Keysight
FieldFox Handheld Analyzers

This manual provides documentation for the following models:
A-Series N99xxA and
B-Series N99xxB
FieldFox Analyzers

This is the SCPI and Programming Help for the N99xxA Series and N99xxB Series FieldFox Analyzers.

Notices

Trademark Acknowledgments

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CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

NOTE

A **NOTE** calls the user's attention to an important point or special information in the text.

Where to Find the Latest Information

Documentation is updated periodically. For the latest information about these products, including instrument software upgrades, application information, and product information, browse to one of the following URLs, according to the name of your product:

http://www.keysight.com/find/fieldfox

To receive the latest updates by email, subscribe to Keysight Email Updates at the following URL:

http://www.keysight.com/find/MyKeysight

Information on preventing instrument damage can be found at:

www.keysight.com/find/PreventingInstrumentRepair

Is your product software up-to-date?

Periodically, Keysight releases software updates to fix known defects and incorporate product enhancements. To search for software updates for your product, go to the Keysight Technical Support website at:

http://www.keysight.com/find/fieldfoxsupport

Contacting Keysight

Assistance with test and measurements needs and information on finding a local Keysight office are available on the Web at: http://www.keysight.com/find/assist.

If you do not have access to the Internet, please contact your Keysight field engineer.

In any correspondence or telephone conversation, refer to the Keysight product by its model number and full serial number. With this information, the Keysight representative can determine whether your product is still within its warranty period.

To contact Keysight for sales and technical support, refer to support links on the following Keysight websites: http://www.keysight.com/find (product specific information and support, software and documentation updates) http://www.keysight.com/find/assist (worldwide contact information for repair and service).

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Supports Firmware Revision: A.08.19 and A12.5x
Date: 16-Sep-2022

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SCPI Concepts and Tips

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Last Modified:

13june2018	Updated links A.10.30
29-Jan-2012	New topic

FieldFox Programming Tips

Mode-specific Programming

Although the FieldFox is a single instrument, each FieldFox mode (NA, SA, and so forth) has its own unique set of SCPI commands. Each mode is targeted separately by first issuing the command to select the mode (INSTrument[:SELect]).

Here is a list of commands that are common to ALL modes: Commands Common to All Modes.

Perform Single Triggering

When programming the FieldFox, it is ALWAYS recommended to perform single sweep triggering: INITiate:CONTinuous 0 and INITiate[:IMMediate] followed with *OPC?.

This is because after making measurement settings such as setting frequency, there is NO guarantee that a continuous sweep will complete and data will be collected at the new setting. By following a series of settings with INIT:IMM;*OPC?, then all settings will be updated correctly.

Communicating with the FieldFox using sockets over LAN

Responses to SCPI commands will always be in ASCII string format unless otherwise noted. Long responses may be separated into packets of data (up to 1460 bytes long). Each response is terminated with a LF character. When receiving long responses, search for the LF character to determine that the response is complete.

Do NOT do Binary Block transfers (FORM:DATA REAL,32 or REAL,64) when using over Telnet to port 5024 on FieldFox.

About Calibration Settings

A calibration session that is performed using the front-panel is completely separate from a calibration session that is performed programmatically.

Therefore, calibration settings that are made remotely (such as setting the cal kit and connectors) can NOT be observed from the front-panel user interface. Alternatively, calibration settings are that are made from the FieldFox front panel (user interface) can NOT be queried programmatically.

Correction Methods Explained

The Correction (Calibration) Methods offered for the FieldFox allow you to balance higher accuracy or a faster sweep time. Several methods are available through SCPI that are NOT available using the front-panel user interface. For example, all of the Cal Methods normally available only in NA mode are also available programmatically in CAT modes.

- Definitions
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About Calibration Settings

A calibration session that is performed using the front-panel is completely separate from a calibration session that is performed programmatically.

Therefore, calibration settings that are made remotely (such as setting the cal kit and connectors) can NOT be observed from the front-panel user interface. Alternatively, calibration settings are that are made from the FieldFox front panel (user interface) can NOT be queried programmatically.

Definitions

Non-insertable DUT – A device whose connectors could NOT mate together. They either do not have the same type of connector or they have the same gender. This also means that the test port cables could NOT mate together as in the above diagram.

Insertable DUT – A device whose connectors could mate together. They have the same type of connector and opposite or no gender. This also means that the test port cables could mate together, as in the above diagram.

Flush THRU - When the test port cables mate together when measuring an Insertable DUT. The THRU standard has no loss and no electrical length.

Sweep Directions – Relevant to N9923A ONLY.

- Sweep in FORWARD direction means port 1 is the source port and port 2 is the receiver port. Used to measure S11 and S21. (N9912A sweeps in forward direction ONLY)
- Sweep in REVERSE direction means port 2 is the source port and port 1 is the receiver port. Used to measure S22 and S12.

Full 2-Port and QSOLT Cals result in correction that requires background measurement sweeps in both directions, regardless of the displayed measurements. The displayed traces are updated at a slower rate than Enhanced Response and 1-port cals, which require sweeps in one direction only.

Cal Methods

1-Port (OSL)

- Insertablility - Not Relevant
- S-parameters Corrected: S11 or S22 (N9923)
- Standards: OPEN, SHORT, LOAD
- Sweeps in ONE direction.

FULL 2-Port (N9923A with Opt 122)

- Mechanical or QuickCal (Opt 111 or 112)
- Corrects all S-parameters.
- Non-Insertable or Insertable DUT
- Standards: OPEN, SHORT, LOAD on BOTH ports. Known (characterized) THRU between ports.
- Sweeps in BOTH directions.

Note: Because FULL 2-Port method requires a known THRU connection between the test ports, it is better to use **SOLR**, which yields the same level of accuracy with ANY (unknown) THRU connection. SOLR is performed when calibrating both ports from the front-panel user interface.

SOLR (Short-Open-Load-Reciprocal Thru) (All models with Full 2-port option)

Also known as Unknown Thru calibration.

- Mechanical Cal ONLY
- Most comprehensive calibration. Corrects all S-parameters.
- Non-Insertable or Insertable DUT
- Standards: OPEN, SHORT, LOAD on BOTH ports. Any THRU between ports.
- Sweeps in BOTH directions.

QSOLT (All models with Full 2-port option)

- Mechanical Cal ONLY
- Quicker to perform than Full 2-port. Corrects all S-parameters.
- Insertable DUT only
- Standards: OPEN, SHORT, LOAD on ONE port. Flush THRU between ports.
- Sweeps in BOTH directions.

Enhanced Response Cal

- Forward (all models) **OR** Reverse (All models with Full 2-port option)
- Mechanical or QuickCal (Opt 111 or 112)
- Faster measurements than Full 2-Port because sweeps in one direction ONLY.
- Insertable DUT only
- S-parameters Corrected: S21 and S11 (Forward) OR S12 and S22 (Reverse)

- Standards: OPEN, SHORT, LOAD on ONE port. Flush THRU between ports.

Response Cals

- Least accurate Cal type - correct Magnitude ONLY.
- Mechanical Cal ONLY
- Perform same as Data/Memory or THRU Normalization
- Standards: OPEN **or** SHORT (1-port) **or** THRU (2-port)

Summary

N9912A - CAT and NA

Cal Methods click to learn more	**Command** click to see command	**Ports <p>**	**Req'd Options**
QuickCals			
1-port OSL	QCAL:CAL <p>	1	111
Enhanced Response	QCAL:ERES <p>	1,2	111, 110
Mechanical Cals - specify connector and cal kit			
1-port OSL	SOLT1 <p>	1	None
Enhanced Response	ERES <p>	1,2	110
Response Cals			
Open Response	OPEN <p>	1	None
Short Response	SHORT <p>	1	None
Thru Response	THRU <p>	1,2	110

N9912A Options

- CAT Mode - Standard
- Option 110 - Adds 2-port (Fwd) measurements
- Option 111 - Adds QuickCal
- Option 303 - Adds NA Mode

All models with Full 2-port option - CAT and NA

Cal Methods click to learn more	**Command** click to see command	**Ports <p>**	**Req'd Options**
QuickCals			
1-port OSL or Full 2 port	QCAL:CAL <p>	1 (1-port)	112
		2 (1-port)	122,112

		1,2 (2-port)	122,112
Enhanced Response	QCAL:ERES <p>	1,2 (Fwd)	112
		2,1 (Rev)	122,112
Mechanical Cals - specify connector and cal kit			
1-port OSL	SOLT1 <p>	1	None
		2	122
Full 2 port	SOLT2 <p>	1,2	122, 211[1]
Unknown Thru	SOLR <p>	1,2	122, 211[1]
QSOLT	QSOLT <p>	1,2 or 2,1	122, 211[1]
Enhanced Response	ERES <p>	1,2	None
		2,1	122
Response Cals			
Open Response	OPEN <p>	1	None
		2	122
Short Response	SHORT <p>	1	None
		2	122
Thru Response	THRU <p>	1,2	None

1. N9923A requires Option 122. For FieldFox N9914/5/6/7/8A and N995xA models with firmware versions ≥A.07.00, Option 211 is required. Option 211 requires Option 210.

N9923A Options

- NA Mode - Standard
- Option 112 - Adds QuickCal
- Option 122 - Adds Full 2-port (Fwd and Rev) Measurements
- Option 305 - Adds CAT Mode

All other A Series FieldFox Model Options

For a comprehensive list, view the FieldFox Configuration Guide at:
http://literature.cdn.keysight.com/litweb/pdf/5990-9836EN.pdf

All B Series FieldFox Model Options

For a comprehensive list, view the FieldFox Configuration Guide at:
http://literature.cdn.keysight.com/litweb/pdf/5992-3701EN.pdf

How the FieldFox Error Queue Works

Errors work as follows:

1. Errors are logged to the central logger, visible with the FieldFox GUI. Press **System 7** then **Service Diagnostics**, then **Error Log**.
2. Errors originating from a specific client (connected program) are logged to the queue for that client. Each client has its own queue. So if you have two socket connections (not recommended), and the first one sends a bad command, the second one does NOT get a 'Header not found' error logged in its queue. Only the first one will see that error on SYST:ERR?
3. 'Global' errors (those that occur independent of a connected client), are logged to the central logger (per #1) and to all currently connected SCPI client error queues.
4. SCPI socket (port 5025) and Telnet (port 5024) clients are independent and dynamic. If there is no current connection (or connections), then no error queue for that connection (or connections) exist(s), and no 'Global' errors are logged there because there is no place to log them.

However, the VXI parser always exists in FieldFox firmware even if no clients are connected to it. This is the connection typically used by Keysight I/O Libraries (unless 'socket' connection is checked). So it will always queue 'Global' errors that occur, and a client that connects via the VXI interface after the errors occur may still query out those errors.

You can bind a C# program to the C# VISA wrapper provided with Keysight I/O Libraries in order to use the VXI interface to FieldFox, if you plan to connect after the errors occur to query them out of the FieldFox.

In cases where a persistent error is occurring (like ADC Overload), currently, the error queue for the VXI parser (which receives these errors, as mentioned above) is unbounded, and will accumulate errors until instrument memory is exhausted. This occurs unless a VXI client connects and clears the VXI parser's error queue (using SYST:ERR?).

Instrument Console (IC)

IC is a free utility that can be used to run simple example programs to control the FieldFox.

This utility is NOT supported. Use 'As-is'.

Download Instrument Console at http://na.support.keysight.com/fieldfox/download_files/ic.zip

Unzip, then double-click on IC.exe to install.

Note: IC requires **.NET** (version 2.0 or later). If IC does NOT run, then download .NET at: http://www.microsoft.com/net/download.aspx

Hint

IC can be used with IO libraries or by directly connecting to an IP address.

If an error is continuously returned, try increasing the timeout. (-t <time in seconds).

Then reconnect by issuing -a <address>

IC Command Summary:

[?|help]	shows this help screen
-a <address>	sets a new address, e.g. 192.168.1.1 <address> can be an IP address, a VISA address or alias, LAN hostname, or InstrumentConsole alias.
-d	detach from currently connected instrument.
-clear	Clear IO stream. Experimental.
-r	re-attach to currently connected instrument.
-t<?>	returns current timeout

-t< time in secs>	sets a new timeout, e.g. "-t .010" for 10ms
-w <time in msecs>	wait (pause) execution for the specified amount of time
-err[-|?]	set/remove/query automatic SYST:ERR? after sending a command/query string
-visa?	List VISA instruments and aliases.
-alias x=[y]	Adds an alias 'x' for instrument name 'y' If y is omitted, alias x is cleared.
-alias?	Returns existing aliases.
-sp <script path>	Sets ';' delimited path to locate scripts.
-sp?	Returns the script path.
-p [Message]	Pauses execution, prints optional Message, user must press return to continue.
-v|-verify <$n<==|!=>value >	verify value in $n, where n=0 is most recent result (0<=n<=9) e.g. "-v $0==1" will pass after a *OPC? IC will exit with -1 if verify test fails.
!<string>	performs ShellExecute on <string>
$<filename>	opens filename and executes all lines of text Lines beginning with # in the 1st column are treated as comments
<string>	sends command to the instrument
<string>?[args]	sends a command, then reads back data
[exit|quit]	quits the program

Alpha support has been added for I/O redirection so that data can be read to/from files as part of sending command strings.

E.g.: SENS:FREQ:STAR < freq.txt where freq.txt contains a string such as "3e9"

or

SENS:FREQ:STAR? > freq.txt to dump the start frequency to freq.txt

This program also allows binaries to be properly redirected to a file, e.g. to save and get a screenshot PNG file, you can now do this (and it works without corrupting the PNG file):

MMEM:STOR:IMAG "my.png" this saves a png file on the FieldFox.

MMEM:DATA? "my.png" > my.png this transfers the file to the PC.

The Rules and Syntax of SCPI

Most of the commands used for controlling instruments on the GPIB are SCPI commands. The following sections will help you learn to use SCPI commands in your programs.

Branches on the Command Tree

All major functions on the analyzer are assigned keywords which are called ROOT commands. Under these root commands are branches that contain one or more keywords. The branching continues until each analyzer function is assigned to a branch. A root command and the branches below it is sometimes known as a subsystem.

For example, under **CALCulate** are several branch commands.

Sometimes the same keyword, such as **STATE**, is used in several branches of the command tree. To keep track of the current branch, the analyzer's command parser uses the following rules:

- **Power On and Reset** - After power is cycled or after `*RST`, the current path is set to the root level commands.
- **Message Terminators** - A message terminator, such as a <NL> character, sets the current path to the root command level. Many programming language output statements send message terminators automatically.
- **Colon (:)** - When a colon is between two command keywords, it moves the current path down one level in the command tree. For example, the second colon in `:SOURCE:POWER` specifies that `POWER` is one level below `SOURCE`. When the colon is the first character of a command, it specifies that the following keyword is a root level command. For example, the first colon in **`:SOURCE:POWER`** specifies that source is a root level command.

Note: You can omit the leading colon if the command is the first of a new program line. For example, the following two commands are equivalent:

```
SOUR:POW:ATT:AUTO
:SOUR:POW:ATT:AUTO
```

- **<WSP>** - Whitespace characters, such as <tab> and <space>, are generally ignored. There are two important exceptions:
  - Whitespace inside a keyword, such as `:CALC ULATE`, is not allowed.
  - Most commands end with a parameter. You must use whitespace to separate these ending parameters from commands. **Always refer to the command documentation**. In the following example, there is whitespace between `STATE` and `ON`.

```
CALCULATE:LIMit:STATE ON
```

- **Comma (,)** - If a command requires more than one parameter, you must separate adjacent parameters using a comma. For example, the `SYSTEM:TIME` command requires three values to set the analyzer clock: one for hours, one for minutes, and one for seconds. A message to set the clock to 8:45 AM would be `SYSTEM:TIME 8,45,0`. Commas do not affect the current path.
- **Semicolon(;)** - A semicolon separates two commands in the same message without changing the current path. See Multiple Commands later in this topic.

- **IEEE 488.2 Common Commands** - Common commands, such as `*RST`, are not part of any subsystem. An instrument interprets them in the same way, regardless of the current path setting.

Command and Query

A SCPI command can be an Event command, Query command (a command that asks the analyzer for information), or both. The following are descriptions and examples of each form of command. GPIB Command Finder lists every SCPI command that is recognized by the analyzer, and its form.

Form	Examples
Event commands - cause an action to occur inside the analyzer.	`:INITIATE:IMMEDIATE`
Query commands - query only; there is no associated analyzer state to set.	`:SYSTem:ERRor?`
Command and query - set or query an analyzer setting. The query form appends a question mark (?) to the set form	`:FORMat:DATA ! Command` `:FORMat:DATA? ! Query`

Multiple Commands

You can send multiple commands within a single program message. By separating the commands with semicolons the current path does not change. The following examples show three methods to send two commands:

1. **Two program messages:**

   ```
   :SENSE:FREQUENCY:START 1e9;
   :SENSE:FREQUENCY:STOP 2e9
   ```

2. **One long message**. A colon follows the semicolon that separates the two commands causing the command parser to reset to the root of the command tree. As a result, the next command is only valid if it includes the entire keyword path from the root of the tree:

   ```
   :SENSE:FREQUENCY:START 1e9;:SENSE:FREQUENCY:STOP 2e9
   ```

3. **One short message**. The command parser keeps track of the position in the command tree. Therefore, you can simplify your program messages by including only the keyword at the same level in the command tree.

   ```
   SENSE:FREQUENCY:START 1e9;STOP 2e9
   ```

Common Commands and SCPI Commands

You can send Common commands and SCPI commands together in the same message. (For more information on these types of commands see GP-IB Fundamentals.) As in sending multiple SCPI commands, you must separate them with a semicolon.

Example of Common command and SCPI commands together

```
*RST;SENSE:FREQUENCY:CENTER 5MHZ;SPAN 100KHZ
```

Command Abbreviation

Each command has a long form and an abbreviated short form. The syntax used in this Help system use uppercase characters to identify the short form of a particular keyword. The remainder of the keyword is lower case to complete the long form.

SENS - Short form
SENSE - Long form

Either the complete short form or complete long form must be used for each keyword. However, the keywords used to make a complete SCPI command can be a combination of short form and long form.

The following is **unacceptable** - The first three keywords use neither short or long form.

SOURc:Powe:Atten:Auto on

The following is **acceptable** - All keywords are either short form or long form.

SOUR:POWer:ATT:AUTO on

In addition, the analyzer accepts lowercase and uppercase characters as equivalent as shown in the following equivalent commands:

source:POW:att:auto ON
Source:Pow:Att:Auto on

Optional [Bracketed] Keywords

You can omit some keywords without changing the effect of the command. These optional, or default, keywords are used in many subsystems and are identified by brackets in syntax diagrams.

Example of Optional Keywords

The SENSe keyword is always optional. Therefore, both of the following commands are equivalent:

:SENS:BWID 1e3
:BWID 1e3
The syntax in this Help system looks like this:
[:SENSe]:BWID

Vertical Bars | Pipes

Vertical bars, or "pipes", can be read as **"or"**. They are sometimes used in syntax diagrams to separate alternative parameter options.

Example of Vertical Bars:

SOURce:POWer:ATTenuation:AUTO <on|off>

Either ON or OFF is a valid parameter option.

MIN and MAX Parameters

The special form parameters "MINimum" and "MAXimum" can be used with commands that specify single frequency (Hz) and time (seconds) as noted in the command documentation. **Note**: Also with these commands, kHZ, MHz, and GHz are accepted as suffixes/units.

The short form (min) and long form (minimum) of these two keywords are equivalent.

- **MAX**imum refers to the largest value that the function can currently be set to
- **MIN**imum refers to the smallest value that the function can currently be set to.

For example, the following command sets the start frequency to the smallest value that is currently possible:

SENS:FREQ:START MIN

In addition, the max and min values can also be queried for these commands.

For example, the following command returns the smallest value that Start Frequency can currently be set to:

SENS:FREQ:START? MIN

An error will be returned if a numeric parameter is sent that exceeds the MAX and MIN values.

For example, the following command will return an "Out of range" error message.

```
SENS:FREQ:START 1khz
```

Last Modified:

29-Jan-2012 New topic

SCPI Errors

SCPI Errors

See Also

How to Query the Error Queue

-100 to -200 Command Errors

A command error indicates that the test set's GPIB parser has detected an IEEE 488.2 syntax error. When one of these errors is generated, the command error bit in the event status register is set.

-100 std_command	Command - This event bit (Bit 5) indicates a syntax error, or a semantic error, or a GET command was entered, see IEEE 488.2, 11.5.1.1.4.
-101 std_invalidChar	Invalid character - Indicates a syntactic elements contains a character which is invalid for that type.
-102 std_syntax	Syntax - Indicates that an unrecognized command or data type was encountered. For example, a string was received when the device does not accept strings.
-103 std_invalidSeparator	Invalid separator - The parser was expecting a separator and encountered an illegal character. For example, the semicolon was omitted after a program message unit.
-104 std_wrongParamType	Data type -The parser recognized a data element different than one allowed. For example, numeric or string data was expected but block data was encountered.
-105 std_GETNotAllowed	GET not allowed - Indicates a Group Execute Trigger was received within a program message. Correct the program so that the GET does not occur within the program code.
-108 std_tooManyParameters	Parameter not allowed - Indicates that more parameters were received than expected for the header. For example, *ESE common command only accepts one parameter, so *ESE 0,1 is not allowed.
-109 std_tooFewParameters	Missing parameter - Indicates that less parameters were received than required for the header. For example, *ESE requires one parameter,

		*ESE is not allowed.
-110	std_cmdHeader	Command header - Indicates an error was detected in the header. This error is used when the device cannot detect the more specific errors -111 through -119.
-111	std_headerSeparator	Header separator - Indicates that a character that is not a legal header separator was encountered while parsing the header.
-112	std_IDTooLong	Program mnemonic too long - Indicates that the header contains more that twelve characters, see IEEE 488.2, 7.6.1.4.1.
-113	std_undefinedHeader	Undefined header - Indicates the header is syntactically correct, but it is undefined for this specific device. For example, *XYZ is not defined for any device.
-114	std_suffixOutOfRange	Header suffix out of range - Indicates the value of a header suffix attached to a program mnemonic makes the header invalid.
-120	std_numericData	Numeric data - This error, as well as errors
-121	std_invalidCharInNumber	Invalid character in number - Indicates an invalid character for the data type being parsed was encountered. For example, an alpha in a decimal numeric or a "9" in octal data.
-123	std_exponentTooLarge	Exponent too large - Indicates the magnitude of an exponent was greater than 32000, see IEEE 488.2, 7.7.2.4.1.
-124	std_decimalTooLong	Too many digits - Indicates the mantissa of a decimal numeric data element contained more than 255 digits excluding leading zeros, see IEEE 488.2, 7.7.2.4.1.
-128	std_numericNotAllowed	Numeric data not allowed - Indicates that a legal numeric data element was received, but the device does not accept one in this position for the header.
-130	std_suffix	Suffix - This error, as well as errors -131 through -139, are generated when parsing a suffix. This particular error message is used if the device cannot detect a more specific error.
-131	std_badSuffix	Invalid suffix - Indicates the suffix does not follow the syntax described in IEEE 488.2, 7.7.3.2, or the suffix is inappropriate for this device.
-134	std_suffixTooLong	Suffix too long - Indicates the suffix contain more than 12 characters, see IEEE 488.2, 7.7.3.4.
-138	std_suffixNotAllowed	Suffix not allowed - Indicates that a suffix was encountered after a numeric element that does not allow suffixes.
-140	std_charData	Character data - This error, as well as errors
-141	std_invalidCharData	Invalid character data - Indicates that the character data element contains an invalid character or the particular element received is not valid for the header.
-144	std_charDataTooLong	Character data too long - Indicates the character data element contains more than twelve characters, see IEEE 488.2, 7.7.1.4.
-148	std_charNotAllowed	Character data not allowed - Indicates a legal character data element was encountered where prohibited by the device.

