (Amps)

:MEASure:AFRequency:CURRent:METer:HEND:DUNits(_)u
:MEASure:AFRequency:CURRent:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = A

:MEASure:AFRequency:CURRent:METer:INTerval(_)p
:MEASure:AFRequency:CURRent:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = number of divisions

:MEASure:AFRequency:CURRent:METer:LEND(_)p(_)u
:MEASure:AFRequency:CURRent:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: u = A

:MEASure:AFRequency:CURRent:METer:LEND:DUNits(_)u
:MEASure:AFRequency:CURRent:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = A

:MEASure:AFRequency:CURRent:REFerence(_)p(_)u
:MEASure:AFRequency:CURRent:REFerence?

Description: Sets reference value for Current measurements.
Returns parameter setting.

Parameter: p = reference value
u = A (Amps)

Example: :MEASure:AFRequency:CURRent:REFerence 5 A

Query Response: :MEASure:AFRequency:CURRent:REFerence?
+5.000000E+00

:MEASure:AFRequency:CURRent:REFerence:DUNits(_)u
:MEASure:AFRequency:CURRent:REFerence:DUNits?

Description: Sets parameter display units to Amps.
Returns parameter setting.

Parameter: u = A

:MEASure:AFRequency:CURRent:REFerence:STATe(_)p
:MEASure:AFRequency:CURRent:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:CURRent:REFerence:STATe OFF

Query Response: :MEASure:AFRequency:CURRent:REFerence:STATe?
0

:MEASure:AFRequency:CURRent:REFerence:VALue(_)p(_)u
:MEASure:AFRequency:CURRent:REFerence:VALue?

Description: Sets reference value for Current measurements.
Returns parameter setting.

Parameter: p = reference value
u = A (Amps)

Example: :MEASure:AFRequency:CURRent:REFerence:VALue 10 A

Query Response: :MEASure:AFRequency:CURRent:REFerence:VALue?
+1.000000E+01

:MEASure:AFRequency:CURRent:METer:STATe(_)p
:MEASure:AFRequency:CURRent:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:CURRent:METer(_)p:UNITs(_)u
:MEASure:AFRequency:CURRent:METer(_)p:UNITs?

Description: Sets unit of measurement to amps.
Returns parameter setting.

Parameter: u = A (Amps)

10.8 AF FREQUENCY - DC VOLTS COMMANDS

:MEASure:AFRequency:DCVolts?

Description: Returns measurement data.

:MEASure:AFRequency:DCVolts:AUNits(_)u
:MEASure:AFRequency:DCVolts:AUNits?

Description: Defines DC Volts unit of measurement as Volts.
Returns parameter setting.

Parameter: u = V

:MEASure:AFRequency:DCVolts:AVERage(_)p
:MEASure:AFRequency:DCVolts:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:DCVolts:AVERage 25

Query Response: :MEASure:AFRequency:DCVolts:AVERage?
+2.500000E+01

:MEASure:AFRequency:DCVolts:AVERage:RESet

Description: Resets average measurement.

Parameter/Query: none

:MEASure:AFRequency:DCVolts:AVERage:STATe(_)p
:MEASure:AFRequency:DCVolts:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DCVolts:AVERage:STATe ON

Query Response: :MEASure:AFRequency:DCVolts:AVERage:STATe?
1

:MEASure:AFRequency:DCVolts:AVERage:VALue(_)p
:MEASure:AFRequency:DCVolts:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:DCVolts:AVERage:VALue 25

Query Response: :MEASure:AFRequency:DCVolts:AVERage:VALue?
+2.500000E+01

:MEASure:AFRequency:DCVolts:DUNits(_)u
:MEASure:AFRequency:DCVolts:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:AFRequency:DCVolts:HLIMit(_)p(_)u
:MEASure:AFRequency:DCVolts:HLIMit?

Description: Sets High Limit value in MV | V.
Returns parameter setting in Volts.

Parameter: p = Limit value in MV | V
u = MV | V

Example: :MEASure:AFRequency:DCVolts:HLIMit 10 MV

Query Response: :MEASure:AFRequency:DCVolts:HLIMit?
+1.000000E-02

:MEASure:AFRequency:DCVolts:HLIMit:DUNits(_)u
:MEASure:AFRequency:DCVolts:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:AFRequency:DCVolts:HLIMit:EXCeeded?

Description: Returns parameter setting.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:AFRequency:DCVolts:HLIMit:EXCeeded?
1

:MEASure:AFRequency:DCVolts:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:DCVolts:HLIMit:STATe(_)p
:MEASure:AFRequency:DCVolts:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DCVolts:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:DCVolts:HLIMit:STATe?
1

:MEASure:AFRequency:DCVolts:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:DCVolts:HLIMit:VALue?

Description: Sets AC Level High Limit in MV | V.
Returns parameter setting in Volts.

Parameter: p = Limit value in MV | V
u = MV | V

Example: :MEASure:AFRequency:DCVolts:HLIMit:VALue 5 MV

Query Response: :MEASure:AFRequency:DCVolts:HLIMit:VALue?
+5.000000E-01

:MEASure:AFRequency:DCVolts:LLIMit(_)p(_)u
:MEASure:AFRequency:DCVolts:LLIMit?

Description: Sets Low Limit value in MV | V.
Returns parameter setting in Volts.

Parameter: p = Limit value in MV | V
u = MV | V

Example: :MEASure:AFRequency:DCVolts:LLIMit 10 MV

Query Response: :MEASure:AFRequency:DCVolts:LLIMit?
+1.000000E-02

:MEASure:AFRequency:DCVolts:LLIMit:DUNits(_)u
:MEASure:AFRequency:DCVolts:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:AFRequency:DCVolts:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:AFRequency:DCVolts:LLIMit:EXCeeded?
1

:MEASure:AFRequency:DCVolts:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:DCVolts:LLIMit:STATe(_)p
:MEASure:AFRequency:DCVolts:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DCVolts:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:DCVolts:LLIMit:STATe?
1

:MEASure:AFRequency:DCVolts:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:DCVolts:LLIMit:VALue?

Description: Sets Low Limit in MV | V.
Returns parameter setting in Volts.

Parameter: p = Limit value in MV | V
u = MV | V

Example: :MEASure:AFRequency:DCVolts:LLIMit:VALue 5 MV

Query Response: :MEASure:AFRequency:DCVolts:LLIMit:VALue?
+5.000000E-01

:MEASure:AFRequency:DCVolts:METer(_)p
:MEASure:AFRequency:DCVolts:METer?

Description: Enables/Disable Meter readings.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DCVolts:METer ON

Query Response: :MEASure:AFRequency:DCVolts:METer?
1

:MEASure:AFRequency:DCVolts:METer:STATe(_)p
:MEASure:AFRequency:DCVolts:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DCVolts:METer:STATe ON

Query Response: :MEASure:AFRequency:DCVolts:METer:STATe?
1

:MEASure:AFRequency:DCVolts:METer:HEND(_)p(_)u
:MEASure:AFRequency:DCVolts:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = MV | V

:MEASure:AFRequency:DCVolts:METer:HEND:DUNits(_)u
:MEASure:AFRequency:DCVolts:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:AFRequency:DCVolts:METer:INTerval(_)p
:MEASure:AFRequency:DCVolts:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = number of divisions

:MEASure:AFRequency:DCVolts:METer:LEND(_)p(_)u
:MEASure:AFRequency:DCVolts:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p value is low end of scale
u = MV | V

:MEASure:AFRequency:DCVolts:METer:LEND:DUNits(_)u
:MEASure:AFRequency:DCVolts:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:AFRequency:DCVolts:REFerence(_)p(_)u
:MEASure:AFRequency:DCVolts:REFerence?

Description: Sets reference in mV | V.
Returns parameter setting.

Parameter: p = reference value in MV | V
u = MV | V

Example: :MEASure:AFRequency:DCVolts:REFerence 5 MV

Query Response: :MEASure:AFRequency:DCVolts:REFerence?
+5.000000E-03

:MEASure:AFRequency:DCVolts:REFerence:DUNits(_)u
:MEASure:AFRequency:DCVolts:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:AFRequency:DCVolts:REFerence:STATe(_)p
:MEASure:AFRequency:DCVolts:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DCVolts:REFerence:STATe ON

Query Response: :MEASure:AFRequency:DCVolts:REFerence:STATe?
1

:MEASure:AFRequency:DCVolts:REFerence:VALue(_)p(_)u
:MEASure:AFRequency:DCVolts:REFerence:VALue?

Description: Sets Reference value in V/mV for DC Volts measurements.
Returns parameter setting.

Parameter: p = reference value in MV | V
u = MV | V

Example: :MEASure:AFRequency:DCVolts:REFerence:VALue 5 MV

Query Response: :MEASure:AFRequency:DCVolts:REFerence:VALue?
+5.000000E-03

:MEASure:AFRequency:DCVolts:METer:STATe(_)p
:MEASure:AFRequency:DCVolts:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:DCVolts:METer:UNITs(_)u
:MEASure:AFRequency:DCVolts:METer:UNITs?

Description: Set command defines GPIB unit of measure for DC Volts measurements.
Returns parameter setting.

Parameter: u = V

10.9 AF GENERATOR 1 COMMANDS

:AFGenerator1:AM(_)p(_)u
:AFGenerator1:AM?

Description: Sets AM depth when DESTination is set to AM.
Returns value in PCT.
Parameter: p = value
u = PCT
Example: :AFGenerator1:AM 5 PCT
Query Response: :AFGenerator1:AM?
+5.000000E+00

:AFGenerator1:AM:DUNits(_)u
:AFGenerator1:AM:DUNits?

Description: Sets parameter display units to PCT.
Returns parameter setting.
Parameter: u = PCT

:AFGenerator1:AM:INCRement(_)p(_)u
:AFGenerator1:AM:INCRement?

Description: Sets Increment value.
Returns parameter setting as a PCT.
Parameter: p = increment value
u - PCT
Example: :AFGenerator1:AM:INCRement 1 PCT
Query Response: :AFGenerator1:AM:INCRement?
1.000000E+00

:AFGenerator1:AM:INCRement(_)UP

Description: Increases Generator setting by value defined in :INCRement(_)p command.
Parameter/Query: none

:AFGenerator1:AM:INCRement(_)DOWN

Description: Decreases Generator setting by value defined in :INCRement(_)p command.
Parameter/Query: none

:AFGenerator1:AM:INCRement:DIVide

Description: Divides Increment value by 10.
Parameter/Query: none

:AFGenerator1:AM:INCRement:DUNits(_)u
:AFGenerator1:AM:INCRement:DUNits?

Description: Sets parameter display units as a PCT.
Returns parameter setting.
Parameter: u = PCT

:AFGenerator1:AM:INCRement:MODE(_)p
:AFGenerator1:AM:INCRement:MODE?

Description: Defines Increment Mode.
Returns parameter setting.
Parameter: LINear | LOGarithm
Example: :AFGenerator1:AM:INCRement:MODE LINEAR
Query Response: :AFGenerator1:AM:INCRement:MODE?
LIN

:AFGenerator1:AM:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:AFGenerator1:AM:STATe(_)p
:AFGenerator1:AM:STATe?

Description: Sets state of Generator when DESTination is set to AM.
Returns parameter setting.
Parameter: OFF | ON | 0 | 1
Example: :AFGenerator1:AM:STATe ON
Query Response: :AFGenerator1:AM:STATe?
1

:AFGenerator1:AM:UNITs(_)u
:AFGenerator1:AM:UNITs?

Description: Sets GPIB units as PCT.
Returns parameter setting.
Parameter: u = PCT

:AFGenerator1:DESTination(_)'p'
:AFGenerator1:DESTination?

Description: Sets AF Generator output port.
Returns parameter setting.
Parameter: AM | FM | Audio(_)Out
AM = AM Modulator
FM = FM Modulator
Audio Out = FGEN/DEMOD Connector (AF Generator)
Example: :AFGenerator1:DESTination ‘AM’
Query Response: AFGenerator1:DESTination?
“AM”

:AFGenerator1:FM(_)p(_)u
:AFGenerator1:FM?

Description: Sets FM deviation when DESTination is set to FM.
Returns value in Hz.

Parameter: p = value in HZ | KHZ
u = HZ | KHZ

Example: :AFGenerator1:FM 150 HZ

Query Response: :AFGenerator1:FM?
+1.500000E+02

:AFGenerator1:FM:DUNits(_)u
:AFGenerator1:FM:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:AFGenerator1:FM:INCRement(_)p(_)u
:AFGenerator1:FM:INCRement?

Description: Sets Increment value in HZ | KHZ.
Returns value in Hz

Parameter: p = value in HZ | KHZ
u = HZ | KHZ

Example: :AFGenerator1:FM:INCRement 100 HZ

Query Response: :AFGenerator1:FM:INCRement?
+1.000000E+02

:AFGenerator1:FM:INCRement(_)UP

Description: Increases Generator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFGenerator1:FM:INCRement(_)DOWN

Description: Decreases Generator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFGenerator1:FM:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:AFGenerator1:FM:INCRement:DUNits(_)u
:AFGenerator1:FM:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ | HZ

:AFGenerator1:FM:INCRement:MODE(_)p
:AFGenerator1:FM:INCRement:MODE?

Description: Defines Increment Mode.
Returns parameter setting.
Parameter: LINear | LOGarithm
Example: :AFGenerator1:FM:INCRement:MODE LINEAR
Query Response: :AFGenerator1:FM:INCRement:MODE?
LIN

:AFGenerator1:FM:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:AFGenerator1:FM:STATe(_)p
:AFGenerator1:FM:STATe?

Description: Sets state of Generator when DESTination is set to FM.
Returns parameter setting.
Parameter: OFF | ON | 0 | 1
Example: :AFGenerator1:FM:STATe ON
Query Response: :AFGenerator1:FM:STATe?
1

:AFGenerator1:UNITs(_)u
:AFGenerator1:UNITs?

Description: Sets GPIB units to Hz.
Returns parameter setting.
Parameter: u = HZ

:AFGenerator1:FREQuency(_)p.pp(_)u
:AFGenerator1 :FREQuency?

Description: Sets Generator output frequency in HZ | KHZ.
Returns value in Hz.
Parameter: p = value in Hz | kHz
u = HZ | KHZ
Example: :AFGenerator1:FREQuency 150.0 HZ
Query Response: :AFGenerator1:FREQuency?
+1.500000E+02

:AFGenerator1:FREQuency:DUNits(_)u
:AFGenerator1:FREQuency:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = KHZ

:AFGenerator1:FREQuency:INCRement(_)p(_)u
:AFGenerator1:FREQuency:INCRement?

Description: Sets Increment value.
Returns value in Hz.
Parameter: p = value in Hz
u = HZ | KHZ
Example: :AFGenerator1:FREQuency:INCRement 150 HZ
Query Response: :AFGenerator1:FREQuency:INCRement?
1.500000E+02

:AFGenerator1:FREQuency:INCRement(_)UP

Description: Increases Generator setting by value defined in :INCRement(_)p command.
Parameter/Query: none

:AFGenerator1:FREQuency:INCRement(_)DOWN

Description: Decreases Generator setting by value defined in :INCRement(_)p command.
Parameter/Query: none

:AFGenerator1:FREQuency:INCRement:DIVide

Description: Divides Increment value by 10.
Parameter/Query: none

:AFGenerator1:FREQuency:INCRement:DUNits(_)u
:AFGenerator1:FREQuency:INCRement:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = KHZ

:AFGenerator1:FREQuency:INCRement:MODE(_)p
:AFGenerator1:FREQuency:INCRement:MODE?

Description: Defines Increment Mode of operation.
Returns setting of Increment Mode.
Parameter: LINear | LOGarithm
Example: :AFGenerator1:FREQuency:INCRement:MODE LINEAR
Query Response: :AFGenerator1:FREQuency:INCRement:MODE?
LIN

:AFGenerator1:FREQuency:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:AFGenerator1:FREQuency:UNITs(_)u
:AFGenerator1:FREQuency:UNITs?

Description: Sets GPIB units to Hz.
Returns parameter setting.
Parameter: u = HZ

:AFGenerator1:OUTPut(_)p(_)u
:AFGenerator1:OUTPut?

Description: Sets amplitude when DESTination is set to Audio Out.
Returns value in V.

Parameter: p = amplitude value
u = MV | V | DBUV

Example: :AFGenerator1:OUTPut 300 MV

Query Response: :AFGenerator1:OUTPut?
+3.000000E-01

:AFGenerator1:OUTPut:DUNits(_)u
:AFGenerator1:OUTPut:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MV

:AFGenerator1:OUTPut:INCRement(_)p(_)u
:AFGenerator1:OUTPut:INCRement?

Description: Sets Increment value.
Returns value in V.

Parameter: p = increment value
u = MV | V | DBUV

Example: :AFGenerator1:OUTPut:INCRement 1 MV

Query Response: :AFGenerator1:OUTPut:INCRement?
+1.000000E-03

:AFGenerator1:OUTPut:INCRement(_)UP

Description: Increases Generator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFGenerator1:OUTPut:INCRement(_)DOWN

Description: Decreases Generator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFGenerator1:OUTPut:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:AFGenerator1:OUTPut:INCRement:DUNits(_)u
:AFGenerator1:OUTPut:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MV

:AFGenerator1:OUTPut:INCRement:MODE(_)p
:AFGenerator1:OUTPut:INCRement:MODE?

Description: Defines Increment Mode of operation.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :AFGenerator1:OUTPut:INCRement:MODE LINEAR

Query Response: :AFGenerator1:OUTPut:INCRement:MODE?
LIN

:AFGenerator1:OUTPut:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:AFGenerator1:OUTPut:STATe(_)p
:AFGenerator1:OUTPut:STATe?

Description: Sets state of Generator when DESTination is set to Audio.
Returns current state of Generator.

Parameter: OFF | ON | 0 | 1

Example: :AFGenerator1:OUTPut:STATe ON

Query Response: :AFGenerator1:OUTPut:STATe?
1

:AFGenerator1:OUTPut:UNITs(_)u
:AFGenerator1:OUTPut:UNITs?

Description: Sets GPIB units in Volts.
Returns parameter setting in Volts.

Parameter: u = V | DBUV

10.10 AF GENERATOR 2 COMMANDS

:AFGenerator2:AM(_)p(_)u
:AFGenerator2:AM?

Description: Sets AM depth when DESTination is set to AM.
Returns value in PCT.
Parameter: p = value
u = PCT
Example: :AFGenerator2:AM 5 PCT
Query Response: :AFGenerator2:AM?
+5.000000E+00

:AFGenerator2:AM:DUNits(_)u
:AFGenerator2:AM:DUNits?

Description: Sets parameter display units to PCT.
Returns parameter setting.
Parameter: u = PCT

:AFGenerator2:AM:INCRement(_)p(_)u
:AFGenerator2:AM:INCRement?

Description: Sets Increment value.
Returns parameter setting as a PCT.
Parameter: p = value
u = PCT
Example: :AFGenerator2:AM:INCRement 1 PCT
Query Response: :AFGenerator2:AM:INCRement?
1.000000E+00

:AFGenerator2:AM:INCRement(_)UP

Description: Increases Generator setting by value defined in :INCRement(_)p command.
Parameter/Query: none

:AFGenerator2:AM:INCRement(_)DOWN

Description: Decreases Generator setting by value defined in :INCRement(_)p command.
Parameter/Query: none

:AFGenerator2:AM:INCRement:DIVide

Description: Divides Increment value by 10.
Parameter/Query: none

:AFGenerator2:AM:INCRement:DUNits(_)u
:AFGenerator2:AM:INCRement:DUNits?

Description: Sets parameter display units as a PCT.
Returns parameter setting.
Parameter: u = PCT

:AFGenerator2:AM:INCRement:MODE(_)p
:AFGenerator2:AM:INCRement:MODE?

Description: Defines Increment Mode of operation.
Returns parameter setting.
Parameter: LINear | LOGarithm
Example: :AFGenerator2:AM:INCRement:MODE LINEAR
Query Response: :AFGenerator2:AM:INCRement:MODE?
LIN

:AFGenerator2:AM:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:AFGenerator2:AM:STATe(_)p
:AFGenerator2:AM:STATe?

Description: Sets state of Generator when DESTination is set to AM.
Returns parameter setting.
Parameter: OFF | ON | 0 | 1
Example: :AFGenerator2:AM:STATe ON
Query Response: :AFGenerator2:AM:STATe?
1

:AFGenerator2:AM:UNITs(_)u
:AFGenerator2:AM:UNITs?

Description: Sets GPIB units to PCT.
Returns parameter setting.
Parameter: u = PCT

:AFGenerator2:DESTination(_)'p'
:AFGenerator2:DESTination?

Description: Sets AF Generator output port.
Returns parameter setting.
Parameter: AM | FM | Audio(_)Out
AM = AM Modulator
FM = FM Modulator
Audio Out = FGEN/DEMOD Connector (AF Generator)
Example: :AFGenerator2:DESTination ‘FM’
Query Response: :AFGenerator2:DESTination?
“FM”

:AFGenerator2:FILTER(_)p'
:AFGenerator2:FILTER?

Description: Command Place Holder. No Op.
Parameter: NONE | 20kHz(_)LPF | 250Hz(_)LPF | 150Hz(_)LPF

:AFGenerator2:FILTER:MODE(_)'p'
:AFGenerator2:FILTER:MODE?

Description: Command Place Holder. No Op.
Parameter: OFF | ON

:AFGenerator2:FM(_)p(_)u
:AFGenerator2:FM?

Description: Sets FM deviation when DESTination is set to FM.
Returns parameter in Hz.
Parameter: p = deviation value in Hz/kHz
u = HZ | KHZ
Example: :AFGenerator2:FM 125 HZ
Query Response: :AFGenerator2:FM?
+1.250000E+02

:AFGenerator2:FM:DUNits(_)u
:AFGenerator2:FM:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = KHZ

:AFGenerator2:FM:INCRement(_)p(_)u
:AFGenerator2:FM:INCRement?

Description: Sets Increment value in HZ | KHZ.
Returns parameter in Hz.
Parameter: p = increment value
u = HZ | KHZ
Example: :AFGenerator2:FM:INCRement 100 HZ
Query Response: :AFGenerator2:FM:INCRement?
+1.000000E+02

:AFGenerator2:FM:INCRement(_)UP

Description: Increases Generator setting by value defined in :INCRement(_)p command.
Parameter/Query: none

:AFGenerator2:FM:INCRement(_)DOWN

Description: Decreases Generator setting by value defined in :INCRement(_)p command.
Parameter/Query: none

:AFGenerator2:FM:INCRement:DIVide

Description: Divides Increment value by 10.
Parameter/Query: none

:AFGenerator2:FM:INCRement:DUNits(_)u
:AFGenerator2:FM:INCRement:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = KHZ | HZ

:AFGenerator2:FM:INCRement:MODE(_)p
:AFGenerator2:FM:INCRement:MODE?

Description: Defines Increment Mode of operation.
Returns parameter setting.
Parameter: LINear | LOGarithm
Example: :AFGenerator1:FM:INCRement:MODE LINEAR
Query Response: :AFGenerator1:FM:INCRement:MODE?
LIN

:AFGenerator2:FM:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:AFGenerator2:FM:STATe(_)p
:AFGenerator2:FM:STATe?

Description: Sets state of Generator when DESTination is set to FM.
Returns parameter setting.
Parameter: OFF | ON | 0 | 1
Example: :AFGenerator2:FM:STATe ON
Query Response: :AFGenerator2:FM:STATe?
1

:AFGenerator2:UNITs(_)Hz
:AFGenerator2:UNITs?

Description: Sets GPIB units in Hz.
Returns parameter setting in Hz.
Parameter: HZ

:AFGenerator2:FREQuency(_)p.pp(_)u
:AFGenerator2 :FREQuency?

Description: Sets Generator output frequency.
Returns value in Hz.
Parameter: p = frequency value
u = HZ | KHZ
Example: :AFGenerator2:FREQuency 150.0 HZ
Query Response: :AFGenerator2:FREQuency?
+1.500000E+02

:AFGenerator2:FREQuency:DUNits(_)kHz
:AFGenerator2:FREQuency:DUNits?

Description: Command Place Holder. No Op.
Parameter: KHZ

:AFGenerator2:FREQuency:INCRement(_)p(_)u
:AFGenerator2:FREQuency:INCRement?

Description: Sets Increment value.
Returns parameter setting in Hz.

Parameter: p = increment value
u = HZ | KHZ

:AFGenerator2:FREQuency:INCRement(_)UP

Description: Increases Generator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFGenerator2:FREQuency:INCRement(_)DOWN

Description: Decreases Generator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFGenerator2:FREQuency:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:AFGenerator2:FREQuency:INCRement:DUNits(_)kHz
:AFGenerator2:FREQuency:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: KHZ

:AFGenerator2:FREQuency:INCRement:MODE(_)p
:AFGenerator2:FREQuency:INCRement:MODE?

Description: Defines Increment Mode of operation.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :AFGenerator2:FREQuency:INCRement:MODE LINEAR

Query Response: :AFGenerator2:FREQuency:INCRement:MODE?
LIN

:AFGenerator2:FREQuency:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:AFGenerator2:FREQuency:UNITs(_)u
:AFGenerator2:FREQuency:UNITs?

Description: Sets GPIB units to Hz.
Returns parameter setting.

Parameter: u = HZ

:AFGenerator2:MODE(_)'p'
:AFGenerator2:MODE?