-150	std_stringData	String data - This error, as well as errors
-151	std_stringInvalid	Invalid string data - Indicates that a string data element was expected, but was invalid, see IEEE 488.2, 7.7.5.2. For example, an END message was received before the terminal quote character.
-158	std_stringNotAllowed	String data not allowed - Indicates that a string data element was encountered but was not allowed by the device at this point in parsing.
-160	std_blockData	Block data - This error, as well as errors -161 through -169, are generated when parsing a block data element. This particular error message is used if the device cannot detect a more specific error.
-161	std_badBlock	Invalid block data - Indicates a block data element was expected, but was invalid, see IEEE 488.2, 7.7.6.2. For example, and END message was received before the end length was satisfied.
-168	std_blockNotAllowed	Block data not allowed - Indicates a legal block data element was encountered, but not allowed by the device at this point in parsing.
-170	std_expr	Expression - This error, as well as errors -171 through -179, are generated when parsing an expression data element. This particular error message is used if the device cannot detect a more specific error.
-171	std_invalidExpression	Invalid expression - Indicates the expression data element was invalid, see IEEE 488.2, 7.7.7.2. For example, unmatched parentheses or an illegal character.
-178	std_exprNotAllowed	Expression data not allowed - Indicates a legal expression data was encountered, but was not allowed by the device at this point in parsing.
-180	std_macro	Macro - This error, as well as error -181 through -189, are generated when defining a macro or execution a macro. This particular error message is used if the device cannot detect a more specific error.
-181	std_validOnlyInsideMacro	Invalid outside macro definition - Indicates that a macro parameter place holder was encountered outside of a macro definition.
-183	std_invalidWithinMacro	Invalid inside macro definition - Indicates that the program message unit sequence, sent with a *DDT or a *DMC command, is syntactically invalid, see IEEE 488.2, 10.7.6.3.
-184	std_macroParm	Macro parameter - Indicates that a command inside the macro definition had the wrong number or type of parameters.

-200 to -299 Execution Errors

These errors are generated when something occurs that is incorrect in the current state of the instrument. These errors may be generated by a user action from either the remote or the manual user interface

-200	std_execGen	Execution - This event bit (Bit 4) indicates a PROGRAM DATA element following a header was outside the legal input range or otherwise inconsistent with the device's capabilities, see IEEE 488.2, 11.5.1.1.5.
-201	std_invalidWhileInLocal	Invalid while in local
-202	std_settingsLost	Settings lost due to rtl
-203	std_commandProtected	Command protected - Indicates that a legal password-protected program command or query could not be executed because the command was

		disabled.
-210	std_trigger	Trigger
-211	std_triggerIgnored	Trigger ignored
-212	std_armIgnored	Arm ignored
-213	std_initIgnored	Init ignored
-214	std_triggerDeadlock	Trigger deadlock
-215	std_armDeadlock	Arm deadlock
-220	std_parm	Parameter - Indicates that a program data element related error occurred.
-221	std_settingsConflict	Settings conflict - Indicates that a legal program data element was parsed but could not be executed due to the current device state.
-222	std_dataOutOfRange	Data out of range - Indicates that a legal program data element was parsed but could not be executed because the interpreted value was outside the legal range defined by the devices
-223	std_tooMuchData	Too much data - Indicates that a legal program data element of block, expression, or string type was received that contained more data than the device could handle due to memory or related device-specific requirements.
-224	std_illegalParmValue	Illegal parameter value - Indicates that the value selected was not part of the list of values given.
-225	std_noMemoryForOp	Out of memory - The device has insufficient memory to perform the requested operation.
-226	std_listLength	Lists not same length - Attempted to use LIST structure having individual LIST's of unequal lengths.
-230	std_dataCorruptOrStale	Data corrupt or stale - Indicates invalid data, a new reading started but not completed since the last access.
-231	std_dataQuestionable	Data questionable - Indicates that measurement accuracy is suspect.
-232	std_invalidFormat	Invalid format
-233	std_invalidVersion	Invalid version - Indicates that a legal program data element was parsed but could not be executed because the version of the data is incorrect to the device. For example, a not supported file version, a not supported instrument version.
-240	std_hardware	Hardware - Indicates that a legal program command or query could not be executed because of a hardware problem in the device.
-241	std_hardwareMissing	Hardware missing - Indicates that a legal program command or query could not be executed because of missing device hardware. For example, an option was not installed.
-250	std_massStorage	Mass storage - Indicates that a mass storage error occurred. The device cannot detect the more specific errors described for errors -251 through -259.
-251	std_missingMassStorage	Missing mass storage - Indicates that a legal program command or query

		could not be executed because of missing mass storage.
-252	std_missingMedia	Missing media - Indicates that a legal program command or query could not be executed because of missing media. For example, no disk.
-253	std_corruptMedia	Corrupt media - Indicates that a legal program command or query could not be executed because of corrupt media. For example, bad disk or wrong format.
-254	std_mediaFull	Media full- Indicates that a legal program command or query could not be executed because the media is full. For example, there is no room left on the disk.
-255	std_directoryFull	Directory full - Indicates that a legal program command or query could not be executed because the media directory was full.
-256	std_fileNotFound	File name not found - Indicates that a legal program command or query could not be executed because the file name was not found on the media.
-257	std_fileName	File name - Indicates that a legal program command or query could not be executed because the file name on the device media was in error. For example, an attempt was made to read or copy a nonexistent file.
-258	std_mediaProtected	Media protected - Indicates that a legal program command or query could not be executed becuse the media was protected. For example, the write-protect switch on a memory card was set.
-260	std_expression	Expression
-261	std_math	Math in expression
-270	std_macroExecution	Macro - Indicates that a macro related execution error occurred.
-271	std_macroSyntax	Macro syntax - Indicates that a syntactically legal macro program data sequence, according to IEEE 488.2, 10.7.2, could not be executed due to a syntax error within the macro definition.
-272	std_macroExec	Macro execution - Indicates that a syntactically legal macro program data sequence could not be executed due to some error in the macro definition, see IEEE 488.2, 10.7.6.3.
-273	std_badMacroName	Illegal macro label - Indicates that the macro label was not accepted, it did not agree with the definition in IEEE 488.2, 10.7.3
-274	std_macroPlaceholderMa	cro parameter - Indicates that the macro definition improperly used a macro parameter placeholder, see IEEE 4882, 10.7.3.
-275	std_macroTooLong	Macro definition too long - Indicates that a syntactically legal macro program data sequence could not be executed because the string of block contents were too long for the device to handle, IEEE 488.2, 10.7.6.1.
-276	std_macroRecursion	Macro recursion - Indicates that a syntactically legal macro program data sequence count not be executed because it would be recursive, see IEEE 488.2, 10.7.6.6.
-277	std_cantRedefineMacro	Macro redefinition not allowed - Indicates that redefining an existing macro label, see IEEE 488.2, 10.7.6.4.
-278	std_macroNotFound	Macro header not found - Indicates that a legal macro label in the

		*GMS?, see IEEE 488.2, 10.13, could not be executed because the header was not previously defined.
-280	std_program	Program
-281	std_cantCreateProgram	Cannot create program
-282	std_illegalProgramName	Illegal program name
-283	std_illegalVarName	Illegal variable name
-284	std_programRunning	Program currently running
-285	std_programSyntax	Program syntax
-286	std_programRuntime	Program runtime
-290	std_memoryUse	Memory use
-291	std_execOutOfMemory	Out of memory
-292	std_nameNotFound	Referenced name does not exist
-293	std_nameAlreadyExists	Referenced name already exists
-294	std_incompatibleType	Incompatible type

-300 to -399 SCPI Specified Device-Specific Errors

A device-specific error indicates that the instrument has detected an error that occurred because some operations did not properly complete, possibly due to an abnormal hardware or firmware condition. For example, an attempt by the user to set an out of range value will generate a device specific error. When one of these errors is generated, the device specific error bit in the event status register is set.

-300	std_deviceSpecific	Device specific - This event bit (Bit 3) indicates that a device operation did not properly complete due to some condition, such as overrange see IEEE 488.2, 11.5.1.1.6.
-310	std_system	System
-311	std_memory	Memory - Indicates some physical fault in the devices memory, such as a parity error.
-312	std_PUDmemoryLost	PUD memory lost - Indicates protected user data saved by the *PUD command has been lost, see IEEE 488.2, 10.27.
-313	std_calMemoryLost	Calibration memory lost - Indicates that nonvolatile calibration data used by the *CAL? command has been lost, see IEEE 488.2, 10.2.
-314	std_savRclMemoryLost	Save/recall memory lost - Indicates that the nonvolatile data saved by the *SAV command has been lost, see IEEE 488.2, 10.33.
-315	std_configMemoryLost	Configuration memory lost - Indicates that nonvolatile configuration data saved by the device has been lost.
-320	std_storageFault	Storage fault - Indicates that the firmware detected a fault when using data storage. This is not an indication of physical damage or failure of any mass storage element.
-321	std_outOfMemory	Out of memory - An internal operation needed more memory than was available
-330	std_selfTestFailed	Self-test failed - Indicates a problem with the device that is not covered by

		a specific error message. The device may require service.
-340	std_calFailed	Calibration failed - Indicates a problem during calibration of the device that is not covered by a specific error.
-350	std_queueOverflow	Queue overflow - Indicates that there is no room in the queue and an error occurred but was not recorded. This code is entered into the queue in lieu of the code that caused the error.
-360	std_comm	Communication - This is the generic communication error for devices that cannot detect the more specific errors described for error -361 through -363.
-361	std_parity	Parity in program message - Parity bit not correct when data received for example, on a serial port.
-362	std_framing	Framing in program message - A stop bit was not detected when data was received for example, on a serial port (for example, a baud rate mismatch).
-363	std_inputBufferOverrun	Input buffer overrun - Software or hardware input buffer on serial port overflows with data caused by improper or nonexistent pacing.

-400 to -800 Query and System Errors

A Query error is generated either when data in the instrument's GPIB output queue has been lost, or when an attempt is being made to read data from the output queue when no output is present or pending.

-400	std_queryGen	Query - This event bit (Bit 2) indicates that an attempt to read data from the Output Queues when no output is present or pending, to data in the Output Queue has been lost see IEEE488.2, 11.5.1.1.7.
-410	std_interrupted	Query INTERRUPTED - Indicates the test set has been interrupted by a new program message before it finishes sending a RESPONSE MESSAGE see IEEE 488.2, 6.3.2.3.
-420	std_unterminated	Query UNTERMINATED - Indicates an incomplete Query in the program see IEEE 488.2, 6.3.2.2.
-430	std_deadlocked	Query DEADLOCKED - Indicates that the Input Buffer and Output Queue are full see IEEE 488.2, 6.3.1.7.
-440	std_responseNotAllowed	Query UNTERMINATED after indefinite response - Indicates that a query was received in the same program message after a query requesting an indefinite response was executed see IEEE 488.2, 6.5.7.5.
-500	std_powerOn	Power on
-600	std_userRequest	User request
-700	std_requestControl	Request control
-800	std_operationComplete	Operation complete

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Analyzer-Specific (Positive) SCPI Errors

-115	UnexpectedNumberOfParameters	The number of parameters received does not correspond to the number of parameters expected.

Last Modified:

4-Aug-2009 Cosmetic mods

Examples

FieldFox Programming Examples

- NA
- VVM
- VVS
- Calibration
- ECal
- FOPS
- Guided Calibration
- Markers
- Memory Commands
- C# Example Program (Make a connection)
- Read Block Data using C#
- IQ Streaming
- Transfer Image to PC

MATLAB Examples

- Binary Block File Transfer via VISA
- Acquire S21 Data via LAN as Socket (Port 5025)

Python Example

- Import SA Data as ASCII

VEE Examples

- Get NA Formatted Data as Real 32 BinBlock
- Get_NA Formatted Data_as_ASCII_Output
- SpecAn Get Data as ASCII Output
- Trigger Synch Sweep Complete
- A TRL Calibration Routine for a Waveguide WR-28 Standard

See Also

How the FieldFox Error Queue Works
Instrument Console (IC)
SCPI Concepts and Tips

NA Mode Setup

This example shows how to:

- Create a simple NA Mode setup with 4-window configuration
- Set format, scale, frequency, IFBW, Averaging

- Set triggering to Single
- Read Data
- Clear Averaging

Note: In the following example:

"-p" indicates a user prompt.

"#" indicates a comment

This example can be copied into a text editor, saved as a *.txt file, and run using the free Keysight Instrument Console program. Learn more.

```
# Preset Instrument and Hold
*RST
# Change to NA Mode and wait until changed
INST:SEL "NA";*OPC?
# 4 window configuration
DISP:WIND:SPL D12_34
#change window 4 to R1 measurement
CALC:PAR4:DEF R1
#Select window 4
CALC:PAR4:SEL
#change window 4 format to SWR
CALC:FORMat SWR
# Autoscale window 1
DISP:WIND:TRAC1:Y:AUTO
# Set Center Freq
SENS:FREQ:CENT 2e9
# Set Freq Span
SENS:FREQ:SPAN 500e6
#set IFBW to 10 kHz
BWID 10e3
# Set averaging to 5 sweeps
AVER:COUNt 5
#Select window 1
CALC:PAR1:SEL
# Set to HOLD mode; wait
INIT:CONT 0;*OPC?
# Trigger FIVE measurements
# Wait between each
INIT:IMMediate;*OPC?
INIT:IMMediate;*OPC?
INIT:IMMediate;*OPC?
```

```
INIT:IMMediate;*OPC?
INIT:IMMediate;*OPC?
#Read formatted data from selected trace (1)
CALC:DATA:FDATa?
#Clear averaging
AVER:CLEar
#And do anther sweep
INIT:IMMediate;*OPC?
```

Last Modified:

23-Aug-2011 New command

VVM Mode Example

The following example sets up a VVM measurement.

Note: In the following example:

"-p" indicates a user prompt.

"#" indicates a comment

This example can be copied into a text editor, saved as a *.txt file, and run using the free Keysight Instrument Console program. Learn more.

```
# Preset Instrument
SYST:PRESet;*OPC?
# Change to VVM Mode and wait until changed
INST:SEL "VVM";*OPC?
# Set to single sweep
INIT:CONT 0;*OPC?
# Setup the instrument for 1-port cable trimming
CALC:PAR:DEF S11
# Set Center Freq
SENS:FREQ:CENT 2e9
# Take a sweep to ensure you get a valid point on your new frequency.
INIT:IMM;*OPC?
# Attach the Reference cable
-p "Attach Reference Cable"
# Zero the display
SENS:CORR:ZERO:STAT ON;*OPC?
# Take another sweep to show the zero in action
```

```
INIT:IMM;*OPC?
# Prompt to attach a cable
-p "Attach Cable to Trim"
# Put into freerun mode
INIT:CONT ON
```

VVS Example

The following example sets up the VVS (variable voltage source).

Note: In the following example:

"-p" indicates a user prompt.

"#" indicates a comment

This example can be copied into a text editor, saved as a *.txt file, and run using the free Keysight Instrument Console program. Learn more.

The following example focuses on reliable switching (On and Off) of the VVS. The key is to make sure that the query reflects the current condition. This is important because the query result is NOT always updated.

The following is **psuedo code** as the Instrument Console has limited programming capability.

```
#This section ensures that the VVS is indeed ON after being tripped.
# Send VVS query
SYST:VVS?
# If "TRIPPED" is returned, then disable VVS
SYST:VVS:ENAB 0
# Wait 50 ms, then enable.
SYST:VVS:ENAB 1
# wait 50 ms, then repeat query.
SYST:VVS?
# If ON, then finished. Otherwise, send ENABle again, and then another
query.

#This section ensures that the VVS is indeed OFF.
# Send VVS query
SYST:VVS?
# If "TRIPPED" is returned, then disable VVS
# If OFF, then finished. Otherwise...
SYST:VVS:ENAB 0
# wait 50 ms, then repeat query.
SYST:VVS?
# wait 50 ms, then repeat query.
```

```
# If OFF, then finished. Otherwise, send ENABle 1, then ENABle 0, and then
another query.
SYST:VVS:ENAB 1
# Wait 50 ms.
SYST:VVS:ENAB 0
# wait 50 ms, then repeat query.
SYST:VVS?
```

Calibration Examples

The following examples show how to perform various calibrations in CAT and NA modes.

About Calibration Settings

A calibration session that is performed using the front-panel is completely separate from a calibration session that is performed programmatically.

Therefore, calibration settings that are made remotely (such as setting the cal kit and connectors) can NOT be observed from the front-panel user interface. Alternatively, calibration settings are that are made from the FieldFox front panel (user interface) can NOT be queried programmatically.

Guided Cal

- Guided Calibration (separate topic)
- ECal (separate topic)

Mechanical Cals

- 1-Port OSL
- 2- Port SOLR
- 2-Port QSOLT
- 2-Port Enhanced Response
- THRU Response

QuickCals

- 1-Port QuickCal
- 2-Port Non-Insertable QuickCal
- 2-Port Insertable QuickCal
- Enhanced Response QuickCal

Note: To Cal a VVM mode measurement, perform a Cal in CAT or NA mode, then switch to VVM mode.

See Also

CAT Mode Commands

NA Mode Commands

See All Programming Examples

Note: In the following examples:

"-p" indicates a user prompt.

"#" indicates a comment

Examples can be copied into a text editor, saved as a *.txt file, and run using the free Keysight Instrument Console program. Learn more.

1- Port OSL Cal on port 1

To perform a 1-port cal on port 2, replace all the '1' arguments with '2'.

```
# Select a Type N male, 50 ohm connector
# as the DUT connector to be attached to port 1.
# Be careful with the dashes in -M- for the following command.
# Some editors will change the character.
CORR:COLL:CONN 1, "Type N -M-,50"
# select the calkit to use.
CORR:COLL:CKIT:LABel 1,"85032B/E"
# Select 1-port cal (SOLT1) on port 1
CORR:COLL:METH:SOLT1 1
-p attach load to port 1
CORR:COLL:LOAD 1;*OPC?
-p attach short to port 1
CORR:COLL:SHOR 1;*OPC?
-p attach open to port 1
CORR:COLL:OPEN 1;*OPC?
# Finish and apply the cal
CORR:COLL:SAVE 0
```

2-Port SOLR Cal

```
# Setup 2-port SOLR Unknown Thru Cal between ports 1 and 2*
# Use the Type N male T kit on both ports
# Cal with either insertable or non-insertable connectors
# Do NOT use on N9912A
corr:coll:ckit:lab 1, "1250-3607"
corr:coll:ckit:lab 2, "1250-3607"
# Be careful with the dashes in -M- for the following command.
# Some editors will change the character.
corr:coll:conn 1,"Type N -M-,50"
corr:coll:conn 2,"Type N -M-,50"
CORR:COLL:METH:SOLR 1,2
-p Attach load to port 1
corr:coll:load 1;*OPC?
-p Attach short to port 1
corr:coll:shor 1;*OPC?
```

```
-p Attach open to port 1
corr:coll:open 1;*OPC?
-p Attach load to port 2
corr:coll:load 2;*OPC?
-p Attach short to port 2
corr:coll:shor 2;*OPC?
-p Attach open to port 2
corr:coll:open 2;*OPC?
-p Attach thru between ports 1 and 2
corr:coll:thru 1,2;*OPC?
corr:coll:save 0
```

2-Port QSOLT

```
# Setup 2-port QSOLT between port 1 and 2 using the T kit on port 1*
# OSL standards measured on port 2 - not available from the GUI
# For insertable DUTs ONLY
# Do NOT use on N9912A
corr:coll:ckit:lab 1, "1250-3607"
# Be careful with the dashes in -M- for the following command.
# Some editors will change the character.
corr:coll:conn 1,"Type N -M-,50"
corr:coll:conn 2,"Type N -F-,50"
corr:coll:meth:QSOL 1,2
-p Attach load to port 1
corr:coll:load 1;*OPC?
-p Attach short to port 1
corr:coll:shor 1;*OPC?
-p Attach open to port 1
corr:coll:open 1;*OPC?
-p Attach thru between ports 1 and 2
corr:coll:thru 1,2;*OPC?
corr:coll:save 0
```

2-Port Enhanced Response

```
# Enhanced Response requires an insertable DUT
# N9923A, calibrate measurements in either forward or reverse direction.
# N9912A, calibrate measurements in forward direction ONLY.
# This example is forward direction
# Choose the 85052D kit for port 1 and also port 2
corr:coll:ckit:lab 1, "85052D"
corr:coll:ckit:lab 2, "85052D"
```

```
# Choose connectors for port 1 and then port 2
# Be careful with the dashes in -M- for the following command.
# Some editors will change the character.
corr:coll:conn 1,"3.5 mm -M-,50"
corr:coll:conn 2,"3.5 mm -F-,50"
# Choose Enhanced Response forward
# For reverse measurement, use <2,1> and measure stds on port 2
corr:coll:meth:ERES 1,2
# Start measuring standards:
-p Attach short to port 1
corr:coll:shor 1;*OPC?
-p Attach open to port 1
corr:coll:open 1;*OPC?
-p Attach load to port 1
corr:coll:load 1;*OPC?
-p Connect ports 1 and 2 with Flush Thru
corr:coll:thru 1,2;*OPC?
#  Saves the finished calibration
corr:coll:save 0
```

THRU Response - Normalization

```
# Correct transmission measurements
# N9912A must have Opt 110
SENS:CORR:COLL:METH:THRU 1,2
-p Attach thru now
SENS:CORR:COLL:THRU 1,2;*OPC?
# Finish and apply the cal
SENS:CORR:COLL:SAVE 0
```

QuickCals

1-Port QuickCal

```
CORR:COLL:METH:QCAL:CAL 1
# First step required to measure internal standards
# Port 1 must be left open
CORR:COLL:INT 1;*OPC?
-p (Optional) Attach load to port
CORR:COLL:LOAD 1;*OPC?
CORR:COLL:SAVE 0
```

2-Port Non-Insertable QuickCal*

```
# Setup full 2-port cal between port 1 and 2 using QuickCal.
# For a non-insertable DUT (both Type N -M-)- performs SOLR
```

```
# Measure INT OPEN, SHORT on BOTH ports
# The load measurement steps are optional.
# Do NOT use on N9912A
# Be careful with the dashes in -M- for the following commands.
# Some editors will change the character.
corr:coll:conn 1,"Type N -M-,50"
corr:coll:conn 2,"Type N -M-,50"
corr:coll:meth:QCAL:CAL 1,2
-p Leave port 1 and port 2 open (no connection)
corr:coll:int 1;*OPC?
corr:coll:int 2;*OPC?
-p Attach a load to port 1
corr:coll:load 1;*OPC?
-p Attach a load to port 2
corr:coll:load 2;*OPC?
-p Connect ports 1 and 2 using any adapter/thru
corr:coll:thru 1,2;*OPC?
corr:coll:save 0
```

2-Port Insertable QuickCal*

```
# Setup full 2-port QuickCal between port 1 and 2
# For an Insertable DUT - performs QSOLT cal
# Measure INT OPEN, SHORT on ONLY one port
# Best to measure INT OPEN, SHORT on port without jumper cable
# The load measurement steps are optional.
# Do NOT use on N9912A
# Be careful with the dashes in -M- for the following command.
# Some editors will change the character.
corr:coll:conn 1,"Type N -M-,50"
corr:coll:conn 2,"Type N -F-,50"
corr:coll:meth:QCAL:CAL 1,2
-p Leave port 1 and port 2 open (no connection)
corr:coll:int 1;*OPC?
-p Attach a load to port 1
corr:coll:load 1;*OPC?
-p Attach a load to port 2
corr:coll:load 2;*OPC?
-p Connect ports 1 and 2 using any adapter/thru
corr:coll:thru 1,2;*OPC?
corr:coll:save 0
```

Enhanced Response QuickCal

```
# Enhanced Response requires an Insertable DUT
# N9923A, calibrate measurements in either forward or reverse direction.
# N9912A, calibrate measurements in forward direction ONLY.
# This example is forward direction
# For reverse measurement, use <2,1> and measure stds on port 2
# Choose connectors for port 1 and then port 2
# Be careful with the dashes in -M- for the following command.
# Some editors will change the character.
corr:coll:conn 1,"3.5 mm -M-,50"
corr:coll:conn 2,"3.5 mm -F-,50"
CORR:COLL:METH:QCAL:ERES 1,2
# Step 1 - Ports 1 and 2 must be left open
-p Leave ports 1 and 2 OPEN
CORR:COLL:INT 1;*OPC?
# Step 2 - (Optional)
-p Attach load to port 1
CORR:COLL:LOAD 1;*OPC?
# Step 3 - Connect ports
-p connect port 1 and port 2
CORR:COLL:THRU 1,2;*OPC?
CORR:COLL:SAVE 0
```

ECal Calibration

ECal requires the use of the Guided Cal acquisition command:

[:SENSe]:CORRection:COLLect:GUIDed:STEP:ACQuire

The following two 'Guided' commands are optional:

[:SENSe]:CORRection:COLLect:GUIDed:SCOunt

[:SENSe]:CORRection:COLLect:GUIDed:STEP:PROMpt

Note: In the following example:

"-p" indicates a user prompt.

"#" indicates a comment

This example can be copied into a text editor, saved as a *.txt file, and run using the free Keysight Instrument Console program. Learn more.

Relevant ECal module commands:

- [:SENSe]:CORRection:COLLect:CKIT:LABel
- [:SENSe]:CORRection:COLLect:ECAL:AORient

The following program performs a **2-port** SOLR calibration using an ECal module that is connected to a FieldFox.

A 2-port ECal may have 1 or 3 three steps depending on if 'simple ECal' is set and if the ECal is insertable (can connect to both test ports simultaneously). If one of those conditions is NOT true, then the cal will require 3 steps.

If you would like to use the 3 step cal process, ensure that CORR:COLL:ECAL:SIMP 0 has been set.

A **1-port ECal** would require only 1 step.

If you would like to use 1 step simple cal ensure that CORR:COLL:ECAL:SIMP 1 has been set.

The :CORRection:COLLect:GUIDed:SCOunt? command is used to query the number of steps required.

The following example is for a **2-port** SOLR cal that uses 3 steps.

```
# First setup a 2-port measurement between port 1 and 2
#
# Change the following line to your DUT/ECal module connector type and gender.
# Be careful with the dashes in -F- for the following command.
# Some editors will change the character.
corr:coll:conn 1,"Type N -F-,50"
corr:coll:conn 2,"Type N -F-,50"
# Change to your model ECal module
corr:coll:ckit:lab 1, "N4431A"
corr:coll:ckit:lab 2, "N4431A"
CORR:COLL:METH:SOLR 1,2
# ECal requires the use of the Guided cal acquisition
# do a For/Next loop, query the number of steps (N)
# CORR:COLL:GUID:SCO?
# CORR:COLL:GUID:STEP:PROM? <step num> // query the prompt (optional, but recommended!)
# CORR:COLL:GUID:STEP:ACQ <step num>;*OPC?
# Otherwise, measure all three stds for SOLR ECal w/o prompts
CORR:COLL:GUID:STEP:ACQ 1;*OPC?
CORR:COLL:GUID:STEP:ACQ 2;*OPC?
CORR:COLL:GUID:STEP:ACQ 3;*OPC?
# Finish
CORR:COLL:SAVE 0
```

FOPS Measurement

The following example sets up a VVM measurement.

Note: In the following example:
"-p" indicates a user prompt.
"#" indicates a comment
This example can be copied into a text editor, saved as a *.txt file, and run using the free Keysight Instrument Console program. Learn more.

```
# Preset Instrument
SYST:PRESet;*OPC?
#Select USB Power Meter
inst "Power Meter"
#Set the max number of ps readings and tolerance settings?
TOL 0.1
POINt:READ:MAX 2
#Select FOPS
SWE:TYPE SWEPt
#Set frequencies
SOUR:FREQ:STAR .5e9
SOUR:FREQ:STOP 1.5e9
SOUR:REC:OFFS .05e9
FREQ:STEP 50e6
#Set Forward sweep
SWE:RX FORWARD
#Set Power Level
SOUR:POW 0
#Set dwell time
POIN:DWEL .05
#Measure Source Power
-p "Connect the power sensor"
INIT:CONT 0
INITiate:IMMediate;*OPC?
SOURce:POWer:MEMorize;*OPC?
TRACe:MEASurement Gain
```

Guided Calibration

The following C# example program performs a 1-port cal:

```
//
// Performs a 1-port guided cal on the specified port with the specified connector
// for that port and kit for that port.
//
```

```
 // port – port number to perform the 1-port calibration on
 // connector – the connector name for the DUT connector, e.g. "Type N -M-,50"
 // kitLabel – the label of the calkit to use, e.g. "1250-3607"
 //
 void Do1PortGuidedCal(int port, string connector, string kitLabel)
 {
        Instrument.Write(string.Format("sens:corr:coll:conn {0},{1}", port, connector));
        Instrument.Write (string.Format("sens:corr:coll:ckit:lab {0},{1}",port,kitLabel));
        Instrument.Write (string.Format("sens:corr:coll:meth:SOLT1 {0}", port));

   int steps = ReadInt("SENS:CORR:COLL:GUID:SCOunt?");
   for(int s = 1; s <= steps; ++s)
   {
      string steptext = Instrument.ReadString(string.Format("SENS:CORR:COLL:GUID:STEP:PROM?
{0}",s));
       PromptUser(steptext); // blocks until user confirms they've performed the requested action
       Instrument.Write (string.Format("SENS:CORR:COLL:GUID:STEP:ACQ {0}",s));
       Instrument.ReadInt("*OPC?");
   }
   Console.Write("Saving...");
   Instrument.Write ("CORR:COLL:SAVE 0");
   Instrument.ReadInt("*OPC?");
   Console.WriteLine("Done ");
 }
```

Marker Example

This example shows how to create and move Delta Markers.

Note: In the following example:
"-p" indicates a user prompt.
"#" indicates a comment
This example can be copied into a text editor, saved as a *.txt file, and run using the free Keysight Instrument Console program. Learn more.

```
# Preset Instrument and Hold
*RST
# Change to NA Mode and wait until changed
INST:SEL "NA";*OPC?
# Set Center Freq
SENS:FREQ:CENT 2e9
```

```
# Set Freq Span
SENS:FREQ:SPAN 500e6
# Setup the instrument to measure Insertion Loss
CALC:PAR:DEF S21
# Set to single trigger
INIT:CONT 0
# Take a single sweep at new freq and measurement
INIT:IMM;*OPC?
# Create reference marker
CALC:MARK1 NORM
# Move the marker to 1.75 GHz
CALC:MARK1:X 1.75e9
# Change to Delta Marker
CALC:MARK1 DELT
# Move the delta marker to 2.0 GHz
CALC:MARK1:X 2e9
# Take a sweep
INIT:IMM;*OPC?
# Read the Y axis values of the marker
# First value is mag, second is zero
CALC:MARK1:Y?
```

Memory Command Examples

These commands are used for memory storage and retrieval.

See also MMEM:DATA.

Note: If you attempt to save a filename that has already been saved at the specified memory location, the FieldFox displays the following error message:

Error -257, File name error; Storage Path "[INTERNAL]:\my_file" is not allowed.

:MMEMory:DATA "<file_name>",#ABC

This command writes <data> into "<file_name>", where <data> is in 488.2 block format.

The FieldFox expects to see waveform data as block data (binary files). The IEEE standard 488.2-1992 section 7.7.6 defines block data. The following example shows how to structure SCPI command for downloading waveform data where #ABC represents the block data.

"<file_name>"	The file name can be the short name, full file path, or NVWFM format. • Use the short name (*"my_file"*); the file will be stored in the default internal FieldFox directory: *[INTERNAL]:\InternalSD\UserData*.

- **Use the file path: "[INTENAL]:\my_data_folder\my_file" (recommended)**
  Note: You will need to create "my_data_folder", before saving your data.
- Other examples of storage location syntax:
  "[USBDISK]:\my_data_folder\my_file"
  "[SDCARD]:\my_data_folder\my_file"
- Examples of deleting files. See also MMEM:DEL.

```
Delete file from active drive/folder
MMEM:DEL "MyOldFile.sta"

'Delete file from USB
MMEM:DEL "[USBDISK]:\MyOldFile.sta"
```

#	This character indicates the beginning of the data block.
A	Number of decimal digits present in B
B	Decimal number specifying the number of data bytes to follow in C
C	Actual binary waveform data

Note: The following commands are *not* supported for non-volatile waveform memory (NVWFM).

:MMEMory:CATalog? "<file_system>"

This query outputs a list of the files from the specified file system. The return data will be in the following form:
<mem_used>,<mem_free>{,"<file_listing>"}.

:MMEMory:CDIRectory "[<directory_name>]", "[<directory_name>]"

:MMEMory:CDIRectory?

This command changes the directory name for a file system. If no parameter is specified, the directory is set to the *RST value. At *RST, this value is set to the default user data directory. The query returns the full path of the default directory.

:MMEMory:COPY "<file_name>","<file_name>"

This command makes a duplicate of the requested file.

:MMEMory:DELete "<file_name>",<directory_name>

This command removes a file from the specified directory.

:MMEMory:MDIRectory <directory_name>

This command creates a new directory where the <directory name> parameter specifies the name of the new directory.

```
:MMEMory:MOVE "<src_file>","<src_file_1>"
This command renames the src_file to src_file_1.

:MMEMory:RDIRectory <directory_name>
This command removes a directory where the <directory_name> parameter
specifies the name of the directory to be removed. All files and
directories under the specified directory are also removed.
```

Last Modified:

22sep2017 Added 10.00.

C# Example Program

The following C# example demonstrates how to send SCPI commands to the FieldFox using a TCP socket connection over a LAN connection.

- It is NOT necessary that you know C# to write a SCPI program. It is ONLY necessary that you understand basic SCPI syntax. You can add or replace the SCPI commands in this example program with your own.
- If you ARE familiar with C#, you can Download the project files here. (Internet connection required).

Note: You can also send single SCPI commands to the FieldFox using this free Instrument Console program.

Requirements

To connect to the FieldFox and run SCPI programs, you must first download and install the Visual C# Express software from: http://www.microsoft.com/express/download/

Once the program is installed, search the PC hard drive for csc.exe. This file could be in the C:\Windows\Microsoft.NET directory.

NOTE: If more than one folder contains csc.exe, use the folder with the latest revision.

Write the SCPI program

The following procedure uses the example filename MyProgram.cs. You can use any filename that you like.

1. Copy the text in the shaded are below into a Notepad file and name it MyProgram.cs.
2. Write your SCPI program between the //Start your program here and //End your program here lines. Several example lines are provided to demonstrate the syntax in which the SCPI commands must be contained. See the SCPI Command Reference and Program Examples for more information.

Run the SCPI Program

Record the dynamically-assigned IP address of the FieldFox.

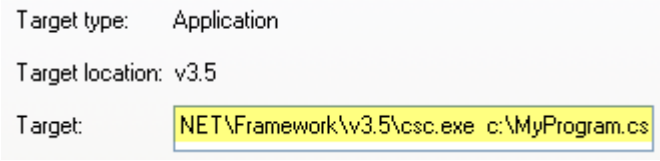
1. Shut down the FieldFox.
2. Connect the FieldFox to the Internet using a LAN connection.
3. Power ON the FieldFox.

4. On the FieldFox, press System, then System Configuration, then LAN.
5. Record the Current IP Address
6. Compile your program by executing csc.exe MyProgram.cs. This creates a file named MyProgram.exe in the same directory as csc.exe.
7. Run your SCPI program by executing MyProgram.exe <FieldFox IP Address>. For example: MyProgram.exe 192.121.1.101

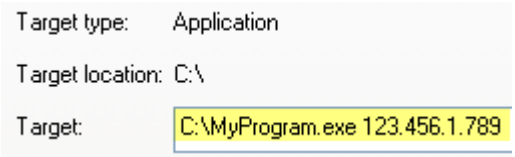
To make this process more convenient:

The following steps show how to create shortcuts on your PC desktop to compile and run MyProgram.exe.

1. Using Windows Explorer, navigate to the folder that contains csc.exe. **NOTE:** If more than one folder contains csc.exe, use the folder with the latest revision.
2. Right-click csc.exe then click **Create Shortcut**.
3. Drag the shortcut file to the PC desktop.
4. Right-click on the desktop shortcut, then click **Properties**.
5. Append a space, the full path, and filename to the end of the "Target" as in the following image. This example shows MyProgram.cs is saved to the C:\ folder.



6. After performing a compile, perform the same 'shortcut' procedure for MyProgram.exe except, instead of appending the path and filename, append the IP address of the FieldFox.



Copy the text in the following shaded area to a Notepad file.

```
using System;
using System.Collections.Generic;
using System.Text;
using System.Net.Sockets;
using System.IO;
namespace Network.Connect
{
    class Program
    {
        static TelnetConnection tc;
        static int Main(string[] args)
        {
            // defaultHostName is host name to use if one is not specified
on the command line.
            string defaultHostName = "192.168.1.1";
```

```
            string hostName = defaultHostName;
            if( args.Length == 1 )
            {
                // If command line contains a '?' character, interpret this
as help.
                if( args[0].Contains("?"))
                {
                    Console.WriteLine("Usage: N9912A_CS_Example.exe
<hostName>\n\n"+
                        "Where optional hostName is an ip address or host
name.\n" +
                        "If no hostName is supplied, the default
("+defaultHostName+") is used.\n\n"+
                        "e.g. N9912A_CS_Example.exe 10.10.1.1\n\nor\n\n" +
                        "N9912A_CS_Example.exe A-N9912A-22762");
                    return 0; // exit.
                }
                // Record hostname passed in on command line.
                hostName = args[0];
            }
            try
            {
                tc = new TelnetConnection();
                tc.ReadTimeout = 10000; // 10 sec
                // open socket on hostName, which can be an IP address, or
use host name (e.g. "A-N9912A-22762") used in lieu of IP
address
                tc.Open(hostName);
                if( tc.IsOpen )
                {
                    //Start your program here
                    Write("SYST:PRES;*OPC?");
                    Write("*IDN?");
                    Write("SENS:FREQ:STAR?");
                    Write("SENS:FREQ:STAR 3e9");
                    Write("SENS:FREQ:STAR?");
                    Write("SYST:ERR?");
                    Write("SYST:HELP:HEAD?");
                    //End your program here
                    tc.Dispose();
                    Console.WriteLine("Press any key to exit.");
                    Console.ReadKey(); // continue after reading a key from
the keyboard.
```

```
                }
                else
                {
                    Console.WriteLine("Error opening " + hostName);
                    return -1;
                }
                //FieldFox Programming Guide 5
            }
            catch(Exception e)
            {
                Console.WriteLine(e.ToString());
                return -1;
            }
            // exit normally.
            return 0;
        }
        /// <summary>
        /// Write a SCPI command to the telnet connection.
        /// If the command has a '?', then read back the response and print
        /// it to the Console.
        /// </summary>
        /// <remarks>
        /// Note the '?' detection is naive, as a ? could occur in the
middle
        /// of a SCPI string argument, and not actually signify a SCPI
query.
        /// </remarks>
        /// <param name="s"></param>
        static void Write(string s)
        {
            Console.WriteLine(s);
            tc.WriteLine(s);
            if (s.IndexOf('?') >= 0)
                Read();
        }
        /// <summary>
        /// Read the telnet connection for a response, and print the
response to the
        /// Console.
        /// </summary>
        static void Read()
        {
```

```
            Console.WriteLine(tc.Read());
        }
    }
#region TelnetConnection - no need to edit
    /// <summary>
    /// Telnet Connection on port 5025 to an instrument
    /// </summary>
    public class TelnetConnection : IDisposable
    {
        TcpClient m_Client;
        NetworkStream m_Stream;
        bool m_IsOpen = false;
        string m_Hostname;
        int m_ReadTimeout = 1000; // ms
        public delegate void ConnectionDelegate();
        public event ConnectionDelegate Opened;
        public event ConnectionDelegate Closed;
        public bool IsOpen { get { return m_IsOpen; } }
        public TelnetConnection() { }
        public TelnetConnection(bool open) : this("localhost", true) { }
        public TelnetConnection(string host, bool open)
        {
            if (open)
                Open(host);
        }
        void CheckOpen()
        {
            if (!IsOpen)
                throw new Exception("Connection not open.");
        }
        public string Hostname
        {
            get { return m_Hostname; }
        }
        public int ReadTimeout
        {
            set { m_ReadTimeout = value; if (IsOpen) m_Stream.ReadTimeout =
value; }
            get { return m_ReadTimeout; }
        }
        public void Write(string str)
        {
```

```
            //FieldFox Programming Guide 6
            CheckOpen();
            byte[] bytes = System.Text.ASCIIEncoding.ASCII.GetBytes(str);
            m_Stream.Write(bytes, 0, bytes.Length);
            m_Stream.Flush();
        }
        public void WriteLine(string str)
        {
            CheckOpen();
            byte[] bytes = System.Text.ASCIIEncoding.ASCII.GetBytes(str);
            m_Stream.Write(bytes, 0, bytes.Length);
            WriteTerminator();
        }
        void WriteTerminator()
        {
            byte[] bytes =
System.Text.ASCIIEncoding.ASCII.GetBytes("\r\n\0");
            m_Stream.Write(bytes, 0, bytes.Length);
            m_Stream.Flush();
        }
        public string Read()
        {
            CheckOpen();
            return System.Text.ASCIIEncoding.ASCII.GetString(ReadBytes());
        }
        /// <summary>
        /// Reads bytes from the socket and returns them as a byte[].
        /// </summary>
        /// <returns></returns>
        public byte[] ReadBytes()
        {
            int i = m_Stream.ReadByte();
            byte b = (byte)i;
            int bytesToRead = 0;
            var bytes = new List<byte>();
            if ((char)b == '#')
            {
                bytesToRead = ReadLengthHeader();
                if (bytesToRead > 0)
                {
                    i = m_Stream.ReadByte();
                    if ((char)i != '\n') // discard carriage return after
```

```
length header.
                        bytes.Add((byte)i);
                }
            }
            if (bytesToRead == 0)
            {
                while (i != -1 && b != (byte)'\n')
                {
                    bytes.Add(b);
                    i = m_Stream.ReadByte();
                    b = (byte)i;
                }
            }
            else
            {
                int bytesRead = 0;
                while (bytesRead < bytesToRead && i != -1)
                {
                    i = m_Stream.ReadByte();
                    if (i != -1)
                    {
                        bytesRead++;
                        // record all bytes except \n if it is the last
char.
                        if (bytesRead < bytesToRead || (char)i != '\n')
                            bytes.Add((byte)i);
                    }
                }
            }
            return bytes.ToArray();
        }
        int ReadLengthHeader()
        {
            int numDigits = Convert.ToInt32(new string(new char[] {
(char)m_Stream.ReadByte() }));
            string bytes = "";
            for (int i = 0; i < numDigits; ++i)
                bytes = bytes + (char)m_Stream.ReadByte();
            return Convert.ToInt32(bytes);
        }
        public void Open(string hostname)
        {
```

```
            if (IsOpen)
                Close();
            m_Hostname = hostname;
            m_Client = new TcpClient(hostname, 5025);
            m_Stream = m_Client.GetStream();
            m_Stream.ReadTimeout = ReadTimeout;
            m_IsOpen = true;
            if (Opened != null)
                Opened();
        }
        public void Close()
        {
            if (!m_IsOpen)
                //FieldFox Programming Guide 7
                return;
            m_Stream.Close();
            m_Client.Close();
            m_IsOpen = false;
            if (Closed != null)
                Closed();
        }
        public void Dispose()
        {
            Close();
        }
    }
#endregion
}
```

Read Block Data using Csharp

The following example program illustrates how to parse block data using C#.

```
/// <summary>
/// Generates a IEEE block header for the specified size.
/// </summary>
/// <remarks>
/// The block header is of the form #[digit indicating number of digits to follow][length]
/// e.g. 201 bytes -> "#3201
///      9999 bytes -> "#49999"
///      0    bytes -> "#10"
```

```
/// </remarks>
/// <param name="size">Size of the block.</param>
/// <returns>Block header size string.</returns>
string GenerateBlockHeader(int size)
{
    string sz = size.ToString();
    return "#" + sz.Length.ToString() + sz;
}
/// <summary>
/// Parses a partially digested IEEE block length header, and returns
/// the specified byte length.
/// </summary>
/// <remarks>
/// The Stream pointer is assumed to point to the 2nd character of the block header
/// (the first digit of the actual length).  The caller is assumed to have parsed the
/// first two block header characters (#?, where ? is the number of digits to follow),
/// and converted the "number of digits to follow" into the int argument to this function.
/// </remarks>
/// <param name="numDigits">Number of digits to read from the stream that make up the
/// length in bytes.</param>
/// <returns>The length of the block.</returns>
int ReadLengthHeader(int numDigits)
{
    string bytes = string.Empty;
    for (int i = 0; i < numDigits; ++i)
        bytes = bytes + (char)Stream.ReadByte();
    return Convert.ToInt32(bytes);
}
```

Transfer Image to PC

This example shows how to transfer an image (screenshot) on the FieldFox to a remote PC.

Note: In the following example:

"#" indicates a comment

This example can be copied into a text editor, saved as a *.txt file, and run using the free Keysight Instrument Console program. Learn more.

```
# Store screen to my.png into the current directory on the FieldFox
```

```
# The default directory is the userdata directory on the instrument.
MMEM:STOR:IMAG "my.png"
# Transfers the contents of my.png as a BINBLOCK
# The file data that is returned by the 2nd command depends on the
programming environment.
# Environments like VEE, Matlab, C/VISA, etc. all deal with BINBLOCK
transfers in their own way.
MMEM:DATA? "my.png"
# Optionally delete of file from instrument's local storage
MMEM:DEL "my.png"
```

MATLAB

MATLAB - Binary Block File Transfer Via VISA

This is a MATLAB example that enables you to control the FieldFox family of Combination Analyzers via a VISA resource string.

- The program first clears the error queue and all status registers via the "*CLS" command.

- The *IDN? identification query is then asserted and the resultant string is read.

- The application stores a PNG file,'Test_Image.PNG',to the internal memory of the targeted FieldFox (FF) analyzer.

- Next the stored PNG image file,'Test_Image.PNG', is transferred from the FieldFox to the controlling PC via the MMEM:DATA? query. This transfer is by default always an IEEE-754 binary bin-block transfer.

- The .PNG file save on the controlling PC is stored as 'C:\Temp\TransferedTestImage.png'

- Lastly, the system error queue is checked at conclusion of the application. If no errors were generated the response to the "SYST:ERR?" then the query will still read "+0, "No Error"".