Description: Command Place Holder. No Op.

Parameter: FUNC(_)GEN | TONE(_)SEQ | DTMF | CDCSS | DIGI(_)PAGE | AMPS(_)TACS | NAMP-NTACS | NMT | MPT(_)1327 | LTR | EDACS

:AFGenerator2:OUTPut(_)p(_)u
:AFGenerator2:OUTPut?

Description: Sets amplitude when DESTination is set to Audio Out.
Returns value in V.

Parameter: p = output value in MV | V | DBUV
u = MV | V | DBUV

Example: :AFGenerator2:OUTPut 200 MV

Query Response: :AFGenerator2:OUTPut?
+2.000000E-01

:AFGenerator2:OUTPut:DUNits(_)mV
:AFGenerator2:OUTPut:DUNits?

Description: Command Place Holder. No Op.

Parameter: MV

:AFGenerator2:OUTPut:INCRement(_)p(_)u
:AFGenerator2:OUTPut:INCRement?

Description: Sets Increment value.
Returns value in V.

Parameter: p = increment value in MV | V | DBUV
u = MV | V | DBUV

Example: :AFGenerator2:OUTPut:INCRement 2 MV

Query Response: :AFGenerator2:OUTPut:INCRement?
+2.000000E-03

:AFGenerator2:OUTPut:INCRement(_)UP

Description: Increases Generator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFGenerator2:OUTPut:INCRement(_)DOWN

Description: Decreases Generator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:AFGenerator2:OUTPut:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:AFGenerator2:OUTPut:INCRement:DUNits(_)mV
:AFGenerator2:OUTPut:INCRement:DUNits?

Description: Command Place Holder. No Op.
Parameter: MV

:AFGenerator2:OUTPut:INCRement:MODE(_)p
:AFGenerator2:OUTPut:INCRement:MODE?

Description: Defines Increment Mode of operation.
Returns parameter setting.
Parameter: LINear | LOGarithm
Example: :AFGenerator1:OUTPut:INCRement:MODE LINEAR
Query Response: :AFGenerator1:OUTPut:INCRement:MODE?
LIN

:AFGenerator2:OUTPut:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:AFGenerator2:OUTPut:STATe(_)p
:AFGenerator2:OUTPut:STATe?

Description: Sets state of Generator when DESTination is set to Audio.
Returns current state of Generator.
Parameter: OFF | ON | 0 | 1
Example: :AFGenerator2:OUTPut:STATe ON
Query Response: :AFGenerator2:OUTPut:STATe?
1

:AFGenerator2:OUTPut:UNITs(_)u
:AFGenerator2:OUTPut:UNITs?

Description: Sets GPIB units.
Returns parameter setting.
Parameter: u = V | DBUV

:AFGenerator2:PEMPhasis(_)‘p’

Description: Command Place Holder. No Op.
Parameter: OFF | ON | 0 | 1

:AFGenerator2:POLarity(_)’p’
:AFGenerator2:POLarity

Description: Command Place Holder. No Op.
Parameter: NORM | INVERT

:AFGenerator2:SEND

Description: Command Place Holder. No Op.
Parameter/Query: none

:AFGenerator2:SEND:MODE(_)'p'
:AFGenerator2:SEND:MODE?

Description: Command Place Holder. No Op.

Parameter: SINGLE | BURST | CONT | STEP

:AFGenerator2:STOP

Description: Command Place Holder. No Op.

Parameter/Query: none

10.11 RF GENERATOR COMMANDS

:RFGenerator:AMPLitude(_)p(_)u
:RFGenerator:AMPLitude?

Description: Sets RF Generator Amplitude.
Returns parameter setting in dBm.
Parameter: p = amplitude value
u = dBm | W | V | DBUV
Example: :RFGenerator:AMPLitude 5.0 DBUV
Query Response: :RFGenerator:AMPLitude?
-1.019897E+02

:RFGenerator:AMPLitude:DUNits(_)u
:RFGenerator:AMPLitude:DUNits?

Description: Sets parameter display units to dBm.
Returns parameter setting.
Parameter: u = DBM

:RFGenerator:AMPLitude:INCRement(_)p(_)u
:RFGenerator:AMPLitude:INCRement?

Description: Sets Increment value for Amplitude.
Returns parameter setting in dBm.
Parameter: p = increment value
u = dBm | W | V | DBUV
Example: :RFGenerator:AMPLitude:INCRement 15 DBM
Query Response: :RFGenerator:AMPLitude:INCRement?

:RFGenerator:AMPLitude:INCRement_UP

Description: Increases Amplitude by value defined in :INCrement(_)p(_)dBm command.
Parameter/Query: none

:RFGenerator:AMPLitude:INCRement_DOWN

Description: Decreases Amplitude by value defined in :INCrement(_)p(_)dBm command.
Parameter/Query: none

:RFGenerator:AMPLitude:INCRement:DIVide

Description: Divides Increment value by 10.
Parameter/Query: none

:RFGenerator:AMPLitude:INCRement:DUNits(_)u
:RFGenerator:AMPLitude:INCRement:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = DBM

:RFGenerator:AMPLitude:INCRement:MODE(_)p
:RFGenerator:AMPLitude:INCRement:MODE?

Description: Sets Amplitude Increment mode of operation.
Returns parameter setting.
Example: LINear | LOGarithm
Query Response: :RFGenerator:AMPLitude:INCRement:MODE LINEAR
Example: :RFGenerator:AMPLitude:INCRement:MODE?
LIN

:RFGenerator:AMPLitude:INCRement:MULTiply

Description: Multiplies Increment value by 10.
Parameter/Query: none

:RFGenerator:AMPLitude:STATe(_)p
:RFGenerator:AMPLitude:STATe?

Description: Enables/Disables defined Amplitude.
Returns parameter setting.
Parameter: OFF | ON | 0 | 1
Example: :RFGenerator:AMPLitude:STATe ON
Query Response: :RFGenerator:AMPLitude:STATe?
1

:RFGenerator:AMPLitude:UNITs(_)u
:RFGenerator:AMPLitude:UNITs?

Description: Sets GPIB units.
Returns parameter setting.
Parameter: u = DBM | W | V | DBUV

:RFGenerator:ATTenuator(_)'p'
:RFGenerator:ATTenuator?

Description: Enables/Disables Attenuator.
Returns parameter setting.
Parameter: ON | OFF
Example: :RFGenerator:ATTenuator ON
Query Response: :RFGenerator:ATTenuator?
“ON”

:RFGenerator:FM:DCZero

Description: Command Place Holder. No Op.
Parameter/Query: none

:RFGenerator:FM:COUPling
:RFGenerator:FM:COUPling?

Description: Command Place Holder. No Op.
Parameter: AC | DC

:RFGenerator:FREQuency(_)pp.ppp(_)MHZ/HZ/KHZ
:RFGenerator:FREQuency?

Description: Sets RF Generator Frequency.
Returns parameter setting in Hz

Parameter: p = a value

Example: :RFGenerator:FREQuency

Query Response: :RFGenerator:FREQuency?

:RFGenerator:FREQuency:DUNits(_)MHz
:RFGenerator:FREQuency:DUNits?

Description: Command Place Holder. No Op.

Parameter: MHZ

:RFGenerator:FREQuency:INCRement(_)p(_)u
:RFGenerator:FREQuency:INCRement?

Description: Sets Increment value for RF Generator Frequency.
Returns parameter setting in Hz.

Parameter: p = increment value
u = HZ | KHZ | MHZ

Example: :RFGenerator:FREQuency:INCRement 50 KHZ

Query Response: :RFGenerator:FREQuency:INCRement?
+5.000000E+04

:RFGenerator:FREQuency:INCRement_UP

Description: Increases Frequency by value defined in :INCrement(_)pMHz command.

Parameter/Query: none

:RFGenerator:FREQuency:INCRement_DOWN

Description: Decreases Frequency by value defined in :INCrement(_)pMHz command.

Parameter/Query: none

:RFGenerator:FREQuency:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:RFGenerator:FREQuency:INCRement:DUNits(_)MHZ
:RFGenerator:FREQuency:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: MHZ

:RFGenerator:FREQuency:INCRement:MODE(_)p
:RFGenerator:FREQuency:INCRement:MODE?

Description: Sets Frequency Increment mode of operation.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :RFGenerator:FREQuency:INCRement:MODE LINEAR

Query Response: :RFGenerator:FREQuency:INCRement:MODE?
LIN

:RFGenerator:FREQuency:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:RFGenerator:FREQuency:UNITs(_)u
:RFGenerator:FREQuency:UNITs?

Description: Sets RF Generator Frequency GPIB units to Hz.
Returns parameter setting.

Parameter: u = HZ

:RFGenerator:MODulation:AOUT(_)'p'
:RFGenerator:MODulation:AOUT?

Description: Command Place Holder. No Op.

Parameter: AC | DC

:RFGenerator:MODulation:EXTernal:AM(_)p(_)u
:RFGenerator:MODulation:EXTernal:AM?

Description: Sets AM depth when DESTination is set to AM.
Returns parameter setting as a PCT.

Parameter: p = depth value
u = PCT

Example: :RFGenerator:MODulation:EXTernal:AM

Query Response: :RFGenerator:MODulation:EXTernal:AM?

:RFGenerator:MODulation:EXTernal:AM:DUNits(_)u
:RFGenerator:MODulation:EXTernal:AM:DUNits?

Description: Sets parameter display units as a PCT.
Returns parameter setting.

Parameter: u = PCT

:RFGenerator:MODulation:EXTernal:AM:INCRement(_)p(_)u
:RFGenerator:MODulation:EXTernal:AM:INCRement?

Description: Sets Increment value in PCT.
Returns parameter setting.

Parameter: p = increment value
u = PCT

Example: :RFGenerator:MODulation:EXTernal:AM:INCRement 5 PCT

Query Response: :RFGenerator:MODulation:EXTernal:AM:INCRement?
+5.00000E+00

:RFGenerator:MODulation:EXTernal:AM:INCRement(_)UP

Description: Increases Modulator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:RFGenerator:MODulation:EXTernal:AM:INCRement(_)DOWN

Description: Decreases Modulator setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:RFGenerator:MODulation:EXTernal:AM:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:RFGenerator:MODulation:EXTernal:AM:INCRement:DUNits(_)u
:RFGenerator:MODulation:EXTernal:AM:INCRement:DUNits?

Description: Sets parameter display units to PCT.
Returns parameter setting.

Parameter: u = PCT

:RFGenerator:MODulation:EXTernal:AM:INCRement:MODE(_)p
:RFGenerator:MODulation:EXTernal:AM:INCRement:MODE?

Description: Defines Increment Mode of operation.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :RFGenerator:MODulation:EXTernal:AM:INCRement:MODE LINEAR

Query Response: :RFGenerator:MODulation:EXTernal:AM:INCRement:MODE?
LIN

:RFGenerator:MODulation:EXTernal:AM:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:RFGenerator:MODulation:EXTernal:AM:STATe(_)p
:RFGenerator:MODulation:EXTernal:AM:STATe?

Description: Sets state of Modulator when destination is set to AM.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :RFGenerator:MODulation:EXTernal:AM:STATe ON

Query Response: :RFGenerator:MODulation:EXTernal:AM:STATe?
1

:RFGenerator:MODulation:EXTernal:AM:UNITs(_)u
:RFGenerator:MODulation:EXTernal:AM:UNITs?

Description: Sets GPIB units of measurement.
Returns parameter setting.

Parameter: u = PCT

:RFGenerator:MODulation:EXTernal:FM(_)p(_)u
:RFGenerator:MODulation:EXTernal:FM?

Description: Sets FM deviation when Modulation source is set to External.
Returns parameter setting in Hz.

Parameter: p = deviation value
u = HZ | KHZ

Example: :RFGenerator:MODulation:EXTernal:FM 250 KHZ

Query Response: :RFGenerator:MODulation:EXTernal:FM?
+2.500000E+02

:RFGenerator:MODulation:EXTernal:FM:DUNits(_)u
:RFGenerator:MODulation:EXTernal:FM:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:RFGenerator:MODulation:EXTernal:FM:INCRement(_)p(_)u
:RFGenerator:MODulation:EXTernal:FM:INCRement?

Description: Sets Increment value.
Returns parameter setting in Hz.

Parameter: p = increment value
u = HZ | KHZ

Example: :RFGenerator:MODulation:EXTernal:FM:INCRement 5 KHZ

Query Response: :RFGenerator:MODulation:EXTernal:FM:INCRement?
+5.000000E+02

:RFGenerator:MODulation:EXTernal:FM:INCRement(_)UP

Description: Increases Modulation by value defined in :INCRement(_)p command.

Parameter/Query: none

:RFGenerator:MODulation:EXTernal:FM:INCRement(_)DOWN

Description: Decreases Modulation by value defined in :INCRement(_)p command.

Parameter/Query: none

:RFGenerator:MODulation:EXTernal:FM:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:RFGenerator:MODulation:EXTernal:FM:INCRement:DUNits(_)u
:RFGenerator:MODulation:EXTernal:FM:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:RFGenerator:MODulation:EXTernal:FM:INCRement:MODE(_)p
:RFGenerator:MODulation:EXTernal:FM:INCRement:MODE?

Description: Defines Increment Mode of operation.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :RFGenerator:MODulation:EXTernal:FM:INCRement:MODE LINEAR

Query Response: :RFGenerator:MODulation:EXTernal:FM:INCRement:MODE?
LIN

:RFGenerator:MODulation:EXTernal:FM:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:RFGenerator:MODulation:EXTernal:FM:STATe(_)p
:RFGenerator:MODulation:EXTernal:FM:STATe?

Description: Sets state of Modulator when DESTination is set to FM.
Returns parameter setting (or FM).

Parameter: OFF | ON | 0 | 1

Example: :RFGenerator:MODulation:EXTernal:FM:STATe ON

Query Response: :RFGenerator:MODulation:EXTernal:FM:STATe?
1

:RFGenerator:MODulation:EXTernal:FM:UNITs(_)u
:RFGenerator:MODulation:EXTernal:FM:UNITs?

Description: Sets GPIB units for measurement to Hz.
Returns parameter setting.

Parameter: u = HZ

:RFGenerator:MODulation:EXTernal:DESTination(_)'p'
:RFGenerator:MODulation:EXTernal:DESTination?

Description: Sets RF Generator external source.
Returns parameter setting.

Parameter: AM(_)(/Vpk) | FM(_)(/Vpk) | Audio(_)Out
AM(_)(/Vpk) = AM Modulator
FM(_)(/Vpk) = FM Modulator
Audio(_)Out = FGEN/DEMOD Connector

Example: :RFGenerator:MODulation:EXTernal:DESTination 'Audio Out'

Query Response: :RFGenerator:MODulation:EXTernal:DESTination?
"Audio Out"

:RFGenerator:MODulation:EXTernal:PEMPhasis(_)'p'
:RFGenerator:MODulation:EXTernal:PEMPhasis?

Description: Command Place Holder. No Op.

Parameter: OFF | ON

:RFGenerator:MODulation:EXTernal:PEMPhasis:MODE(_)'p'
:RFGenerator:MODulation:EXTernal:PEMPhasis:MODE?

Description: Command Place Holder. No Op.

Parameter: AUTO | HOLD

:RFGenerator:OUTPut(_)'p'
:RFGenerator:OUTPut?

Description: Set RF Generator Output port.
Returns parameter setting.

Parameter: RF(_)Out | Dupl

Example: :RFGenerator:OUTPut 'RF Out'

Query Response: :RFGenerator:OUTPut?
"RF Out"

10.12 AF FREQUENCY - AC LEVEL MEASURE COMMANDS

:MEASure:AFRequency:ACLevel?

Description: Returns measurement data.

:MEASure:AFRequency:ACLevel:AUNits(_)u
:MEASure:AFRequency:ACLevel:AUNits?

Description: Defines unit of measure for AC Level measurements.
Returns parameter setting.

Parameter: u = V

:MEASure:AFRequency:ACLevel:AVERage(_)p
:MEASure:AFRequency:ACLevel:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:ACLevel:AVERage 25

Query Response: :MEASure:AFRequency:ACLevel:AVERage?
+2.500000E+01

:MEASure:AFRequency:ACLevel:AVERage:RESet

Description: Resets AC Level average measurement.

Parameter/Query: none

:MEASure:AFRequency:ACLevel:AVERage:STATe(_)p
:MEASure:AFRequency:ACLevel:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter: ON | OFF | 0 | 1

Example: :MEASure:AFRequency:ACLevel:AVERage:STATe ON

Query Response: :MEASure:AFRequency:ACLevel:AVERage:STATe?
1

:MEASure:AFRequency:ACLevel:AVERage:VALue(_)p
:MEASure:AFRequency:ACLevel:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:ACLevel:AVERage:VALue 25

Query Response: :MEASure:AFRequency:ACLevel:AVERage:VALue?
+2.500000E+01

:MEASure:AFRequency:ACLevel:DUNits(_)u
:MEASure:AFRequency:ACLevel:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MV

:MEASure:AFRequency:ACLevel:HLIMit(_)p(_)u
:MEASure:AFRequency:ACLevel:HLIMit?

Description: Sets High Limit value.
Returns parameter setting in V.

Parameter: p = Limit value
u = MV | V

Example: :MEASure:AFRequency:ACLevel:HLIMit 5 MV

Query Response: :MEASure:AFRequency:ACLevel:HLIMit?
+5.00000E-03

:MEASure:AFRequency:ACLevel:HLIMit:DUNits(_)u
:MEASure:AFRequency:ACLevel:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MV

:MEASure:AFRequency:ACLevel:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:AFRequency:ACLevel:HLIMit:EXCeeded?
0

:MEASure:AFRequency:ACLevel:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:ACLevel:HLIMit:STATe(_)p
:MEASure:AFRequency:ACLevel:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:ACLevel:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:ACLevel:HLIMit:STATe?
1

:MEASure:AFRequency:ACLevel:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:ACLevel:HLIMit:VALue?

Description: Sets AC Level High Limit in mV.
Returns parameter setting.

Parameter: p = Limit value
u = MV | V

Example: :MEASure:AFRequency:ACLevel:HLIMit:VALue 5 MV

Query Response: :MEASure:AFRequency:ACLevel:HLIMit:VALue?
+5.00000E-03

:MEASure:AFRequency:ACLevel:LLIMit(_)p(_)u
:MEASure:AFRequency:ACLevel:LLIMit?

Description: Sets Low Limit value in mV.
Returns parameter setting in Volts.

Parameter: p = Limit value
u = MV | V

Example: :MEASure:AFRequency:ACLevel:LLIMit 2 MV

Query Response: :MEASure:AFRequency:ACLevel:LLIMit?
+2.00000E-03

:MEASure:AFRequency:ACLevel:LLIMit:DUNits(_)MV
:MEASure:AFRequency:ACLevel:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: MV

:MEASure:AFRequency:ACLevel:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:ACLevel:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:ACLevel:LLIMit:STATe(_)p
:MEASure:AFRequency:ACLevel:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:ACLevel:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:ACLevel:LLIMit:STATe?
1

:MEASure:AFRequency:ACLevel:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:ACLevel:LLIMit:VALue?

Description: Sets Low Limit value.
Returns parameter setting.

Parameter: p = Limit value
u = MV | V

Example: :MEASure:AFRequency:ACLevel:LLIMit:VALue 2 MV

Query Response: :MEASure:AFRequency:ACLevel:LLIMit:VALue?
+2.00000E-03

:MEASure:AFRequency:ACLevel:METer(_)p
:MEASure:AFRequency:ACLevel:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:ACLevel:METer:STATe(_)p
:MEASure:AFRequency:ACLevel:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:ACLevel:METer:HEND(_)p(_)MV
:MEASure:AFRequency:ACLevel:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p value is high end of scale

:MEASure:AFRequency:ACLevel:METer:HEND:DUNits(_)MV
:MEASure:AFRequency:ACLevel:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: MV

:MEASure:AFRequency:ACLevel:METer:INTerval(_)p
:MEASure:AFRequency:ACLevel:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:AFRequency:ACLevel:METer:LEND(_)p(_)MV
:MEASure:AFRequency:ACLevel:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p value is low end of scale

:MEASure:AFRequency:ACLevel:METer:LEND:DUNits(_)MV
:MEASure:AFRequency:ACLevel:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: MV

:MEASure:AFRequency:ACLevel:REFerence(_)p(_)u
:MEASure:AFRequency:ACLevel:REFerence?

Description: Sets reference value.
Returns parameter setting in V.

Parameter: p = reference value
u = MV | V

Example: :MEASure:AFRequency:ACLevel:REFerence 5 MV

Query Response: :MEASure:AFRequency:ACLevel:REFerence?
+5.00000E-03

:MEASure:AFRequency:ACLevel:REFerence:STATe(_)p
:MEASure:AFRequency:ACLevel:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:ACLevel:REFerence:STATe ON

Query Response: :MEASure:AFRequency:ACLevel:REFerence:STATe?
1

:MEASure:AFRequency:ACLevel:REFerence:VALue(_)p(_)u
:MEASure:AFRequency:ACLevel:REFerence:VALue?

Description: Sets reference value for AC Level measurements.
Returns parameter setting.

Parameter: p = reference value
u = MV | V

Example: :MEASure:AFRequency:ACLevel:REFerence:VALue 5 MV

Query Response: :MEASure:AFRequency:ACLevel:REFerence:VALue?
+5.00000E-03

:MEASure:AFRequency:ACLevel:STATe(_)p
:MEASure:AFRequency:ACLevel:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:ACLevel:STATe ON

Query Response: :MEASure:AFRequency:ACLevel:STATe?
1

:MEASure:AFRequency:ACLevel:UNITs(_)u
:MEASure:AFRequency:ACLevel:UNITs?

Description: GPIB units for AC Level measurements.
Returns parameter setting.

Parameter: u = V

10.13 AF FREQUENCY - AM MEASURE COMMANDS

:MEASure:AFRequency:AM?

Description: Returns measurement as a PCT.

:MEASure:AFRequency:AM:AUNits(_)u
:MEASure:AFRequency:AM:AUNits?

Description: Defines unit of measure for AM measurements.
Returns parameter setting.

Parameter: u = PCT

:MEASure:AFRequency:AM:AVERage(_)p
:MEASure:AFRequency:AM:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:AM:AVERage 25

Query Response: :MEASure:AFRequency:AM:AVERage?
2.500000E+00

:MEASure:AFRequency:AM:AVERage:RESet

Description: Resets AM average measurement.

Parameter/Query: none

:MEASure:AFRequency:AM:AVERage:STATe(_)p
:MEASure:AFRequency:AM:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter: ON | OFF | 0 | 1

Example: :MEASure:AFRequency:AM:AVERage:STATe ON

Query Response: :MEASure:AFRequency:AM:AVERage:STATe?
1

:MEASure:AFRequency:AM:AVERage:VALue(_)p
:MEASure:AFRequency:AM:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:AM:AVERage:VALue 25

Query Response: :MEASure:AFRequency:AM:AVERage:VALue?
2.500000E+00

:MEASure:AFRequency:AM:DUNits(_)u
:MEASure:AFRequency:AM:DUNits?

Description: Sets parameter display units to PCT.
Returns parameter setting.

Parameter: u = PCT

:MEASure:AFRequency:AM:HLIMit(_)p(_)u
:MEASure:AFRequency:AM:HLIMit?

Description: Sets High Limit value.
Returns parameter setting.

Parameter: p = Limit value
u = PCT

Example: :MEASure:AFRequency:AM:HLIMit 5.0 PCT

Query Response: :MEASure:AFRequency:AM:HLIMit?
+5.000000E+00

:MEASure:AFRequency:AM:HLIMit:DUNits(_)PCT
:MEASure:AFRequency:AM:HLIMit:DUNits?

Description: Sets parameter display units as PCT.
Returns parameter setting.

Parameter: PCT

:MEASure:AFRequency:AM:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:AFRequency:AM:HLIMit:EXCeeded?
0

:MEASure:AFRequency:AM:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:AM:HLIMit:STATe(_)p
:MEASure:AFRequency:AM:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:AM:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:AM:HLIMit:STATe?
1

:MEASure:AFRequency:AM:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:AM:HLIMit:VALue?

Description: Sets AM High Limit as a PCT.
Returns parameter setting.

Parameter: p = Limit value
u = PCT

Example: :MEASure:AFRequency:AM:HLIMit:VALue 5.0 PCT

Query Response: :MEASure:AFRequency:AM:HLIMit:VALue?
+5.000000E+00

:MEASure:AFRequency:AM:LLIMit(_)p(_)u
:MEASure:AFRequency:AM:LLIMit?

Description: Sets Low Limit value as a PCT.
Returns parameter setting.

Parameter: p = Limit value
u = PCT

Example: :MEASure:AFRequency:AM:LLIMit 2.0 PCT

Query Response: :MEASure:AFRequency:AM:LLIMit?
+2.000000E+00

:MEASure:AFRequency:AM:LLIMit:DUNits(_)u
:MEASure:AFRequency:AM:LLIMit:DUNits?

Description: Sets parameter display units as PCT.
Returns parameter setting.

Parameter: u = PCT

:MEASure:AFRequency:AM:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:AM:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:AM:LLIMit:STATe(_)p
:MEASure:AFRequency:AM:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:AM:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:AM:LLIMit:STATe?
1

:MEASure:AFRequency:AM:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:AM:LLIMit:VALue?