Note: In the following example:
"%","{%*" indicates a comment
"*}" indicates the end of a comment

```
%{
Sample MATLAB program for the Keysight Technologies FieldFox (FF) handheld
combination analyzers.
The sample program connects to a FF Family handheld combination analyzer
thru a VISA resource string.
The program first clears the error queue and all status registers via the
"*CLS" command. The *IDN? identification query is then asserted and the
resultant string is read.
The application stores a PNG file,'Test_Image.PNG',to the internal memory
of the targeted
FieldFox (FF) analyzer.
```

```
Next the stored PNG image file,'Test_Image.PNG', is transferred from the FF
to the controlling PC via
the MMEM:DATA? query. This transfer is by default always an IEEE-754 binary
bin-block transfer.
The .PNG file save on the controlling PC is stored as
'C:\Temp\TransferedTestImage.png'
As a wrap up the system error queue is checked at conclusion of the
application. If no errors were generated the response to the "SYST:ERR?"
query will still be "+0, "No Error"".
%}
%Remove all interfaces to instrument
instrreset
% find all previously created objects
oldobjs = instrfind;
% If there are any existing objects
if (~isempty(oldobjs))
    % close the connection to the instrument
    fclose(oldobjs);
    % and free up the object resources
    delete(oldobjs);
end

% Remove the object list from the workspace.
clear oldobjs;
%{
Define FieldFox (FF) interface, this is the VISA resource string. Replace
this VISA
resource string with your controlling PC's FieldFox VISA resource string as
appropriate.
For this applicaiton the 'agilent' I/o libraries are utilized.
%}
fieldFox = visa('agilent', 'TCPIP0::156.140.159.126::inst0::INSTR');
% Buffer size must precede open command
set(fieldFox,'InputBufferSize', 640000);
set(fieldFox,'OutputBufferSize', 640000);
% Open session to fieldFox based on VISA resource string
fopen(fieldFox);
% Clear the event status registers and all errors which may be in the
FieldFox's queue.
fprintf(fieldFox, '*CLS');
% Check to ensure the error queue is clear. Response is "+0, No Error"
fprintf(fieldFox, 'SYST:ERR?');
[errIdentifyStart,~] = fscanf(fieldFox, '%c');
```

```
['Initial error check results: ', errIdentifyStart]
% Query instrument identification string
fprintf(fieldFox, '*IDN?');
[idn,~] = fscanf(fieldFox, '%c');
['Instrument identified as: ', idn]
% Set the FF mass storage to the internal drive
fprintf(fieldFox, 'MMEM:CDIR "[INTERNAL]:"');
% Binary efforts here
% First store an image to the local FF memory.
fprintf(fieldFox, 'MMEM:STOR:IMAG "TestImage.png"');
% Query image via MMEM:DATA? 'yourFileNameHere.mimeExtensionType'
fprintf(fieldFox, 'MMEM:DATA? "TestImage.png"');

% Dump return bits to a variable 'screenPNG' via a MATLAB binblockread
call.
% MATLAB binblockread supports five 8-bit bin block read types:
%   uchar, schar, int8, unit8, char.
% Of these uint8, uchar, char % all functioned without corrupting the
binary bits,
% i.e., the resultant file transfer preserved the data integrity of the
original
% file without corruption.
screenPNG = binblockread(fieldFox,'uint8'); fread(fieldFox,1);
% Write bits to file as PNG file save
% From MATLAB help (in command window 'help fid' to view details)
% 'FID = fopen(FILENAME) opens the file FILENAME for read access'.
% FILENAME is the name of the file to be opened. Thus, in this case open
% C:\Temp\TransferedTestImage.png
% The 'w' indicates 'open file for writing; discard existing contents'
fid = fopen('C:\Temp\TransferedTestImage.png','w');
fwrite(fid,screenPNG,'uint8');
fclose(fid);
% As a last step query the fieldFox error queue and ensure no errors have
% occurred since initiation and completion of the program
fprintf(fieldFox, 'SYST:ERR?');
[errIdentifyStop,~] = fscanf(fieldFox, '%c');
['Final error check results: ', errIdentifyStop]
% Close session connection
fclose(fieldFox);
delete(fieldFox);
clear fieldFox;
%Import the saved image into MATLAB workspace
```

```
importedImage = imread('C:\Temp\TransferedTestImage.png')
image(importedImage)
['Initial error check results: ', errIdentifyStart]
['Instrument identified as: ', idn]
['Final error check results: ', errIdentifyStop]
```

MATLAB - Binary Block File Transfer Via LAN as Socket at Port 5025

This is a MATLAB example that enables you to control the FieldFox family of Combination Analyzers. This example does not rely the VISA libraries or a VISA connection. Connection to the targeted analyzer is via TCP/IP and sockets at port number 5025, as supported by the Keysight Technologies FieldFox handheld combination analyzers.

- The sample program sets the Keysight Technologies FieldFox handheld analyzer to "NA" (network analyzer) mode.
- The DUT is a 177MHz wideband band-pass filter.
- The application then acquires S21 transmission data and frequency stimulus data via binary bin-block data transfers.
- The resultant data is plotted in the MatLab GUI as a logMag versus frequency X-Y plot.

Note: In the following example:
"%" indicates a comment

```
% Instantiate connection to Keysight FieldFox via LAN as Socket at Port
5025
% Alter the TCPIP address to match your targeted FieldFox IP address.
    fieldFox = tcpip('156.140.155.106',5025);
%Set input and output buffer defualt sizes
    set(fieldFox, 'InputBufferSize', 8096);
    set(fieldFox, 'OutputBufferSize', 8069);
% Default binary data read is BigEndian resulting in corrupt data.
% Modify return of binary data from default BigEndian to LittleEndian
% via MathWorks SET command
    set(fieldFox,'ByteOrder', 'littleEndian')
% Open session to fieldFox at address / port as noted above.
    fopen(fieldFox);
% 'Hello World' equivalent, i.e. Identification Query String
    fprintf(fieldFox,'*IDN?\n');
    myId = fscanf(fieldFox,'%c')
% Clear the status registers and all potential error indications within the
% error queue prior to starting applications. Also, check the error queue
via
```

```
% 'SYST:ERR?' error query and ensure the error indication is '0, "No
Error".
    fprintf(fieldFox,'*CLS\n');
    fprintf(fieldFox,'SYST:ERR?\n');
    initErrCheck = fscanf(fieldFox,'%c')
% Set Instrument and various other important items
    % Instrument mode to Network Analyzer
    fprintf(fieldFox,'INST:SEL ''NA''')
    % Trigger mode to continuous off
    fprintf(fieldFox,'INIT:CONT 0\n')
    % Set start and stop frequencies. DUT is a wideband 177MHz bandpass
filter (BPF).
    fprintf(fieldFox,'FREQ:STAR 60E6;STOP 300E6\n')
    % Set number of trace points
    fprintf(fieldFox,'SWE:POIN 101\n')
    % Trace 1 to measurement of S21 and select that measurement as active
    fprintf(fieldFox,'CALC:PAR1:DEF S21;SEL\n')
    % Hold off for operation complete to ensure settings
    fprintf(fieldFox,'*OPC?\n')
    done = fscanf(fieldFox,'%1d')

% Trigger single sweep with hold off via *OPC? Operation Complete Query.
% For long sweeps times there may be a TCPIP hold off or time out setting
that
% must be increased.
    fprintf(fieldFox,'INIT;*OPC?\n')
    trigComplete = fscanf(fieldFox,'%1d')

%Query FORMATTED data from fieldFox
    % Set data format to real-32 bin block transfer
    fprintf(fieldFox, 'FORM:DATA REAL,32\n')
    fprintf(fieldFox,'CALC:DATA:FDATA?\n')
    myBinData = binblockread(fieldFox,'float')
    % There will be a line feed not read, i.e. hanging. Read it to clear
buffer.
    % If you do not read the hanging line feed a -410, "Query Interrupted
    % Error" will occur
    hangLineFeed = fread(fieldFox,1)

%Query of x-axis stimulus
      % Set data format to real-64 bin block transfer. Real 64 bit to
ensure
    % Hz resolution in GHz capable analyzers.
```

```
    fprintf(fieldFox, 'FORM:DATA REAL,64\n')
    fprintf(fieldFox,'SENS:FREQ:DATA?\n')
    myBinStimulusData = binblockread(fieldFox,'double')
    % There will be a line feed not read, i.e. hanging. Read it to clear
buffer.
    hangLineFeed = fread(fieldFox,1)
    % Within the MatLab GUI display data and stimulus numbers and plot same
    display myBinData
    display myBinStimulusData

    % MatLab plot related commands and efforts:

    % Convert FieldFox returned frequency data to units of MHz
    myStimulusDataMHz = myBinStimulusData/1E6

   clear title xlabel ylabel

   plot(myStimulusDataMHz, myBinData)
   title('S21 :  177MHz Band Pass Filter')
   xlabel('Frequency (MHz)')
   ylabel ('Log Mag (dB)')

% Check Error Queue. A "*CLS" was asserted at the beginning of the
% application. This will clear the entire error queue. Upon completion of
% the application the error queue is queried a final time. If the
% application is written correctly and there are no hardware failures the
% final error query check via 'SYST:ERR?' should return '0, "No Error" else
% the application is in error.
    fprintf(fieldFox, 'SYST:ERR?')
    finalErrCheck = fscanf(fieldFox, '%c')
%Close session to instrument prior to completion
    fclose(fieldFox);
```

Python Example

This is a python example that enables you to control the FieldFox family of Combination Analyzers to import SA data as ASCII.

- Imports the pyvisa libraries and operating system dependent functionality;

- Establishes a visa resource manager;

- Opens a connection to the FieldFox based on the instrument's VISA address as acquired via Keysight Connection Expert;

- Sets the visa time out (increasing the timeout as compared to the default).

- Clears the event status register and thus clears the error queue;
- Defines an error check function and checks the system error queue;
- Presets the FieldFox unit; performs a *IDN?, sets the analyzer to Spectrum Analyzer mode,
- Then queries the number of points, start frequency and stop frequency.
- Executes a synchronized single sweep.
- Queries the spectrum analyzer trace data, builds a linear array to compute the stimulus array, and
- Plots the stimulus - response data as an X-Y trace.

> **Note:** In the following example:
> "#" indicates a comment

```
# -*- coding: utf-8 -*-
# Python for Test and Measurement
# Requires VISA installed on controlling PC, 'http://pyvisa.sourceforge.net/pyvisa/'
# Keysight IO Libraries 18.1.22x 32-Bit Keysight VISA (as primary)
# Anaconda Python 4.4.0 32 bit
# pyvisa 3.6.x
# Keysight N9952A 50GHz FieldFox Handheld portable combination analyzer
# running A.10.17 application code
##""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""
## Copyright © 2018 Keysight Technologies Inc. All rights reserved.
##
## You have a royalty-free right to use, modify, reproduce and distribute this
## example / files (and/or any modified version) in any way you find useful, provided
## that you agree that Keysight has no warranty, obligations or liability for any
## Sample Application / Files.
##
##""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""
# Example Description:

# A python sample program utilizing pyvisa to connect and control a Keysight FieldFox
# Family Combination Analyzer.
#
# The application performs the following:

#   Imports the pyvisa libraries and operating system dependent functionality;
#   Establishes a visa resource manager;
#   Opens a connection to the FieldFox based on the instrument's VISA address as
acquired via Keysight Connection Expert
#   Sets the visa time out (increasing the timeout as compared to the default).
#   Clears the event status register and thus clears the error queue;
```

```
#   Defines an error check function and checks the system error queue;
#   Presets the FieldFox unit; performs a *IDN?, sets the analyzer to Spectrum Analyzer mode,
#   then queries the number of points, start frequency and stop frequency.
#   Executes a synchronized single sweep.
#   Queries the spectrum analyzer trace data, builds a linear array to compute the stimulus array,
#   and plots the stimulus - response data as an X-Y trace.
#
# Import the visa libraries
import visa
import os
# The numpy is imported as it is helpful for a linear ramp creation for the stimulus array
import numpy as npStimulusArray
# import module for plotting
import matplotlib.pyplot as stimulusResponsePlot
# A variable to control various events and testing during development.
# by uncommenting the #debug True line, debug will occur, for efficiency, during development.
debug = False
#debug = True
print "Debug flag set to " + str(debug)

# Set variables for ease of change - assumes 'debug is true.
# If debug is set to false then Spectrum Analyzer preset defaults for
# start frequency, stop frequency and number of points are utilized.
numPoints = 21
startFreq = 1.28579E9
stopFreq = 2.28579E9
# Open a VISA resource manager pointing to the installation folder for the Keysight Visa libraries.
rm = visa.ResourceManager('C:\\Program Files (x86)\\IVI Foundation\\VISA\\WinNT\\agvisa\\agbin\\visa32.dll')

# Based on the resource manager, open a session to a specific VISA resource string as provided via
# Keysight Connection Expert
# ALTER LINE BELOW - Updated VISA resource string to match your specific configuration
myFieldFox = rm.open_resource("TCPIP0::156.140.157.162::inst0::INSTR")

#Set Timeout - 10 seconds
myFieldFox.timeout =  10000
```

```
# Clear the event status registers and empty the error queue
myFieldFox.write("*CLS")
# Query identification string *IDN?
myFieldFox.write("*IDN?")
print (myFieldFox.read())
# Define Error Check Function
def Errcheck():
    myError = []
    ErrorList = myFieldFox.query("SYST:ERR?").split(',')
    Error = ErrorList[0]
    if int(Error) == 0:
        print ("+0, No Error!")
    else:
     while int(Error)!=0:
        print ("Error #: " + ErrorList[0])
        print ("Error Description: " + ErrorList[1])
        myError.append(ErrorList[0])
        myError.append(ErrorList[1])
        ErrorList = myFieldFox.query("SYST:ERR?").split(',')
        Error = ErrorList[0]
        myError = list(myError)
    return myError

# Call and print error check results
print (Errcheck())
# Preset the FieldFox and wait for operation complete via the *OPC?, i.e.
# the operation complete query.
myFieldFox.write("SYST:PRES;*OPC?")
print "Preset complete, *OPC? returned : " + myFieldFox.read()
# Set mode to Spectrum Analyzer and wait for operation complete via the *OPC?, i.e.
# the operation complete query.
myFieldFox.write("INST:SEL 'SA';*OPC?")
myFieldFox.read()
# If debug is true then user setting of start frequency, stop frequency and number of
points
if debug:
    myFieldFox.write("SENS:SWE:POIN " + str(numPoints))
    myFieldFox.write("SENS:FREQ:START " + str(startFreq))
    myFieldFox.write("SENS:FREQ:STOP " + str(stopFreq))

# Determine, i.e. query, number of points in trace for ASCII transfer - query
myFieldFox.write("SENS:SWE:POIN?")
```

```
numPoints = myFieldFox.read()
print "Number of trace points " + numPoints
# Determine, i.e. query, start and stop frequencies, i.e. stimulus begin and end points
myFieldFox.write("SENS:FREQ:START?")
startFreq = myFieldFox.read()
myFieldFox.write("SENS:FREQ:STOP?")
stopFreq = myFieldFox.read()
print "FieldFox start frequency = " + startFreq + " stop frequency = " + stopFreq
# Set trigger mode to hold for trigger synchronization
myFieldFox.write("INIT:CONT OFF;*OPC?")
myFieldFox.read()
# Use of Python numpy import to comupte linear step size of stimulus array
# based on query of the start frequency - stop frequency and number of points.
# 'Other' analyzers support a SCPI "SENSe:X?" query which will provide the stimulus
#  array as a SCPI query.
stimulusArray =
npStimulusArray.linspace(float(startFreq),float(stopFreq),int(numPoints))
print stimulusArray
# Assert a single trigger and wait for trigger complete via *OPC? output of a 1
myFieldFox.write("INIT:IMM;*OPC?")
print "Single Trigger complete, *OPC? returned : " + myFieldFox.read()
# Query the FieldFox response data
myFieldFox.write("TRACE:DATA?")
ff_SA_Trace_Data = myFieldFox.read()
print ff_SA_Trace_Data # This is one long comma separated string list of values.
# Use split to turn long string to an array of values
ff_SA_Trace_Data_Array = ff_SA_Trace_Data.split(",")
# Now plot the x - y data
maxResponseVal= max(ff_SA_Trace_Data_Array)
minResponseVal = min(ff_SA_Trace_Data_Array)
#if debug:
print "Max value = " + maxResponseVal + " Min Value = " + minResponseVal

stimulusResponsePlot.title ("Keysight FieldFox Spectrum Trace Data via Python - PyVisa
- SCPI")
stimulusResponsePlot.xlabel("Frequency")
stimulusResponsePlot.ylabel("Amplitude (dBm)")
stimulusResponsePlot.plot(stimulusArray,ff_SA_Trace_Data_Array)
stimulusResponsePlot.autoscale(True, True, True)
stimulusResponsePlot.show()
# Return the FieldFox back to free run trigger mode
myFieldFox.write("INIT:CONT ON")
```

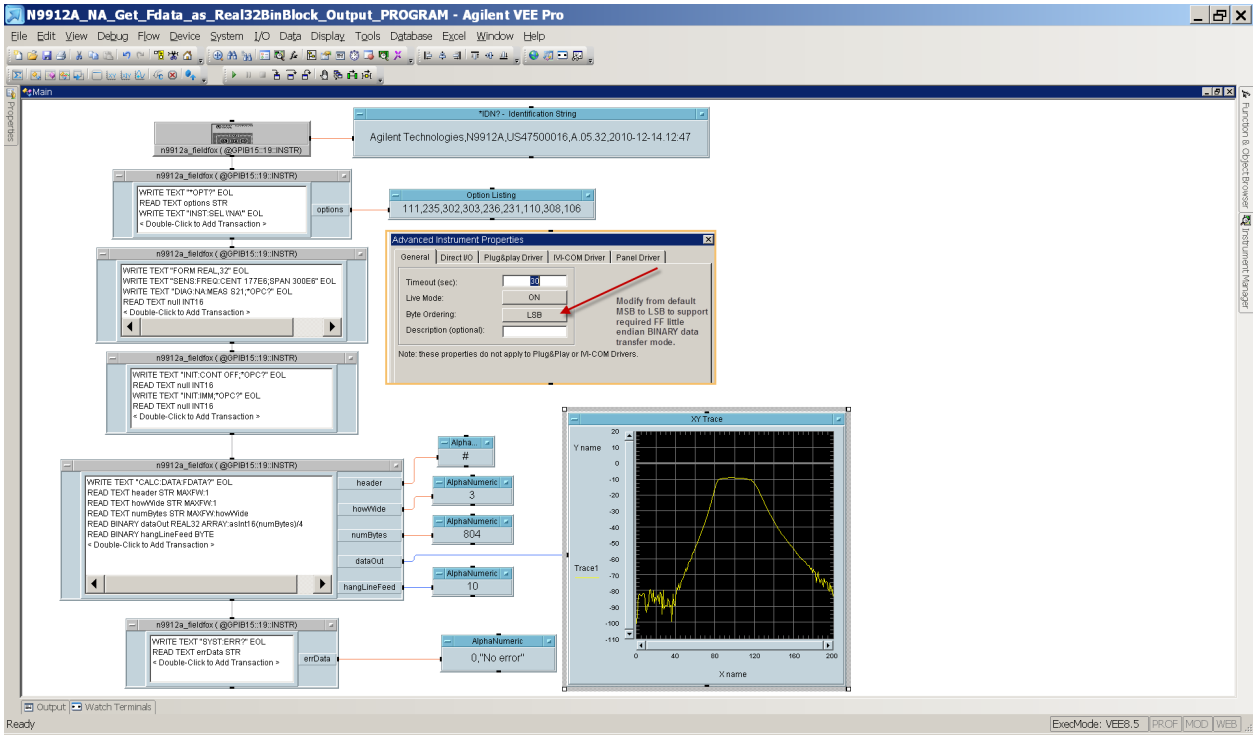
```
# Send a corrupt SCPI command end of application as a debug test
if debug:
    myFieldFox.write("INIT:CONT OOOOOOOOOO")
# Call the ErrCheck function and ensure no errors occurred between start of program
# (first Errcheck() call and end of program (last Errcheck() call.
print (Errcheck())
# On exit clean a few items up.
myFieldFox.clear()
myFieldFox.close()
```

VEE

Get Formatted Data as Real 32 Binary Block

The following VEE example demonstrates how to configure measurement settings, then read formatted Real 32 bit Binary Block data.

Download N9912A_NA_Get_Fdata_as_Real32BinBlock_Output_PROGRAM.VEE



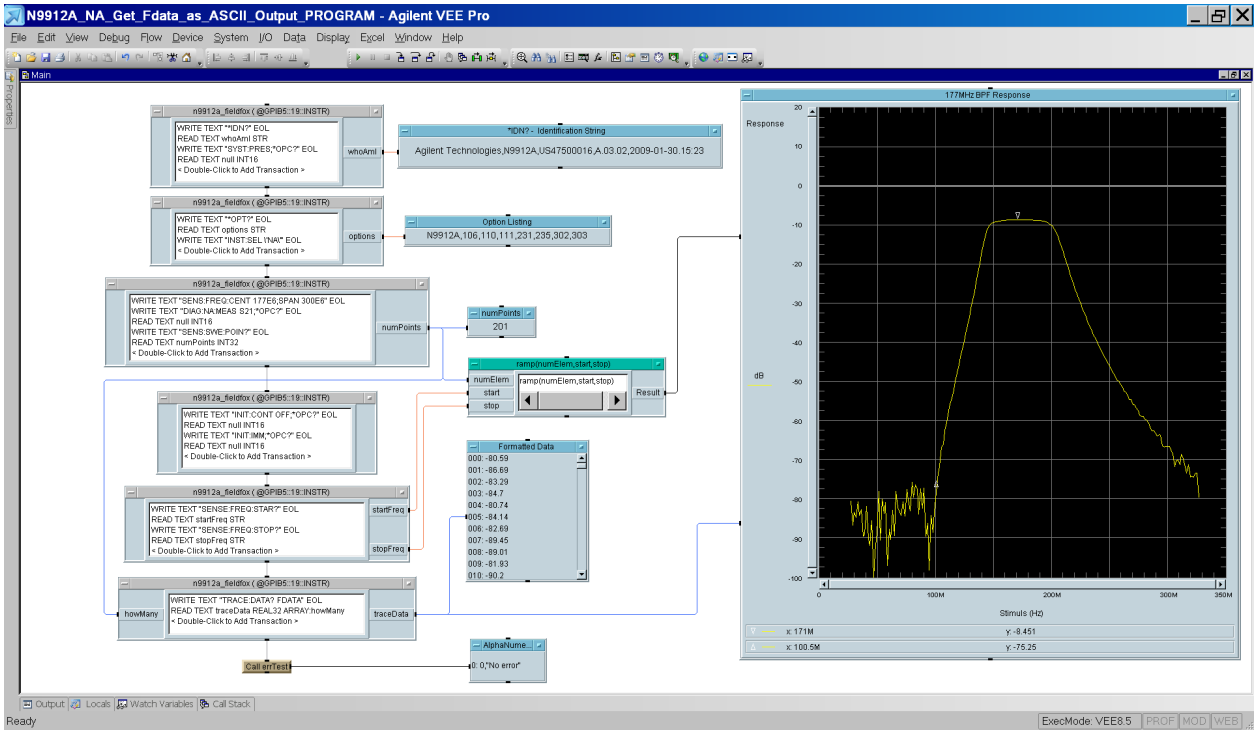
Last Modified:

24-Aug-2011 New topic

Get Formatted Data as ASCII Output

The following VEE example demonstrates how to configure NA measurement settings, then read formatted ASCII data from the FieldFox.