Description: Sets AM Low Limit as a PCT.

Parameter: p = Limit value
u = PCT

Example: :MEASure:AFRequency:AM:LLIMit:VALue 1.0 PCT

Query Response: :MEASure:AFRequency:AM:LLIMit:VALue?
+2.000000E+00

:MEASure:AFRequency:AM:METer(_)p
:MEASure:AFRequency:AM:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:AM:METer:STATe(_)p
:MEASure:AFRequency:AM:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:AM:METer:HEND(_)p(_)u
:MEASure:AFRequency:AM:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = PCT

:MEASure:AFRequency:AM:METer:HEND:DUNits(_)u
:MEASure:AFRequency:AM:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:AFRequency:AM:METer:INTerval(_)p
:MEASure:AFRequency:AM:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:AFRequency:AM:METer:LEND(_)p(_)u
:MEASure:AFRequency:AM:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = PCT

:MEASure:AFRequency:AM:METer:LEND:DUNits(_)u
:MEASure:AFRequency:AM:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: PCT

:MEASure:AFRequency:AM:REFerence(_)p(_)u
:MEASure:AFRequency:AM:REFerence?

Description: Sets reference as a PCT.
Returns parameter setting as a PCT.

Parameter: p = reference value
u = PCT

Example: :MEASure:AFRequency:AM:REFerence 10 PCT

Query Response: :MEASure:AFRequency:AM:REFerence?
+1.000000E+-1

:MEASure:AFRequency:AM:REFerence:STATe(_)p
:MEASure:AFRequency:AM:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:AM:REFerence:STATe ON

Query Response: :MEASure:AFRequency:AM:REFerence:STATe?
1

:MEASure:AFRequency:AM:REFerence:VALue(_)p(_)u
:MEASure:AFRequency:AM:REFerence:VALue?

Description: Sets reference value for AM measurements.
Returns parameter setting.

Parameter: p = reference value
u = PCT

Example: :MEASure:AFRequency:AM:REFerence:VALue 10 PCT

Query Response: :MEASure:AFRequency:AM:REFerence:VALue?
+1.000000E+-1

:MEASure:AFRequency:AM:STATe(_)p
:MEASure:AFRequency:AM:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:AM:STATe ON

Query Response: :MEASure:AFRequency:AM:STATe?
1

:MEASure:AFRequency:AM:UNITs(_)u
:MEASure:AFRequency:AM:UNITs?

Description: Sets AM measurements units.
Returns parameter setting.

Parameter: u = PCT

10.14 AF FREQUENCY - DISTN MEASURE COMMANDS

NOTE

Based on :AFAN:INPUT command:
For Demod Distortion = AM Demod, FM Demod or SSB Demod
For Audio Distortion = Audio In

:MEASure:AFRequency:DISTN?

Description: Returns parameter setting in PCT/dB.

:MEASure:AFRequency:DISTN:AUNits(_)u
:MEASure:AFRequency:DISTN:AUNits?

Description: Defines unit of measure for Distortion measurements.
Returns parameter setting.
Parameter: u = PCT

:MEASure:AFRequency:DISTN:AVERage(_)p
:MEASure:AFRequency:DISTN:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.
Parameter: p = average value
Example: :MEASure:AFRequency:DISTN:AVERage 25
Query Response: :MEASure:AFRequency:DISTN:AVERage?
2.500000E+01

:MEASure:AFRequency:DISTN:AVERage:RESet

Description: Resets AM average measurement.
Parameter/Query: none

:MEASure:AFRequency:DISTN:AVERage:STATe(_)p
:MEASure:AFRequency:DISTN:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.
Parameter: ON | OFF | 0 | 1
Example: :MEASure:AFRequency:DISTN:AVERage:STATe ON
Query Response: :MEASure:AFRequency:DISTN:AVERage:STATe?
1

:MEASure:AFRequency:DISTN:AVERage:VALue(_)p
:MEASure:AFRequency:DISTN:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.
Parameter: p = average value
Example: :MEASure:AFRequency:DISTN:AVERage:VALue 25
Query Response: :MEASure:AFRequency:DISTN:AVERage:VALue?
2.500000E+01

:MEASure:AFRequency:DISTN:DUNits(_)u
:MEASure:AFRequency:DISTN:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:AFRequency:DISTN:HLIMit(_)p(_)u
:MEASure:AFRequency:DISTN:HLIMit?

Description: Sets High Limit value as a PCT or in dB.
Returns parameter setting in PCT or in dB.

Parameter: p = Limit value
u = PCT | DB

Example: :MEASure:AFRequency:DISTN:HLIMit 5.0 PCT

Query Response: :MEASure:AFRequency:DISTN:HLIMit?
+5.000000E+00

:MEASure:AFRequency:DISTN:HLIMit:DUNits(_)u
:MEASure:AFRequency:DISTN:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT | DB

:MEASure:AFRequency:DISTN:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:DISTN:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:DISTN:HLIMit:STATe(_)p
:MEASure:AFRequency:DISTN:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DISTN:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:DISTN:HLIMit:STATe?
1

:MEASure:AFRequency:DISTN:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:DISTN:HLIMit:VALue?

Description: Sets High Limit as a PCT/dB.
Returns parameter setting.

Parameter: p = Limit value
u = PCT | DB

Example: :MEASure:AFRequency:DISTN:HLIMit:VALue 5.0 PCT

Query Response: :MEASure:AFRequency:DISTN:HLIMit:VALue?
+5.000000E+00

:MEASure:AFRequency:DISTN:LLIMit(_)p(_)u
:MEASure:AFRequency:DISTN:LLIMit?

Description: Sets Low Limit value as a PCT or in dB.
Returns parameter setting as a PCT.

Parameter: p = Limit value
u = PCT | DB

Example: :MEASure:AFRequency:DISTN:LLIMit 2.0 PCT

Query Response: :MEASure:AFRequency:DISTN:LLIMit?
+2.000000E+00

:MEASure:AFRequency:DISTN:LLIMit:DUNits(_)u
:MEASure:AFRequency:DISTN:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT | DB

:MEASure:AFRequency:DISTN:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:DISTN:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:DISTN:LLIMit:STATe(_)p
:MEASure:AFRequency:DISTN:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DISTN:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:DISTN:LLIMit:STATe?
1

:MEASure:AFRequency:DISTN:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:DISTN:LLIMit:VALue?

Description: Sets Low Limit as a PCT or in dB.
Returns parameter setting.

Parameter: p = Limit value
u = PCT | DB

Example: :MEASure:AFRequency:DISTN:LLIMit:VALue 2.0 PCT

Query Response: :MEASure:AFRequency:DISTN:LLIMit:VALue?
+2.000000E+00

:MEASure:AFRequency:DISTN:METer(_)p
:MEASure:AFRequency:DISTN:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:DISTN:METer:STATe(_)p
:MEASure:AFRequency:DISTN:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:DISTN:METer:HEND(_)p(_)u
:MEASure:AFRequency:DISTN:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = PCT | DB

:MEASure:AFRequency:DISTN:METer:HEND:DUNits(_)u
:MEASure:AFRequency:DISTN:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:AFRequency:DISTN:METer:INTerval(_)p
:MEASure:AFRequency:DISTN:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = number of divisions

:MEASure:AFRequency:DISTN:METer:LEND(_)p(_)u
:MEASure:AFRequency:DISTN:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = PCT | DB

:MEASure:AFRequency:DISTN:METer:LEND:DUNits(_)u
:MEASure:AFRequency:DISTN:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:AFRequency:DISTN:REFerence(_)p(_)u
:MEASure:AFRequency:DISTN:REFerence?

Description: Sets reference as a PCT or in dB.
Returns parameter setting as a PCT.

Parameter: p = reference value
u = PCT | DB

Example: :MEASure:AFRequency:DISTN:REFerence 2 PCT

Query Response: :MEASure:AFRequency:DISTN:REFerence?
+2.000000E+00

:MEASure:AFRequency:DISTN:REFerence:STATe(_)p
:MEASure:AFRequency:DISTN:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DISTN:REFerence:STATe ON

Query Response: :MEASure:AFRequency:DISTN:REFerence:STATe?
1

:MEASure:AFRequency:DISTN:REFerence:VALue(_)p(_)u
:MEASure:AFRequency:DISTN:REFerence:VALue?

Description: Sets reference value for AM measurements.
Returns parameter setting.

Parameter: p = reference value
u = PCT

Example: :MEASure:AFRequency:DISTN:REFerence:VALue 2 PCT

Query Response: :MEASure:AFRequency:DISTN:REFerence:VALue?
+2.000000E+00

:MEASure:AFRequency:DISTN:STATe(_)p
:MEASure:AFRequency:DISTN:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:DISTN:UNITs(_)u
:MEASure:AFRequency:DISTN:UNITs?

Description: Sets AM measurements units as PCT or in dB.
Returns parameter setting.

Parameter: u = PCT | DB

10.15 AF FREQUENCY - DISTORTION MEASURE COMMANDS

:MEASure:AFRequency:DISTortion?

Description: Returns measurement in PCT/dB.

:MEASure:AFRequency:DISTortion:AUNits(_)u
:MEASure:AFRequency:DISTortion:AUNits?

Description: Defines unit of measure for Distortion measurements as PCT.
Returns parameter setting.

Parameter: u = PCT

:MEASure:AFRequency:DISTortion:AVERage(_)p
:MEASure:AFRequency:DISTortion:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:DISTortion:AVERage 25

Query Response: :MEASure:AFRequency:DISTortion:AVERage?
2.500000E+01

:MEASure:AFRequency:DISTortion:AVERage:RESet

Description: Resets average measurement.

Parameter/Query: none

:MEASure:AFRequency:DISTortion:AVERage:STATe(_)p
:MEASure:AFRequency:DISTortion:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter: ON | OFF | 0 | 1

Example: :MEASure:AFRequency:DISTortion:REFerence:STATe ON

Query Response: :MEASure:AFRequency:DISTortion:REFerence:STATe?
1

:MEASure:AFRequency:DISTortion:AVERage:VALue(_)p
:MEASure:AFRequency:DISTortion:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:DISTortion:AVERage:VALue 25

Query Response: :MEASure:AFRequency:DISTortion:AVERage:VALue?
2.500000E+01

:MEASure:AFRequency:DISTortion:DUNits(_)u
:MEASure:AFRequency:DISTortion:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT | DB

:MEASure:AFRequency:DISTortion:HLIMit(_)p(_)u
:MEASure:AFRequency:DISTortion:HLIMit?

Description: Sets High Limit value.
Returns parameter setting.

Parameter: p = limit value
u = PCT

Example: :MEASure:AFRequency:DISTortion:HLIMit 5.0 PCT

Query Response: :MEASure:AFRequency:DISTortion:HLIMit?
+5.000000E+00

:MEASure:AFRequency:DISTortion:HLIMit:DUNits(_)u
:MEASure:AFRequency:DISTortion:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:AFRequency:DISTortion:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:AFRequency:DISTortion:HLIMit:EXCeeded?
0

:MEASure:AFRequency:DISTortion:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:DISTortion:HLIMit:STATe(_)p
:MEASure:AFRequency:DISTortion:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DISTortion:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:DISTortion:HLIMit:STATe?
1

:MEASure:AFRequency:DISTortion:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:DISTortion:HLIMit:VALue?

Description: Sets High Limit value.
Returns parameter setting.

Parameter: p = limit value
u = PCT

Example: :MEASure:AFRequency:DISTortion:HLIMit:VALue 5.0 PCT

Query Response: :MEASure:AFRequency:DISTortion:HLIMit:VALue?
+5.000000E+00

:MEASure:AFRequency:DISTortion:LLIMit(_)p(_)u
:MEASure:AFRequency:DISTortion:LLIMit?

Description: Sets Low Limit value as a PCT or in dB.
Returns parameter setting as a PCT.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:DISTortion:LLIMit 2.0 DB

Query Response: :MEASure:AFRequency:DISTortion:LLIMit?
+1.258925E+02

:MEASure:AFRequency:DISTortion:LLIMit:DUNits(_)PCT/DB
:MEASure:AFRequency:DISTortion:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: PCT | DB

:MEASure:AFRequency:DISTortion:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:AFRequency:DISTortion:LLIMit:EXCeeded?
0

:MEASure:AFRequency:DISTortion:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:DISTortion:LLIMit:STATe(_)p
:MEASure:AFRequency:DISTortion:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DISTortion:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:DISTortion:LLIMit:STATe?
1

:MEASure:AFRequency:DISTortion:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:DISTortion:LLIMit:VALue?

Description: Sets Low Limit as a PCT or in dB.
Returns parameter setting as a PCT.

Parameter: p = lower limit value
u = PCT | DB

Example: :MEASure:AFRequency:DISTortion:LLIMit:VALue 2.0 DB

Query Response: :MEASure:AFRequency:DISTortion:LLIMit:VALue?
+1.258925E+02

:MEASure:AFRequency:DISTortion:METer(_)p
:MEASure:AFRequency:DISTortion:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:DISTortion:METer:STATe(_)p
:MEASure:AFRequency:DISTortion:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:DISTortion:METer:HEND(_)p(_)u
:MEASure:AFRequency:DISTortion:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = PCT | DB

:MEASure:AFRequency:DISTortion:METer:HEND:DUNits(_)u
:MEASure:AFRequency:DISTortion:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:AFRequency:DISTortion:METer:INTerval(_)p
:MEASure:AFRequency:DISTortion:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:AFRequency:DISTortion:METer:LEND(_)p(_)u
:MEASure:AFRequency:DISTortion:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = PCT | DB

:MEASure:AFRequency:DISTortion:METer:LEND:DUNits(_)u
:MEASure:AFRequency:DISTortion:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:AFRequency:DISTortion:REFerence(_)p(_)u
:MEASure:AFRequency:DISTortion:REFerence?

Description: Sets reference as a PCT or in dB.
Returns parameter setting as a PCT.

Parameter: p = reference value
u = PCT | DB

Example: :MEASure:AFRequency:DISTortion:REFerence 2 PCT

Query Response: :MEASure:AFRequency:DISTortion:REFerence?
+2.000000E+00

:MEASure:AFRequency:DISTortion:REFerence:STATe(_)p
:MEASure:AFRequency:DISTortion:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:DISTortion:REFerence:STATe ON

Query Response: :MEASure:AFRequency:DISTortion:REFerence:STATe?
1

:MEASure:AFRequency:DISTortion:REFerence:VALue(_)p(_)u
:MEASure:AFRequency:DISTortion:REFerence:VALue?

Description: Sets reference value for measurements.
Returns parameter setting.

Parameter: p = reference value
u = PCT

Example: :MEASure:AFRequency:DISTortion:REFerence:VALue 2 PCT

Query Response: :MEASure:AFRequency:DISTortion:REFerence:VALue?
+2.000000E+00

:MEASure:AFRequency:DISTortion:STATe(_)p
:MEASure:AFRequency:DISTortion:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:DISTortion:UNITs(_)u
:MEASure:AFRequency:DISTortion:UNITs?

Description: Sets measurements units as PCT or in dB
Returns parameter setting.

Parameter: u = PCT | DB

10.16 AF FREQUENCY - FM MEASURE COMMANDS

:MEASure:AFRequency:FM?

Description: Returns parameter measurement in Hz

:MEASure:AFRequency:FM:AUNits(_)u

Description: Defines unit of measurement as Hz
Parameter: u = HZ

:MEASure:AFRequency:FM:AVERage(_)p
:MEASure:AFRequency:FM:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.
Parameter: p = average value
Example: :MEASure:AFRequency:FM:AVERage 25
Query Response: :MEASure:AFRequency:FM:AVERage?
2.500000E+00

:MEASure:AFRequency:FM:AVERage?:RESet

Description: Resets average measurement.
Parameter/Query: none

:MEASure:AFRequency:FM:AVERage:STATe(_)p
:MEASure:AFRequency:FM:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.
Parameter: OFF | ON | 0 | 1
Example: :MEASure:AFRequency:FM:AVERage:STATe ON
Query Response: :MEASure:AFRequency:FM:AVERage:STATe?
1

:MEASure:AFRequency:FM:AVERage:VALue(_)p
:MEASure:AFRequency:FM:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.
Parameter: p = average value
Example: :MEASure:AFRequency:FM:AVERage:VALue 25
Query Response: :MEASure:AFRequency:FM:AVERage:VALue?
2.500000E+00

:MEASure:AFRequency:FM:DUNits(_)u
:MEASure:AFRequency:FM:DUNits?

Description: Command Place Holder. No Op.
Parameter: u = HZ

:MEASure:AFRequency:FM:HLIMit(_)p(_)u
:MEASure:AFRequency:FM:HLIMit?

Description: Sets High Limit value.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:AFRequency:FM:HLIMit 50 KHZ

Query Response: :MEASure:AFRequency:FM:HLIMit?
+5.000000E+04

:MEASure:AFRequency:FM:HLIMit:DUNits(_)KHZ
:MEASure:AFRequency:FM:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: KHZ

:MEASure:AFRequency:FM:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:FM:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:FM:HLIMit:STATe(_)p
:MEASure:AFRequency:FM:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:FM:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:FM:HLIMit:STATe?
1

:MEASure:AFRequency:FM:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:FM:HLIMit:VALue?

Description: Sets High Limit in kHz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:AFRequency:FM:HLIMit:VALue 50 KHZ

Query Response: :MEASure:AFRequency:FM:HLIMit:VALue?
+5.000000E+04

:MEASure:AFRequency:FM:LLIMit(_)p(_)u
:MEASure:AFRequency:FM:LLIMit?

Description: Sets Low Limit value in kHz.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:AFRequency:FM:LLIMit 50 KHZ

Query Response: :MEASure:AFRequency:FM:LLIMit?
+5.000000E+04

:MEASure:AFRequency:FM:LLIMit:DUNits(_)u
:MEASure:AFRequency:FM:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:AFRequency:FM:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:FM:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:FM:LLIMit:STATe(_)p
:MEASure:AFRequency:FM:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:FM:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:FM:LLIMit:STATe?
1

:MEASure:AFRequency:FM:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:FM:LLIMit:VALue?

Description: Sets Low Limit in kHz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:AFRequency:FM:LLIMit:VALue 50 KHZ

Query Response: :MEASure:AFRequency:FM:LLIMit:VALue?
+5.000000E+04

:MEASure:AFRequency:FM:METer(_)p
:MEASure:AFRequency:FM:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:FM:METer:HEND(_)p(_)u
:MEASure:AFRequency:FM:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = HZ | KHZ

:MEASure:AFRequency:FM:METer:HEND:DUNits(_)u
:MEASure:AFRequency:FM:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:AFRequency:FM:METer:INTerval(_)p
:MEASure:AFRequency:FM:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:AFRequency:FM:METer:LEND(_)p(_)u
:MEASure:AFRequency:FM:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = HZ | KHZ

:MEASure:AFRequency:FM:METer:LEND:DUNits(_)u
:MEASure:AFRequency:FM:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:AFRequency:FM:REFerence(_)p(_)u
:MEASure:AFRequency:FM:REFerence?

Description: Sets reference in Hz/kHz.
Returns parameters setting in Hz.

Parameter: p = reference value
u = HZ | KHZ

Example: :MEASure:AFRequency:FM:REFerence 5 KHZ

Query Response: :MEASure:AFRequency:FM:REFerence?
+5.000000E+03

:MEASure:AFRequency:FM:REFerence:STATe(_)p
:MEASure:AFRequency:FM:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:FM:REFerence:STATe ON

Query Response: :MEASure:AFRequency:FM:REFerence:STATe?
1

:MEASure:AFRequency:FM:REFerence:VALue(_)p(_)u

Description: Sets reference value for FM measurements in kHz.
Returns parameter setting.

Parameter: p = reference value
u = HZ | KHZ

Example: :MEASure:AFRequency:FM:REFerence:VALue 5 KHZ

Query Response: :MEASure:AFRequency:FM:REFerence:VALue?
+5.000000E+03

:MEASure:AFRequency:FM:STATe(_)p
:MEASure:AFRequency:FM:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:FM:UNITs(_)u
:MEASure:AFRequency:FM:UNITs?

Description: Sets GPIB units for FM.
Returns parameter setting.

Parameter: u = HZ

10.17 AF FREQUENCY - FREQUENCY MEASURE COMMANDS

NOTE

Based on :AFAN:INPUT command:
For Demod Frequency = AM Demod, FM Demod or SSB Demod
For Audio Frequency = Audio In

:MEASure:AFRequency:FREQuency?

Description: Returns parameter setting in Hz

:MEASure:AFRequency:FREQuency:AUNits(_)u
:MEASure:AFRequency:FREQuency:AUNits?

Description: Defines GPIB units in Hz.
Returns parameter setting.
Parameter: u = HZ

:MEASure:AFRequency:FREQuency:AVERage(_)p
:MEASure:AFRequency:FREQuency:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.
Parameter: p = average value
Example: :MEASure:AFRequency:FREQuency:AVERage 25
Query Response: :MEASure:AFRequency:FREQuency:AVERage?
2.500000E+00

:MEASure:AFRequency:FREQuency:AVERage:RESet

Description: Resets average measurement.
Parameter/Query: none

:MEASure:AFRequency:FREQuency:AVERage:STATe(_)p
:MEASure:AFRequency:FREQuency:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.
Parameter: OFF | ON | 0 | 1
Example: :MEASure:AFRequency:FREQuency:AVERage:STATe ON
Query Response: :MEASure:AFRequency:FREQuency:AVERage:STATe?
1

:MEASure:AFRequency:FREQuency:AVERage:VALue(_)p
:MEASure:AFRequency:FREQuency:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.
Parameter: p = average value
Example: :MEASure:AFRequency:FREQuency:AVERage:VALue 25
Query Response: :MEASure:AFRequency:FREQuency:AVERage:VALue?
2.500000E+00

:MEASure:AFRequency:FREQuency:DUNits(_)u
:MEASure:AFRequency:FREQuency:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:MEASure:AFRequency:FREQuency:HLIMit(_)p(_)u
:MEASure:AFRequency:FREQuency:HLIMit?

Description: Sets High Limit value in Hz/kHz.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:AFRequency:FREQuency:HLIMit 15 HZ

Query Response: :MEASure:AFRequency:FREQuency:HLIMit?
+1.500000E+01

:MEASure:AFRequency:FREQuency:HLIMit:DUNits(_)u
:MEASure:AFRequency:FREQuency:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:MEASure:AFRequency:FREQuency:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:FREQuency:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:FREQuency:HLIMit:STATe(_)p
:MEASure:AFRequency:FREQuency:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter; OFF | ON | 0 | 1

Example: :MEASure:AFRequency:FREQuency:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:FREQuency:HLIMit:STATe?
1

:MEASure:AFRequency:FREQuency:HLIMit:VALue(_)p(_)u

Description: Sets High Limit in Hz/kHz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:AFRequency:FREQuency:HLIMit:VALue 15 HZ

Query Response: :MEASure:AFRequency:FREQuency:HLIMit:VALue?
+1.500000E+01

:MEASure:AFRequency:FREQuency:LLIMit(_)p(_)u
:MEASure:AFRequency:FREQuency:LLIMit?

Description: Sets Low Limit value in Hz/kHz.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:AFRequency:FREQuency:LLIMit 15 HZ

Query Response: :MEASure:AFRequency:FREQuency:LLIMit?
+1.500000E+01

:MEASure:AFRequency:FREQuency:LLIMit:DUNits(_)u
:MEASure:AFRequency:FREQuency:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:MEASure:AFRequency:FREQuency:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:FREQuency:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:FREQuency:LLIMit:STATe(_)p
:MEASure:AFRequency:FREQuency:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:FREQuency:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:FREQuency:LLIMit:STATe?
1

:MEASure:AFRequency:FREQuency:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:FREQuency:LLIMit:VALue?

Description: Sets Low Limit in Hz/kHz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:AFRequency:FREQuency:LLIMit:VALue 15 HZ

Query Response: :MEASure:AFRequency:FREQuency:LLIMit:VALue?
+1.500000E+01

:MEASure:AFRequency:FREQuency:METer(_)p
:MEASure:AFRequency:FREQuency:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:FREQuency:METer:HEND(_)p(_)u
:MEASure:AFRequency:FREQuency:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = HZ | KHZ

:MEASure:AFRequency:FREQuency:METer:HEND:DUNits(_)u
:MEASure:AFRequency:FREQuency:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:MEASure:AFRequency:FREQuency:METer:INTerval(_)p
:MEASure:AFRequency:FREQuency:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:AFRequency:FREQuency:METer:LEND(_)p(_)u
:MEASure:AFRequency:FREQuency:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = HZ | KHZ

:MEASure:AFRequency:FREQuency:METer:LEND:DUNits(_)u
:MEASure:AFRequency:FREQuency:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:MEASure:AFRequency:FREQuency:REFerence(_)p(_)u
:MEASure:AFRequency:FREQuency:REFerence?

Description: Sets frequency reference in Hz/kHz.
Returns parameter setting in Hz.

Parameter: p = reference value
u = HZ | KHZ

Example: :MEASure:AFRequency:FREQuency:REFerence 15 HZ

Query Response: :MEASure:AFRequency:FREQuency:REFerence?
+1.500000E+01

:MEASure:AFRequency:FREQuency:REFerence:DUNits(_)u
:MEASure:AFRequency:FREQuency:REFerence:DUNits?

Description: Sets parameter display units in Hz/kHz.
Returns parameter setting.

Parameter: u = HZ | KHZ

:MEASure:AFRequency:FREQuency:REFerence:STATe(_)p
:MEASure:AFRequency:FREQuency:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:FREQuency:REFerence:STATe ON

Query Response: :MEASure:AFRequency:FREQuency:REFerence:STATe?
1

:MEASure:AFRequency:FREQuency:REFerence:VALue(_)p(_)u
:MEASure:AFRequency:FREQuency:REFerence:VALue?

Description: Sets reference value in Hz/kHz.
Returns parameter setting.

Parameter: p = reference value
u = HZ | KHZ

Example: :MEASure:AFRequency:FREQuency:REFerence:VALue 15 HZ

Query Response: :MEASure:AFRequency:FREQuency:REFerence:VALue?
+1.500000E+01

:MEASure:AFRequency:FREQuency:STATe(_)p
:MEASure:AFRequency:FREQuency:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:FREQuency:UNITs(_)u
:MEASure:AFRequency:FREQuency:UNITs?

Description: Sets GPIB units for measurement.
Returns parameter setting.

Parameter: u = HZ

10.18 AF FREQUENCY - SELECT COMMANDS

:MEASure:AFRequency:SELect(_)'p'

Description: Displays Meters or DMM screen depending on selection.

Parameter: DISTN | SINAD | AF(_)FREQ | SNR | DC(_)Level | Current

Example: :MEASure:AFRequency:SELect 'SINAD'

NOTE

Query command no longer supported. Effective with Software Version 1.7.8.

10.19 AF FREQUENCY - SINAD MEASURE COMMANDS

NOTE	Based on :AFAN:INPUT command: For Demod SINAD = AM Demod, FM Demod or SSB Demod For Audio SINAD = Audio In

:MEASure:AFRequency:SINAD?

Description: Returns measurement in PCT/DB.

:MEASure:AFRequency:SINAD:AUNits(_)u
:MEASure:AFRequency:SINAD:AUNits?

Description: Sets attribute units to dB.
Returns parameter setting.

Parameter: u = PCT | DB

:MEASure:AFRequency:SINAD:AVERage(_)p
:MEASure:AFRequency:SINAD:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:SINAD:AVERage 25

Query Response: :MEASure:AFRequency:SINAD:AVERage?
2.500000E+01

:MEASure:AFRequency:SINAD:AVERage:RESet

Description: Resets average measurement.

Parameter/Query: none

:MEASure:AFRequency:SINAD:AVERage:STATe(_)p
:MEASure:AFRequency:SINAD:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter/Query: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SINAD:AVERage:STATe ON

Query Response: :MEASure:AFRequency:SINAD:AVERage:STATe?
1

:MEASure:AFRequency:SINAD:AVERage:VALue(_)p
:MEASure:AFRequency:SINAD:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:AFRequency:SINAD:AVERage:VALue 25

Query Response: :MEASure:AFRequency:SINAD:AVERage:VALue?
2.500000E+01

:MEASure:AFRequency:SINAD:DUNits(_)u
:MEASure:AFRequency:SINAD:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT | DB

:MEASure:AFRequency:SINAD:HLIMit(_)p(_)u
:MEASure:AFRequency:SINAD:HLIMit?

Description: Sets High Limit value in PCT/DB.
Returns parameter setting in dB/PCT.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:SINAD:HLIMit -50 DB

Query Response: :MEASure:AFRequency:SINAD:HLIMit?
-5.000000E+01

:MEASure:AFRequency:SINAD:HLIMit:DUNits(_)u
:MEASure:AFRequency:SINAD:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT | DB

:MEASure:AFRequency:SINAD:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:AFRequency:SINAD:HLIMit:EXCeeded?
0

:MEASure:AFRequency:SINAD:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:SINAD:HLIMit:STATe(_)p
:MEASure:AFRequency:SINAD:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SINAD:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:SINAD:HLIMit:STATe?
1

:MEASure:AFRequency:SINAD:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:SINAD:HLIMit:VALue?

Description: Sets High Limit in PCT/DB.
Returns parameter setting.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:SINAD:HLIMit:VALue -50 DB

Query Response: :MEASure:AFRequency:SINAD:HLIMit:VALue?
-5.000000E+01

:MEASure:AFRequency:SINAD:LLIMit(_)p(_)u
:MEASure:AFRequency:SINAD :LLIMit?

Description: Sets Low Limit value in PCT/DB.
Returns parameter setting in dB/PCT.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:SINAD:LLIMit -50 DB

Query Response: :MEASure:AFRequency:SINAD:LLIMit?
-5.000000E+01

:MEASure:AFRequency:SINAD:LLIMit:DUNits(_)u
:MEASure:AFRequency:SINAD:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT | DB

:MEASure:AFRequency:SINAD:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:SINAD:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:SINAD:LLIMit:STATe(_)p
:MEASure:AFRequency:SINAD:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SINAD:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:SINAD:LLIMit:STATe?
1

:MEASure:AFRequency:SINAD:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:SINAD:LLIMit:VALue?

Description: Sets Low Limit in PCT/DB.
Returns parameter setting.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:SINAD:LLIMit:VALue -50 DB

Query Response: :MEASure:AFRequency:SINAD:LLIMit:VALue?
-5.000000E+01

:MEASure:AFRequency:SINAD:METer(_)p
:MEASure:AFRequency:SINAD:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:SINAD:METer:HEND(_)p(_)u
:MEASure:AFRequency:SINAD:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = PCT | DB

:MEASure:AFRequency:SINAD:METer:HEND:DUNits(_)u
:MEASure:AFRequency:SINAD:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:MEASure:AFRequency:SINAD:METer:INTerval(_)p
:MEASure:AFRequency:SINAD:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:AFRequency:SINAD:METer:LEND(_)p(_)u
:MEASure:AFRequency:SINAD:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = PCT | DB

:MEASure:AFRequency:SINAD:METer:LEND:DUNits(_)u
:MEASure:AFRequency:SINAD:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:MEASure:AFRequency:SINAD:REFerence(_)p(_)u
:MEASure:AFRequency:SINAD:REFerence?

Description: Sets reference as a PCT or in dB.
Returns parameter setting.

Parameter: p = reference value
u = PCT | DB

Example: :MEASure:AFRequency:SINAD:REFerence 5 PCT

Query Response: :MEASure:AFRequency:SINAD:REFerence?
+5.000000E+00

:MEASure:AFRequency:SINAD:REFerence:STATe(_)p
:MEASure:AFRequency:SINAD:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting in dB.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SINAD:REFerence:STATe ON

Query Response: :MEASure:AFRequency:SINAD:REFerence:STATe?
1

:MEASure:AFRequency:SINAD:REFerence:VALue(_)p(_)u
:MEASure:AFRequency:SINAD:REFerence:VALue?

Description: Sets reference value for Sinad measurements.
Returns parameter setting.

Parameter: p = reference value
u = PCT | DB

Example: :MEASure:AFRequency:SINAD:REFerence:VALue 5 PCT

Query Response: :MEASure:AFRequency:SINAD:REFerence:VALue?
+5.000000E+00

:MEASure:AFRequency:SINAD:STATe(_)p
:MEASure:AFRequency:SINAD:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:SINAD:UNITs(_)u
:MEASure:AFRequency:SINAD:UNITs?

Description: Sets unit of measurement in PCT/DB.
Returns parameter setting in dB.

Parameter: u = PCT | DB

10.20 AF FREQUENCY - SNR MEASURE COMMANDS

NOTE	Based on :AFAN:INPUT command: For Demod SNR = AM Demod, FM Demod or SSB Demod For Audio SNR = Audio In

:MEASure:AFRequency:SNR?

Description: Returns measurement in PCT/DB.

:MEASure:AFRequency:SNR:AUNits(_)u
:MEASure:AFRequency:SNR:AUNits?

Description: Sets attribute units in dB.
Returns parameter setting in dB.

Parameter: u = PCT | DB

:MEASure:AFRequency:SNR:AVERage(_)p
:MEASure:AFRequency:SNR:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting in dB.

Parameter: p = average value

Example: :MEASure:AFRequency:SNR:AVERage 25

Query Response: :MEASure:AFRequency:SNR:AVERage?
2.500000E+00

:MEASure:AFRequency:SNR:AVERage:RESet

Description: Resets average measurement.

Parameter/Query: none

:MEASure:AFRequency:SNR:AVERage:STATe(_)p
:MEASure:AFRequency:SNR:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting in dB.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SNR:AVERage:STATe ON

Query Response: :MEASure:AFRequency:SNR:AVERage:STATe?
1

:MEASure:AFRequency:SNR:AVERage:VALue(_)p
:MEASure:AFRequency:SNR:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting in dB.

Parameter: p = average value

Example: :MEASure:AFRequency:SNR:AVERage:VALue 25

Query Response: :MEASure:AFRequency:SNR:AVERage:VALue?
2.500000E+00

:MEASure:AFRequency:SNR:DUNits(_)u
:MEASure:AFRequency:SNR:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:MEASure:AFRequency:SNR:HLIMit(_)p(_)u
:MEASure:AFRequency:SNR:HLIMit?

Description: Sets High Limit value.
Returns parameter setting in DB.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:SNR:HLIMit 5 DB

Query Response: :MEASure:AFRequency:SNR:HLIMit?
+5.000000E+00

:MEASure:AFRequency:SNR:HLIMit:DUNits(_)u
:MEASure:AFRequency:SNR:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:MEASure:AFRequency:SNR:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:SNR:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:SNR:HLIMit:STATe(_)p
:MEASure:AFRequency:SNR:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SNR:HLIMit:STATe ON

Query Response: :MEASure:AFRequency:SNR:HLIMit:STATe?
1

:MEASure:AFRequency:SNR:HLIMit:VALue(_)p(_)u
:MEASure:AFRequency:SNR:HLIMit:VALue?

Description: Sets High Limit in dB/PCT.
Returns parameter setting in DB.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:SNR:HLIMit:VALue 5 PCT

Query Response: :MEASure:AFRequency:SNR:HLIMit:VALue?
-2.602060E+01

:MEASure:AFRequency:SNR:LLIMit(_)p(_)u
:MEASure:AFRequency:SNR:LLIMit?

Description: Sets Low Limit value in dB/PCT.
Returns parameter setting in dB.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:SNR:LLIMit 5 PCT

Query Response: :MEASure:AFRequency:SNR:LLIMit?
-2.602060E+01

:MEASure:AFRequency:SNR:LLIMit:DUNits(_)u
:MEASure:AFRequency:SNR:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:MEASure:AFRequency:SNR:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:AFRequency:SNR:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:AFRequency:SNR:LLIMit:STATe(_)p
:MEASure:AFRequency:SNR:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SNR:LLIMit:STATe ON

Query Response: :MEASure:AFRequency:SNR:LLIMit:STATe?
1

:MEASure:AFRequency:SNR:LLIMit:VALue(_)p(_)u
:MEASure:AFRequency:SNR:LLIMit:VALue?

Description: Sets Low Limit in dB/PCT.
Returns parameter setting.

Parameter: p = limit value
u = PCT | DB

Example: :MEASure:AFRequency:SNR:LLIMit:VALue 5 DB

Query Response: :MEASure:AFRequency:SNR:LLIMit:VALue?
+5.000000E+00

:MEASure:AFRequency:SNR:METer(_)p
:MEASure:AFRequency:SNR:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:AFRequency:SNR:METer:HEND(_)p(_)u
:MEASure:AFRequency:SNR:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = PCT | DB

:MEASure:AFRequency:SNR:METer:HEND:DUNits(_)u
:MEASure:AFRequency:SNR:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:MEASure:AFRequency:SNR:METer:INTerval(_)p
:MEASure:AFRequency:SNR:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = number of divisions

:MEASure:AFRequency:SNR:METer:LEND(_)p(_)u
:MEASure:AFRequency:SNR:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = PCT | DB

:MEASure:AFRequency:SNR:METer:LEND:DUNits(_)u
:MEASure:AFRequency:SNR:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DB

:MEASure:AFRequency:SNR:REFerence(_)p(_)u
:MEASure:AFRequency:SNR:REFerence?

Description: Sets reference in dB.
Returns parameter setting in dB.

Parameter: p = reference value
u = PCT | DB

Example: :MEASure:AFRequency:SNR:REFerence 2 PCT

Query Response: :MEASure:AFRequency:SNR:REFerence?
-3.397940E+01

:MEASure:AFRequency:SNR:REFerence:STATe(_)p
:MEASure:AFRequency:SNR:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SNR:REFerence:STATe ON

Query Response: :MEASure:AFRequency:SNR:REFerence:STATe?
1

:MEASure:AFRequency:SNR:REFerence:VALue(_)p(_)u
:MEAsure:AFRequency:SNR:REFerence:VALue?

Description: Sets reference value for SNR measurements in dB/PCT.
Returns parameter setting in DB.

Parameter: p = reference value
u = PCT | DB

Example: :MEASure:AFRequency:SNR:REFerenc:VALuee 2 PCT

Query Response: :MEASure:AFRequency:SNR:REFerence:VALue?
-3.397940E+01

:MEASure:AFRequency:SNR:STATe(_)p
:MEASure:AFRequency:SNR:STATe?

Description: Enables/Disables SNR Meter.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:AFRequency:SNR:STATe ON

Query Response: :MEASure:AFRequency:SNR:STATe?
1

:MEASure:AFRequency:SNR:UNITs(_)u
:MEASure:AFRequency:SNR:UNITs?

Description: Sets GPIB units of measurement.
Returns parameter setting.

Parameter: u = PCT | DB

10.21 OSCILLOSCOPE COMMANDS

NOTE	Must send :AFAN:INPUT command to set Scope trace prior to sending any Scope commands.

:OSCilloscope:CONTrol(_)'p
:OSCilloscope:CONTrol?

Description: Command Place Holder. No Op.

Parameter: MAIN | TRIGGER | MARKER

:OSCilloscope:MARKer:NPEak

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:MARKer:PPEak

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:MARKer:POSition(_)p(_)u
:OSCilloscope:MARKer:POSition?

Description: Sets Marker position.
Returns parameter setting.

Parameter: p = marker position
u = DIV

Example: :OSCilloscope:MARKer:POSition 25 DIV

Query Response: :OSCilloscope:MARKer:POSition?
+2.500000E+01

:OSCilloscope:MARKer:POSition:DUNits(_)u
:OSCilloscope:MARKer:POSition:DUNits?

Description: Sets parameter display units in divisions.
Returns parameter setting.

Parameter: u = DIV

:OSCilloscope:MARKer:POSition:INCRement(_)p(_)u
:OSCilloscope:MARKer:POSition:INCRement?

Description: Defines Increment value.
Returns parameter setting.

Parameter: p = value in divisions
u = DIV

Example: :OSCilloscope:MARKer:POSition:INCRement 2 DIV

Query Response: :OSCilloscope:MARKer:POSition:INCRement?
+2.000000E+00

:OSCilloscope:MARKer:POSition:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:OSCilloscope:MARKer:POSition:INCRement:DUNits(_)u
:OSCilloscope:MARKer:POSition:INCRement:DUNits?

Description: Sets parameter display units in divisions.
Returns parameter setting.

Parameter: u = DIV

:OSCilloscope:MARKer:POSition:INCRement:MODE(_)p
:OSCilloscope:MARKer:POSition:INCRement:MODE?

Description: Defines Increment Mode.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :OSCilloscope:MARKer:POSition:INCRement:MODE LINEAR

Query Response: :OSCilloscope:MARKer:POSition:INCRement:MODE?
LIN

:OSCilloscope:MARKer:POSition:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:OSCilloscope:MARKer:POSition:UNITs(_)DIV
:OSCilloscope:MARKer:POSition:UNITs?

Description: Sets GPIB units as DIV.
Returns parameter setting.

Parameter: DIV

:OSCilloscope:SCALe:TIME(_)'p(_)MS'
:OSCilloscope:SCALe:TIME?

Description: Defines horizontal sweep time per division.
Returns parameter setting.

Parameter: p = value in MS

Example: :OSCilloscope:SCALe:TIME '100 MS'

Query Response: :OSCilloscope:SCALe:TIME?
"100 MS"

:OSCilloscope:SCALe:VERTical:AM(_)'p(_)%'
:OSCilloscope:SCALe:VERTical:AM?

Description: Defines vertical scale for AM measurements.
Returns parameter setting.

Parameter: p = value in PCT

Example: :OSCilloscope:SCALe:VERTical:AM '1 %'

Query Response: :OSCilloscope:SCALe:VERTical:AM?
"1 %"

NOTE Applies to AF Analog and AM Demod

:OSCilloscope:SCALe:VERTical:FM(_)'p(_)u'
:OSCilloscope:SCALe:VERTical:FM?

Description: Defines vertical scale for FM measurements.
Returns parameter setting.

Parameter: p = value in Hz/kHz
u = HZ | KHZ

Example: :OSCilloscope:SCALe:VERTical:FM '200 HZ'

Query Response: :OSCilloscope:SCALe:VERTical:FM?
"200 HZ"

NOTE Applies to AF Analog and FM Demod

:OSCilloscope:SCALe:VERTical:OFFSet(_)p(_)u
:OSCilloscope:SCALe:VERTical:OFFSet?

Description: Sets Offset value.
Returns parameter setting.

Parameter: p = value in divisions
u = DIV

Example: :OSCilloscope:SCALe:VERTical:OFFSet 5 DIV

Query Response: :OSCilloscope:SCALe:VERTical:?
+5.000000E+00

:OSCilloscope:SCALe:VERTical:OFFSet:INCRement(_)p(_)u
:OSCilloscope:SCALe:VERTical:OFFSet:INCRement?

Description: Defines Vertical Offset Increment setting.
Returns parameter setting.

Parameter: p = value in divisions
u = DIV

Example: :OSCilloscope:SCALe:VERTical:OFFSet:INCRement 2 DIV

Query Response: :OSCilloscope:SCALe:VERTical:OFFSet:INCRement?
+2.000000E+00

:OSCilloscope:SCALe:VERTical:OFFSet:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:OSCilloscope:SCALe:VERTical:OFFSet:INCRement:DUNits(_)u
:OSCilloscope:SCALe:VERTical:OFFSet:INCRement:DUNits?

Description: Sets parameter display units in divisions.
Returns parameter setting.

Parameter: u = DIV

:OSCilloscope:SCALe:VERTical:OFFSet:INCRement:MODE(_)p
:OSCilloscope:SCALe:VERTical:OFFSet:INCRement:MODE?

Description: Defines Increment Mode.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :OSCilloscope:SCALe:VERTical:OFFSet:INCRement:MODE LINEAR

Query Response: :OSCilloscope:SCALe:VERTical:OFFSet:INCRement:MODE?
LIN

:OSCilloscope:SCALe:VERTical:OFFSet:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:OSCilloscope:SCALe:VERTical:OFFSet:UNITs(_)DIV
:OSCilloscope:SCALe:VERTical:OFFSet:UNITs?

Description: Command for RCI only.
Returns parameter setting.

Parameter: DIV

:OSCilloscope:SCALe:VERTical:VOLTs(_)'p(_)V'
:OSCilloscope:SCALe:VERTical:VOLTs?

Description: Defines Vertical Offset in Volts.
Returns parameter setting.

Parameter: p = value in Volts

Example: :OSCilloscope:SCALe:VERTical:VOLTs ‘10 V’

Query Response: :OSCilloscope:SCALe:VERTical:VOLTs?
“10 V”

:OSCilloscope:TRIGger:LEVel(_)p.pp(_)DIV
:OSCilloscope:TRIGger:LEVel?

Description: Sets Trigger level in divisions.
Returns parameter setting.

Parameter: p = level value in divisions

Example: :OSCilloscope:TRIGger:LEVel 5.00 DIV

Query Response: :OSCilloscope:TRIGger:LEVel?
+5.000000E+00

:OSCilloscope:TRIGger:LEVel:INCRement(_)p(_)u
:OSCilloscope:TRIGger:LEVel:INCRement?

Description: Defines Increment value.
Returns parameter setting.

Parameter: p = increment value
u = DIV

Example: :OSCilloscope:TRIGger:LEVel:INCRement 5 DIV

Query Response: :OSCilloscope:TRIGger:LEVel:INCRement?
+5.000000E+00

:OSCilloscope:TRIGger:LEVel:INCRement(_)UP

Description: Increases level setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:OSCilloscope:TRIGger:LEVel:INCRement(_)DOWN

Description: Decreases level setting by value defined in :INCRement(_)p command.

Parameter/Query: none

:OSCilloscope:TRIGger:LEVel:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:OSCilloscope:TRIGger:LEVel:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:OSCilloscope:TRIGger:DELay(_)p
:OSCilloscope:TRIGger:DELay?

Description: Command Place Holder. No Op.

Parameter: p = settling rate

:OSCilloscope:TRIGger:DELay:INCRement(_)p(_)u
:OSCilloscope:TRIGger:DELay:INCRement?

Description: Command Place Holder. No Op.

Parameter: p = increment value

:OSCilloscope:TRIGger:DELay:INCRement(_)UP

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:DELay:INCRement(_)DOWN

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:DELay:INCRement:DIVide

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:DELay:INCRement:MULTiply

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:MODE(_)'p'
:OSCilloscope:TRIGger:MODE?

Description: Defines trigger sweep mode.
Returns parameter setting.

Parameter: Cont | Single
Cont = Continuous sweep
Single = Single sweep

Example: :OSCilloscope:TRIGger:MODE 'CONT'

Query Response: :OSCilloscope:TRIGger:MODE?
"CONT"

:OSCilloscope:TRIGger:PRETrigger(_)p.pp(_)u
:OSCilloscope:TRIGger:PRETrigger?

Description: Command Place Holder. No Op.

Parameter: p.pp = number of divisions
u = DIV

:OSCilloscope:TRIGger:PRETrigger:INCRement(_)0.1(_)DIV
:OSCilloscope:TRIGger:PRETrigger:INCRement?

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:PRETrigger:INCRement(_)UP

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:PRETrigger:INCRement(_)DOWN

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:PRETrigger:INCRement:DIVide

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:PRETrigger:INCRement:MULTiply

Description: Command Place Holder. No Op.

Parameter/Query: none

:OSCilloscope:TRIGger:RESet

Description: Resets scope trigger when :MODE:SINGle is selected.

Parameter/Query: none

:OSCilloscope:TRIGger:SENSe(_)'p'
:OSCilloscope:TRIGger:SENSe?

Description: Sets whether triggering occurs at positive or negative.
Returns parameter setting.

Parameter: POS | NEG
POS = Positive going signal
NEG = Negative going signal

Example: :OSCilloscope:TRIGger:SENSe 'POS'

Query Response: :OSCilloscope:TRIGger:SENSe?
"POS"

:OSCilloscope:TRIGger:SOURce(_)'p'
:OSCilloscope:TRIGgerSOURce?

Description: Selects Trigger Source.
Returns parameter setting.

Parameter: Internal | Ext(TTL) | Encoder
Internal = Uses displayed signal for trigger source.
External = Uses EXT Scope Trigger Input for trigger source.

Example: :OSCilloscope:TRIGger:SOURce 'ENCODER'

Query Response: :OSCilloscope:TRIGger:SOURce?
"ENCODER"

:OSCilloscope:TRIGger:TYPE(_)'p'
:OSCilloscope:TRIGger:TYPE?

Description: Sets how trigger level is set.
Returns parameter setting.

Parameter: Auto | Norm
Auto = Triggers automatically
Norm = Triggers only when conditions are met.

Example: :OSCilloscope:TRIGger:TYPE 'AUTO'

Query Response: :OSCilloscope:TRIGger:TYPE?
"AUTO"

10.22 OSCILLOSCOPE MEASURE COMMANDS

:MEASure:OSCilloscope:MARKer:LEVel:AM?

Description: Returns measurement as a PCT.

:MEASure:OSCilloscope:MARKer:LEVel:AM:AUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:AUNits?

Description: Defines unit of measure for Average readings.
Returns parameter setting.

Parameter: u = PCT

:MEASure:OSCilloscope:MARKer:LEVel:AM:AVERage(_)p
:MEASure:OSCilloscope:MARKer:LEVel:AM:AVERage?

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:OSCilloscope:MARKer:LEVel:AM:AVERage:RESet

Description: Command Place Holder. No Op.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:AM:AVERage:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:AM:AVERage:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:OSCilloscope:MARKer:LEVel:AM:AVERage:VALue(_)p
:MEASure:OSCilloscope:MARKer:LEVel:AM:AVERage:VALue?

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:OSCilloscope:MARKer:LEVel:AM:DUNits(_)PCT
:MEASure:OSCilloscope:MARKer:LEVel:AM:DUNits?

Description: Command Place Holder. No Op.

Parameter: PCT

:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit?

Description: Sets High Limit value as a PCT.
Returns parameter setting in PCT.

Parameter: p = limit value
u = PCT

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit 5 PCT

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:VALue?

Description: Sets High Limit value as a PCT.
Returns parameter setting.

Parameter: p = limit value
u = PCT

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:VALue 5 PCT

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:HLIMit:VALue?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit?

Description: Sets Low Limit value.
Returns parameter setting.

Parameter: p = limit value
u = PCT

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit 5 PCT

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:VALue?

Description: Sets Low Limit as a PCT.
Returns parameter setting.

Parameter: p = limit value
u = PCT

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:VALue 5 PCT

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:LLIMit:VALue?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence?