Download N9912A_NA_Get_Fdata_as_ASCII_Output_PROGRAM.VEE



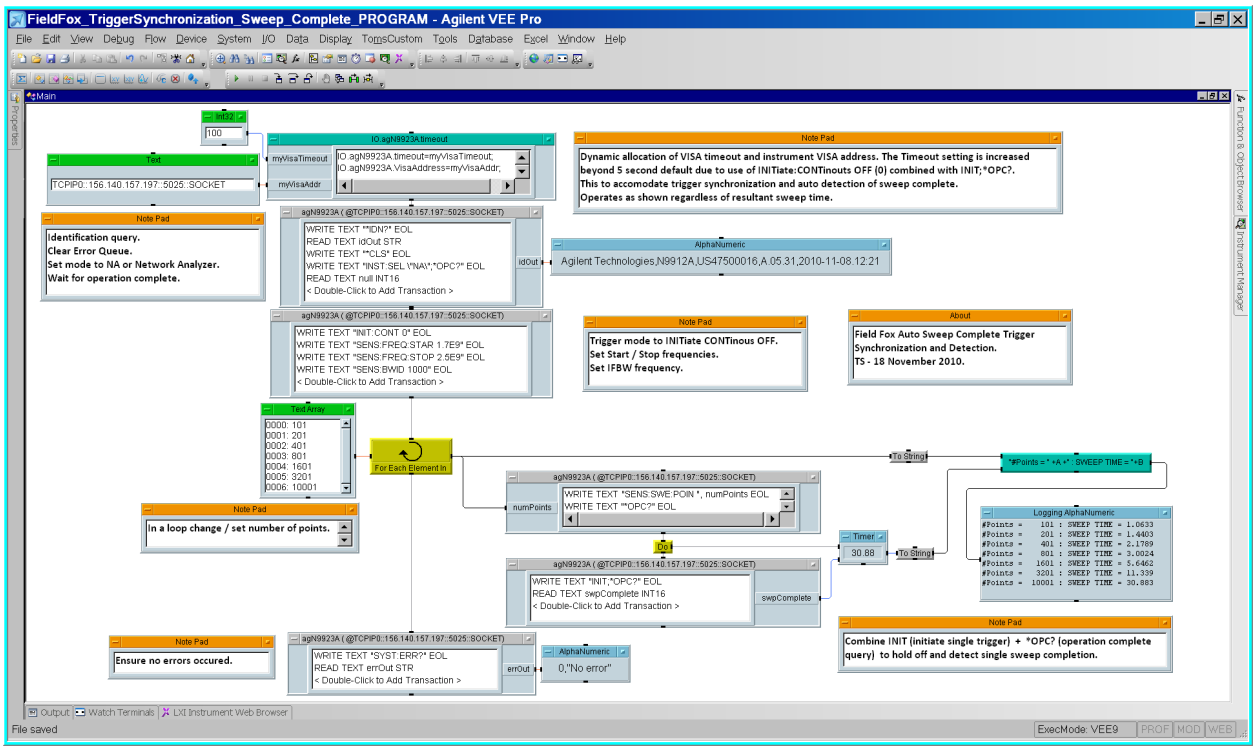
Last Modified:

24-Aug-2011 New topic

Trigger Synch Sweep Complete

The following VEE example demonstrates how to configure measurement settings, set trigger to single, then notify when a sweep is complete.

Download FieldFox_Trigger_Synchronization Sweep_Complete_Program.VEE



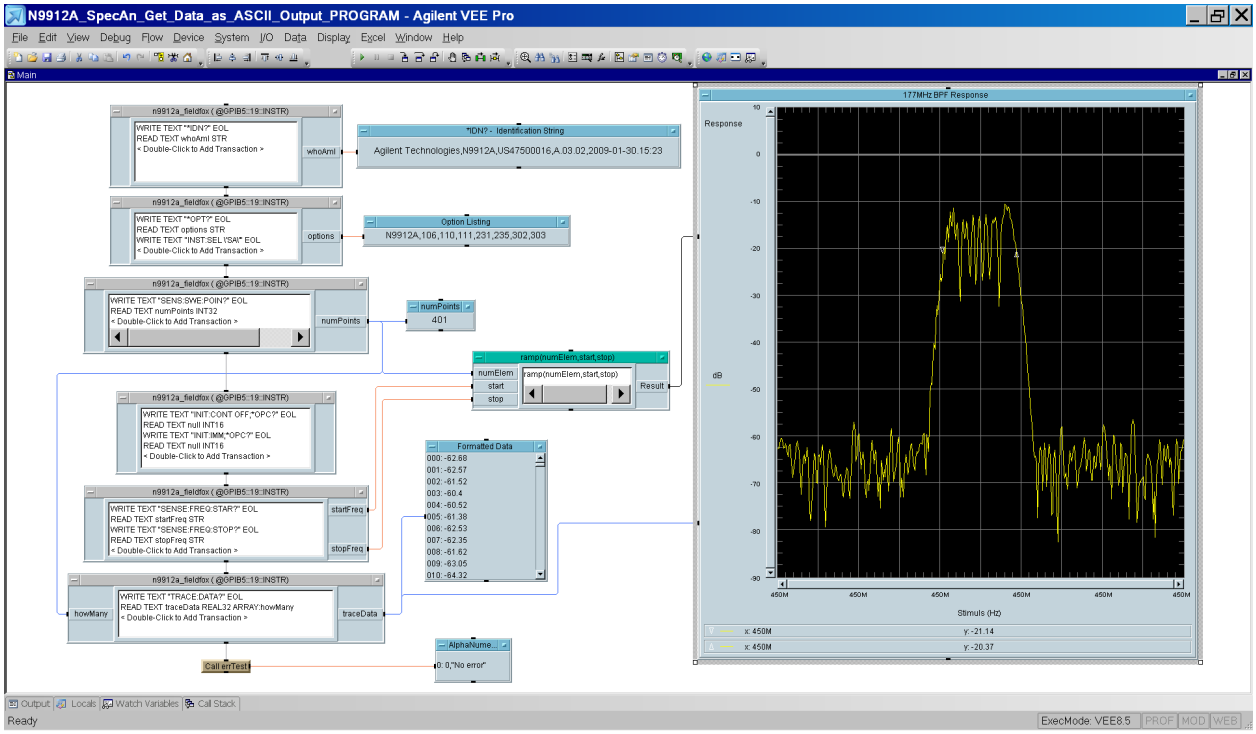
Last Modified:

24-Aug-2011 New topic

SpecAn Get Data as ASCII Output

The following VEE example demonstrates how to configure SA measurement settings, then read formatted ASCII data from the FieldFox.

Download N9912A_SpecAn_Get_Data_as_ASCII_Output_PROGRAM.VEE



Last Modified:

16-Sep-2022	New command

TRL Calibration Routine for a Waveguide WR-28 Standard

The following VEE programming example demonstrates how to configure TRL calibration automation routine for a waveguide WR-28 Standard.

NOTE: This document contains references to Agilent Technologies. Agilent's former Test and Measurement business has become Keysight Technologies. For more information, go to www.keysight.com.

Description of Example

A Keysight VEE Pro programming example for automation of a Keysight FieldFox R-Band waveguide calibration via a TRL method. Please refer to the following attachments:

- - FieldFox_R-Band_WG_Cal_via_VEEPro-TS-3Apr2020_PROGRAM.vee (VEE Source Code)
- - FieldFox_R-Band_WG_Cal_via_VEEPro-IOLibs_Command_Capture.xml (Keysight IO Monitor log file as XML)

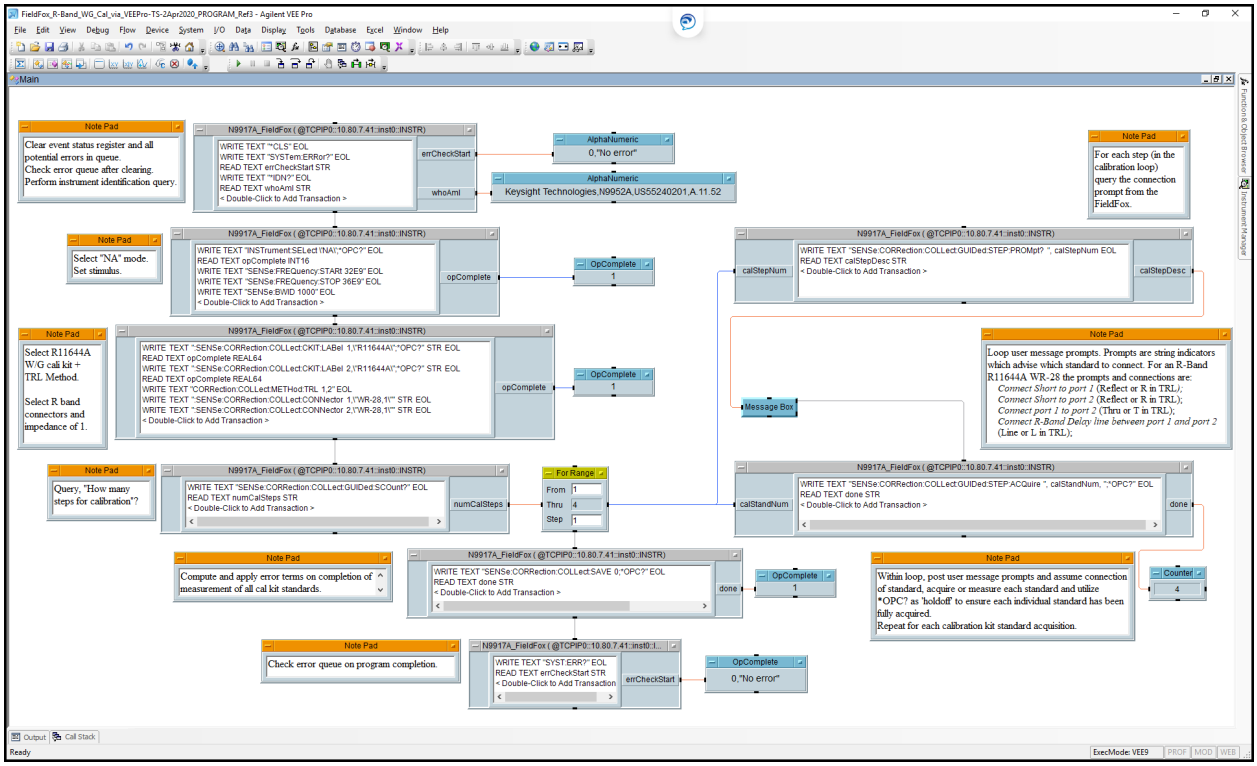
NOTE: If this link does not open properly, right click and the click on "Open in new tab".

- - FieldFox_R-Band_WG_Cal_via_VEEPro-IOLibs_Commands_as_Text.csv (CSV conversion of all write commands (only) as acquired in the IO Monitor XML output file)
- **See also:**

- Download VEE

- Download VEE Runtime (requires IO Libraries)

.



FieldFox R-Band Waveguide Calibration via VEE Program

Copy the text in the following shaded area to a Notepad file.

```
(saveFormat "7.0")
(date "Fri 03/Apr/2020 15:33:04 ")
(veerev "9.32.17710.0")
(platform "PC")
(execMode v6)
(prefExecMode v9)
(filterNAN 0)
(workspaceStackingOrder M)
(sysconfig
(iodevice "N9952A_FF"
(type TCPIP)
(channel 180)
(readTerm "\n")
(fs ",")
(eol "\n")
(multiField dataOnly)
(arrayFormat linear)
```

```
(timeout 5)
(byteOrder 0)
(ppAddr "TCPIP0::10.80.7.41::inst0::INSTR")
(model "")
(eoiEnabled 1)
(VISAddr "TCPIP0::10.80.7.41::inst0::INSTR")
(model ""
(standard 488)))
(iodevice "N9917A_FieldFox"
(type TCPIP)
(channel 180)
(readTerm "\n")
(fs ",")
(eol "\n")
(multiField dataOnly)
(arrayFormat block)
(timeout 20)
(byteOrder 0)
(ppAddr "TCPIP0::10.80.7.41::inst0::INSTR")
(model "")
(eoiEnabled 1)
(VISAddr "TCPIP0::10.80.7.41::inst0::INSTR")
(model ""
(standard 488))))
(SaveCF no)
(device 0 ROOTCONTEXT
(assemblyRefs
(assemblyRef 1
(displayName
"mscorlib, Version=1.0.5000.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089"
)
(filename "C:\\WINDOWS\\Microsoft.NET\\Framework\\v1.1.4322\\mscorlib.dll"))
(selectedNamespaces ""))
(properties
(variableName Main)
(variableScope glob)
(trigMode deg)
(nextID 147)
(popupTitleText "Untitled")
(popupMoveable 1)
(deleteGlobals 0))
```

```
(deviceList
(device 49 IODEVICE
(properties
(name "N9917A_FieldFox ( @TCPIP0::10.80.7.41::inst0::INSTR)")
(variableScope cont)
(transactions 5 "WRITE TEXT \"*CLS\" EOL" "WRITE TEXT \"SYSTem:ERRor?\" EOL"
"READ TEXT errCheckStart STR" "WRITE TEXT \"*IDN?\" EOL" "READ TEXT whoAmI
STR")
)
(interface
(output 1
(name "errCheckStart")
(optional yes))
(output 2
(name "whoAmI")
(optional yes)))
(implementation
(ioDevType 18)
(iopath "N9917A_FieldFox")))
(device 51 TEXTDISPLAY
(properties
(variableScope cont))
(interface
(input 1
(name "Data"))))
(device 52 TEXTDISPLAY
(properties
(variableScope cont))
(interface
(input 1
(name "Data"))))
(device 56 IODEVICE
(properties
(name "N9917A_FieldFox ( @TCPIP0::10.80.7.41::inst0::INSTR)")
(variableScope cont)
(transactions 2 "WRITE TEXT \"SYST:ERR?\" EOL" "READ TEXT errCheckStart STR"))
(interface
(output 1
(name "errCheckStart")
(optional yes)))
(implementation
(ioDevType 18)
```

```
(iopath "N9917A_FieldFox")))
(device 57 TEXTDISPLAY
(properties
(name "OpComplete")
(variableScope cont))
(interface
(input 1
(name "Data"))))
(device 106 IODEVICE
(properties
(name "N9917A_FieldFox ( @TCPIP0::10.80.7.41::inst0::INSTR)")
(variableScope cont)
(transactions 7
"WRITE TEXT \":SENSe:CORRection:COLLect:CKIT:LABel 1,\\\"R11644A\\\";*OPC?\"
STR EOL"
"READ TEXT opComplete REAL64"
"WRITE TEXT \":SENSe:CORRection:COLLect:CKIT:LABel 2,\\\"R11644A\\\";*OPC?\"
STR EOL"
"READ TEXT opComplete REAL64"
"WRITE TEXT \"CORRection:COLLect:METHod:TRL 1,2\" EOL"
"WRITE TEXT \":SENSe:CORRection:COLLect:CONNector 1,\\\"WR-28,1\\\"\" STR EOL"
"WRITE TEXT \":SENSe:CORRection:COLLect:CONNector 2,\\\"WR-28,1\\\"\" STR
EOL"))
(interface
(output 1
(name "opComplete")
(optional yes)))
(implementation
(ioDevType 18)
(iopath "N9917A_FieldFox")))
(device 53 IODEVICE
(properties
(name "N9917A_FieldFox ( @TCPIP0::10.80.7.41::inst0::INSTR)")
(variableScope cont)
(transactions 5 "WRITE TEXT \"INSTrument:SELect \\\'NA\\\';*OPC?\" EOL"
"READ TEXT opComplete INT16" "WRITE TEXT \"SENSe:FREQuency:STARt 32E9\" EOL"
"WRITE TEXT \"SENSe:FREQuency:STOP 36E9\" EOL"
"WRITE TEXT \"SENSe:BWID 1000\" EOL"))
(interface
(output 1
(name "opComplete")
(optional yes)))
```

```
(implementation
(ioDevType 18)
(iopath "N9917A_FieldFox")))
(device 121 IODEVICE
(properties
(name "N9917A_FieldFox ( @TCPIP0::10.80.7.41::inst0::INSTR)")
(variableScope cont)
(transactions 2 "WRITE TEXT \"SENSe:CORRection:COLLect:GUIDed:SCOunt?\" EOL"
"READ TEXT numCalSteps STR"))
(interface
(output 1
(name "numCalSteps")
(optional yes)))
(implementation
(ioDevType 18)
(iopath "N9917A_FieldFox")))
(device 122 IODEVICE
(properties
(name "N9917A_FieldFox ( @TCPIP0::10.80.7.41::inst0::INSTR)")
(variableScope cont)
(transactions 2
"WRITE TEXT \"SENSe:CORRection:COLLect:GUIDed:STEP:PROMpt? \", calStepNum EOL"
"READ TEXT calStepDesc STR"))
(interface
(input 1
(name "calStepNum")
(optional yes))
(output 1
(name "calStepDesc")
(optional yes)))
(implementation
(ioDevType 18)
(iopath "N9917A_FieldFox")))
(device 126 FORRANGE
(properties
(variableScope cont)
(from 1)
(thru 4)
(step 1))
(interface
(input 1
(name "Thru")
```

```
(tag "Thru")
(requires
(datatype Real64)
(shape "Scalar"))
(lock constraints)
(optional yes)
(buffer YES))
(output 1
(name "Data")
(lock name constraints))))
(device 128 MESSAGEBOX
(properties
(variableScope cont)
(position 828 296)
(message "User Message")
(symbol Information))
(interface
(input 1
(name "Message")
(tag "Message")
(requires
(datatype Text))
(lock name constraints)
(optional yes)
(buffer YES))
(output 1
(name "OK")
(lock name constraints))
(output 2
(name "Cancel")
(lock name constraints)))
(implementation
(customButtons 0)
(displayMode 3)
(buttons "OK  Cancel")
(buttonLabel1 "OK")
(buttonLabel2 "Cancel")
(buttonLabel3 "")
(bdefault "OK")))
(device 129 IODEVICE
(properties
(name "N9917A_FieldFox ( @TCPIP0::10.80.7.41::inst0::INSTR)")
```

```
(variableScope cont)
(transactions 2
"WRITE TEXT \"SENSe:CORRection:COLLect:GUIDed:STEP:ACQuire \", calStandNum,
\";*OPC?\" EOL"
"READ TEXT done STR"))
(interface
(input 1
(name "calStandNum")
(optional yes))
(output 1
(name "done")
(optional yes)))
(implementation
(ioDevType 18)
(iopath "N9917A_FieldFox")))
(device 130 COUNTER
(properties
(variableScope cont))
(interface
(input 1
(name "Data"))
(output 1
(name "Count"))))
(device 132 IODEVICE
(properties
(name "N9917A_FieldFox ( @TCPIP0::10.80.7.41::inst0::INSTR)")
(variableScope cont)
(transactions 2 "WRITE TEXT \"SENSe:CORRection:COLLect:SAVE 0;*OPC?\" EOL"
"READ TEXT done STR"))
(interface
(output 1
(name "done")
(optional yes)))
(implementation
(ioDevType 18)
(iopath "N9917A_FieldFox")))
(device 135 TEXTDISPLAY
(properties
(name "OpComplete")
(variableScope cont))
(interface
(input 1
```

```
(name "Data"))))
(device 136 TEXTDISPLAY
(properties
(name "OpComplete")
(variableScope cont))
(interface
(input 1
(name "Data"))))
(device 137 TEXTDISPLAY
(properties
(name "OpComplete")
(variableScope cont))
(interface
(input 1
(name "Data"))))
(device 138 NOTE
(properties
(variableScope cont)
(text2 1
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 Clear event
status register and all potential errors in queue. \\par\r\nCheck error queue
after clearing.\\par\r\nPerform instrument identification query.\\par\r\n}\r\n"
)))
(device 139 NOTE
(properties
(variableScope cont)
(text2 1
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 Select \"NA\"
mode.\\par\r\nSet stimulus.\\par\r\n}\r\n"
)))
(device 140 NOTE
(properties
(variableScope cont)
(text2 1
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 Select
R11644A\\par\r\nW/G cali kit + TRL Method.\\par\r\n\\par\r\nSelect R band
connectors and impedance of 1.\\par\r\n}\r\n"
)))
```

```
(device 141 NOTE
(properties
(variableScope cont)
(text2 1
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 Query, \"How
many steps for calibration\"?\\par\r\n}\r\n"
)))
(device 142 NOTE
(properties
(variableScope cont)
(text2 1
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 Loop user
message prompts. Prompts are string indicators which advise which standard to
connect. For an R-Band R11644A WR-28 the prompts and connections
are:\\i\\fs23\\par\r\n    Connect Short to port 1\\i0  (Reflect or R in TRL\\i
);\\par\r\n    Connect Short to port 2 \\i0 (Reflect or R in TRL);\\par\r\n\\i
    Connect port 1 to port 2 \\i0 (Thru or T in TRL);\\i\\par\r\n    Connect R-
Band Delay line between port 1 and port 2\\i0\\par\r\n    (Line or L in
TRL);\\fs26\\par\r\n}\r\n"
)))
(device 143 NOTE
(properties
(variableScope cont)
(text2 1
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 For each step
(in the calibration loop) query the connection prompt from the FieldFox.
 \\par\r\n}\r\n"
)))
(device 144 NOTE
(properties
(variableScope cont)
(text2 1
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 Check error
queue on program completion.\\par\r\n}\r\n"
)))
(device 145 NOTE
(properties
(variableScope cont)
(text2 1
```

```
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 Compute and
apply error terms on completion of measurement of all cal kit
standards.\\par\r\n\\par\r\n}\r\n"
)))
(device 146 NOTE
(properties
(variableScope cont)
(text2 1
"{\\rtf1\\ansi\\ansicpg1252\\deff0\\deflang1033{\\fonttbl{\\f0\\fnil\\fcharset0
Times New Roman;}}\r\n{\\colortbl
;\\red0\\green0\\blue0;}\r\n\\viewkind4\\uc1\\pard\\cf1\\f0\\fs24 Within loop,
post user message prompts and assume connection of standard, acquire or measure
each standard and utilize *OPC? as \'holdoff\' to ensure each individual
standard has been fully acquired. \\par\r\nRepeat for each calibration kit
standard acquisition.\\par\r\n}\r\n"
)))
(configuration
(connect D0:1 D1:1)
(connect D0:2 D2:1)
(connect D13:0 D3:0)
(connect D3:1 D4:1)
(connect D6:0 D5:0)
(connect D0:0 D6:0)
(connect D5:0 D7:0)
(connect D9:1 D8:1)
(connect D7:1 D9:1)
(connect D8:1 D10:1)
(connect D10:1 D11:0)
(connect D9:1 D11:1)
(connect D11:1 D12:1)
(connect D9:0 D13:0)
(connect D6:1 D14:1)
(connect D5:1 D15:1)
(connect D13:1 D16:1)))
(contextCarrier
(wndRestoredOrigin 2 2)
(wndRestoredExtent 702 385)
(wndState max)
(active detail)
(detail
(extent 1893 989)
(anchorPt -836 -235)
```

```
(configuration
(devCarrierFor 49
(active open)
(icon
(iconImage "io.icn"))
(open
(extent 314 116))
(terminals on)
(pinCenter 1310 370))
(devCarrierFor 51
(active open)
(icon)
(open
(extent 184 26))
(pinCenter 1770 340))
(devCarrierFor 52
(active open)
(icon)
(open
(extent 374 26))
(pinCenter 1770 400))
(devCarrierFor 56
(active open)
(icon
(iconImage "io.icn"))
(open
(extent 204 86))
(terminals on)
(pinCenter 1680 1150))
(devCarrierFor 57
(active open)
(icon
(extent 77 0))
(open
(extent 154 36))
(pinCenter 1990 1150))
(devCarrierFor 106
(active open)
(icon
(iconImage "io.icn"))
(open
(extent 554 156))
```

```
(terminals on)
(pinCenter 1310 700))
(devCarrierFor 53
(active open)
(icon
(iconImage "io.icn"))
(open
(extent 384 116))
(terminals on)
(pinCenter 1310 530))
(devCarrierFor 121
(active open)
(icon
(iconImage "io.icn"))
(open
(extent 414 86))
(terminals on)
(pinCenter 1310 880))
(devCarrierFor 122
(active open)
(icon
(iconImage "io.icn"))
(open
(extent 524 96))
(terminals on)
(pinCenter 2310 520))
(devCarrierFor 126
(active open)
(icon
(iconImage "loop.icn"))
(open
(extent 99 79))
(pinCenter 1710 880))
(devCarrierFor 128
(active icon)
(icon
(extent 81 25))
(open
(extent 223 134))
(terminals on)
(pinCenter 2010 730))
(devCarrierFor 129
```

```
(active open)
(icon
(iconImage "io.icn"))
(open
(extent 574 96))
(terminals on)
(pinCenter 2335 880))
(devCarrierFor 130
(active open)
(icon)
(open
(extent 84 31))
(pinCenter 2640 1010))
(devCarrierFor 132
(active open)
(icon
(iconImage "io.icn"))
(open
(extent 444 86))
(terminals on)
(pinCenter 1705 1010))
(devCarrierFor 135
(active open)
(icon
(extent 77 0))
(open
(extent 121 22))
(pinCenter 1770 530))
(devCarrierFor 136
(active open)
(icon
(extent 77 0))
(open
(extent 121 22))
(pinCenter 1770 700))
(devCarrierFor 137
(active open)
(icon
(extent 77 0))
(open
(extent 121 22))
(pinCenter 2050 1010))
```

```
(devCarrierFor 138
(active open)
(icon
(iconImage "notepad.icn"))
(open
(extent 254 106)
(editing enabled))
(pinCenter 980 360))
(devCarrierFor 139
(active open)
(icon
(iconImage "notepad.icn"))
(open
(extent 144 56)
(editing enabled))
(pinCenter 1000 510))
(devCarrierFor 140
(active open)
(icon
(iconImage "notepad.icn"))
(open
(extent 134 166)
(editing enabled))
(pinCenter 920 710))
(devCarrierFor 141
(active open)
(icon
(iconImage "notepad.icn"))
(open
(extent 164 66)
(editing enabled))
(pinCenter 980 870))
(devCarrierFor 142
(active open)
(icon
(iconImage "notepad.icn"))
(open
(extent 384 166)
(editing enabled))
(pinCenter 2530 710))
(devCarrierFor 143
(active open)
```

```
(icon
(iconImage "notepad.icn"))
(open
(extent 154 116)
(editing enabled))
(pinCenter 2580 380))
(devCarrierFor 144
(active open)
(icon
(iconImage "notepad.icn"))
(open
(extent 304 46)
(editing enabled))
(pinCenter 1380 1130))
(devCarrierFor 145
(active open)
(icon
(iconImage "notepad.icn"))
(open
(extent 334 56)
(editing enabled))
(pinCenter 1260 1000))
(devCarrierFor 146
(active open)
(icon
(iconImage "notepad.icn"))
(open
(extent 404 116)
(editing enabled))
(pinCenter 2370 1030))
(connect D0:1 D1:1
(points 2 1559 340 1675 340))
(connect D0:2 D2:1
(points 2 1559 400 1580 400))
(connect D13:0 D3:0
(points 2 1710 1055 1710 1086))
(connect D3:1 D4:1
(points 2 1874 1150 1910 1150))
(connect D6:0 D5:0
(points 2 1340 590 1340 601))
(connect D0:0 D6:0
(points 2 1340 430 1340 451))
```

```
(connect D5:0 D7:0
(points 2 1340 780 1340 816))
(connect D9:1 D8:1
(points 4 1762 880 1930 880 1930 520 1955 520))
(connect D7:1 D9:1
(points 2 1609 880 1658 880))
(connect D8:1 D10:1
(points 6 2664 520 2680 520 2680 590 1950 590 1950 730 1967 730))
(connect D10:1 D11:0
(points 3 2053 720 2310 720 2310 811))
(connect D9:1 D11:1
(points 2 1762 880 1955 880))
(connect D11:1 D12:1
(points 6 2664 880 2680 880 2680 950 2580 950 2580 1010 2595 1010))
(connect D9:0 D13:0
(points 2 1710 922 1710 946))
(connect D6:1 D14:1
(points 2 1594 530 1707 530))
(connect D5:1 D15:1
(points 2 1679 700 1707 700))
(connect D13:1 D16:1
(points 2 1969 1010 1987 1010)))
(stackingOrder 0 9 13 3 11 8 6 7 16 4 12 5 24 19 10 15 20 17 1 2 18 14 22 21 25
23))
(numberFormats
(realFormat standard)
(realSigDigits 4)
(realRadixSpec 4)
(integerBase decimal))))
```

R-Band Waveguide Calibration VEE Pro IO Libraries Commands (*.xml)

FieldFox_R-Band_WG_Cal_via_VEEPro-IOLibs_Command_Capture (Keysight IO Monitor log file as XML - Duplicate link from above)

R-Band Waveguide Calibration VEE Pro IO Libraries SCPI Commands

*CLS

SYSTem:ERRor?

*IDN?

INSTrument:SELect 'NA';*OPC?

SENSe:FREQuency:STARt 32E9

SENSe:FREQuency:STOP 36E9

SENSe:BWID 1000

:SENSe:CORRection:COLLect:CKIT:LABel 1	R11644A;*OPC?
:SENSe:CORRection:COLLect:CKIT:LABel 2	R11644A;*OPC?
CORRection:COLLect:METHod:TRL 1	2
:SENSe:CORRection:COLLect:CONNector 1	WR-28,1
:SENSe:CORRection:COLLect:CONNector 2	WR-28,1

SENSe:CORRection:COLLect:GUIDed:SCOunt?

SENSe:CORRection:COLLect:GUIDed:STEP:PROMpt? 1

SENSe:CORRection:COLLect:GUIDed:STEP:ACQuire 1;*OPC?

SENSe:CORRection:COLLect:GUIDed:STEP:PROMpt? 2

SENSe:CORRection:COLLect:GUIDed:STEP:ACQuire 2;*OPC?

SENSe:CORRection:COLLect:GUIDed:STEP:PROMpt? 3

SENSe:CORRection:COLLect:GUIDed:STEP:ACQuire 3;*OPC?

SENSe:CORRection:COLLect:GUIDed:STEP:PROMpt? 4

SENSe:CORRection:COLLect:GUIDed:STEP:ACQuire 4;*OPC?

SENSe:CORRection:COLLect:SAVE 0;*OPC?

SYST:ERR?

Last Modified:

01dec2020	New topic (A.12.2x)

Commands by Mode

CAT Mode Commands

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Set and select Traces

Description	Commands
Set and read number of traces	CALCulate:PARameter:COUNt
Change parameter	CALCulate:PARameter:DEFine
Select trace	CALCulate:PARameter:SELect
Sweep Settings	
Set center freq	[:SENSe]:FREQuency:CENTer
Set freq span	[:SENSe]:FREQuency:SPAN
Set start freq	[:SENSe]:FREQuency:STARt
Set stop freq	[:SENSe]:FREQuency:STOP
Read X-axis values	[:SENSe]:FREQuency:DATA?
Set resolution (number of points)	[:SENSe]:SWEep:POINts
Set sweep time	[:SENSe]:SWEep:TIME

Read sweep time	[:SENSe]:SWEep:MTIMe?
Set manual source power	SOURce:POWer
Set flat source power	SOURce:POWer:ALC[:MODE]

Averaging

Averaging	[:SENSe]:AVERage:COUNt
Clear Averaging	[:SENSe]:AVERage:CLEar
Image rejection	CALCulate:IREJection:LEVel
Smoothing On/Off	CALCulate[:SELected]:SMOothing[:STATe]
Smoothing aperture	CALCulate[:SELected]:SMOothing:APERture

Display Items

View Memory trace	DISPlay:WINDow:TRACe:MEMory:STATe
View Data trace	DISPlay:WINDow:TRACe:STATe
Scaling - auto	DISPlay:WINDow:TRACe:Y[:SCALe]:AUTO
Scaling - Set bottom of scale	DISPlay:WINDow:TRACe:Y[:SCALe]:BOTTom
Scaling - Set per division	DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision
Scaling - Set reference level	DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel
Scaling - Set reference position	DISPlay:WINDow:TRACe:Y[:SCALe]:RPOSition
Scaling - Set top of scale	DISPlay:WINDow:TRACe:Y[:SCALe]:TOP

Limit Lines

Limit line beep	CALCulate[:SELected]:LIMit:SOUNd
Create limit lines	CALCulate[:SELected]:LIMit:LLData
Limit line testing state	CALCulate[:SELected]:LIMit[:STATe]
Limit line testing annotation	CALCulate[:SELected]:LIMit:WARN
Read Pass / Fail	STATus:QUEStionable:LIMit:CONDition?
Build Limit from Trace	None

Markers

Activate a marker	CALCulate[:SELected]:MARKer:ACTivate
Markers - all off	CALCulate[:SELected]:MARKer:AOFF
Markers - coupled	CALCulate[:SELected]:MARKer:COUPled
Marker search - Max	CALCulate[:SELected]:MARKer:FUNCtion:MAXimum
Marker search - Min	CALCulate[:SELected]:MARKer:FUNCtion:MINimum
Marker search - MAX between	CALCulate[:SELected]:MARKer:FUNCtion:M*n*:MAX

Markers 1,2 (M5) or Markers 3,4 (M6)	
Marker search - MIN between Markers 1,2 (M5) or Markers 3,4 (M6)	CALCulate[:SELected]:MARKer:FUNCtion:M*n*:MIN
Marker search - Peak excursion	CALCulate[:SELected]:MARKer:FUNCtion:PEXCursion
Marker search - Peak Next	CALCulate[:SELected]:MARKer:FUNCtion:PNEXt
Marker search - Peak threshold	CALCulate[:SELected]:MARKer:FUNCtion:PTHReshold
Tracking On/Off	CALCulate[:SELected]:MARKer:FUNCtion:TRACking
FieldFox setting => to marker location	CALCulate[:SELected]:MARKer:SET
Marker On/Off	CALCulate[:SELected]:MARKer[:STATe]
Marker => specified trace	CALCulate[:SELected]:MARKer:TRACe
Marker => specified X-axis location	CALCulate[:SELected]:MARKer:X
Read Marker Y-axis location	CALCulate[:SELected]:MARKer:Y?

Math

Math function	CALCulate[:SELected]:MATH:FUNCtion
Data to Memory	CALCulate[:SELected]:MATH:MEMorize

Distance to Fault

DTF - Set bandpasss/lowpass	CALCulate:TRANsform:DISTance:BANDpass
DTF - Set center freq	CALCulate:TRANsform:DISTance:FREQuency:CENTer
DTF - Set max freq span	CALCulate:TRANsform:DISTance:FREQuency:SPAN:MAXimum
DTF - Set min start freq	CALCulate:TRANsform:DISTance:FREQuency:STARt:MINimum
DTF - Set max freq	CALCulate:TRANsform:DISTance:FREQuency:STOP:MAXimum
DTF - Set start distance	CALCulate:TRANsform:DISTance:STARt
DTF - Set stop distance	CALCulate:TRANsform:DISTance:STOP
DTF - Set distance units	CALCulate:TRANsform:DISTance:UNIT
DTF - Set window type	CALCulate:TRANsform:DISTance:WINDow
DTF - Set bandpasss/lowpass	CALCulate:TRANsform:FREQuency[:TYPE]

DTF Cable Specs

Select Auto or Manual setting	[:SENSe]:CORRection:COAX
Set cable loss	[:SENSe]:CORRection:LOSS:COAX
Set velocity factor	[:SENSe]:CORRection:RVELocity:COAX

TDR

Set resolution mode	[:SENSe]:SWEep:TDR:RES
Max stop frequency with Res mode = AUTO	[:SENSe]:SWEep:TDR:AUTO:FREQuency:STOP:MAXimum
TDR marker format	CALCulate[:SELected]:MARKer:TDR:FORMat

Save / Recall Files

Recall Cable data	MMEMory:LOAD:CABLe
Store Cable data	MMEMory:STORe:CABLe
Save data trace to csv file	MMEMory:STORe:FDATa
Save SNP data	MMEMory:STORe:SNP[:DATA]

See other Save / Recall commands

Send / Read Data

Send and read formatted measured data	CALCulate[:SELected]:DATA:FDATA
Send and read formatted memory data	CALCulate[:SELected]:DATA:FMEM
Set data format for read	FORMat[:DATA]

Calibration Commands

See Also

Correction Methods Explained

Calibration Examples

Set and read error term data	[:SENSe]:CORRection:COEFficient[:DATA]
Read number of cal steps	[:SENSe]:CORRection:COLLect:GUIDed:SCOunt
Measure step number	[:SENSe]:CORRection:COLLect:GUIDed:STEP:ACQuire
Prompt for step number	[:SENSe]:CORRection:COLLect:GUIDed:STEP:PROMpt
Measure Quick Cal	[:SENSe]:CORRection:COLLect[:ACQuire]:INT
Measure load	[:SENSe]:CORRection:COLLect[:ACQuire]:LOAD
Measure open	[:SENSe]:CORRection:COLLect[:ACQuire]:OPEN
Measure short	[:SENSe]:CORRection:COLLect[:ACQuire]:SHORt
Measure thru	[:SENSe]:CORRection:COLLect[:ACQuire]:THRU
Set Cal Kit	[:SENSe]:CORRection:COLLect:CKIT:LABel
Catalog all cal kits	[:SENSe]:CORRection:COLLect:CKIT:LABel:CATalog?
Set connectors	[:SENSe]:CORRection:COLLect:CONNector
Select method - Enhanced	[:SENSe]:CORRection:COLLect:METHod:ERES

Response	
Select method - QuickCal	[:SENSe]:CORRection:COLLect:METHod:QCALibrate:CALibrate
Select method - QuickCal Enhanced Response	[:SENSe]:CORRection:COLLect:METHod:QCALibrate:ERESponse
Select method - Simple Open response	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:OPEN
Select method - Simple Short response	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:SHORt
Select method - Thru response	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:THRU
Select method - Short response	[:SENSe]:CORRection:COLLect:METHod:SRESponse
Select method - Open response	[:SENSe]:CORRection:COLLect:METHod:ORESponse
Select method - 1-port SOLT	[:SENSe]:CORRection:COLLect:METHod:SOLT1
Select method - TRL	[:SENSe]:CORRection:COLLect:METHod:TRL
Read method	[:SENSe]:CORRection:COLLect:METHod:TYPE?
Set AutoOrient for ECal	[:SENSe]:CORRection:COLLect:ECAL:AORient
Set simple ECal	[:SENSe]:CORRection:COLLect:ECAL:SIMPle
Omit Isolation	[:SENSe]:CORRection:COLLect:OISolation
Select Medium	[:SENSe]:CORRection:MEDium
Set Waveguide cutoff	[:SENSe]:CORRection:WGCutoff
Select Waveguide standard (CAT only)	[:SENSe]:CORRection:WAVeguide:STANdard
Finish Cal	[:SENSe]:CORRection:COLLect:SAVE
Turn ALL Correction ON and OFF	[:SENSe]:CORRection[:STATe]
Turn User Correction ON and OFF	[:SENSe]:CORRection:USER[:STATe]
Set system impedance	[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude]
Set CalReady type	[:SENSe]:CORRection:CALReady:TYPE

Last Modified:

04dec2019	Added Marker CALCulate[:SELected]:MARKer:FUNCtion:MAXimum & :MINimum

20-Jan-2015	Added 8.0 commands
15-Nov-2013	Added TRL
	Added new commands for A.07.25
	Added several commands (A.06.03)
	Updated

NA Mode Commands

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Traces

Description	Commands
Create Measurement	CALCulate:PARameter{1:4}:DEFine
Set and read number of traces	CALCulate:PARameter:COUNt
Select Measurement	CALCulate:PARameter{1:4}:SELect
Set trace format	CALCulate[:SELected]:FORMat
Multi-trace Configurations	DISPlay:WINDow:SPLit

Perform measurement conversion	CALCulate[:SELected]:CONVersion:FUNCtion

Sweep Settings

Set center freq	[:SENSe]:FREQuency:CENTer
Set freq span	[:SENSe]:FREQuency:SPAN
Set start freq	[:SENSe]:FREQuency:STARt
Set stop freq	[:SENSe]:FREQuency:STOP
Read X-axis values	[:SENSe]:FREQuency:DATA?
Set resolution (number of points)	[:SENSe]:SWEep:POINts
Set sweep time	[:SENSe]:SWEep:TIME
Read sweep time	[:SENSe]:SWEep:MTIMe?
Set manual source power	SOURce:POWer
Set flat source power	SOURce:POWer:ALC[:MODE]
Set trigger Internal or External	TRIGger:SOURce
Set polarity of external	TRIGger:SLOPe

IFBW / Average / Smooth / Image Rej

IFBW	[:SENSe]:BWID
Averaging	[:SENSe]:AVERage:COUNt
Clear Averaging	[:SENSe]:AVERage:CLEar
Average (Swp/Point)	[:SENSe]:AVERage:MODE
Smoothing ON/OFF	CALCulate[:SELected]:SMOothing[:STATe]
Smoothing aperture	CALCulate[:SELected]:SMOothing:APERture

Display Items

View Memory trace	DISPlay:WINDow:TRACe:MEMory:STATe
View Data trace	DISPlay:WINDow:TRACe:STATe
Scaling - auto	DISPlay:WINDow:TRACe:Y[:SCALe]:AUTO
Scaling - Set bottom of scale	DISPlay:WINDow:TRACe:Y[:SCALe]:BOTTom
Scaling - Set per division	DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision
Scaling - Set reference level	DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel
Scaling - Set reference position	DISPlay:WINDow:TRACe:Y[:SCALe]:RPOSition
Scaling - Set top of scale	DISPlay:WINDow:TRACe:Y[:SCALe]:TOP
Electrical Delay	CALCulate[:SELected]:CORRection:EDELay:TIME

Phase Offset	CALCulate[:SELected]:CORRection:OFFSet:PHASe
Mag Offset	CALCulate[:SELected]:OFFSet[:MAGNitude]
Mag Slope	CALCulate[:SELected]:OFFSet:SLOPe

Limit Lines

Limit line beep	CALCulate[:SELected]:LIMit:SOUNd
Create limit lines	CALCulate[:SELected]:LIMit:LLData
Limit line testing state	CALCulate[:SELected]:LIMit[:STATe]
Limit line testing annotation	CALCulate[:SELected]:LIMit:WARN
Read Pass / Fail	STATus:QUEStionable:LIMit:CONDition?
Build Limit from Trace	None

Markers

Marker On/Off	CALCulate[:SELected]:MARKer[:STATe]
Activate a marker	CALCulate[:SELected]:MARKer:ACTivate
Markers - all off	CALCulate[:SELected]:MARKer:AOFF
Read BW data	CALCulate[:SELected]:MARKer:BWIDth:DATA
Marker search - BW / Q On/Off	CALCulate[:SELected]:MARKer:BWIDth[:STATe]
Markers - coupled	CALCulate[:SELected]:MARKer:COUPled
BW search value	CALCulate[:SELected]:MARKer:FUNCtion:BWIDth:THReshold
Marker search - Max	CALCulate[:SELected]:MARKer:FUNCtion:MAXimum
Marker search - Min	CALCulate[:SELected]:MARKer:FUNCtion:MINimum
Marker search - MAX between Markers 1,2 (M5) or Markers 3,4 (M6)	CALCulate[:SELected]:MARKer:FUNCtion:M*n*:MAX
Marker search - MIN between Markers 1,2 (M5) or Markers 3,4 (M6)	CALCulate[:SELected]:MARKer:FUNCtion:M*n*:MIN
Marker search - Peak excursion	CALCulate[:SELected]:MARKer:FUNCtion:PEXCursion
Marker search - Peak Next	CALCulate[:SELected]:MARKer:FUNCtion:PNEXt
Marker search - Peak threshold	CALCulate[:SELected]:MARKer:FUNCtion:PTHReshold
Marker search - Target	CALCulate[:SELected]:MARKer:FUNCtion:TARGet
Marker search - Wrap/No Wrap	CALCulate[:SELected]:MARKer:FUNCtion:TDIRection
Tracking On/Off	CALCulate[:SELected]:MARKer:FUNCtion:TRACking
FieldFox setting => to marker	CALCulate[:SELected]:MARKer:SET

location	
Marker format	CALCulate[:SELected]:MARKer:FORMat
Marker => specified trace	CALCulate[:SELected]:MARKer:TRACe
Marker => specified X-axis location	CALCulate[:SELected]:MARKer:X
Read Marker Y-axis location	CALCulate[:SELected]:MARKer:Y?

Big Marker Display States (A and B)

Enable Big marker readouts	DISPlay:MARKer:LARGe:STATe
Set font size	DISPlay:MARKer:LARGe:<x>:FONT
Set how the marker is displayed (norm / delta)	DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:MARKer:STATe
Enable a readout line	DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:STATe
Assign a marker number to the readout line	DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:MNUMber
Assign a trace number to the readout line	DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:TNUMber
Set format for the readout line	DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:FORMat
Set marker tracking	DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:TRACking
Set number of traces	DISPlay:MARKer:LARGe:<x>:TRACE:COUNt
Set measurement for the trace	DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:MEASurement
Set format for the trace	DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:FORMat
Enable bandwidth search	DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:BWIDth:STATe

Math

Math function	CALCulate[:SELected]:MATH:FUNCtion
Data to Memory	CALCulate[:SELected]:MATH:MEMorize

Save / Recall Files - Data

Save data trace to csv file	MMEMory:STORe:FDATa
Save SNP data	MMEMory:STORe:SNP[:DATA]

See other Save / Recall commands

Send and read formatted measured data	CALCulate[:SELected]:DATA:FDATa
Send and read formatted memory data	CALCulate[:SELected]:DATA:FMEM
Send and read unformatted measured data	CALCulate[:SELected]:DATA:SDATa

Send and read unformatted memory data	CALCulate[:SELected]:DATA:SMEM
Set read format	FORMat[:DATA]

Port Extensions

Enable	[:SENSe]:CORRection:EXTension[:STATe]
Set port 1	[:SENSe]:CORRection:EXTension:PORT1
Set port 2	[:SENSe]:CORRection:EXTension:PORT2
Set velocity factor	[:SENSe]:CORRection:RVELocity:COAX

Calibration

See Also

Correction Methods Explained

Calibration Examples

Set and read error term data	[:SENSe]:CORRection:COEFficient[:DATA]
Read number of cal steps	[:SENSe]:CORRection:COLLect:GUIDed:SCOunt
Measure step number	[:SENSe]:CORRection:COLLect:GUIDed:STEP:ACQuire
Prompt for step number	[:SENSe]:CORRection:COLLect:GUIDed:STEP:PROMpt
Measure Quick Cal	[:SENSe]:CORRection:COLLect[:ACQuire]:INT
Measure load	[:SENSe]:CORRection:COLLect[:ACQuire]:LOAD
Measure open	[:SENSe]:CORRection:COLLect[:ACQuire]:OPEN
Measure short	[:SENSe]:CORRection:COLLect[:ACQuire]:SHORt
Measure thru	[:SENSe]:CORRection:COLLect[:ACQuire]:THRU
Set Cal Kit	[:SENSe]:CORRection:COLLect:CKIT:LABel
Catalog all cal kits	[:SENSe]:CORRection:COLLect:CKIT:LABel:CATalog?
Set connectors	[:SENSe]:CORRection:COLLect:CONNector
Select method - Enhanced Response	[:SENSe]:CORRection:COLLect:METHod:ERES
Select method - QuickCal	[:SENSe]:CORRection:COLLect:METHod:QCALibrate:CALibrate
Select method - QuickCal Enhanced Response	[:SENSe]:CORRection:COLLect:METHod:QCALibrate:ERESponse
Select method - Simple Open response	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:OPEN
Select method - Simple Short response	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:SHORt
Select method - Thru	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:THRU

response	
Select method - Open response	[:SENSe]:CORRection:COLLect:METHod:ORESponse
Select method - Short response	[:SENSe]:CORRection:COLLect:METHod:SRESponse
Select method - 1-port SOLT	[:SENSe]:CORRection:COLLect:METHod:SOLT1
Select method - TRL	[:SENSe]:CORRection:COLLect:METHod:TRL
Read method	[:SENSe]:CORRection:COLLect:METHod:TYPE?
Set AutoOrient for ECal	[:SENSe]:CORRection:COLLect:ECAL:AORient
Set simple ECal	[:SENSe]:CORRection:COLLect:ECAL:SIMPle
Omit Isolation	[:SENSe]:CORRection:COLLect:OISolation
Select Medium	[:SENSe]:CORRection:MEDium
Sets Start & Stop frequencies to calibration cardinal points	[:SENSe]:CORRection:APPLy:NEARest
Set Waveguide cutoff	[:SENSe]:CORRection:WGCutoff
Finish Cal	[:SENSe]:CORRection:COLLect:SAVE
Turn ALL Correction ON and OFF	[:SENSe]:CORRection[:STATe]
Turn User Correction ON and OFF	[:SENSe]:CORRection:USER[:STATe]
Set system impedance	[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude]
Set CalReady type	[:SENSe]:CORRection:CALReady:TYPE