Description: Sets reference as a PCT.
Returns parameter setting in PCT.

Parameter: p = reference value
u = PCT

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence 5 PCT

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = PCT

:MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:VALue?

Description: Sets reference value for Marker Level measurements as a PCT.
Returns parameter setting.

Parameter: p = reference value
u = PCT

Example: :MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:VALue 5 PCT

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:AM:REFerence:VALue?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:AM:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:AM:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:OSCilloscope:MARKer:LEVel:AM:UNITs(_)PCT
:MEASure:OSCilloscope:MARKer:LEVel:AM:UNITs?

Description: Sets GPIB units of measurement.
Returns parameter setting.

Parameter: PCT

:MEASure:OSCilloscope:MARKer:LEVel:FM?

Description: Returns measurement in Hz.

:MEASure:OSCilloscope:MARKer:LEVel:FM:AUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:AUNits?

Description: Defines unit of measurement.
Returns parameter setting.

Parameter: u = HZ

:MEASure:OSCilloscope:MARKer:LEVel:FM:AVERage(_)p
:MEASure:OSCilloscope:MARKer:LEVel:FM:AVERage?

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:OSCilloscope:MARKer:LEVel:FM:AVERage:RESet

Description: Command Place Holder. No Op.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:FM:AVERage:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:FM:AVERage:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:OSCilloscope:MARKer:LEVel:FM:AVERage:VALue(_)p
:MEASure:OSCilloscope:MARKer:LEVel:FM:AVERage:VALue?

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:OSCilloscope:MARKer:LEVel:FM:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit?

Description: Sets High Limit value in kHz.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit -50 HZ

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit?
-5.000000E+01

:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:DUNits(_)HZ/KHZ
:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: HZ | KHZ

:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:VALue?

Description: Sets High Limit value in Hz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:VALue -50 HZ

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:HLIMit:VALue?
+5.000000E+01

:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit?

Description: Sets Low Limit value in Hz.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit -50 HZ

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit?
+5.000000E+01

:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:VALue?

Description: Sets Low Limit in Hz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:VALue -50 HZ

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:LLIMit:VALue?
+5.000000E+01

:MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence?

Description: Sets reference in Hz/kHz.
Returns parameter setting in Hz.

Parameter: p = reference value
u = HZ | KHZ

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence 5 KHZ

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ | KHZ

:MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:VALue?

Description: Sets reference value in Hz/kHz.
Returns parameter setting.

Parameter: p = reference value
u = HZ | KHZ

Example: :MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:VALue 5 KHZ

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:FM:REFerence:VALue?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:FM:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:FM:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:OSCilloscope:MARKer:LEVel:FM:UNITs(_)u
:MEASure:OSCilloscope:MARKer:LEVel:FM:UNITs?

Description: Sets GPIB units to Hz.
Returns parameter setting.

Parameter: u = HZ

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs?

Description: Returns measurement in Volts.

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:AUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:AUNits?

Description: Defines unit of measure for measurement.
Returns parameter setting.

Parameter: u = V

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:AVERage(_)p
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:AVERage?

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:AVERage:RESet

Description: Command Place Holder. No Op.

Parameer/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:AVERage:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:AVERage:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:AVERage:VALue(_)p

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit(_)p(_)u
:MEASure:OSCilloscope:MARKerLEVel:VOLTs:HLIMit?

Description: Sets High Limit value in Volts.
Returns parameter setting in Volts.

Parameter: p = limit value
u = V

Example: :MEASure:OSCilloscope:MARKerLEVel:VOLTs:HLIMit 5 V

Query Response: :MEASure:OSCilloscope:MARKerLEVel:VOLTs:HLIMit?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:HLIMit:VALue?

Description: Sets High Limit value in Volts.
Returns parameter setting.

Parameter: p = limit value
u = V

Example: :MEASure:OSCilloscope:MARKerLEVel:VOLTs:HLIMit:VALue 5 V

Query Response: :MEASure:OSCilloscope:MARKerLEVel:VOLTs:HLIMit:VALue?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit?

Description: Sets Low Limit value in V.
Returns parameter setting.

Parameter: p = limit value
u = V

Example: :MEASure:OSCilloscope:MARKerLEVel:VOLTs:LLIMit 5 V

Query Response: :MEASure:OSCilloscope:MARKerLEVel:VOLTs:LLIMit?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:LLIMit:VALue?

Description: Sets Low Limit in V.
Returns parameter setting.

Parameter: p = limit value
u = V

Example: :MEASure:OSCilloscope:MARKerLEVel:VOLTs:LLIMit:VALue 5 V

Query Response: :MEASure:OSCilloscope:MARKerLEVel:VOLTs:LLIMit:VALue?
+5.000000E+00

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence?

Description: Sets reference in Volts.
Returns parameter setting.

Parameter: p = reference value
u = V

Example: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence 10 V

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence?
+1.000000E+01

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:DUNits(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = V

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:STATe?
1

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:VALue?

Description: Sets reference in Volts.
Returns parameter setting.

Parameter: p = reference value
u = V

Example: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:VALue 10 V

Query Response: :MEASure:OSCilloscope:MARKer:LEVel:VOLTs:REFerence:VALue?
+1.000000E+01

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:STATe(_)p
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:UNITs(_)u
:MEASure:OSCilloscope:MARKer:LEVel:VOLTs:UNITs?

Description: Sets GPIB units for Marker level as Volts.
Returns parameter setting.

Parameter: u = V

:MEASure:OSCilloscope:MARKer:TIME?

Description: Returns parameter setting.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:TIME:AUNits(_)u
:MEASure:OSCilloscope:MARKer:TIME:AUNits?

Description: Defines unit of measure for measurement.
Returns parameter setting.

Parameter: u = S

:MEASure:OSCilloscope:MARKer:TIME:AVERage(_)p
:MEASure:OSCilloscope:MARKer:TIME:AVERage?

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:OSCilloscope:MARKer:TIME:AVERage:RESet

Description: Command Place Holder. No Op.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:TIME:AVERage:STATe(_)p
:MEASure:OSCilloscope:MARKer:TIME:AVERage:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:OSCilloscope:MARKer:TIME:AVERage:VALue(_)p

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:OSCilloscope:MARKer:TIME:DUNits(_)u
:MEASure:OSCilloscope:MARKer:TIME:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = S

:MEASure:OSCilloscope:MARKer:TIME:HLIMit(_)p(_)u
:MEASure:OSCilloscope:MARKer:TIME:HLIMit?

Description: Sets High Limit value in seconds.
Returns parameter setting in seconds.

Parameter: p = limit value
u = S

Example: :MEASure:OSCilloscope:MARKer:TIME:HLIMit 5 S

Query Response: :MEASure:OSCilloscope:MARKer:TIME:HLIMit?
+5.0000E+00

:MEASure:OSCilloscope:MARKer:TIME:HLIMit:DUNits(_)S
:MEASure:OSCilloscope:MARKer:TIME:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: S

:MEASure:OSCilloscope:MARKer:TIME:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:OSCilloscope:MARKer:TIME:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:OSCilloscope:MARKer:TIME:HLIMit:STATe(_)p
:MEASure:OSCilloscope:MARKer:TIME:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:TIME:HLIMit:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:TIME:HLIMit:STATe?
1

:MEASure:OSCilloscope:MARKer:TIME:HLIMit:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:TIME:HLIMit:VALue?

Description: Sets High Limit value in seconds.
Returns parameter setting.

Parameter: p = limit value
u = S

Example: :MEASure:OSCilloscope:MARKer:TIME:HLIMit:VALue 5 S

Query Response: :MEASure:OSCilloscope:MARKer:TIME:HLIMit:VALue?
+5.0000E+00

:MEASure:OSCilloscope:MARKer:TIME:LLIMit(_)p(_)u
:MEASure:OSCilloscope:MARKer:TIME:LLIMit?

Description: Sets Low Limit value in seconds.
Returns parameter setting.

Parameter: p = limit value
u = S

Example: :MEASure:OSCilloscope:MARKer:TIME:LLIMit 5 S

Query Response: :MEASure:OSCilloscope:MARKer:TIME:LLIMit?
+5.0000E+00

:MEASure:OSCilloscope:MARKer:TIME:LLIMit:DUNits(_)u
:MEASure:OSCilloscope:MARKer:TIME:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = S

:MEASure:OSCilloscope:MARKer:TIME:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

Query Response: :MEASure:OSCilloscope:MARKer:TIME:LLIMit:EXCeeded?
0

:MEASure:OSCilloscope:MARKer:TIME:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter: none

:MEASure:OSCilloscope:MARKer:TIME:LLIMit:STATe(_)p
:MEASure:OSCilloscope:MARKer:TIME:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:TIME:LLIMit:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:TIME:LLIMit:STATe?
1

:MEASure:OSCilloscope:MARKer:TIME:LLIMit:VALue(_)p(_)S
:MEASure:OSCilloscope:MARKer:TIME:LLIMit:VALue?

Description: Sets Low Limit in seconds.
Returns parameter setting.

Parameter: p = limit value
u = S

Example: :MEASure:OSCilloscope:MARKer:TIME:LLIMit:VALue 5 S

Query Response: :MEASure:OSCilloscope:MARKer:TIME:LLIMit:VALue?
+5.0000E+00

:MEASure:OSCilloscope:MARKer:TIME:REFerence(_)p(_)u
:MEASure:OSCilloscope:MARKer:TIME:REFerence?

Description: Sets reference in seconds.
Returns parameter setting in ms.

Parameter: p = reference value
u = S

Example: :MEASure:OSCilloscope:MARKer:TIME:REFerence 2 S

Query Response: :MEASure:OSCilloscope:MARKer:TIME:REFerence
+2.000000E-03

:MEASure:OSCilloscope:MARKer:TIME:REFerence:DUNits(_)u
:MEASure:OSCilloscope:MARKer:TIME:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = S

:MEASure:OSCilloscope:MARKer:TIME:REFerence:STATe(_)p
:MEASure:OSCilloscope:MARKer:TIME:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:OSCilloscope:MARKer:TIME:REFerence:STATe ON

Query Response: :MEASure:OSCilloscope:MARKer:TIME:REFerence:STATe?
1

:MEASure:OSCilloscope:MARKer:TIME:REFerence:VALue(_)p(_)u
:MEASure:OSCilloscope:MARKer:TIME:REFerence:VALue?

Description: Sets reference value in seconds.
Returns parameter setting.

Parameter: p = reference value
u = S

Example: :MEASure:OSCilloscope:MARKer:TIME:REFerence:VALue 2 S

Query Response: :MEASure:OSCilloscope:MARKer:TIME:REFerence:VALue?
:MEASure:OSCilloscope:MARKer:TIME:REFerence
+2.000000E-03

:MEASure:OSCilloscope:MARKer:TIME:STATe(_)p
:MEASure:OSCilloscope:MARKer:TIME:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:OSCilloscope:MARKer:TIME:UNITs(_)u
:MEASure:OSCilloscope:MARKer:TIME:UNITs?

Description: Sets GPIB units for Marker time measurements in seconds.
Returns parameter setting.

Parameter: u = S

:MEASure:OSCilloscope:MARKer:TRACe?

Description: Command Place Holder. No Op.

10.23 RF FREQUENCY - FREQUENCY MEASURE COMMANDS

:MEASure:RFRequency:FREQuency:ABSolute?

Description: Returns measurement in Hz.

:MEASure:RFRequency:FREQuency:ABSolute:AUNits(_)u
:MEASure:RFRequency:FREQuency:ABSolute:AUNits?

Description: Sets attribute units of RF absolute frequency in Hz.
Returns parameter setting.

Parameter: u = HZ

:MEASure:RFRequency:FREQuency:ABSolute:AVERage(_)p
:MEASure:RFRequency:FREQuency:ABSolute:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:RFRequency:FREQuency:ABSolute:AVERage:VALue 25

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:AVERage:VALue?
2.500000E+00

:MEASure:RFRequency:FREQuency:ABSolute:AVERage:RESet

Description: Resets average measurement.

Parameter/Query: none

:MEASure:RFRequency:FREQuency:ABSolute:AVERage:STATe(_)p
:MEASure:RFRequency:FREQuency:ABSolute:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:FREQuency:ABSolute:AVERage:STATe ON

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:AVERage:STATe?
1

:MEASure:RFRequency:FREQuency:ABSolute:AVERage:VALue(_)p
:MEASure:RFRequency:FREQuency:ABSolute:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:RFRequency:FREQuency:ABSolute:AVERage:VALue 25

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:AVERage:VALue?
2.500000E+00

:MEASure:RFRequency:FREQuency:ABSolute:DUNits(_)MHZ
:MEASure:RFRequency:FREQuency:ABSolute:DUNits?

Description: Command Place Holder. No Op.

Parameter: MHZ

:MEASure:RFRequency:FREQuency:ABSolute:HLIMit(_)p(_)u
:MEASure:RFRequency:FREQuency:ABSolute:HLIMit?

Description: Sets High Limit value.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ABSolute:HLIMit 10 MHZ

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:HLIMit?
+1.000000E+07

:MEASure:RFRequency:FREQuency:ABSolute:HLIMit:DUNits(_)u
:MEASure:RFRequency:FREQuency:ABSolute:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MHZ

:MEASure:RFRequency:FREQuency:ABSolute:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:RFRequency:FREQuency:ABSolute:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:RFRequency:FREQuency:ABSolute:HLIMit:STATe(_)p
:MEASure:RFRequency:FREQuency:ABSolute:HLIMit:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:FREQuency:ABSolute:HLIMit:STATe ON

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:HLIMit:STATe?
1

:MEASure:RFRequency:FREQuency:ABSolute:LLIMit(_)p(_)u
:MEASure:RFRequency:FREQuency:ABSolute:LLIMit?

Description: Sets Low Limit value.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ABSolute:LLIMit 5 MHZ

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:LLIMit?
+5.000000E+06

:MEASure:RFRequency:FREQuency:ABSolute:LLIMit:DUNits(_)u
:MEASure:RFRequency:FREQuency:ABSolute:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MHZ

:MEASure:RFRequency:FREQuency:ABSolute:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:RFRequency:FREQuency:ABSolute:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:RFRequency:FREQuency:ABSolute:LLIMit:STATe(_)p
:MEASure:RFRequency:FREQuency:ABSolute:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:FREQuency:ABSolute:LLIMit:STATe ON

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:LLIMit:STATe?
1

:MEASure:RFRequency:FREQuency:ABSolute:LLIMit:VALue(_)p(_)u
:MEASure:RFRequency:FREQuency:ABSolute:LLIMit:VALue?

Description: Sets Low Limit in MHz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ABSolute:LLIMit:VALue 5 MHZ

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:LLIMit:VALue?
+5.000000E+06

:MEASure:RFRequency:FREQuency:ABSolute:METer(_)p
:MEASure:RFRequency:FREQuency:ABSolute:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:RFRequency:FREQuency:ABSolute:METer:HEND(_)p(_)u
:MEASure:RFRequency:FREQuency:ABSolute:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = HZ | KHZ | MHZ

:MEASure:RFRequency:FREQuency:ABSolute:METer:HEND:DUNits(_)u
:MEASure:RFRequency:FREQuency:ABSolute:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MHZ

:MEASure:RFRequency:FREQuency:ABSolute:METer:INTerval(_)p
:MEASure:RFRequency:FREQuency:ABSolute:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:RFRequency:FREQuency:ABSolute:METer:LEND(_)p(_)u
:MEASure:RFRequency:FREQuency:ABSolute:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = HZ | KHZ | MHZ

:MEASure:RFRequency:FREQuency:ABSolute:METer:LEND:DUNits(_)u
:MEASure:RFRequency:FREQuency:ABSolute:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = MHZ

:MEASure:RFRequency:FREQuency:ABSolute:REFerence(_)p(_)u
:MEASure:RFRequency:FREQuency:ABSolute:REFerence?

Description: Sets reference in MHz/Hz/kHz.
Returns parameter setting in Hz.

Parameter: p = reference value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ABSolute:REFerence 2.5 MHZ

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:REFerence?
+2.500000E+06

:MEASure:RFRequency:FREQuency:ABSolute:REFerence:DUNits(_)MHZ
:MEASure:RFRequency:FREQuency:ABSolute:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: MHZ

:MEASure:RFRequency:FREQuency:ABSolute:REFerence:STATe(_)p
:MEASure:RFRequency:FREQuency:ABSolute:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:FREQuency:ABSolute:REFerence:STATe ON

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:REFerence:STATe?
1

:MEASure:RFRequency:FREQuency:ABSolute:REFerence:VALue(_)p(_)u
:MEASure:RFRequency:FREQuency:ABSolute:REFerence:VALue?

Description: Sets reference value in MHZ/HZ/KHZ.
Returns parameter setting.

Parameter: p = reference value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ABSolute:REFerence:VALue 2.5 MHZ

Query Response: :MEASure:RFRequency:FREQuency:ABSolute:REFerence:VALue?
+2.500000E+06

:MEASure:RFRequency:FREQuency:ABSolute:STATe(_)p
:MEASure:RFRequency:FREQuency:ABSolute:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:RFRequency:FREQuency:ABSolute:UNITs(_)u
:MEASure:RFRequency:FREQuency:ABSolute:UNITs?

Description: Sets GPIB units for RF absolute frequency measurement as Hz.
Returns parameter setting.

Parameter: u = HZ

:MEASure:RFRequency:FREQuency:ERRor?

Description: Returns parameter setting in Hz

Parameter/Query: none

:MEASure:RFRequency:FREQuency:ERRor:AUNits(_)u
:MEASure:RFRequency:FREQuency:ERRor:AUNits?

Description: Sets attribute unit for RF Error Frequency measurements as Hz.
Returns parameter setting.

Parameter: u = HZ

:MEASure:RFRequency:FREQuency:ERRor:AVERage(_)p
:MEASure:RFRequency:FREQuency:ERRor:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:RFRequency:FREQuency:ERRor:AVERage 25

Query Response: :MEASure:RFRequency:FREQuency:ERRor:AVERage?
2.500000E+00

:MEASure:RFRequency:FREQuency:ERRor:AVERage:RESet

Description: Resets average measurement.

Parameter/Query: none

:MEASure:RFRequency:FREQuency:ERRor:AVERage:STATe(_)p
:MEASure:RFRequency:FREQuency:ERRor:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter: ON | OFF

Example: :MEASure:RFRequency:FREQuency:ERRor:AVERage:STATe ON

Query Response: :MEASure:RFRequency:FREQuency:ERRor:AVERage:STATe?
1

:MEASure:RFRequency:FREQuency:ERRor:AVERage:VALue(_)p
:MEASure:RFRequency:FREQuency:ERRor:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:RFRequency:FREQuency:ERRor:AVERage:VALue 25

Query Response: :MEASure:RFRequency:FREQuency:ERRor:AVERage:VALue?
2.500000E+00

:MEASure:RFRequency:FREQuency:ERRor:DUNits(_)u
:MEASure:RFRequency:FREQuency:ERRor:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:RFRequency:FREQuency:ERRor:HLIMit(_)p(_)u
:MEASure:RFRequency:FREQuency:ERRor:HLIMit?

Description: Sets High Limit value in kHz.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ERRor:HLIMit 1 KHZ

Query Response: :MEASure:RFRequency:FREQuency:ERRor:HLIMit?
+1.000000E+03

:MEASure:RFRequency:FREQuency:ERRor:HLIMit:DUNits(_)u
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:RFRequency:FREQuency:ERRor:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:RFRequency:FREQuency:ERRor:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:RFRequency:FREQuency:ERRor:HLIMit:STATe(_)p
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:FREQuency:ERRor:HLIMit:STATe ON

Query Response: :MEASure:RFRequency:FREQuency:ERRor:HLIMit:STATe?
1

:MEASure:RFRequency:FREQuency:ERRor:HLIMit:VALue(_)p(_)u
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:VALue?

Description: Sets High Limit value.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ERRor:HLIMit:VALue

Query Response: :MEASure:RFRequency:FREQuency:ERRor:HLIMit:VALue?

:MEASure:RFRequency:FREQuency:ERRor:LLIMit(_)p(_)u
:MEASure:RFRequency:FREQuency:ERRor:LLIMit?

Description: Sets Low Limit value.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ERRor:LLIMit

Query Response: :MEASure:RFRequency:FREQuency:ERRor:LLIMit?

:MEASure:RFRequency:FREQuency:ERRor:LLIMit:DUNits(_)u
:MEASure:RFRequency:FREQuency:ERRor:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:RFRequency:FREQuency:ERRor:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:RFRequency:FREQuency:ERRor:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:RFRequency:FREQuency:ERRor:LLIMit:STATe(_)p
:MEASure:RFRequency:FREQuency:ERRor:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:FREQuency:ERRor:LLIMit:STATe ON

Query Response: :MEASure:RFRequency:FREQuency:ERRor:LLIMit:STATe?
1

:MEASure:RFRequency:FREQuency:ERRor:LLIMit:VALue(_)p(_)u
:MEASure:RFRequency:FREQuency:ERRor:LLIMit:VALue?

Description: Sets Low Limit value.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ERRor:LLIMit:VALue

Query Response: :MEASure:RFRequency:FREQuency:ERRor:LLIMit:VALue?

:MEASure:RFRequency:FREQuency:ERRor:METer(_)p
:MEASure:RFRequency:FREQuency:ERRor:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:RFRequency:FREQuency:ERRor:METer:HEND(_)p(_)u
:MEASure:RFRequency:FREQuency:ERRor:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = HZ | KHZ | MHZ

:MEASure:RFRequency:FREQuency:ERRor:METer:HEND:DUNits(_)u
:MEASure:RFRequency:FREQuency:ERRor:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:RFRequency:FREQuency:ERRor:METer:INTerval(_)p
:MEASure:RFRequency:FREQuency:ERRor:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:RFRequency:FREQuency:ERRor:METer:LEND(_)p(_)u
:MEASure:RFRequency:FREQuency:ERRor:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = HZ | KHZ | MHZ

:MEASure:RFRequency:FREQuency:ERRor:METer:LEND:DUNits(_)u
:MEASure:RFRequency:FREQuency:ERRor:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:RFRequency:FREQuency:ERRor:REFerence(_)p(_)u
:MEASure:RFRequency:FREQuency:ERRor:REFerence?

Description: Sets reference value.
Returns parameter setting in Hz.

Parameter: p = reference value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ERRor:REFerence 1 KHZ

Query Response: :MEASure:RFRequency:FREQuency:ERRor:REFerence?
+1.000000E+03

:MEASure:RFRequency:FREQuency:ERRor:REFerence:DUNits(_)u
:MEASure:RFRequency:FREQuency:ERRor:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:RFRequency:FREQuency:ERRor:REFerence:STATe(_)p
:MEASure:RFRequency:FREQuency:ERRor:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:FREQuency:ERRor:REFerence:STATe ON

Query Response: :MEASure:RFRequency:FREQuency:ERRor:REFerence:STATe?
1

:MEASure:RFRequency:FREQuency:ERRor:REFerence:VALue(_)p(_)u
:MEASure:RFRequency:FREQuency:ERRor:REFerence:VALue?

Description: Sets reference value in MHz/Hz/kHz.
Returns parameter setting.

Parameter: p = reference value
u = HZ | KHZ | MHZ

Example: :MEASure:RFRequency:FREQuency:ERRor:REFerence:VALue 1 KHZ

Query Response: :MEASure:RFRequency:FREQuency:ERRor:REFerence:VALue?
+1.000000E+03

:MEASure:RFRequency:FREQuency:ERRor:STATe(_)p
:MEASure:RFRequency:FREQuency:ERRor:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:RFRequency:FREQuency:ERRor:UNITs(_)u
:MEASure:RFRequency:FREQuency:ERRor:UNITs?

Description: Sets GPIB units for RF Error measurements as Hz.
Returns parameter setting.

Parameter: u = HZ

10.24 RF FREQUENCY - POWER MEASURE COMMANDS

:MEASure:RFRequency:POWer?

Description: Returns measurement in Watts or dBm.

:MEASure:RFRequency:POWer:AUNits(_)u
:MEASure:RFRequency:POWer:AUNits?

Description: Sets attribute units for RF Power measurements as Watts.
Returns parameter setting.

Parameter: u = W

:MEASure:RFRequency:POWer:AVERage(_)p
:MEASure:RFRequency:POWer:AVERage?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:RFRequency:POWer:AVERage 25

Query Response: :MEASure:RFRequency:POWer:AVERage?
2.500000E+00

:MEASure:RFRequency:POWer:AVERage:RESet

Description: Resets average measurement.

Parameter/Query: none

:MEASure:RFRequency:POWer:AVERage:STATe(_)p
:MEASure:RFRequency:POWer:AVERage:STATe?

Description: Enables/Disables average measurements.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:POWer:AVERage:STATe ON

Query Response: :MEASure:RFRequency:POWer:AVERage:STATe?
1

:MEASure:RFRequency:POWer:AVERage:VALue(_)p
:MEASure:RFRequency:POWer:AVERage:VALue?

Description: Sets number of averages taken to calculate measurement.
Returns parameter setting.

Parameter: p = average value

Example: :MEASure:RFRequency:POWer:AVERage:VALue 25

Query Response: :MEASure:RFRequency:POWer:AVERage:VALue?
2.500000E+00

:MEASure:RFRequency:POWer:DUNits(_)u
:MEASure:RFRequency:POWer:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = W

:MEASure:RFRequency:POWer:HLIMit(_)p(_)W/DBM
:MEASure:RFRequency:POWer:HLIMit?

Description: Sets High Limit value.
Returns parameter setting in Watts.

Parameter: p = limit value
u = W | DBM

Example: :MEASure:RFRequency:POWer:HLIMit 2.5 DBM

Query Response: :MEASure:RFRequency:POWer:HLIMit?
+1.778279E-03

:MEASure:RFRequency:POWer:HLIMit:DUNits(_)u
:MEASure:RFRequency:POWer:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = W

:MEASure:RFRequency:POWer:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:RFRequency:POWer:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:RFRequency:POWer:HLIMit:STATe(_)p
:MEASure:RFRequency:POWer:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:POWer:HLIMit:STATe ON

Query Response: :MEASure:RFRequency:POWer:HLIMit:STATe?
1

:MEASure:RFRequency:POWer:HLIMit:VALue(_)p(_)u
:MEASure:RFRequency:POWer:HLIMit:VALue?

Description: Sets High Limit in W.
Returns parameter setting.

Parameter: p = limit value
u = W | DBM

Example: :MEASure:RFRequency:POWer:HLIMit:VALue 2.5 DBM

Query Response: :MEASure:RFRequency:POWer:HLIMit:VALue?
+1.778279E-03

:MEASure:RFRequency:POWer:LLIMit(_)p(_)u
:MEASure:RFRequency:POWer:LLIMit?

Description: Sets Low Limit value in W.
Returns parameter setting in Watts.

Parameter: p = limit value
u = W | DBM

Example: :MEASure:RFRequency:POWer:LLIMit 2.5 DBM

Query Response: :MEASure:RFRequency:POWer:LLIMit?
+1.778279E-03

:MEASure:RFRequency:POWer:LLIMit:DUNits(_)u
:MEASure:RFRequency:POWer:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = W

:MEASure:RFRequency:POWer:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:RFRequency:POWer:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:RFRequency:POWer:LLIMit:STATe(_)p
:MEASure:RFRequency:POWer:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:POWer:LLIMit:STATe ON

Query Response: :MEASure:RFRequency:POWer:LLIMit:STATe?
1

:MEASure:RFRequency:POWer:LLIMit:VALue(_)p(_)u
:MEASure:RFRequency:POWer:LLIMit:VALue?

Description: Sets Low Limit in W.
Returns parameter setting.

Parameter: p = limit value
u = W | DBM

Example: :MEASure:RFRequency:POWer:LLIMit:VALue 2.5 DBM

Query Response: :MEASure:RFRequency:POWer:LLIMit:VALue?
+1.778279E-03

:MEASure:RFRequency:POWer:METer(_)p
:MEASure:RFRequency:POWer:METer?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:RFRequency:POWer:METer:STATe(_)p
:MEASure:RFRequency:POWer:METer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:RFRequency:POWer:METer:HEND(_)p(_)u
:MEASure:RFRequency:POWer:METer:HEND?

Description: Command Place Holder. No Op.

Parameter: p = high end of scale
u = W | DBM

:MEASure:RFRequency:POWer:METer:HEND:DUNits(_)u
:MEASure:RFRequency:POWer:METer:HEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = W

:MEASure:RFRequency:POWer:METer:INTerval(_)p
:MEASure:RFRequency:POWer:METer:INTerval?

Description: Command Place Holder. No Op.

Parameter: p = the number of divisions

:MEASure:RFRequency:POWer:METer:LEND(_)p(_)u
:MEASure:RFRequency:POWer:METer:LEND?

Description: Command Place Holder. No Op.

Parameter: p = low end of scale
u = W | DBM

:MEASure:RFRequency:POWer:METer:LEND:DUNits(_)u
:MEASure:RFRequency:POWer:METer:LEND:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = W

:MEASure:RFRequency:POWer:REFerence(_)p(_)u
:MEASure:RFRequency:POWer:REFerence?

Description: Sets reference value.
Returns parameter setting in Watts.

Parameter: p = reference value
u = W | DBM

Example: :MEASure:RFRequency:POWer:REFerence 5 DBM

Query Response: :MEASure:RFRequency:POWer:REFerence?
+3.162278E-03

:MEASure:RFRequency:POWer:REFerence:DUNits(_)u
:MEASure:RFRequency:POWer:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DBM

:MEASure:RFRequency:POWer:REFerence:STATe(_)p
:MEASure:RFRequency:POWer:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:RFRequency:POWer:REFerence:STATe ON

Query Response: :MEASure:RFRequency:POWer:REFerence:STATe?
1

:MEASure:RFRequency:POWer:REFerence:VALue(_)p(_)u
:MEASure:RFRequency:POWer:REFerence:VALue?

Description: Sets reference value.
Returns parameter setting.

Parameter: p = reference value
u = W | DBM

Example: :MEASure:RFRequency:POWer:REFerence:VALue 5 DBM

Query Response: :MEASure:RFRequency:POWer:REFerence:VALue?
+3.162278E-03

:MEASure:RFRequency:POWer:STATe(_)p
:MEASure:RFRequency:POWer:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:RFRequency:POWer:UNITs(_)u
:MEASure:RFRequency:POWer:UNITs?

Description: Sets GPIB units for RF Power Measurements as Watts or dBm.
Returns parameter setting.

Parameter: u = W | DBM

10.25 SPECTRUM ANALYZER COMMANDS

NOTE	Test Set must have Spectrum Analyzer Tile selected for Remote Commands to be valid :DISPlay(_)SANalyzer.

:SANalyzer:ATTenuator(_)'p(_)DB'
:SANalyzer:ATTenuator?

Description: Sets attenuator.
Returns parameter setting in dB.

Parameter: 0(_)dB | 20(_)dB | 40(_)dB
p = a value in dB

Example: :SANalyzer:ATTenuator '20_DB'

Query Response: :SANalyzer:ATTenuator?
"20 DB"

:SANalyzer:ATTenuator:MODE(_)p
:SANalyzer:ATTenuator:MODE?

Description: Sets Attenuator mode, always 'AUTO'.
Returns parameter setting., always 'AUTO'.
Set by adjusting Spectrum Analyzer Reference Level.

Parameter: AUTO

:SANalyzer:CFRequency(_)p(_)u
:SANalyzer:CFRequency?

Description: Sets Center Frequency of Spectrum Analyzer.
Returns parameter setting in Hz.

Parameter: p = frequency value
u = HZ | KHZ | MHZ

Example: :SANalyzer:CFRequency 175 MHZ

Query Response: :SANalyzer:CFRequency?
+1.750000E+08

:SANalyzer:CFRequency:DUNits(_)u
:SANalyzer:CFRequency:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ

:SANalyzer:CFRequency:INCRement(_)p(_)u
:SANalyzer:CFRequency:INCRement?

Description: Sets Increment value in MHz.
Returns parameter setting in MHz.

Parameter: p = increment value
u = HZ | KHZ | MHZ

Example: :SANalyzer:CFRequency:INCRement 5 KHZ

Query Response: :SANalyzer:CFRequency:INCRement?
+5.000000E+03

:SANalyzer:CFRequency:INCRement(_)UP

Description: Increases Center Frequency value by value defined in :INCRement(_)p command.

Parameter/Query: none

:SANalyzer:CFRequency:INCRement(_)DOWN

Description: Decreases Center Frequency value by value defined in :INCRement(_)p command.

Parameter/Query: none

:SANalyzer:CFRequency:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:SANalyzer:CFRequency:INCRement:DUNits(_)u
:SANalyzer:CFRequency:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ

:SANalyzer:CFRequency:INCRement:MODE(_)p
:SANalyzer:CFRequency:INCRement:MODE?

Description: Sets Center Frequency Increment mode.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :SANalyzer:CFRequency:INCRement:MODE LINEAR

Query Response: :SANalyzer:CFRequency:INCRement:MODE?
LIN

:SANalyzer:CFRequency:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:SANalyzer:CFRequency:UNITs(_)u
:SANalyzer:CFRequency:UNITs?

Description: Sets Increment value in Hz.
Returns parameter setting in Hz.

Parameter: u = HZ

:SANalyzer:CONTrol(_)'p'
:SANalyzer:CONTrol?

Description: Command Place Holder. No Op.

Parameter: MAIN | RF(_)GEN | MARKer | AUXiliary

:SANalyzer:DISPlay:SCALe(_)'p(_)DB/DIV'
:SANalyzer:DISPlay:SCALe?

Description: Sets Display scale.
Returns parameter setting in dB/div.

Parameter: p = a value in dB/div
1(_)dB/div | 2(_)dB/div | 10(_)dB/div

Example: :SANalyzer:DISPlay:SCALe '2 DB/DIV'

Query Response: :SANalyzer:DISPlay:SCALe?
“2 DB/DIV?

:SANalyzer:INPut(_)'p'
:SANalyzer:INPut?

Description: Sets Spectrum Analyzer Input source.
Returns parameter setting.

Parameter: RF(_)In | ANT

Example: :SANalyzer:INPut 'ANT'

Query Response: :SANalyzer:INPut?
“ANT”

:SANalyzer:MARKer:CFRequency

Description: Sets Center Frequency to Marker position.

Parameter/Query: none

:SANalyzer:MARKer:EXCursion(_)p
:SANalyzer:MARKer:EXCursion?

Description: Command Place Holder. No Op.

Parameter: p = integer value

:SANalyzer:MARKer:EXCursion:INCRement(_)UP

Description: Command Place Holder. No Op.

Parameter/Query: none

:SANalyzer:MARKer:EXCursion:INCRement(_)DOWN

Description: Command Place Holder. No Op.

Parameter/Query: none

:SANalyzer:MARKer:NPEak

Description: Moves Marker to next peak.

Parameter/Query: none

:SANalyzer:MARKer:NPLevel(_)p(_)u
:SANalyzer:MARKer:NPLevel?

Description: Sets NP Level.
Returns parameter setting in DBM.

Parameter: p = NP level
u = DBM

Example: :SANalyzer:MARKer:NPLevel 5 DBM

Query Response: :SANalyzer:MARKer:NPLevel?
+5.000000E+00

:SANalyzer:MARKer:NPLevel:DUNits(_)u
:SANalyzer:MARKer:NPLevel:DUNits?

Description: Sets parameter display units to dBm.
Returns parameter setting.

Parameter: u = DBM

:SANalyzer:MARKer:NPLevel:INCRement(_)p(_)u
:SANalyzer:MARKer:NPLevel:INCRement?

Description: Sets Increment value in divisions.
Returns parameter setting in divisions.

Parameter: p = increment value
u = DIV

Example: :SANalyzer:MARKer:NPLevel:INCRement 5 DIV

Query Response: :SANalyzer:MARKer:NPLevel:INCRement?
+5.000000E+00

:SANalyzer:MARKer:NPLevel:INCRement(_)UP

Description: Increases next peal level value by value defined in :INCRement(_)p command.

Parameter/Query: none

:SANalyzer:MARKer:NPLevel:INCRement(_) DOWN

Description: Decreases next peak level value by value defined in :INCRement(_)p command.

Parameter/Query: none

:SANalyzer:MARKer:NPLevel:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:SANalyzer:MARKer:NPLevel:INCRement:DUNits(_)u
:SANalyzer:MARKer:NPLevel:INCRement:DUNits?

Description: Sets parameter display units in divisions.
Returns parameter setting.

Parameter: u = DBM

:SANalyzer:MARKer:NPLevel:INCRement:MODE(_)p
:SANalyzer:MARKer:NPLevel:INCRement:MODE?

Description: Sets Center Frequency Increment mode.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :SANalyzer:MARKer:NPLevel:INCRement:MODE LINEAR

Query Response: :SANalyzer:MARKer:NPLevel:INCRement:MODE?
LIN

:SANalyzer:MARKer:NPLevel:INCRement:MULTiply

Description: Multiplies Increment value by 10.

Parameter/Query: none

:SANalyzer:MARKer:NPLevel:INCRement:UNITs(_)u
:SANalyzer:MARKer:NPLevel:INCRement:UNITs?

Description: Sets GPIB units for NP Level.
Returns parameter setting.

Parameter: u = DBM

:SANalyzer:MARKer:PEAK

Description: Moves Marker to peak point.

Parameter/Query: none

:SANalyzer:MARKer:RLEVel

Description: Sets Reference Level to Marker position.

Parameter/Query: none

:SANalyzer:MARKer:POSition1(_)p(_)u
:SANalyzer:MARKer:POSition1?

Description: Sets Marker 1 position in divisions.
Returns parameter setting.

Parameter: p = marker position
u = DIV

Example: :SANalyzer:MARKer:POSition1 3 DIV

Query Response: :SANalyzer:MARKer:POSition1?
+3.000000E+00

:SANalyzer:MARKer:POSition1:DUNits(_)u
:SANalyzer:MARKer:POSition1:DUNits?

Description: Sets parameter display units in divisions.
Returns parameter setting.

Parameter: u = DIV

:SANalyzer:MARKer:POSition1:INCRement(_)p(_)u
:SANalyzer:MARKer:POSition1:INCRement?

Description: Sets position value in divisions.
Returns parameter setting.

Parameter: p = increment value
u = DIV

Example: :SANalyzer:MARKer:POSition1:INCRement 2.5 DIV

Query Response: :SANalyzer:MARKer:POSition1:INCRement?
+2.5ooooE+01

:SANalyzer:MARKer:POSition1:INCRement(_)UP

Description: Increases position by value defined in :INCrement(_)p command.

Parameter/Query: none

:SANalyzer:MARKer:POSition1:INCRement(_)DOWN

Description: Decreases position by value defined in :INCrement(_)p command.

Parameter/Query: none

:SANalyzer:MARKer:POSition1:INCRement:DIVide

Description: Divides defined Increment value by 10.
:POSition:INCRement(_)p.ppdiv command must be issued prior to :DIVide command.

Parameter/Query: none

:SANalyzer:MARKer:POSition1:INCRement:DUNits(_)u
:SANalyzer:MARKer:POSition1:INCRement:DUNits?

Description: Sets parameter display units in divisions.
Returns parameter setting.

Parameter: u = DIV

:SANalyzer:MARKer:POSition1:INCRement:MODE(_)p
:SANalyzer:MARKer:POSition1:INCRement:MODE?

Description: Defines Position Mode setting.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :SANalyzer:MARKer:POSition1:INCRement:MODE LINEAR

Query Response: :SANalyzer:MARKer:POSition1:INCRement:MODE?
LIN

:SANalyzer:MARKer:POSition1:INCRement:MULTiply

Description: Multiplies defined Increment value by 10.
:POSition:INCRement(_)p.ppdiv command must be issued prior to :MULTiply command.

Parameter/Query: none

:SANalyzer:MARKer:POSition1:UNITs(_)u
:SANalyzer:MARKer:POSition1:UNITs?

Description: Sets GPIB units in divisions.
Returns parameter setting.

Parameter: u = DIV

:SANalyzer:RLEVel(_)p(_)u
:SANalyzer:RLEVel?

Description: Sets reference level or Top of Scale.
Returns parameter setting in dBm.

Parameter: p = reference level
u = DBM | W | V | DBUV

Example: :SANalyzer:RLEVel 5 W

Query Response: :SANalyzer:RLEVel?
+3.69870E+01

:SANalyzer:RLEVel:DUNits(_)u
:SANalyzer:RLEVel:DUNits?

Description: Sets parameter display units in dBm.
Returns parameter setting in dBm/W/V/DBUV.

Parameter: u = DBM

:SANalyzer:RLEVel:INCRement(_)UP

Description: Increases Reference Level by value defined in :INCrement(_)p command.

Parameter/Query: none

:SANalyzer:RLEVelINCRement(_)DOWN

Description: Decreases Reference Level by value defined in :INCrement(_)p command.

Parameter/Query: none

:SANalyzer:RLEVel:INCRement(_)p(_)u
:SANalyzer:RLEVel:INCRement?

Description: Defines Increment value.
Returns parameter setting in dBm.

Parameter: p = increment value
u = DBM | W | V | DBUV

:SANalyzer:RLEVel:INCRement:DIVide

Description: Divides defined Increment value by 10.
:INCRement(_)pdBm command must be issued prior to :DIVide command.

Parameter/Query: none

:SANalyzer:RLEVel:INCRement:DUNits?
:SANalyzer:RLEVel:INCRement:DUNits(_)dBm

Description: Command Place Holder. No Op.

Parameter: DBM

:SANalyzer:RLEVel:INCRement:MODE(_)p
:SANalyzer:RLEVel:INCRement:MODE?

Description: Defines increment mode of operaiton.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :SANalyzer:RLEVel:INCRement:MODE LINEAR

Query Response: :SANalyzer:RLEVel:INCRement:MODE?
LIN

:SANalyzer:RLEVel:INCRement:MULTiply

Description: Multiplies defined Increment value by 10.
:INCRement(_)pdBm command must be issued prior to :MULTiply command.

Parameter/Query: none

:SANalyzer:RLEVel:STATe(_)p
:SANalyzer:RLEVel:STATe?

Description: Sets state of Generator when destination is set to Audio.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :SANalyzer:RLEVel:STATe ON

Query Response: :SANalyzer:RLEVel:STATe?
1

:SANalyzer:RLEVel:UNITs(_)u
:SANalyzer:RLEVel:UNITs?

Description: Defines Reference Level unit in dBm.
Returns parameter setting.

Parameter: u = DBM | W | V | DBUV

:SANalyzer:RFGenerator(_)'p'
:SANalyzer:RFGenerator?

Description: Selects generator type.
Returns parameter setting.

Parameter: TRACK | FIXED

Example: :SANalyzer:RFGenerator 'TRACK'

Query Response: :SANalyzer:RFGenerator?
"TRACK"

:SANalyzer:SPAN(_)p(_)u
:SANalyzer:SPAN?

Description: Sets Span in kHz.
Returns parameter setting in Hz.

Parameter: p = span value
u = KHZ | MHZ

Example: :SANalyzer:SPAN 5 KHZ

Query Response: :SANalyzer:SPAN?
+5.000000E+03

:SANalyzer:SPAN:DUNits(_)u
:SANalyzer:SPAN:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:SANalyzer:SPAN:INCRement(_)p(_)u
:SANalyzer:SPAN:INCRement?

Description: Sets Increment value in MHz/kHz.
Returns parameter setting.

Parameter: p = increment value
u = KHZ | MHZ

Example: :SANalyzer:SPAN:INCRement 1 KHZ

Query Response: :SANalyzer:SPAN:INCRement?
+1.000000E+03

:SANalyzer:SPAN:INCRement(_)UP

Description: Increases span value by value defined in :INCRement(_)p command.

Parameter/Query: none

:SANalyzer:SPAN:INCRement(_)DOWN

Description: Decreases span value by value defined in :INCRement(_)p command.

Parameter/Query: none

:SANalyzer:SPAN:INCRement:DIVide

Description: Divides defined Increment value by 10.

Parameter/Query: none

:SANalyzer:SPAN:INCRement:DUNits(_)u
:SANalyzer:SPAN:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:SANalyzer:SPAN:INCRement:MODE(_)p
:SANalyzer:SPAN:INCRement:MODE?

Description: Defines Increment Mode.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :SANalyzer:SPAN:INCRement:MODE LINEAR

Query Response: :SANalyzer:SPAN:INCRement:MODE?
LIN

:SANalyzer:SPAN:INCRement:MULTiply

Description: Multiplies increment value by 10.
:POSition:INCRement(_)p.ppdiv command must be issued prior to :MULTiply command.

Parameter/Query: none

:SANalyzer:SPAN:STATe(_)p
:SANalyzer:SPAN:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:SANalyzer:SPAN:UNITs(_)u
:SANalyzer:SPAN:UNITs?

Description: Sets Span in Hz.
Returns parameter setting.

Parameter: u = HZ

:SANalyzer:TGENerator:AMPLitude(_)p(_)u
:SANalyzer:TGENerator:AMPLitude?

Description: Sets Tracking Generator Amplitude in dBm.
Returns parameter setting in dBm.

Parameter: p = value
u = DBM

Example: :SANalyzer:TGENerator:AMPLitude -75 DBM

Query Response: :SANalyzer:TGENerator:AMPLitude?
-7.500000E+01

:SANalyzer:TGENerator:AMPLitude:DUNits(_)u
:SANalyzer:TGENerator:AMPLitude:DUNits?

Description: Sets parameter display units in dBm.
Returns parameter setting.

Parameter: u = DBM

:SANalyzer:TGENerator:AMPLitude:INCRement(_)p(_)u
:SANalyzer:TGENerator:AMPLitude:INCRement?

Description: Defines Increment value for Amplitude measurement.
Returns parameter setting in dBm.

Parameter: p = increment value
u = DBM

Example: :SANalyzer:TGENerator:AMPLitude:INCRement 1 DBM

Query Response: :SANalyzer:TGENerator:AMPLitude:INCRement?
+1.000000E+00

:SANalyzer:TGENerator:AMPLitude:INCRement_UP

Description: Increases Amplitude setting by value defined in :INCrement_p_dBm command.

Parameter/Query: none

:SANalyzer:TGENerator:AMPLitude:INCRement_DOWN

Description: Decreases Amplitude setting by value defined in :INCrement_p_dBm command.

Parameter/Query: none

:SANalyzer:TGENerator:AMPLitude:INCRement:DIVide

Description: Divides Increment value by 10.

Parameter/Query: none

:SANalyzer:TGENerator:AMPLitude:INCRement:DUNits(_)u
:SANalyzer:TGENerator:AMPLitude:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DBM

:SANalyzer:TGENerator:AMPLitude:INCRement:MODE(_)p
:SANalyzer:TGENerator:AMPLitude:INCRement:MODE?

Description: Defines Mode setting.
Returns parameter setting.

Parameter: LINear | LOGarithm

Example: :SANalyzer:TGENerator:AMPLitude:INCRement:MODE LINEAR

Query Response: :SANalyzer:TGENerator:AMPLitude:INCRement:MODE?
LIN

:SANalyzer:TGENerator:AMPLitude:INCRement:MULTiply

Description: Multiplies defined Increment value by 10.

Parameter/Query: none

:SANalyzer:TGENerator:AMPLitude:UNITs(_)u
:SANalyzer:TGENerator:AMPLitude:UNITs?

Description: Sets Tracking Generator Amplitude GPIB unit.
Returns parameter setting.

Parameter: u = DBM

:SANalyzer:TGENerator:AMPLitude:STATe(_)ON
:SANalyzer:TGENerator:AMPLitude:STATe?

Description: Enables Tracking Generator.
Returns parameter setting.

Parameter: ON

:SANalyzer:TGENerator:OFRequency(_)p(_)u
:SANalyzer:TGENerator:OFRequency?

Description: Command Place Holder. No Op.

Parameter: p = Offset value
u = HZ

:SANalyzer:TGENerator:OFRequency:DUNits(_)u
:SANalyzer:TGENerator:OFRequency:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ

:SANalyzer:TGENerator:OFRequency:INCRement(_)p(_)u
:SANalyzer:TGENerator:OFRequency:INCRement?

Description: Command Place Holder. No Op.

Parameter: p = increment value
u = HZ

:SANalyzer:TGENerator:OFRequency:INCRement(_)UP

Description: Command Place Holder. No Op.

Parameter/Query: none

:SANalyzer:TGENerator:OFRequency:INCRement(_)DOWN

Description: Decreases Offset Frequency by value defined in the :INCRement(_)p command.

Parameter/Query: none

:SANalyzer:TGENerator:OFRequency:INCRement:DIVide

Description: Command Place Holder. No Op.

Parameter/Query: none

:SANalyzer:TGENerator:OFRequency:INCRement:DUNits(_)u
:SANalyzer:TGENerator:OFRequency:INCRement:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = HZ

:SANalyzer:TGENerator:OFRequency:INCRement:MULTiply

Description: Command Place Holder. No Op.

Parameter/Query: none

:SANalyzer:TGENerator:OFRequency:UNITs(_)u
:SANalyzer:TGENerator:OFRequency:UNITs?

Description: Command Place Holder. No Op.

Parameter: u = HZ

:SANalyzer:TGENerator:DESTination(_)'p'
:SANalyzer:TGENerator:DESTination?

Description: Selects Tracking Generator port.
Returns parameter setting.

Parameter: RF(_)Out | Dupl

Example: :SANalyzer:TGENerator:DESTination 'DUPL'

Query Response: :SANalyzer:TGENerator:DESTination?
"Dupl"

:SANalyzer:TGENerator:SWEep(_)'p'
:SANalyzer:TGENerator:SWEep?

Description: Selects Tracking Generator Sweep Method.
Returns parameter setting.

Parameter: NORM (always Normal sweep)

:SANalyzer:TRACe:MHOLD(_)'p'
:SANalyzer:TRACe:MHOLD?

Description: Sets Measurement Hold parameter.
Returns parameter setting.

Parameter: No(_)Pk/Avg | Pk(_)Hold | Avg(_)n | OFF
No Pk/Avg = Peak hold and video averaging are OFF
Pk Hold = Peak hold is ON
Avg(_)n = Enables video averaging over n measurements
where n = 1, 2, 3, 4, 5, 10, 20, 50 or 100
OFF = Peak hold and video averaging are OFF

Example: :SANalyzer:TRACe:MHOLD 'Pk Hold'

Query Response: :SANalyzer:TRACe:MHOLD?
"Pk Hold"

:SANalyzer:TRACe:NORMalize(_)'p'
:SANalyzer:TRACe:NORMalize?