Source

Set the active source	SOURce{1:1}:PORT[:STATe]

Time Domain (Opt 010)

Enable	CALCulate[:SELected]:TRANsform:TIME:STATe
Start time	CALCulate[:SELected]:TRANsform:TIME:STARt
Stop time	CALCulate[:SELected]:TRANsform:TIME:STOP
Center time	CALCulate[:SELected]:TRANsform:TIME:CENTer
Span time	CALCulate[:SELected]:TRANsform:TIME:SPAN
Lowpass or BandPass	CALCulate[:SELected]:TRANsform:TIME: [TYPE]
Step or Impulse	CALCulate[:SELected]:TRANsform:TIME:STIMulus
Step rise time	CALCulate[:SELected]:TRANsform:TIME:STEP:RTIMe
Impulse width	CALCulate[:SELected]:TRANsform:TIME:IMPulse:WIDTh

Kaiser Bessel width	CALCulate[:SELected]:TRANsform:TIME:KBESsel
Set Lowpass freq.	CALCulate[:SELected]:TRANsform:TIME:LPFREQuency

Time Domain Gating

Enable	CALCulate[:SELected]:FILTer[:GATE]:TIME:STATe
Start time	CALCulate[:SELected]:FILTer[:GATE]:TIME:STARt
Stop time	CALCulate[:SELected]:FILTer[:GATE]:TIME:STOP
Center time	CALCulate[:SELected]:FILTer[:GATE]:TIME:CENTer
Span time	CALCulate[:SELected]:FILTer[:GATE]:TIME:SPAN
Gating shape	CALCulate[:SELected]:FILTer[:GATE]:TIME:SHAPe
Bandpass or notch	CALCulate[:SELected]:FILTer[:GATE]:TIME

Last Modified:

01june2022	Added SENS:CORR:APPL:NEAR command (A12.5x)
13-Nov-2013	Added TRL command
6-Mar-2013	Added new commands (A.06.25)
18-Oct-2012	Added new commands (A.06.00)

SA Mode

SA Mode Commands

In this topic:

- Markers
- Read / Save Data
- Independent Source / Tracking Generator
- Source Tracking Offset
- Trigger Settings
- FFT Gating
- Analog Demod Audio Capture and Playback
- Record/Playback Actions
- Record/Playback Configuration
- Record/Playback Sessions
- Select Channel Measurement
- Read Current Channel Measurement Data
- Channel Measurement Setup
- Adjacent Channel Power Setup
- Interference Analyzer Settings
- Tune and Listen Settings
- Spectral Emission Mask (SEM)
- IQ Streaming
- USB Antenna (USB)
- Frequency Extender Head **NEW!**
- General Status **NEW!**

See Also

- Commands that are Common to All Modes
- Status Registers

Frequency

Description	Command
Center freq	[:SENSe]:FREQuency:CENTer
Step size for up/down keys	[:SENSe]:FREQuency:CENTer:STEP
Step size auto/manual	[:SENSe]:FREQuency:CENTer:STEP:AUTO
Freq span	[:SENSe]:FREQuency:SPAN
Span to full	[:SENSe]:FREQuency:SPAN:FULL
Span to zero	[:SENSe]:FREQuency:SPAN:ZERO
Start freq	[:SENSe]:FREQuency:STARt
Stop freq	[:SENSe]:FREQuency:STOP
Frequency annotation method	[:SENSe]:FREQuency:ANNotation[:SELect]
Radio Standard	
Channel number center	[:SENSe]:RADio:CHANnel:CENTer

Uplink or Downlink	[:SENSe]:RADio:CHANnel:DIRection
Start channel	[:SENSe]:RADio:CHANnel:STARt
Channel step size	[:SENSe]:RADio:CHANnel:STEP
Stop channel	[:SENSe]:RADio:CHANnel:STOP
Select standard	[:SENSe]:RADio:STANdard[:SELect]
Freq or Chan	[:SENSe]:RADio:TEUNit

Gain/Atten

Attenuation value	[:SENSe]:POWer[:RF]:ATTenuation
Atten Auto/Manual	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set external gain value	[:SENSe]:POWer[:RF]:EXTGain
Preamp ON/OFF	[:SENSe]:POWer[:RF]:GAIN[:STATe]
Read number of traces.	[:SENSe]:QUANtity:TACTive?

Sweep

Sweep time (Non-zerospan)	[:SENSe]:SWEep:ACQuisition
Sweep time (Zerospan)	[:SENSe]:SWEep:TIME
Read sweep time	[:SENSe]:SWEep:MTIMe?
Auto / Manual	[:SENSe]:SWEep:ACQuisition:AUTO
Sweep points	[:SENSe]:SWEep:POINts
Sweep Type	[:SENSe]:SWEep:TYPe
Reverse sweep (Step sweep and Opt. 209 only)	[:SENSe]:FREQuency:SPAN:DREVerse

Scale / Units

Auto Scale trace	DISPlay:WINDow:TRACe:Y[:SCALe]:AUTO
Per division	DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision
Reference level	DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel
Reference position	DISPlay:WINDow:TRACe:Y[:SCALe]:RPOSition
Log / Linear scale	[:SENSe]:AMPLitude:SCALe
Set Units	[:SENSe]:AMPLitude:UNIT
Read ONLY - Bottom scale value	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:BOTTom
Read ONLY - Top scale value	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:TOP

Average

Average count	[:SENSe]:AVERage:COUNt
Averaging type	[:SENSe]:AVERage:TYPE

Restart trace averaging	INITiate:RESTart
Video / Res Bandwidth	
Manual Res BW value	[:SENSe]:BANDwidth[:RESolution]
Choose Auto or Manual Res BW	[:SENSe]:BANDwidth[:RESolution]:AUTO
Manual Video BW value	[:SENSe]:BANDwidth:VIDeo
Choose Auto or Manual Video BW	[:SENSe]:BANDwidth:VIDeo:AUTO
IF Output	[:SENSe]:BANDwidth:IF:OUT
Trace Type/Detector	
Set Trace Type	TRACe{1:4}:TYPE
Returns the current trace X-values	TRACe{1:4}:XVALue
Detector function	[:SENSe]:DETector:FUNCtion
Alignments (nstAlign)	
Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:AMPLitude:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:AMPLitude[OBSOLETE]:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]
RF burst now (Not applicable to ERTA)	[:SENSe]:ALIGnment:BURSt:NOW
RF burst state (Not applicable to ERTA)	[:SENSe]:ALIGnment:BURSt[:STATe]
Alignments (Channel Equalization State)	
Fast channel equalization alignment (enable/disable)	[:SENSe]:ALIGnment:CHEQ:FAST
Channel equalization now	[:SENSe]:ALIGnment:CHEQ:NOW
Channel equalization state	[:SENSe]:ALIGnment:CHEQ[:STATe]
Instrument	
Query a file catalog	:INSTrument:CATalog?
Enables front panel key press control	:INSTrument:GTL
Disables front panel key press control (Lockout)	:INSTrument:GTR
Set and query the status of the remote SCPI lockout	:INSTrument:RLOCkout:DISable
Sets the current mode	:INSTrument[:SELect]
Limit / Display Lines	

Limit line beep	CALCulate[:SELected]:LIMit:SOUNd
Create limit lines	CALCulate:LIMit:LLData
Limit line testing state	CALCulate:LIMit[:STATe]
Limit line testing annotation	CALCulate:LIMit:WARN
Display Line level setting	DISPlay:WINDow:TRACe:Y:DLINe
Display Line state	DISPlay:WINDow:TRACe:Y:DLINe:STATe
Read Pass/Fail	STATus:QUEStionable:LIMit:CONDition?
Build Limit from Trace	None

Markers

Sets the Precision Marker value	CALCulate:MARKer:FCOunt:PRECision
Select a marker	CALCulate:MARKer:ACTivate
Markers - all off	CALCulate:MARKer:AOFF
Audio Beep on Marker	CALCulate:MARKer:AUDio:BEEP
Markers - Fixed delta reference marker state.	CALCulate:MARKer:DREF:FIXed
Frequency counter marker ON/OFF	CALCulate:MARKer:FCOunt[:STATe]
Read Frequency Count	CALCulate:MARKer:FCOunt:X?
Set Noise Marker and Band Power Marker	CALCulate:MARKer:FUNCtion
Band power span	CALCulate:MARKer:FUNCtion:BAND:SPAN
Band power mode	CALCulate:MARKer:FUNCtion:BAND:SPAN:AUTO
Interval power span	CALCulate:MARKer:FUNCtion:INTerval:SPAN
Interval power mode	CALCulate:MARKer:FUNCtion:INTerval:SPAN:AUTO
Marker search - Max	CALCulate:MARKer{1:6}:FUNCtion:MAXimum
Marker search - Min	CALCulate:MARKer{1:6}:FUNCtion:MINimum
Marker search - Peak excursion	CALCulate:MARKer{1:6}:FUNCtion:PEXCursion
Marker search - Peak left	CALCulate:MARKer{1:6}:FUNCtion:PLEFt
Marker search - Peak Next	CALCulate:MARKer{1:6}:FUNCtion:PNEXt
Marker search - Peak right	CALCulate:MARKer{1:6}:FUNCtion:PRIGht
Marker search - Peak threshold	CALCulate:MARKer{1:6}:FUNCtion:PTHReshold
Noise marker On/Off	CALCulate:MARKer:NOISe[:STATe]

Marker -> Setting	CALCulate:MARKer:SET
Move marker to center freq	CALCulate:MARKer:SET:CENTer
Move marker to ref level	CALCulate:MARKer:SET:REFLevel
Signal Tracking	CALCulate:MARKer:STRack
Marker On/Off	CALCulate:MARKer[:STATe]
Move marker to other trace	CALCulate:MARKer:TRACe
Move/read marker X-axis position	CALCulate:MARKer:X
Read marker Y-axis position	CALCulate:MARKer:Y?

Read / Save Data

See Also: Read Current Channel Measurement Data

Read Trace Data	TRACe{1:4}:DATA
Saves trace to CSV file.	MMEMory:STORe:FDATa

Independent Source / Tracking Generator

CW or S/R	SOURce:MODE
CW Frequency	SOURce:FREQuency[:CW]
Normalize	SOURce:NORMalize
Power Level (All models EXCEPT N9912A)	SOURce:POWer
Max Power (All models EXCEPT N9912A)	SOURce:POWer:MAXimum
Attenuation (power) N9912A ONLY	SOURce:POWer:ATTenuation
Enable Source Tracking	SOURce:TRACking

Field Strength (Corrections)

All corrections OFF	[:SENSe]:AMPLitude:CORRections:DISable
All corrections ON	[:SENSe]:AMPLitude:CORRections[:STATe] (SUPERSEDED)

Source Tracking Offset

Enable	SOURce:TOFFset:ENABle
Set frequency	SOURce:TOFFset:FREQuency
Reverse frequency	SOURce:TOFFset:REVerse

Receiver (or ONLY one) Antenna/Cables

Antenna corrections ON	[:SENSe]:AMPLitude:CORRections:ANTenna[:STATe]
Cable corrections ON	[:SENSe]:AMPLitude:CORRections:CABLe[:STATe]
Load Antenna file	MMEMory:LOAD:ANTenna

Store Antenna file	MMEMory:STORe:ANTenna
Clear Antenna correction values	[:SENSe]:AMPLitude:CORRections:ANTenna:DEFault
Load Cable file	MMEMory:LOAD:CABLe
Store Cable file	MMEMory:STORe:CABLe
Clear Cable correction values	[:SENSe]:AMPLitude:CORRections:CABLe:DEFault

Source Antenna/Cables

Antenna corrections ON	[:SENSe]:AMPLitude:CORRections:SANTenna[:STATe]
Cable corrections ON	[:SENSe]:AMPLitude:CORRections:SCABle[:STATe]
Load Antenna file	MMEMory:LOAD:SANTenna
Store Antenna file	MMEMory:STORe:SANTenna
Clear Antenna correction values	[:SENSe]:AMPLitude:CORRections:SANTenna:DEFault
Load Cable file	MMEMory:LOAD:SCABle
Store Cable file	MMEMory:STORe:SCABle
Clear Cable correction values	[:SENSe]:AMPLitude:CORRections:SCABle:DEFault

Trigger Settings

Trigger Type (Ext/Vid/RFBurst/Freerun/Periodic)	TRIGger[:SEQuence]:SOURce
Trigger Slope (Pos/Neg)	TRIGger[:SEQuence]:SLOPe
Trigger Delay	TRIGger[:SEQuence]:DELay
Trigger Delay ON/OFF	TRIGger[:SEQuence]:DELay:STATe
Trigger Level	TRIGger[:SEQuence]:VIDeo:LEVel
Auto trigger time	TRIGger[:SEQuence]:ATRigger
Auto trigger ON/OFF	TRIGger[:SEQuence]:ATRigger:STATe
Trigger Position	TRIGger[:SEQuence]:POSition
Trigger Position ON/OFF	TRIGger[:SEQuence]:POSition:STATe

FFT Gating

Enable gating	TRIGger[:SEQuence]:FGATe[:STATe]
Set gate delay	TRIGger[:SEQuence]:FGATe:DELay
Display the gating window	TRIGger[:SEQuence]:FGATe:VIEW[:STATe]
Set X-axis time span for the gating window	TRIGger[:SEQuence]:FGATe:VIEW:TIME
Set the width of the gated area within the gating window	TRIGger[:SEQuence]:FGATe:WIDTh

Analog Demod Audio Capture and Playback

Sets/query the audio capture count value	[:SENSe]:AUDio:CAPTure:COUNt
Sets/query the automatic loading of audio capture file	[:SENSe]:AUDio:CAPTure:PLAYback:ALOad
Start the audio capture file playback	[:SENSe]:AUDio:CAPTure:PLAYback:STARt
Stop the audio capture file playback	[:SENSe]:AUDio:CAPTure:PLAYback:STOP
Sets/query the audio capture fm stereo type	[:SENSe]:AUDio:CAPTure:PLAYback:SCHannel
Start the audio capture	[:SENSe]:AUDio:CAPTure:STARt
Stop the audio capture	[:SENSe]:AUDio:CAPTure:STOP
Set/query the audio capture time	[:SENSe]:AUDio:CAPTure:TIME
Set/query the AM window top Y axis percentage	[:SENSe]:ADEMod:METRics:AMTY
Set/query the analog demod metrics type (AM/FM Narrow/FM wide)	[:SENSe]:ADEMod:METRics:DTYPe
Set/query the BPF type	[:SENSe]:ADEMod:METRics:FILTer:BPF[:TYPe]
Set/query the de-emphasis TAO value	[:SENSe]:ADEMod:METRics:FILTer:DEEMphasis:TAO
Set/query the de-emphasis state value	[:SENSe]:ADEMod:METRics:FILTer:DEEMphasis[:STATe]
Set/query the HPF cutoff value	[:SENSe]:ADEMod:METRics:FILTer:HPF:CUToff
Set/query the HPF type	[:SENSe]:ADEMod:METRics:FILTer:HPF[:TYPe]
Set/query the LPF cutoff value	[:SENSe]:ADEMod:METRics:FILTer:LPF:CUToff
Set/query the LPF cutoff type	[:SENSe]:ADEMod:METRics:FILTer:LPF[:TYPe]
Set/query the FM window top Y axis frequency	[:SENSe]:ADEMod:METRics:FMTY
Set/query the analog demod audio value (Mute/On)	[:SENSe]:ADEMod:METRics:LON
Set/query the analog demod audio listen time value	[:SENSe]:ADEMod:METRics:LTIMe
Set/query Deviation Peak+ and Peak- in the demodulation window	[:SENSe]:ADEMod:METRics:MMENable
Set/query the PM window Y axis top radian value	[:SENSe]:ADEMod:METRics:PMTY

Set/query the **AM SSB** window Y axis top gracticule value	[:SENSe]:ADEMod:METRics:SSBTY
Set/query the time span of the modulation window	[:SENSe]:ADEMod:METRics:STIMe
Set/query the analog demod center frequency value	[:SENSe]:ADEMod:METRics:TFReq
This command **now** chooses the AM/FM metrics type: - Tune and Listen (TAL) or - Analog Demod Metrics (ADEM)	[:SENSe]:MEASurement:ADEMod is a new SCPI syntax and is recommended. And, the following legacy is **not** recommended: [:SENSe]:MEASurement:ADEMod (LEGACY BEHAVIOR)
Related Audio Capture Memory commands:	
Set/query the analog demod audio file storage device type	MMEMory:STORe:AUDio:FNAMe:DEVice
Set/query the analog demod audio filename	MMEMory:STORe:AUDio:FNAMe:FNAMe
Set/query the adding the timestamp to the analog demod audio filename	MMEMory:STORe:AUDio:FNAMe:TSTamp
Record/Playback Actions	
Pause	RECPlayback:ACTion:PAUSe
Play	RECPlayback:ACTion:PLAY
Record	RECPlayback:ACTion:RECord
Tag position	RECPlayback:ACTion:SPOSition
Stop	RECPlayback:ACTion:STOP
Trace position	RECPlayback:ACTion:TPOSition
Record/Playback Configuration	
Frequency Mask Trigger (FMT) data	RECPlayback:CONFig:FMTRigger:LLData
FMT enable	RECPlayback:CONFig:FMTRigger:ENABle
Playback Time Interval	RECPlayback:CONFig:PRFTrace
Playback Time Interval	RECPlayback:CONFig:PRLTrace
Playback Time Interval	RECPlayback:CONFig:PTINterval
Record Segment Counting Length	RECPlayback:CONFig:RSCLength
Record Source	RECPlayback:CONFig:RSOurce
Record Time Interval	RECPlayback:CONFig:RTINerval
Record Time limit	RECPlayback:CONFig:RTLSeconds

Record/Playback Sessions

Clear all records	RECPlayback:SESSion:CARecords
Close	RECPlayback:SESSion:CLOSe
Records single, range, or all (batch) of trace data	RECPlayback:SESSion:CSSTyle
Create new session	RECPlayback:SESSion:NEW
Open session	RECPlayback:SESSion:OPEN?
Storage device	RECPlayback:SESSion:SDEVice
Trace record limit	RECPlayback:SESSion:TRLimit
Is a session open?	STATus:OPERation:SAMode:CONDition?

Select Channel Measurement

Activate the EMF antenna	[:SENSe]:CHPower:TAASelect
All channel meas OFF	[:SENSe]:MEASurement:AOFF
Select channel meas	[:SENSe]:MEASurement:CHANnel
Select Interference Analysis (Opt 236) display.	[:SENSe]:MEASurement:INTerference
Preset channel meas	[:SENSe]:MEASurement:PRESet
Power percent for Occupied Bandwidth	[:SENSe]:OBW:PPOW

Read Current Channel Measurement Data

Channel Power, Occupied Bandwidth, or Adjacent Channel Power

Read current channel measurement data	CALCulate:MEASurement:DATA?

Channel Measurement Setup

Averaging ON/OFF	[:SENSe]:CMEasurement:AVERage:ENABle
Integration BW	[:SENSe]:CMEasurement:IBW
RCC filter state	[:SENSe]:CMEasurement:RRCFilter
RCC filter value	[:SENSe]:CMEasurement:RRCFilter:ALPHa

Adjacent Channel Power Setup

Reference value	[:SENSe]:ACPower:MREFerence
Reference method	[:SENSe]:ACPower:MREFerence:AUTO
Meas Type	[:SENSe]:ACPower:MTYPe
Limit testing On/Off	[:SENSe]:ACPower:LIMit[:STATe]
Offset bandwidths	[:SENSe]:ACPower:OFFSet:BWIDth
Offset frequencies	[:SENSe]:ACPower:OFFSet:FREQuency

Offset states	[:SENSe]:ACPower:OFFSet:STATe
Lower offset limits	[:SENSe]:ACPower:OFFSet:LLIMit
Upper offset limits	[:SENSe]:ACPower:OFFSet:ULIMit

Interference Analyzer Settings

Blue power level	[:SENSe]:SPECtrogram:BPLevel
Red power level	[:SENSe]:SPECtrogram:RPLevel
Time/Delta marker state	[:SENSe]:SPECtrogram:TMARker:STATe
Time/Delta marker location	[:SENSe]:SPECtrogram:TMARker:VALue
Spectrogram display setting	[:SENSe]:SPECtrogram:VIEW
Waterfall angle	[:SENSe]:SPECtrogram:WANGle

Tune and Listen Settings

This command **now** chooses the AM/FM metrics type: - Tune and Listen (TAL) or - Analog Demod Metrics (ADEM)	[:SENSe]:MEASurement:ADEMod (LEGACY BEHAVIOR) is **not** recommended and has a new recommended behavior: [:SENSe]:MEASurement:ADEMod
Tune and Listen demod type	[:SENSe]:MEASurement:TAListen[:**OBSOLETE**] (see [:SENSe]:ADEMod:METRics:DTYPe)
Sets the Tune and Listen AM LSB/USB Gain	[:SENSe]:TAListen:AM:SSB:GAIN
Volume	[:SENSe]:TAListen:AVOLume - **OBSOLETE**
Demod ON / OFF	[:SENSe]:TAListen:DSTate
Demod type	[:SENSe]:TAListen:DTYPe
Listen tme	[:SENSe]:TAListen:LTIMe
Tune freq	[:SENSe]:TAListen:TFReq

Spectral Emission Mask (SEM)

Set the SEM averaging count.	[:SENSe]:SEMask:AVERage:COUNt
Set the SEM averaging state	[:SENSe]:SEMask:AVERage:ENABle
Sets the Reference channel detector settings	[:SENSe]:SEMask:CDETector[:FUNCtion]
Set a fixed SEM power reference	[:SENSe]:SEMask:MREFerence
Set the power reference Auto state	[:SENSe]:SEMask:MREFerence:AUTO
Set the type of SEM measured	[:SENSe]:SEMask:MTYPe
Set the SEM Frequency control menu	[:SENSe]:SEMask:OASPan
Sets the Offset detector settings	[:SENSe]:SEMask:ODETector[:FUNCtion]

Set the SEM carrier definition	[:SENSe]:SEMask:OFDefine
Set the absolute start value for a segment	[:SENSe]:SEMask:OFFSet<n>:ALIMit:STARt
Set the absolute stop value for a segment	[:SENSe]:SEMask:OFFSet<n>:ALIMit:STOP
Set the absolute stop value to automatic for a segment	[:SENSe]:SEMask:OFFSet<n>:ALIMit:STOP:AUTO
Set the relative start value for a segment	[:SENSe]:SEMask:OFFSet<n>:RLIMit:STARt
Set the relative stop value for a segment	[:SENSe]:SEMask:OFFSet<n>:RLIMit:STOP
Set the relative stop value to automatic for a segment	[:SENSe]:SEMask:OFFSet<n>:RLIMit:STOP:AUTO
Set the type of triggers for the SEM failure mask	[:SENSe]:SEMask:OFFSet<n>:FMASk
Set the SEM offset resolution BW	[:SENSe]:SEMask:OFFSet<n>:BANDwidth[:RESolution]
Set the SEM offset resolution BW Auto setting	[:SENSe]:SEMask:OFFSet<n>:BANDwidth[:RESolution]:AUTO
Set the SEM frequency Offset state	[:SENSe]:SEMask:OFFSet<n>:ENABle
Set and query the SEM Offset start frequency	[:SENSe]:SEMask:OFFSet<n>:FREQuency:STARt
Set the SEM Offset stop frequency	[:SENSe]:SEMask:OFFSet<n>:FREQuency:STOP
Set the type of SEM Offset to be activated	[:SENSe]:SEMask:OFFSet<n>:SIDE
Set the SEM Resolution BW	[:SENSe]:SEMask:REFChannel:BANDwidth[:RESolution]
Set the SEM resolution bandwidth Auto setting	[:SENSe]:SEMask:REFChannel:BANDwidth[:RESolution]:AUTO
Set a SEM Center Frequency control	[:SENSe]:SEMask:REFChannel:CENTer
Set and query the SEM reference channel center auto status	[:SENSe]:SEMask:REFChannel:CENTer:AUTO
Set and query a SEM frequency range integrated bandwidth	[:SENSe]:SEMask:REFChannel:IBW
Set and query the SEM Reference Channel Span	[:SENSe]:SEMask:REFChannel:SPAN