Description: Sets Normalize operation mode.
Returns parameter setting.

Parameter: A(_)Only | A-B
A Only = Provides live display.
A-B = Displays difference between SAVE B trace and currently displayed trace.

Example: :SANalyzer:TRACe:NORMalize 'A-B'

Query Response: :SANalyzer:TRACe:NORMalize?
"A-B"

NOTE :TRACe:SAVE command must be issued prior to :NORMalizeA-B command to obtain A-B reference reading.

:SANalyzer:TRACe:SAVE

Description: Saves currently displayed trace (Save B) for reference with Normalize A-B operation.

Parameter/Query: none

10.26 SPECTRUM ANALYZER - MEASURE COMMANDS

NOTE	Test Set must have Spectrum Analyzer Tile selected for Remote Commands to be valid :DISPlay(_)SANalyzer.

:MEASure:SANalyzer:MARKer:FREQuency?

Description: Returns Spectrum Analyzer marker frequency in Hz.

:MEASure:SANalyzer:MARKer:FREQuency:AUNits(_)u
:MEASure:SANalyzer:MARKer:FREQuency:AUNits?

Description: Sets attribute units to Hz.
Returns parameter setting.

Parameter: u = HZ

:MEASure:SANalyzer:MARKer:FREQuency:AVERage(_)p
:MEASure:SANalyzer:MARKer:FREQuency:AVERage?

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:SANalyzer:MARKer:FREQuency:AVERage:RESet

Description: Command Place Holder. No Op.

:MEASure:SANalyzer:MARKer:FREQuency:AVERage:STATe(_)p
:MEASure:SANalyzer:MARKer:FREQuency:AVERage:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:SANalyzer:MARKer:FREQuency:AVERage:VALue(_)p

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:SANalyzer:MARKer:FREQuency:DUNits(_)u
:MEASure:SANalyzer:MARKer:FREQuency:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:SANalyzer:MARKer:FREQuency:HLIMit(_)p(_)MHZ/HZ/KHZ
:MEASure:SANalyzer:MARKer:FREQuency:HLIMit?

Description: Sets High Limit value in MHz/Hz/kHz.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:SANalyzer:MARKer:FREQuency:HLIMit 1 MHZ

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:HLIMit?
+1.000000E+08

:MEASure:SANalyzer:MARKer:FREQuency:HLIMit:DUNits(_)u
:MEASure:SANalyzer:MARKer:FREQuency:HLIMit:DUNits?

Description: Sets parameter display units in MHz.
Returns parameter setting.

Parameter: u = MHZ

:MEASure:SANalyzer:MARKer:FREQuency:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:SANalyzer:MARKer:FREQuency:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:SANalyzer:MARKer:FREQuency:HLIMit:STATe(_)p
:MEASure:SANalyzer:MARKer:FREQuency:HLIMit:STATe?

Description: Enables/Disables High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:SANalyzer:MARKer:FREQuency:HLIMit:STATe ON

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:HLIMit:STATe?
1

:MEASure:SANalyzer:MARKer:FREQuency:HLIMit:VALue(_)p(_)u
:MEASure:SANalyzer:MARKer:FREQuency:HLIMit:VALue?

Description: Sets High Limit in Hz/kHz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:SANalyzer:MARKer:FREQuency:HLIMit:VALue 1 MHZ

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:HLIMit:VALue?
+1.000000E+08

:MEASure:SANalyzer:MARKer:FREQuency:LLIMit(_)p(_)u
:MEASure:SANalyzer:MARKer:FREQuency:LLIMit?

Description: Sets Low Limit value in Hz/kHz.
Returns parameter setting in Hz.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:SANalyzer:MARKer:FREQuency:LLIMit 1 kHZ

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:LLIMit?
+1.000000E+03

:MEASure:SANalyzer:MARKer:FREQuency:LLIMit:DUNits(_)u
:MEASure:SANalyzer:MARKer:FREQuency:LLIMit:DUNits?

Description: Sets parameter display units in kHz.
Returns parameter setting.

Parameter: u = KHZ

:MEASure:SANalyzer:MARKer:FREQuency:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:SANalyzer:MARKer:FREQuency:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:SANalyzer:MARKer:FREQuency:LLIMit:STATe(_)p
:MEASure:SANalyzer:MARKer:FREQuency:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:SANalyzer:MARKer:FREQuency:LLIMit:STATe ON

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:LLIMit:STATe?
1

:MEASure:SANalyzer:MARKer:FREQuency:LLIMit:VALue(_)p(_)u
:MEASure:SANalyzer:MARKer:FREQuency:LLIMit:VALue?

Description: Sets Low Limit in Hz/kHz.
Returns parameter setting.

Parameter: p = limit value
u = HZ | KHZ | MHZ

Example: :MEASure:SANalyzer:MARKer:FREQuency:LLIMit:VALue 1 KHZ

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:LLIMit:VALue?
+1.000000E+03

:MEASure:SANalyzer:MARKer:FREQuency:REFerence(_)p(_)u
:MEASure:SANalyzer:MARKer:FREQuency:REFerence?

Description: Sets reference in Hz/kHz.
Returns parameter setting in Hz.

Parameter: p = reference value
u = HZ | KHZ | MHZ

Example: :MEASure:SANalyzer:MARKer:FREQuency:REFerence 1 KHZ

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:REFerence?
+1.000000E+03

:MEASure:SANalyzer:MARKer:FREQuency:REFerence:DUNits(_)u
:MEASure:SANalyzer:MARKer:FREQuency:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = KHZ

:MEASure:SANalyzer:MARKer:FREQuency:REFerence:STATe(_)p
:MEASure:SANalyzer:MARKer:FREQuency:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:SANalyzer:MARKer:FREQuency:REFerence:STATe ON

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:REFerence:STATe?
1

:MEASure:SANalyzer:MARKer:FREQuency:REFerence:VALue(_)p(_)u
:MEASure:SANalyzer:MARKer:FREQuency:REFerence:VALue?

Description: Sets reference value in Hz/kHz.
Returns parameter setting.

Parameter: p = reference value
u = HZ | KHZ | MHZ

Example: :MEASure:SANalyzer:MARKer:FREQuency:REFerence:VALue 1 KHZ

Query Response: :MEASure:SANalyzer:MARKer:FREQuency:REFerence:VALue?
+1.000000E+03

:MEASure:SANalyzer:MARKer:FREQuency:STATe(_)p
:MEASure:SANalyzer:MARKer:FREQuency:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:SANalyzer:MARKer:FREQuency:UNITs(_)u
:MEASure:SANalyzer:MARKer:FREQuency:UNITs?

Description: Sets GPIB units for marker frequency in Hz.
Returns parameter setting.

Parameter: u = HZ

‘:MEASure:SANalyzer:MARKer:LEVel?

Description: Returns parameter setting in Watts or dBm.

:MEASure:SANalyzer:MARKer:LEVel:AUNits(_)u
:MEASure:SANalyzer:MARKer:LEVel:AUNits?

Description: Sets attribute units in dBm.
Returns parameter setting.

Parameter: u = DBM

:MEASure:SANalyzer:MARKer:LEVel:AVERage(_)p
:MEASure:SANalyzer:MARKer:LEVel:AVERage?

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:SANalyzer:MARKer:LEVel:AVERage:RESet

Description: Command Place Holder. No Op.

Parameter/Query: none

:MEASure:SANalyzer:MARKer:LEVel:AVERage:STATe(_)p
:MEASure:SANalyzer:MARKer:LEVel:AVERage:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:SANalyzer:MARKer:LEVel:AVERage:VALue(_)p

Description: Command Place Holder. No Op.

Parameter: p = average value

:MEASure:SANalyzer:MARKer:LEVel:DUNits(_)u
:MEASure:SANalyzer:MARKer:LEVel:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DBM

:MEASure:SANalyzer:MARKer:LEVel:HLIMit(_)p(_)u
:MEASure:SANalyzer:MARKer:LEVel:HLIMit?

Description: Sets High Limit value.
Returns parameter setting in dBm.

Parameter: p = limit value
u = W | DBM

Example :MEASure:SANalyzer:MARKer:LEVel:HLIMit 2 W

Query Response: :MEASure:SANalyzer:MARKer:LEVel:HLIMit?
+3.301030E+01

:MEASure:SANalyzer:MARKer:LEVel:HLIMit:DUNits(_)u
:MEASure:SANalyzer:MARKer:LEVel:HLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DBM

:MEASure:SANalyzer:MARKer:LEVel:HLIMit:EXCeeded?

Description: Indicates if measurement has exceeded defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:SANalyzer:MARKer:LEVel:HLIMit:RESet

Description: Resets High Limit measurement.

Parameter/Query: none

:MEASure:SANalyzer:MARKer:LEVel:HLIMit:STATe(_)p
:MEASure:SANalyzer:MARKer:LEVel:HLIMit:STATe?

Description: Enables/Disables defined High Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:SANalyzer:MARKer:LEVel:HLIMit:STATe ON

Query Response: :MEASure:SANalyzer:MARKer:LEVel:HLIMit:STATe?
1

:MEASure:SANalyzer:MARKer:LEVel:HLIMit:VALue(_)p(_)u
:MEASure:SANalyzer:MARKer:LEVel:HLIMit:VALue?

Description: Sets High Limit value.
Returns parameter setting in DBM.

Parameter: p = limit value
u = W | DBM

Example :MEASure:SANalyzer:MARKer:LEVel:HLIMit:VALue 2 W

Query Response: :MEASure:SANalyzer:MARKer:LEVel:HLIMit:VALue?
+3.301030E+01

:MEASure:SANalyzer:MARKer:LEVel:LLIMit(_)p(_)u
:MEASure:SANalyzer:MARKer:LEVel:LLIMit?

Description: Sets Low Limit value.
Returns parameter setting in dBm.

Parameter: p = limit value
u = W | DBM

Example :MEASure:SANalyzer:MARKer:LEVel:LLIMit 1 W

Query Response: :MEASure:SANalyzer:MARKer:LEVel:LLIMit?
+3.000000E+01

:MEASure:SANalyzer:MARKer:LEVel:LLIMit:DUNits(_)u
:MEASure:SANalyzer:MARKer:LEVel:LLIMit:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DBM

:MEASure:SANalyzer:MARKer:LEVel:LLIMit:EXCeeded?

Description: Indicates if measurement is below defined limit.

Parameter: 0 = Not exceeded
1 = Exceeded

:MEASure:SANalyzer:MARKer:LEVel:LLIMit:RESet

Description: Resets Low Limit measurement.

Parameter/Query: none

:MEASure:SANalyzer:MARKer:LEVel:LLIMit:STATe(_)p
:MEASure:SANalyzer:MARKer:LEVel:LLIMit:STATe?

Description: Enables/Disables defined Low Limit.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:SANalyzer:MARKer:LEVel:LLIMit:STATe ON

Query Response: :MEASure:SANalyzer:MARKer:LEVel:LLIMit:STATe?
1

:MEASure:SANalyzer:MARKer:LEVel:LLIMit:VALue(_)p(_)u
:MEASure:SANalyzer:MARKer:LEVel:LLIMit:VALue?

Description: Sets Low Limit in dBm.
Returns parameter setting.

Parameter: p = limit value
u = DBM

Example :MEASure:SANalyzer:MARKer:LEVel:LLIMit:VALue 1 W

Query Response: :MEASure:SANalyzer:MARKer:LEVel:LLIMit:VALue?
+3.000000E+01

:MEASure:SANalyzer:MARKer:LEVel:REFerence(_)p(_)u
:MEASure:SANalyzer:MARKer:LEVel:REFerence?

Description: Sets reference in dBm.
Returns parameter setting in dBm.

Parameter: p = reference value
u = W | DBM

Example :MEASure:SANalyzer:MARKer:LEVel:REFerence 20 DBM

Query Response: :MEASure:SANalyzer:MARKer:LEVel:REFerence?
+2.000000E+01

:MEASure:SANalyzer:MARKer:LEVel:REFerence:DUNits(_)u
:MEASure:SANalyzer:MARKer:LEVel:REFerence:DUNits?

Description: Command Place Holder. No Op.

Parameter: u = DBM

:MEASure:SANalyzer:MARKer:LEVel:REFerence:STATe(_)p
:MEASure:SANalyzer:MARKer:LEVel:REFerence:STATe?

Description: Enables/Disables reference.
Returns parameter setting.

Parameter: OFF | ON | 0 | 1

Example: :MEASure:SANalyzer:MARKer:LEVel:REFerence:STATe ON

Query Response: :MEASure:SANalyzer:MARKer:LEVel:REFerence:STATe?
1

:MEASure:SANalyzer:MARKer:LEVel:REFerence:VALue(_)p(_)u
:MEASure:SANalyzer:MARKer:LEVel:REFerence:VALue?

Description: Sets reference value in dBm.
Returns parameter setting.

Parameter: p = reference value
u = W | DBM

Example: :MEASure:SANalyzer:MARKer:LEVel:REFerence:LEVel 20 DBM

Query Response: :MEASure:SANalyzer:MARKer:LEVel:REFerence:LEVel?
+2.000000E+01

:MEASure:SANalyzer:MARKer:LEVel:STATe(_)p
:MEASure:SANalyzer:MARKer:LEVel:STATe?

Description: Command Place Holder. No Op.

Parameter: OFF | ON | 0 | 1

:MEASure:SANalyzer:MARKer:LEVel:UNITs(_)u
:MEASure:SANalyzer:MARKer:LEVel:UNITs?

Description: Sets GPIB units for Spectrum Analyzer Marker Level in dBm.
Returns parameter setting.

Parameter: u = W | DBM

:MEASure:SANalyzer:TRACe?

Description: Returns 520 data point from the Spectrum Analyzer Live Trace.

10.27 SAVE/RECALL FILES

:REGister:CLEar(_)'filename'

Description: Deletes saved file: do not include file extension in filename.

:REGister:CLEar:ALL

Description: Deletes all saved files.

Parameter/Query: none

:REGister:RECall(_)'filename'

Description: Recalls file settings: do not include file extension in filename.

:REGister:SAVE(_)'filename'

Description: Saves file settings: do not include file extension in filename.

10.28 TRIGGER COMMANDS

NOTE :TRIGger commands apply to the Spectrum Analyzer.

:TRIGger:ABORt

Description: Stops current measurement cycle.

Parameter/Query: none

:TRIGger:IMMediate

Description: Immediately starts measurement cycle.

Parameter/Query: none

:TRIGger:MODE:RETRigger(_)p
:TRIGger:MODE:RETRigger?

Description: Selects Trigger mode.
Returns parameter setting.

Parameter: REPetitive | SINGle
SING = Trigger cycle stops after a single measurement is obtained: returns 1 measurement value.
REP = Measurement cycle repeats continuously: returns consecutive measured values.

Example: :TRIGger:MODE:RETRigger SING

Query Response: :TRIGger:MODE:RETRigger?
SING

:TRIGger:MODE:SETTling(_)p
:TRIGger:MODE:SETTling?

Description: Sets Settling Time for Audio Measurements.
Returns parameter setting.

Parameter: FAST | FULL
FAST = No delays are introduced to signal.
FULL = Introduces delay appropriate to measurement being performed.

Example: :TRIGger:MODE:SETTling FAST

Query Response: :TRIGger:MODE:SETTling?
FAST

10.29 DISPLAY COMMANDS

NOTE	Commands display relevant 3900 Display Tile.

:DISPlay?

Description: Commands return screen names set when screen is supported by the 3900. Commands which set screens not supported by the 3900 return DUPL for the Analog Duplex Tile.

:DISPlay(_)ACNTrol

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)ACPower

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)AFANalyzer

Description: Displays Analyzer Tile within maximized Analog Duplex system Tile.

:DISPlay(_)AUTHentication

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)CBIT

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)CCNFigure

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)CDATa

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)CMEasure

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)CONFigure

Description: Configure Screen.

:DISPlay(_)DECoder

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)DUPLex

Description: Displays Analog Duplex Screen

:DISPlay(_)ENCoder

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)HELP

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)IOConfigure

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)MESSage

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)OSCilloscope

Description: Displays Oscilloscope Tile within maximized Analog Duplex system Tile.

:DISPlay(_)PCONfigure

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)PDCtest

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)PHPtest

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)RFANalyzer

Description: Displays maximized view of Analyzer Tile.

:DISPlay(_)RFGenerator

Description: Displays maximized view of Generators Tile.

:DISPlay(_)RINTerface
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)RX
Description: Displays maximized view of Generators Tile within Analog Duplex system.

:DISPlay(_)SANalyzer
Description: Displays Spectrum Analyzer Tile.

:DISPlay(_)SERVice
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)TCONfigure
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)TDMAtest
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)TESTs
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)TFReq
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)THLP
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)TIBasic
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)TMAKe
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)TPARm
Description: Command Place Holder. No Op.
Query Response: DUPL

:DISPlay(_)TPRint

Description: Command Place Holder. No Op.

Query Response: DUPL

:DISPlay(_)TSEQn

Description: Command Place Holder. No Op.

Query Response: DUPL

:DSPlay(_)TSPec

Description: Command Place Holder. No Op.

Query Response: DUPL

:DIPlay(_)TX

Description: Tx Test Screen: Displays maximized Analyzers Tile within Analog Duplex system.

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Appendix A - Supported DCS Codes

The table below identifies DCS Codes and functionality supported by the 3900.

- 3900 supports Encoding of listed DCS Codes and Aliases.
- 3900 supports Decoding of listed DCS Codes.

Code	Inverse	Alias
001	077	476 | 760
003	113	100
004	347	300 | 334
005	175	044 | 400
006	021	
007	214	670
010	463	033 | 600
011	651	401 | 531 | 625
012	577	215 | 320
013	376	063 | 700
014	646	450 | 500 | 544
015	141	740 | 747
016	357	154 | 206
017	050	200
020	166	170 | 230 | 601
021	006	277 | 402
022	576	264 | 461 | 613
023	047	340 | 766
024	753	120 | 260
025	244	
026	464	566
027	272	201 | 242
030	527	055
031	627	374 | 643
032	051	
034	336	103 | 140 | 410
035	275	124 | 403
036	172	137
040	337	052 | 404
041	767	111 | 451 | 514 | 602
042	361	160 | 216 | 341
043	445	355
045	716	240 | 305 | 543
046	556	202 | 210 | 421 | 644

Code	Inverse	Alias
047	023	375 | 707
050	017	167
051	032	520 | 771
053	452	
054	413	405 | 675
061	537	211 | 232 | 650
062	367	070 | 101 | 407
064	555	151 | 406 | 440
065	271	301
071	306	603 | 717 | 746
072	245	470 | 701
073	506	640
074	174	360 | 721
077	001	
102	547	121 | 323 | 604
105	335	204 | 247 | 420 | 710
106	733	221 | 241 | 304 | 424
110	752	126 | 302 | 430
113	003	573
114	712	327 | 615
115	152	534 | 674
116	754	060 | 737
122	225	535
125	365	173
131	364	572 | 702
132	546	605 | 634 | 714
134	223	273
141	015	177 | 541
143	412	333
145	274	525
146	633	220 | 414 | 422 | 442 | 622
152	115	366 | 415
155	731	233 | 660
156	265	517 | 741
162	503	416 | 553
165	251	354
166	020	773
172	036	057
174	074	142 | 270
175	005	
205	263	135 | 610
212	356	253
214	007	310 | 377 | 437
223	134	350 | 475 | 750
225	122	536
226	411	104 | 557

Code	Inverse	Alias
243	351	267 | 342
244	025	176 | 417
245	072	370 | 554
246	523	542 | 653
251	165	236 | 704 | 742
252	462	661
255	446	425
261	732	227 | 567
263	205	213 | 736
265	156	171 | 426
266	454	655
271	065	427 | 510 | 762
272	027	
274	145	652
275	035	
311	664	330 | 456 | 561
315	423	321 | 673
325	526	550 | 626
331	465	372 | 507
332	455	433 | 552
335	105	
336	034	770
337	040	
343	532	324 | 570
346	612	616 | 635 | 724
347	004	434 | 776
351	243	353 | 435
356	212	521
357	016	477 | 774
361	042	373
364	131	130 | 641
365	125	107
367	062	676
371	734	217 | 453 | 530
376	013	617 | 763
411	226	117 | 756
412	143	127 | 441 | 711
413	054	133 | 620
423	315	234 | 563 | 621 | 713
431	723	262 | 316 | 730
432	516	276 | 326
445	043	222 | 457 | 575
446	255	467 | 511 | 672
452	053	524 | 765
454	266	513 | 545 | 564
455	332	533 | 551

Code	Inverse	Alias
462	252	472 | 623 | 725
463	010	637 | 775
464	026	237 | 642 | 772
465	331	056 | 656
466	662	144 | 666
503	162	157 | 322
506	073	224 | 313 | 574
516	432	067 | 720
523	246	647 | 726
526	325	562 | 645
527	030	764
532	343	161 | 345
537	061	735
546	132	317 | 614 | 751
547	102	757
555	064	571
556	046	
565	703	307 | 362
576	022	722
577	012	
606	631	153 | 630
612	346	254 | 314 | 706
624	632	075 | 501
627	031	037 | 560
631	606	231 | 504 | 636 | 745
632	624	123 | 657
633	146	667
646	014	665
651	011	677
654	743	163 | 460 | 607
662	466	363 | 436 | 443 | 444
664	311	344 | 471 | 715
703	565	150 | 256
712	114	136 | 502
716	045	727
723	431	235 | 611 | 671
731	155	447 | 473 | 474 | 744
732	261	164 | 207
733	106	
734	371	066
743	654	312 | 515 | 663
752	110	755
753	024	
754	116	076 | 203
767	041	
Invalid	000 | 002 | 112 | 250 | 257 | 505 | 512 | 522 | 540 | 705 | 777	

Appendix B - Compatibility Commands Conversion Chart

The following table identifies industry standard commands and their equivalent 3900 Series Remote Commands. Unless otherwise indicated, when more than one 3900 command is listed as replacement commands, both commands must be used.

Refer to appropriate chapters in the 3900 Series Remote Programming Manual for detailed descriptions of 3900 Remote Commands.

NOTE	3900 Commands that indicate two command options are dependent on the selected :AFAN:INPUT parameter. For AM Demod and FM Demod use 3900 commands that contain :MOD in the command string. For Audio In use 3900 commands that contain :AF in the command string.

For example:

:CONF:AF:ANAL:DIST:AVER? Is the command string used when Audio is the selected AF Analyzer input.
:CONF:MOD:ANAL:DIST:AVER? Is the command string used when AM or FM Demod is the selected AF Analyzer input.

Standard Command	3900 Command(s)
:AFANalyzer:AIN ‘GND’	:CONF:AF:ANAL:SOUR AUD1
:AFANalyzer:INPut 'FM Demod'	:RF:ANAL:MOD FM
:AFANalyzer:SPEaker:VOLume 'Pot'	:CONF:PORT:LOUD AUD :ASSign:VOLume 50
:AFANalyzer:SPEaker:VOLume?	:CONF:PORT:LOUD? :ASSign:VOLume?
:CONFigure:OFRequency 0.000 MHz	:CONF:OFFS:DUPL:VAL 0.000 MHz
:CONFigure:OFRequency?	:CONF:OFFS:DUPL:VAL?
:CONFigure:OMODe 'Off'	:CONF:OFFS:DUPL:LOCK OFF
:CONFigure:OMODe?	:CONF:OFFS:DUPL:LOCK?
:CONFigure:OFLevel:MODE 'On'	:CONF:OFFS:ANAL:ENAB 0 :CONF:OFFS:GEN:ENAB 0
:CONFigure:OFLevel:MODE?	:CONF:OFFS:ANAL:ENAB? :CONF:OFFS:GEN:ENAB?
:CONFigure:OFLevel:RFINout 0 dB	:CONF:OFFS:GEN:VAL 0 dB :CONF:OFFS:ANAL:VAL 0dB
:CONFigure:OFLevel:RFINout?	:CONF:OFFS:GEN:VAL? :CONF:OFFS:ANAL:VAL?
:CONFigure:OFLevel:DUPLex 0 dB	:CONF:OFFS:GEN:VAL 0 dB
:CONFigure:OFLevel:DUPLex?	:CONF:OFFS:GEN:VAL?
:CONFigure:OFLevel:ANTenna 0 dB	:CONF:OFFS:ANAL:VAL 0 dB
:CONFigure:OFLevel:ANTenna?	:CONF:OFFS:ANAL:VAL?
:OSCilloscope:SCALe:TIME '200 ms'	:SCOP:HDIV 200 [ms]
:OSCilloscope:SCALe:TIME?	:SCOP:HDIV?
:OSCilloscope:SCALe:VERTical:AM '50 %'	:SCOP:ATR:VDIV:AM 50 %
:OSCilloscope:SCALe:VERTical:AM?	:SCOP:ATR:VDIV:AM?
:OSCilloscope:SCALe:VERTical:FM '50 kHz'	:SCOP:ATR:VDIV:FM 50 [kHz]
:OSCilloscope:SCALe:VERTical:FM?	:SCOP:ATR:VDIV:FM?
:OSCilloscope:SCALe:VERTical:VOLTs '20 V'	:SCOP:ATR:VDIV:VOLT 20 V
:OSCilloscope:SCALe:VERTical:VOLTs?	:SCOP:ATR:VDIV:VOLT?
:OSCilloscope:TRIGger:MODE 'Cont'	:INIT:CONT:SCOP ON
:OSCilloscope:TRIGger:MODE?	:INIT:CONT:SCOP?
:OSCilloscope:TRIGger:RESet	:INIT:IMM:SCOP
:OSCilloscope:TRIGger:SENSe 'Pos'	:SCOP:TRIG:EDGE RISE
:OSCilloscope:TRIGger:SENSe?	:SCOP:TRIG:EDGE?
:OSCilloscope:TRIGger:SOURce 'Internal'	:SCOP:TRIG:SOUR ATR
:OSCilloscope:TRIGger:SOURce?	:SCOP:TRIG:SOUR?
:OSCilloscope:TRIGger:TYPE 'Auto'	:SCOP:TRIG:MODE AUTO
:OSCilloscope:TRIGger:TYPE?	:SCOP:TRIG:MODE?
:RFANalyzer:ATTenuator '40 dB'	:RF:ANAL:AGC:LEV 40 dBm
:RFANalyzer:ATTenuator?	:RF:ANAL:AGC:LEV?
:RFANalyzer:ATTenuator:MODE 'Auto'	:RF:ANAL:AGC:MODE AUTO
:RFANalyzer:ATTenuator:MODE?	:RF:ANAL:AGC:MODE?
:RFANalyzer:FREQuency 30.000 MHz	:RF:ANAL:FREQ 30.000 MHz
:RFANalyzer:FREQuency?	:RF:ANAL:FREQ?
:RFANalyzer:IFBW '15 kHz'	:RF:ANAL:AMIF (for AM source) or :RF:ANAL:FMIF (for FM source)
:RFANalyzer:INPut 'RF In'	:RF:ANAL:PORT TR
:RFANalyzer:INPut?	:RF:ANAL:PORT?
:RFANalyzer:PMEasurement:ZERO	:RF:P:DET:ZER 1

Standard Command	3900 Command(s)
:RFANalyzer:TMODe 'Auto'	:RF:ANAL:FMOD AUT
:RFANalyzer:TMODe?	:RF:ANAL:FMOD?
:RFGenerator:AMPLitude -137	:RF:GEN:LEV -137
:RFGenerator:AMPLitude?	:RF:GEN:LEV?
:RFGenerator:AMPLitude:STATe ON	:RF:GEN:ENAB ON
:RFGenerator:AMPLitude:STATe?	:RF:GEN:ENAB?
:RFGenerator:FREQuency 30.000 MHz	:RF:GEN:FREQ 30.000 [MHz]
:RFGenerator:FREQuency?	:RF:GEN:FREQ?
:RFGenerator:OUTPut 'RF Out'	:RF:GEN:PORT TR
:RFGenerator:OUTPut?	:RF:GEN:PORT?
:SANalyzer:CFRequency 150 MHz	:SA:HOR:FREQ:CENT 100 kHz
:SANalyzer:CFRequency?	:SA:HOR:FREQ:CENT?
:SANalyzer:DISPlay:SCALe '1 dB/div'	:SA:VERT:VDIV 1
:SANalyzer:DISPlay:SCALe?	:SA:VERT:VDIV?
:SANalyzer:INPut 'RF In'	:SA:SOUR TR
:SANalyzer:INPut?	:SA:SOUR?
:SANalyzer:MARKer:CFRequency	:SA:MARK:MKR1:SCF
:SANalyzer:MARKer:PEAK	:SA:MARK:MKR1:PEAK
:SANalyzer:MARKer:RLEVel	:SA:MARK:MKR1:SREF
:SANalyzer:SPAN 100.000 kHz	:SA:HOR:FREQ:SPAN 100 kHz
:SANalyzer:TRACe:MHOLD 'No Pk/Avg'	:SA:TRAC:AVER:ENAB ON :SA:TRAC:AVER:VAL 10 :SA:TRAC:PEAK
:MEASure:AFRequency:ACLevel:AVERage?	:FETC:AF:ANAL:LEV?
:MEASure:AFRequency:ACLevel:AVERage 10	:CONF:AF:ANAL:LEV:AVER 10
:MEASure:AFRequency:ACLevel:AVERage:VALue 10	:CONF:AF:ANAL:LEV:AVER 10
:MEASure:AFRequency:ACLevel:AVERage?	:CONF:AF:ANAL:LEV:AVER?
:MEASure:AFRequency:ACLevel:HLIMit 900 mV	:LIM:AF:LEV:UPP:VAL 900 mV
:MEASure:AFRequency:ACLevel:HLIMit:VALue 900 mV	:LIM:AF:LEV:UPP:VAL 900 mV
:MEASure:AFRequency:ACLevel:HLIMit?	:LIM:AF:LEV:UPP:VAL?
:MEASure:AFRequency:ACLevel:HLIMit:STATe ON	:LIM:AF:LEV:UPP:ENAB ON
:MEASure:AFRequency:ACLevel:HLIMit:STATe?	:LIM:AF:LEV:UPP:ENAB?
:MEASure:AFRequency:ACLevel:LLIMit 0 mV	:LIM:AF:LEV:LOW:VAL 0 mV
:MEASure:AFRequency:ACLevel:LLIMit:VALue 0 mV	:LIM:AF:LEV:LOW:VAL 0 mV
:MEASure:AFRequency:ACLevel:LLIMit?	:LIM:AF:LEV:LOW:VAL?
:MEASure:AFRequency:ACLevel:LLIMit:STATe ON	:LIM:AF:LEV:LOW:ENAB ON
:MEASure:AFRequency:ACLevel:LLIMit:STATe?	:LIM:AF:LEV:LOW:ENAB?
:MEASure:AFRequency:AM:AVERage?	:FETC:MOD:ANAL:AM?
:MEASure:AFRequency:AM:AVERage 10	:CONF:MOD:ANAL:AM:AVER 10
:MEASure:AFRequency:AM:AVERage:VALue 10	:CONF:MOD:ANAL:AM:AVER 10
:MEASure:AFRequency:AM:AVERage?	:CONF:MOD:ANAL:AM:AVER?
:MEASure:AFRequency:AM:HLIMit 90 %	:LIM:MOD:AM:UPP:VAL 90 %
:MEASure:AFRequency:AM:HLIMit:VALue 90 %	:LIM:MOD:AM:UPP:VAL 90 %
:MEASure:AFRequency:AM:HLIMit?	:LIM:MOD:AM:UPP:VAL?
:MEASure:AFRequency:AM:HLIMit:STATe ON	:LIM:MOD:AM:UPP:ENAB ON
:MEASure:AFRequency:AM:HLIMit:STATe?	:LIM:MOD:AM:UPP:ENAB?
:MEASure:AFRequency:AM:LLIMit 0 %	:LIM:MOD:AM:LOW:VAL 0 %
:MEASure:AFRequency:AM:LLIMit:VALue 0 %	:LIM:MOD:AM:LOW:VAL 0 %
:MEASure:AFRequency:AM:LLIMit?	:LIM:MOD:AM:LOW:VAL?
:MEASure:AFRequency:AM:LLIMit:STATe ON	:LIM:MOD:AM:LOW:ENAB ON

Standard Command	3900 Command(s)
:MEASure:AFRequency:AM:LLIMit:STATe?	:LIM:MOD:AM:LOW:ENAB?
:MEASure:AFRequency:CURRent?	:DMM:METERs:AMPS:DC:STATus?
:MEASure:AFRequency:CURRent:AVER 10	:DMM:METERs:AMPS:DC:AVER 10
:MEASure:AFRequency:CURRent:AVER:VAL 10	:DMM:METERs:AMPS:DC:AVER 10
:MEASure:AFRequency:CURRent:AVERSTATe ON	:DMM:METERs:AMPS:DC:ENAB:AVG 1
:MEASure:AFRequency:CURRent:AVER:STATe?	:DMM:METERs:AMPS:DC:ENAB:AVG?
:MEASure:AFRequency:CURRent:AVER?	:DMM:METERs:AMPS:DC:AVER?
:MEASure:AFRequency:CURRent:HLIMit 10 A	:LIMIT:DMM:AMPS:DC:UPP:VAL 10 A
:MEASure:AFRequency:CURRent:HLIMit:VALue 10 A	:LIMIT:DMM:AMPS:DC:UPP:VAL 10 A
:MEASure:AFRequency:CURRent:HLIMit?	:LIMIT:DMM:AMPS:DC:UPP:VAL?
:MEASure:AFRequency:CURRent:HLIMit:STATe ON	:LIMIT:DMM:AMPS:DC:UPP:ENAB ON
:MEASure:AFRequency:CURRent:HLIMit:STATe?	:LIMIT:DMM:AMPS:DC:UPP:ENAB?
:MEASure:AFRequency:CURRent:LLIMit 2 A	:LIMIT:DMM:AMPS:DC:LOW:VAL 2 A
:MEASure:AFRequency:CURRent:LLIMit:VALue 2 A	:LIMIT:DMM:AMPS:DC:LOW:VAL 2 A
:MEASure:AFRequency:CURRent:LLIMit?	:LIMIT:DMM:AMPS:DC:LOW:VAL?
:MEASure:AFRequency:CURRent:LLIMit:STATe ON :MEASure:AFRequency:CURRent:LLIMit:STATe?	:LIMIT:DMM:AMPS:DC:LOW:ENAB ON :LIMIT:DMM:AMPS:DC:LOW:ENAB?
:MEASure:AFRequency:DCVolts?	:DMM:METERs:VOLTS:DC:STATus?
:MEASure:AFRequency:DCVolts:AVER 10	:DMM:METERs:VOLTS:DC:AVER 10
:MEASure:AFRequency:DCVolts:AVER:VAL 10	:DMM:METERs:VOLTS:DC:AVER 10
:MEASure:AFRequency:DCVolts:AVER:STATe ON	:DMM:METERs:VOLTS:DC:ENAB:AVG 1
:MEASure:AFRequency:DCVolts:AVER:STATe?	:DMM:METERs:VOLTS:DC:ENAB:AVG?
:MEASure:AFRequency:DCVolts:AVER?	:DMM:METERs:VOLTS:DC:AVER?
:MEASure:AFRequency:DCVolts:HLIMit 10 A	:LIMIT:DMM:VOLTS:DC:UPP:VAL 10 A
:MEASure:AFRequency:DCVolts:HLIMit:VALue 10 A	:LIMIT:DMM:VOLTS:DC:UPP:VAL 10 A
:MEASure:AFRequency:DCVolts:HLIMit?	:LIMIT:DMM:VOLTS:DC:UPP:VAL?
:MEASure:AFRequency:DCVolts:HLIMit:STATe ON	:LIMIT:DMM:VOLTS:DC:UPP:ENAB ON
:MEASure:AFRequency:DCVolts:HLIMit:STATe?	:LIMIT:DMM:VOLTS:DC:UPP:ENAB?
:MEASure:AFRequency:DCVolts:LLIMit 2 A	:LIMIT:DMM:VOLTS:DC:LOW:VAL 2 A
:MEASure:AFRequency:DCVolts:LLIMit:VALue 2 A	:LIMIT:DMM:VOLTS:DC:LOW:VAL 2 A
:MEASure:AFRequency:DCVolts:LLIMit?	:LIMIT:DMM:VOLTS:DC:LOW:VAL?
:MEASure:AFRequency:DCVolts:LLIMit:STATe ON :MEASure:AFRequency:DCVolts:LLIMit:STATe?	:LIMIT:DMM:VOLTS:DC:LOW:ENAB ON :LIMIT:DMM:VOLTS:DC:LOW:ENAB?
:MEASure:AFRequency:DISTN?	:FETC:AF:ANAL:DIST? or :FETC:MOD:ANAL:DIST?
:MEASure:AFRequency:DISTortion?	:FETC:AF:ANAL:DIST? or :FETC:MOD:ANAL:DIST?
:MEASure:AFRequency:DISTN:AVERage 10	:CONF:AF:ANAL:DIST:AVER 10 or :CONF:MOD:ANAL:DIST:AVER 10
:MEASure:AFRequency:DISTN:AVERage:VALue 10	:CONF:AF:ANAL:DIST:AVER 10 or :CONF:MOD:ANAL:DIST:AVER 10
:MEASure:AFRequency:DISTortion:AVERage 10	:CONF:AF:ANAL:DIST:AVER 10 or :CONF:MOD:ANAL:DIST:AVER 10
:MEASure:AFRequency:DISTortion:AVERage:VALue 10	:CONF:AF:ANAL:DIST:AVER 10 or :CONF:MOD:ANAL:DIST:AVER 10

Standard Command	3900 Command(s)
:MEASure:AFRequency:DISTN:AVERage?	:CONF:AF:ANAL:DIST:AVER? or :CONF:MOD:ANAL:DIST:AVER?
:MEASure:AFRequency:DISTortion:AVERage?	:CONF:AF:ANAL:DIST:AVER? or :CONF:MOD:ANAL:DIST:AVER?
:MEASure:AFRequency:DISTN:HLIMit 90 %	:LIM:AF:DIST:UPP:VAL 90 % or :LIM:MOD:DIST:UPP:VAL 90 %
:MEASure:AFRequency:DISTortion:HLIMit 90 %	:LIM:AF:DIST:UPP:VAL 90 % or :LIM:MOD:DIST:UPP:VAL 90 %
:MEASure:AFRequency:DISTN:HLIMit:VALue 90 %	:LIM:AF:DIST:UPP:VAL 90 % or :LIM:MOD:DIST:UPP:VAL 90 %
:MEASure:AFRequency:DISTortion:HLIMit:VALue 90 %	:LIM:AF:DIST:UPP:VAL 90 % or :LIM:MOD:DIST:UPP:VAL 90 %
:MEASure:AFRequency:DISTN:HLIMit?	:LIM:AF:DIST:UPP:VAL? or :LIM:MOD:DIST:UPP:VAL?
:MEASure:AFRequency:DISTortion:HLIMit?	:LIM:AF:DIST:UPP:VAL? or :LIM:MOD:DIST:UPP:VAL?
:MEASure:AFRequency:DISTN:HLIMit:STATe ON	:LIM:AF:DIST:UPP:ENAB ON or :LIM:MOD:DIST:UPP:ENAB ON
:MEASure:AFRequency:DISTortion:HLIMit:STATe ON	:LIM:AF:DIST:UPP:ENAB ON or :LIM:MOD:DIST:UPP:ENAB ON
:MEASure:AFRequency:DISTN:HLIMit:STATe?	:LIM:AF:DIST:UPP:ENAB? or :LIM:MOD:DIST:UPP:ENAB?
:MEASure:AFRequency:DISTortion:HLIMit:STATe?	:LIM:AF:DIST:UPP:ENAB? or :LIM:MOD:DIST:UPP:ENAB?
:MEASure:AFRequency:FM?	:FETC:MOD:ANAL:FM?
:MEASure:AFRequency:FM:AVERage 10	:CONF:MOD:ANAL:FM:AVER 10
:MEASure:AFRequency:FM:AVERage:VALue 10	:CONF:MOD:ANAL:FM:AVER 10
:MEASure:AFRequency:FM:AVERage?	:CONF:MOD:ANAL:FM:AVER?
:MEASure:AFRequency:FM:HLIMit 5 kHz	:LIM:MOD:FM:UPP:VAL 5 kHz
:MEASure:AFRequency:FM:HLIMit:VALue 5 kHz	:LIM:MOD:FM:UPP:VAL 5 kHz
:MEASure:AFRequency:FM:HLIMit?	:LIM:MOD:FM:UPP:VAL?
:MEASure:AFRequency:FM:HLIMit:STATe ON	:LIM:MOD:FM:UPP:ENAB ON
:MEASure:AFRequency:FM:HLIMit:STATe?	:LIM:MOD:FM:UPP:ENAB?
:MEASure:AFRequency:FM:LLIMit 0 kHz	:LIM:MOD:FM:LOW:VAL 0 kHz
:MEASure:AFRequency:FM:LLIMit:VALue 0 kHz	:LIM:MOD:FM:LOW:VAL 0 kHz
:MEASure:AFRequency:FM:LLIMit?	:LIM:MOD:FM:LOW:VAL?
:MEASure:AFRequency:FM:LLIMit:STATe ON	:LIM:MOD:FM:LOW:ENAB ON
:MEASure:AFRequency:FM:LLIMit:STATe?	:LIM:MOD:FM:LOW:ENAB?
:MEASure:AFRequency:FREQuency?	:FETC:AF:ANAL:FREQ? or :FETC:MOD:ANAL:FREQ?

Standard Command	3900 Command(s)
:MEASure:AFRequency:FREQuency:AVERage?	:CONF:AF:ANAL:FREQ:AVER? or :CONF:MOD:ANAL:FREQ:AVER?
:MEASure:AFRequency:FREQuency:AVERage 10	:CONF:AF:ANAL:FREQ:AVER 10 or :CONF:MOD:ANAL:FREQ:AVER 10
:MEASure:AFRequency:FREQuency:AVERage?	:CONF:AF:ANAL:FREQ:AVER? or :CONF:MOD:ANAL:FREQ:AVER?
:MEASure:AFRequency:SINAD?	:FETC:AF:ANAL:SIN? or :FETC:MOD:ANAL:SIN?
:MEASure:AFRequency:SINAD:AVERage 10	:CONF:AF:ANAL:SIN:AVER 10 or :CONF:MOD:ANAL:SIN:AVER 10
:MEASure:AFRequency:SINAD:AVERage:VALue 10	:CONF:AF:ANAL:SIN:AVER 10 or :CONF:MOD:ANAL:SIN:AVER 10
:MEASure:AFRequency:SINAD:AVERage?	:CONF:AF:ANAL:SIN:AVER? or :CONF:MOD:ANAL:SIN:AVER?
:MEASure:AFRequency:SINAD:LLIMit 0 dB	:LIM:AF:SIN:LOW:VAL 0 dB or :LIM:MOD:SIN:LOW:VAL 0 dB
:MEASure:AFRequency:SINAD:LLIMit:VALue 0 dB	:LIM:AF:SIN:LOW:VAL 0 dB or :LIM:MOD:SIN:LOW:VAL 0 dB
:MEASure:AFRequency:SINAD:LLIMit?	:LIM:AF:SIN:LOW:VAL? or :LIM:MOD:SIN:LOW:VAL?
:MEASure:AFRequency:SINAD:LLIMit:STATe ON	:LIM:AF:SIN:LOW:ENAB ON or :LIM:MOD:SIN:LOW:ENAB ON
:MEASure:AFRequency:SINAD:LLIMit:STATe?	:LIM:AF:SIN:LOW:ENAB? or :LIM:MOD:SIN:LOW:ENAB?
:MEASure:AFRequency:SNR?	:FETC:AF:ANAL:SNR? or :FETC:MOD:ANAL:SNR?
:MEASure:AFRequency:SNR:AVERage 10 :MEASure:AFRequency:SNR:AVERage:VALue 10	:CONF:AF:ANAL:SNR:AVER 10 or :CONF:MOD:ANAL:SNR:AVER 10
:MEASure:AFRequency:SNR:AVERage?	:CONF:AF:ANAL:SNR:AVER? or :CONF:MOD:ANAL:SNR:AVER?
:MEASure:AFRequency:SNR:HLIMit 80 dB	:LIM:AF:SNR:UPP:VAL 80 dB or :LIM:MOD:SNR:UPP:VAL 80 dB
:MEASure:AFRequency:SNR:HLIMit:VALue 80 dB	:LIM:AF:SNR:UPP:VAL 80 dB or :LIM:MOD:SNR:UPP:VAL 80 dB
:MEASure:AFRequency:SNR:LLIMit 0 dB	:LIM:AF:SNR:LOW:VAL 0 dB or :LIM:MOD:SNR:LOW:VAL 0 dB

Standard Command	3900 Command(s)
:MEASure:AFRequency:SNR:LLIMit:VALue 0 dB	:LIM:AF:SNR:LOW:VAL 0 dB or :LIM:MOD:SNR:LOW:VAL 0 dB
:MEASure:AFRequency:SNR:LLIMit?	:LIM:AF:SNR:LOW:VAL? or :LIM:MOD:SNR:LOW:VAL?
:MEASure:AFRequency:SNR:LLIMit:STATe ON	:LIM:AF:SNR:LOW:ENAB ON or :LIM:MOD:SNR:LOW:ENAB ON
:MEASure:AFRequency:SNR:LLIMit:STATe?	:LIM:AF:SNR:LOW:ENAB? or :LIM:MOD:SNR:LOW:ENAB?
:MEASure:AFRequency:SNR:HLIMit:STATe?	:LIM:AF:SNR:UPP:ENAB? or :LIM:MOD:SNR:UPP:ENAB?
:MEASure:AFRequency:SNR:HLIMit:STATe?	:LIM:AF:SNR:UPP:ENAB? or :LIM:MOD:SNR:UPP:ENAB?
:MEASure:RFRequency:FREQuency:ERRor?	:FETC:RF:ANAL:FOFF?
:MEASure:RFRequency:FREQuency:ERRor:AVERage?	:CONF:RF:ANAL:FOFF:AVER?
:MEASure:RFRequency:FREQuency:ERRor:AVERage 10	:CONF:RF:ANAL:FOFF:AVER 10
:MEASure:RFRequency:FREQuency:ERRor:AVERage:VALue 10	:CONF:RF:ANAL:FOFF:AVER 10
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:STATe?	:LIM:RF:FOFF:UPP:ENAB?
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:STATe ON	:LIM:RF:FOFF:UPP:ENAB ON
:MEASure:RFRequency:FREQuency:ERRor:HLIMit?	:LIM:RF:FOFF:UPP:VAL?
:MEASure:RFRequency:FREQuency:ERRor:HLIMit 10 KHZ	:LIM:RF:FOFF:UPP:VAL 10 KHZ
:MEASure:RFRequency:FREQuency:ERRor:HLIMit:VAL: 10 KHZ	:LIM:RF:FOFF:UPP:VAL 10 KHZ
:MEASure:RFRequency:POWer?	:FETCH:RF:ANAL:TRBP?
:MEASure:RFRequency:POWer:AVERage 10	:CONF:RF:ANAL:TRB:AVER 10
:MEASure:RFRequency:POWer:AVERage:VALue 10	:CONF:RF:ANAL:TRB:AVER 10
:MEASure:RFRequency:POWer:AVERage?	:CONF:RF:ANAL:TRB:AVER?
:MEASure:RFRequency:POWer:HLIMit 100 W	:LIM:RF:TRBP:UPP:VAL 100 W
:MEASure:RFRequency:POWer:HLIMit:VALue 100 W	:LIM:RF:TRBP:UPP:VAL 100 W
:MEASure:RFRequency:POWer:HLIMit?	:LIM:RF:TRBP:UPP:VAL?
:MEASure:RFRequency:POWer:HLIMit:STATe ON	:LIM:RF:TRBP:UPP:ENAB ON
:MEASure:RFRequency:POWer:HLIMit:STATe?	:LIM:RF:TRBP:UPP:ENAB?
:MEASure:RFRequency:POWer:LLIMit 0 W	:LIM:RF:TRBP:LOW:VAL 0 W
:MEASure:RFRequency:POWer:LLIMit:VALue 0 W	LIM:RF:TRBP:LOW:VAL 0 W
:MEASure:RFRequency:POWer:LLIMit?	:LIM:RF:TRBP:LOW:VAL?
:MEASure:RFRequency:POWer:LLIMit:STATe ON	:LIM:RF:TRBP:LOW:ENAB ON
:MEASure:RFRequency:POWer:LLIMit:STATe?	:LIM:RF:TRBP:LOW:ENAB?
:MEASure:SANalyzer:MARKer:FREQuency?	:SA:MARK:MKR1:POS?
:MEASure:SANalyzer:MARKer:LEVel?	:SA:MARK:MKR1:LEV?

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As we are always seeking to improve our products, the information in this document gives only a general indication of the product capacity, performance and suitability, none of which shall form part of any contract. We reserve the right to make design changes without notice.

CHINA / Beijing	Tel: [+86] (10) 6539 1166	Fax: [+86] (10) 6539 1778
CHINA / Shanghai	Tel: [+86] (21) 5109 5128	Fax: [+86] (21) 6457 7668
FINLAND	Tel: [+358] (9) 2709 5541	Fax: [+358] (9) 804 2441
FRANCE	Tel: [+33] 1 60 79 96 00	Fax: [+33] 1 60 77 69 22
GERMANY	Tel: [+49] 8131 2926-0	Fax: [+49] 8131 2926-130
HONG KONG	Tel: [+852] 2832 7988	Fax: [+852] 2834 5364
INDIA	Tel: [+91] (0) 80 4115 4501	Fax: [+91] (0) 80 4115 4502
JAPAN	Tel: [+81] 3 3500 5591	Fax: [+81] 3 3500 5592
KOREA	Tel: [+82] (2) 3424 2719	Fax: [+82] (2) 3424 8620
SCANDINAVIA	Tel: [+45] 9614 0045	Fax: [+45] 9614 0047
***SINGAPORE**	Tel: [+65] 6873 0991	Fax: [+65] 6873 0992
UK / Cambridge	Tel: [+44] (0) 1763 262277	Fax: [+44] (0) 1763 285353
***UK / Stevenage**	Tel: [+44] (0) 1438 742200 Freephone: 0800 282388	Fax: [+44] (0) 1438 727601
***USA**	Tel: [+1] (316) 522 4981 Toll Free: 800 835 2352	Fax: [+1] (316) 522 1360

* Indicates Regional Sales/Service Center

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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven, customer-focused.