IQ Streaming (Applies to B-Series FieldFoxes ONLY)

Set the destination host IP address	[:SENSe]:IQSTream:DHOSt
Set the destination port	[:SENSe]:IQSTream:DPORt
Sets the IQ streaming protocol	[:SENSe]:IQSTream:PROTocol
Set a the number of samples per packet	[:SENSe]:IQSTream:SPP

Re-sends the metadata packets	[:SENSe]:IQSTream:VITA:MRESend
Sets the interval for re-sending the metadata packets	[:SENSe]:IQSTream:VITA:MRIP
Set the stream identifier for VITA data	[:SENSe]:IQSTream:SIDentifier
Starts IQ Streaming	[:SENSe]:IQSTream:STARt
Stops IQ Streaming	[:SENSe]:IQSTream:STOP
In VITA streaming mode, sends metadata	[:SENSe]:IQSTream:VITA:MRESend
In VITA protocol, resends packet data	[:SENSe]:IQSTream:VITA:MRIP
In VITA protocol, sets the stream identifier	[:SENSe]:IQSTream:VITA:SIDentifier
Sets the IQ Analysis mode	[:SENSe]:MEASurement:IQANalysis

USB Triaxial Antenna

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the currentfS azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe

image (i.e., if image loaded)	
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Presets the antenna	SYSTem:PRESet:ANTenna

Frequency Extender Head

SA Mode Frequency Converter Only:	
Enable/disables frequency converter corrections of head	[:SENSe]:AMPLitude:CORRections:CONVerter:DEFault
Clears the frequency converter corrections table	[:SENSe]:AMPLitude:CORRections:CONVerter[:STATe]
Recalls a frequency converter corrections file (*csv)	MMEMory:LOAD:CONVerter
Saves a freqeuncy converter corrections file (*csv)	MMEMory:STORe:CONVerter
All Frequency Converter Compatible Modes:	
Selects a frequency extender head file to load.	MMEMory:LOAD:HEAD
Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head corrections from SA mode	SYSTem:HEAD:CORRections[:STATe]
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]

General Status

ADC Over-range status	CALCulate:MEASurement:WAOR?
Set and query ADC over range warning emphasis	SYSTem:PREFerences:SA:EAOR

Last Modified:

01june2022	Updated commands (A12.4x)
01dec2020	Updated commands (A12.1x)
20apr2020	Added for A.11.75 FW (Compatible with IQA, OTA, PAA, RTSA, & SA Modes)
01dec2019	Added new commands (A.11.5x)
19apr2019	Added new commands (A11.25)
19-sep-2016	Corrected/Added SA reverse sweep SCPI command (step sweep only). (:FREQ:SPAN:DREV)
25-Mar-2014	Added new commands (A.06.25)
25-Mar-2014	Added new commands (A.06.00)

EMF Commands (USB Tri-Axial Antenna)

In this topic:

- USB Triaxial Antenna

See Also

- Commands that are Common to All Modes
- Status Registers

USB Triaxial Antenna (also, referred to as EMF Antenna)

Description	Command
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Set the X-axis dipole in a triaxial antenna to its default values	[:SENSe]:AMPlitude:CORRections:XANTenna:DEFault
Set and query the X-axis antenna corrections ON/OFF state	[:SENSe]:AMPlitude:CORRections:XANTenna[:STATe]
Set the Y-axis dipole in a triaxial antenna to its default values	[:SENSe]:AMPlitude:CORRections:YANTenna:DEFault
Set and query the Y-axis antenna	[:SENSe]:AMPlitude:CORRections:YANTenna[:STATe]

corrections ON/OFF state	
Set the Z-axis dipole in a triaxial antenna to its default values	[:SENSe]:AMPlitude:CORRections:ZANTenna:DEFault
Set and query the Z-axis antenna corrections ON/OFF state	[:SENSe]:AMPlitude:CORRections:XANTenna:DEFault

Last modified:

01-june-2018	New command

RTSA Mode Commands (A.90.xx and Greater Firmware Only)

In this topic:

Frequency

Description	Command

Center freq	[:SENSe]:FREQuency:CENTer
Step size for up/down keys	[:SENSe]:FREQuency:CENTer:STEP
Step size auto/manual	[:SENSe]:FREQuency:CENTer:STEP:AUTO
Freq span	[:SENSe]:FREQuency:SPAN
Span to full	[:SENSe]:FREQuency:SPAN:FULL
Start freq	[:SENSe]:FREQuency:STARt
Stop freq	[:SENSe]:FREQuency:STOP
Frequency annotation method	[:SENSe]:FREQuency:ANNotation[:SELect]

Gain/Atten

Attenuation value	[:SENSe]:POWer[:RF]:ATTenuation
Atten Auto/Manual	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set external gain value	[:SENSe]:POWer[:RF]:EXTGain
Preamp ON/OFF/AUTO	[:SENSe]:POWer[:RF]:GAIN[:STATe]

Sweep

Selects between Density, Spectrogram, & Real-Time Spectrum traces	[:SENSe]:MEASure
Selects the acquisition time in the Density & Real-time Traces.	[:SENSe]:ACQuisition:TIME
Sets the acquisition time in the Density & Real-time Traces to AUTO.	[:SENSe]:ACQuisition:TIME:AUTO

Scale / Units

Per division	DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision
Reference level	DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel
Reference position	DISPlay:WINDow:TRACe:Y[:SCALe]:RPOSition

Average

Average count	[:SENSe]:AVERage:COUNt
Restart trace averaging	INITiate:RESTart

Res Bandwidth / IF Path

IF Path (Narrow/Wide) - *B models only*	[:SENSe]:IFPath
Manual Res BW value	[:SENSe]:BANDwidth[:RESolution]
Choose Auto or Manual Res BW	[:SENSe]:BANDwidth[:RESolution]:AUTO
Query ration of Span to Res BW	[:SENSe]:FREQuency:SPAN:BANDwidth[:RESoulution]:RATio?

Trace Type/Detector

Set Trace Type	TRACe{1:4}:TYPE
Retrieves trace data	TRACe:DATA?
Defaults all traces back to their default state	TRACe:PRESet:ALL
Returns the current trace X-values	TRACe{1:4}:XVALue
Detector function	[:SENSe]:DETector:TRACe{1:4}:FUNCtion

Alignments (includes InstAlign)

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:AMPLitude:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]
RF burst now	[:SENSe]:ALIGnment:BURSt:NOW
RF burst state	[:SENSe]:ALIGnment:BURSt[:STATe]
Fast channel equalization alignment (enable/disable)	[:SENSe]:ALIGnment:CHEQ:FAST
Channel equalization now	[:SENSe]:ALIGnment:CHEQ:NOW
Channel equalization state	[:SENSe]:ALIGnment:CHEQ[:STATe]

Alignments (Channel Equalization State)

Fast channel equalization alignment (enable/disable)	[:SENSe]:ALIGnment:CHEQ:FAST
Channel equalization now	[:SENSe]:ALIGnment:CHEQ:NOW
Channel equalization state	[:SENSe]:ALIGnment:CHEQ[:STATe]

Limit / Display Lines

Display Line level setting	DISPlay:WINDow:TRACe:Y:DLINe
Display Line state	DISPlay:WINDow:TRACe:Y:DLINe:STATe

Markers

Select a marker	CALCulate:MARKer{1:6}:ACTivate
Markers - all off	CALCulate:MARKer{1:6}:AOFF
Markers - Fixed delta reference marker state.	CALCulate:MARKer{1:6}:DREF:FIXed
Marker search - Max	CALCulate:MARKer{1:6}:FUNCtion:MAXimum
Marker search - Min	CALCulate:MARKer{1:6}:FUNCtion:MINimum

Marker search - Peak excursion	CALCulate:MARKer{1:6}:FUNCtion:PEXCursion
Marker search - Peak left	CALCulate:MARKer{1:6}:FUNCtion:PLEFt
Marker search - Peak Next	CALCulate:MARKer{1:6}:FUNCtion:PNEXt
Marker search - Peak right	CALCulate:MARKer{1:6}:FUNCtion:PRIGht
Marker search - Peak threshold	CALCulate:MARKer{1:6}:FUNCtion:PTHReshold
Move marker to center freq	CALCulate:MARKer{1:6}:SET:CENTer
Move marker to ref level	CALCulate:MARKer{1:6}:SET:REFLevel
Marker On/Off	CALCulate:MARKer{1:6}[:STATe]
Move marker to other trace	CALCulate:MARKer{1:6}:TRACe
Move/read marker X-axis position	CALCulate:MARKer{1:6}:X
Read marker Y-axis position	CALCulate:MARKer{1:6}:Y?
Enable/Disables a displayed marker table	:DISPlay:TABle:MARKer

Read / Save Data

See Also: Read Current Channel Measurement Data

Read Trace Data	TRACe{1:4}:DATA
Saves trace to CSV file.	MMEMory:STORe:FDATa

Source

Trigger Settings

Auto trigger time	TRIGger[:SEQuence]:ATRigger
Auto trigger ON/OFF	TRIGger[:SEQuence]:ATRigger:STATe
Trigger Delay	TRIGger[:SEQuence]:DELay
Trigger Delay ON/OFF	TRIGger[:SEQuence]:DELay:STATe
Trigger Frame Offset value	TRIGger[:SEQuence]:FRAMe:OFFSet
Trigger Frame Offset Reset	TRIGger[:SEQuence]:FRAMe:OFFSet:DISPlay:RESet
Set the period of the internal periodic timer clock	TRIGger[:SEQuence]:FRAMe:PERiod
Sets the holdoff time between triggers	TRIGger[:SEQuence]:HOLDoff
Sets the level for the trigger	TRIGger[:SEQuence]:LEVel
Trigger Type (Ext/Vid/RFBurst/Freerun)	TRIGger[:SEQuence]:SOURce
Trigger Slope (Pos/Neg)	TRIGger[:SEQuence]:SLOPe

Frequency Extender Head

Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head corrections from SA mode	SYSTem:HEAD:CORRections[:STATe]
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD

Record/Playback Actions

Pause	RECPlayback:ACTion:PAUSe
Play	RECPlayback:ACTion:PLAY
Record	DLOGging:RECord:STARt
Tag position	RECPlayback:ACTion:SPOSition
Stop	RECPlayback:ACTion:STOP
Trace position	RECPlayback:ACTion:TPOSition

Record/Playback Configuration

Playback Time Interval	RECPlayback:CONFig:PRFTrace
Playback Time Interval	RECPlayback:CONFig:PRLTrace
Playback Time Interval	RECPlayback:CONFig:PTINterval
Record Segment Counting Length	RECPlayback:CONFig:RSCLength
Record Source	RECPlayback:CONFig:RSOurce
Record Time Interval	RECPlayback:CONFig:RTINerval
Record Time limit	RECPlayback:CONFig:RTLSeconds

Record/Playback Sessions

Clear all records	RECPlayback:SESSion:CARecords
Close	RECPlayback:SESSion:CLOSe
Records single, range, or all (batch) of trace data	RECPlayback:SESSion:CSSTyle
Create new session	RECPlayback:SESSion:NEW
Open session	RECPlayback:SESSion:OPEN?
Storage device	RECPlayback:SESSion:SDEVice

Trace record limit	RECPlayback:SESSion:TRLimit
Is a session open?	STATus:OPERation:SAMode:CONDition?

Density

Density blue limit percentage	[:SENSe]:DENSity:BPLevel
Density red limit percentage	[:SENSe]:DENSity:RPLevel
Persistense values	:DISPlay:VIEW:DENSity:PERSistence
Persistence Infinite (enables/disables)	:DISPlay:VIEW:DENSity:PERSistence:INFinite
Enables/Disables Show Density graphics	:DISPlay:VIEW:DENSity:STATe

Spectrogram

Spectrogram blue limit percentage	[:SENSe]:SPECtrogram:BPLevel
Spectrogram red limit percentage	[:SENSe]:SPECtrogram:RPLevel
Time per division values	[:SENSe]:SPECtrogram:TPDivision
View choice	[:SENSe]:SPECtrogram:VIEW

Last Modified:

14apr2020	Added for A.11.75 FW (Compatible with OTA, PAA, RTSA, & SA Modes)
14may2019	Added new commands (A11.25)
20-sep-2016	Added new RTSA mode commands (9.50)

I/Q Analyzer (IQA) Mode Commands (A.09.xx and Greater Firmware Only)

In I/Q Analyzer (IQA) mode there are two main types of measurements: Spectrum and Waveform.

Here is the recommended procedure when querying trace-data or using marker-data using SCPI commands:

1. Set the Measurement to the desired type, if not already set:
   - For Spectrum data, use the :CONFigure:SPECtrum command to set the measurement to Spectrum.
   - For Waveform data, use the :CONFigure:WAVeform command to set the measurement to Waveform.
2. Change to **Single** acquisition mode by using INITiate:CONTinuous **OFF**, if the unit is *not* already in Single acquisition mode.
3. Execute one acquisition by using INITiate:IMMediate.
4. Perform the data-query (trace and/or marker) using the corresponding SCPI command.

Caution: Data integrity is not guaranteed if the above sequence of steps are not followed.

In this topic:

- Frequency
- Gain/Atten
- Acquisition
- Scale / Units
- Average
- Video/ Resolution BW/ IF Path
- Measurement/Display
- Trace Type
- Alignments (InstAlign)
- Alignments (Channel Equalization State)
- Limit / Display Lines
- Markers
- Read / Save Data
- I/Q Capture
- Trigger Settings
- Frequency Extender Head
- FFT (Spectrum)
- Sample
- Waveform

See Also

- Commands that are Common to All Modes
- Status Registers

Frequency

Description	Command
Center	[:SENSe]:FREQuency:CENTer
Span	[SENSe]:SPECtrum:FREQuency:SPAN
Gain/Atten	
Attenuation value	[:SENSe]:POWer[:RF]:ATTenuation
Atten Auto/Manual	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
External gain	[:SENSe]:POWer[:RF]:EXTGain
Preamp state	[:SENSe]:POWer[:RF]:GAIN:AUTO
Preamp ON/OFF	[:SENSe]:POWer[:RF]:GAIN[:STATe]
Acquisition	
Enable/Disable acquisition mode	INITiate:CONTinuous
Restart trace averaging	INITiate:RESTart
Scale / Units	

Auto Scale (IMAGinary)	TRACe:IMAGinary:Y:AUTO
Per division (IMAGinary)	TRACe:IMAGinary:Y:PDIVision
Reference level (IMAGinary)	TRACe:IMAGinary:Y:RLEVel
Reference position (IMAGinary)	TRACe:IMAGinary:Y:RPOSition
Auto Scale (PHASe)	TRACe:PHASe:Y:AUTO
Per division (PHASe)	TRACe:PHAse:Y:PDIVision
Reference level (PHASe)	TRACe:PHASe:Y:RLEVel
Reference position (PHASe)	TRACe:PHASe:Y:RPOSition
Auto Scale (POLar)	TRACe:POLar:Y:AUTO
Reference level (POLar)	TRACe:POLar:Y:RLEVel
Auto Scale (REAL)	TRACe:REAL:Y:AUTO
Per division (REAL)	TRACe:REAL:Y:PDIVision
Reference level (REAL)	TRACe:REAL:Y:RLEVel
Reference position (REAL)	TRACe:REAL:Y:RPOSition
Log/Linear scale (SPECtrum)	TRACe:SPECtrum:AMPLitude:SCALe
Unit (SPECtrum)	TRACe:SPECtrum:AMPLitude:UNIT
Auto Scale (SPECtrum)	TRACe:SPECtrum:Y:AUTO
Per division (SPECtrum)	TRACe:SPECtrum:Y:PDIVision
Reference level (SPECtrum)	TRACe:SPECtrum:Y:RLEVel
Reference position (SPECtrum)	TRACe:SPECtrum:Y:RPOSition
Auto Scale (UPHase)	TRACe:UPHase:Y:AUTO
Per division (UPHase)	TRACe:UPHase:Y:PDIVision
Reference level (UPHase)	TRACe:UPHase:Y:RLEVel
Reference position (UPHase)	TRACe:UPHase:Y:RPOSition
Log/Linear scale (RF Envelope)	TRACe:WAVeform:AMPLitude:SCALe
Unit (RF Envelope)	TRACe:WAVeform:AMPLitude:UNIT
Auto Scale (RF Envelope)	TRACe:WAVeform:Y:AUTO
Per division (RF Envelope)	TRACe:WAVeform:Y:PDIVision
Reference level (RF Envelope)	TRACe:WAVeform:Y:RLEVel
Reference position (RF Envelope)	TRACe:WAVeform:Y:RPOSition

Average

Average count	[:SENSe]:AVERage:COUNt
Averaging type	[:SENSe]:AVERage:TYPE
Restart trace averaging	INITiate:RESTart

Video / Res Bandwidth / IF Path

IF bandwidth (IF BW)	[:SENSe]:DIF:BANDwidth
IF Path (Narrow/Wide) - *B models only*	[:SENSe]:IFPath
Resolution bandwidth (Res BW)	[:SENSe]:SPECtrum:BANDwidth[:RESolution]
Resolution bandwidth mode (Res BW mode)	[:SENSe]:SPECtrum:BANDwidth[:RESolution]:AUTO

Measurement/Display

Configure query (Spectrum/Waveform)	:CONFigure?
Configure Spectrum command	:CONFigure:SPECtrum
Configure Waveform command	:CONFigure:WAVeform
Waveform view selection	:DISPlay:WAVeform:VIEW[:SELect]
Selected window	:DISPlay:WINDow[:SELect]
Window display trace (SPECtrum/WAVeform/PHASe/POLar/UPHase/REAL/IMAGinary/TIMesummary)	:DISPlay:WINDow<*n*>:DATA
Window State (Enable/Disable)	:DISPlay:WINDow<*n*>:STATe

Trace Type

Spectrum trace type	:TRACe:SPECtrum<*n*>:TYPE
Waveform trace type	:TRACe:WAVeform<*n*>:TYPE

Alignments (InstAlign)

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:AMPLitude:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:ALL:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]
RF burst now	[:SENSe]:ALIGnment:BURSt:NOW
RF burst state	[:SENSe]:ALIGnment:BURSt[:STATe]

Alignments (Channel Equalization State)

Fast channel equalization alignment (enable/disable)	[:SENSe]:ALIGnment:CHEQ:FAST
Channel equalization now	[:SENSe]:ALIGnment:CHEQ:NOW

Channel equalization state	[:SENSe]:ALIGnment:CHEQ[:STATe]

Limit / Display Lines

Display Line state	DISPlay:WINDow:TRACe:Y:DLINe:STATe
Display line (IMAGinary)	TRACe:IMAGinary:Y:DLINe
Display line (PHASe)	TRACe:PHASe:Y:DLINe
Display line (REAL)	TRACe:REAL:Y:DLINe
Display line (SPECtrum)	TRACe:SPECtrum:Y:DLINe
Display line (UPHase)	TRACe:UPHase:Y:DLINe
Display line (RF envelope)	TRACe:WAVeform:Y:DLINe

Markers

Markers all disabled (Spectrum)	CALCulate:SPECtrum:MARKer:AOFF
Continuous peak search (Spectrum) - (disable/enable)	CALCulate:SPECtrum:MARKer:CPSearch[:STATe]
Markers - Fixed delta reference marker state (Spectrum) - (disable/enable)	CALCulate:SPECtrum:MARKer:DREF:FIXed
Marker search - Peak excursion (Spectrum)	CALCulate:SPECtrum:MARKer:FUNCtion:PEXCursion
Marker search - Peak threshold (Spectrum)	CALCulate:SPECtrum:MARKer:FUNCtion:PTHReshold
Set Noise Marker and Band Power Marker (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:FUNCtion
Band power span	CALCulate:SPECtrum:MARKer:FUNCtion:BAND:SPAN
Band power mode	CALCulate:SPECtrum:MARKer:FUNCtion:BAND:SPAN:AUTO
Marker search - Maximum (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:FUNCtion:MAXimum
Marker search - Minimum (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:FUNCtion:MINimum
Marker search - Peak left (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:FUNCtion:PLEFt
Marker search - Peak right (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:FUNCtion:PRIGht
Read phase (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:PHASe?
Move marker to center frequency (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:SET:CENTer
Move marker to reference level (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:SET:RLEVel

Move marker to another specified trace (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:TRACe
Move/read marker X-axis position (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:X
Read marker Y-axis position (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>:Y?
Marker State (Spectrum)	CALCulate:SPECtrum:MARKer<*n*>[:STATe]
Markers - all disabled (Waveform)	CALCulate:WAVeform:MARKer:AOFF
Coupled marker X value (Waveform)	CALCulate:WAVeform:MARK:COUPle:X
Markers - coupled (Waveform)	CALCulate:WAVeform:MARKer:COUPle[:STATe]
Continuous peak search (Waveform) - (disable/enable)	CALCulate:WAVeform:MARKer:CPSearch[:STATe]
Fixed delta / reference markers (Waveform) - (disable/enable)	CALCulate:WAVeform:MARKer:DREF:FIXed
Marker search - Peak excursion (Waveform)	CALCulate:WAVeform:MARKer:FUNCtion:PEXCursion
Marker search - Peak threshold (Waveform)	CALCulate:WAVeform:MARKer:FUNCtion:PTHReshold
Set result trace to marker (Waveform)	CALCulate:WAVeform:MARKer<*n*>:DATA
Set Noise Marker and Interval Span Marker (Waveform)	CALCulate:WAVeform:MARKer<*n*>:FUNCtion
Interval span (Waveform)	CALCulate:WAVeform:MARKer:FUNCtion:INTerval:SPAN
Interval span mode (Waveform)	CALCulate:WAVeform:MARKer:FUNCtion:INTerval:SPAN:AUTO
Marker search - Maximum (Waveform)	CALCulate:WAVeform:MARKer<*n*>:FUNCtion:MAXimum
Marker search - Minimum (Waveform)	CALCulate:WAVeform:MARKer<*n*>:FUNCtion:MINimum
Marker search - Next Peak (Waveform)	CALCulate:WAVeform:MARKer<*n*>:FUNCtion:PNEXt
Move marker to another specified trace (Waveform)	CALCulate:WAVeform:MARKer<*n*>:TRACe
Move/read marker X-axis position (Waveform)	CALCulate:WAVeform:MARKer<*n*>:X
Read marker Y-axis position (Waveform)	CALCulate:WAVeform:MARKer<*n*>:Y?

Marker State (Waveform)	CALCulate:WAVeform:MARKer<*n*>[:STATe]
Display marker table (Spectrum)	DISPlay:TABLe:MARKer:SPECtrum
Display marker table (Waveform)	DISPlay:TABLe:MARKer:WAVeform

Read / Save

See Also: I/Q Capture

Store CSV file	MMEMory:STORe:FDATa
Store MAT file	MMEMory:STORe:MAT
Store SDF file	MMEMory:STORe:SDF
Store TXT file	MMEMory:STORe:TXT
Reads the trace data (IMAGinary)	TRACe:IMAGinary:DATA?
Reads the trace data (PHASe)	TRACe:PHASe:DATA?
Reads the trace data (POLar)	TRACe:POLar:DATA?
Reads the trace data (REAL)	TRACe:REAL:DATA?
Reads the trace data (SPECtrum)	TRACe:SPECtrum<*n*>:DATA?
Reads the raw I/Q data (SPECtrum)	TRACe:SPECtrum:RAWiq?
Returns the trace data (UPHase)	TRACe:UPHase:DATA?
Reads the trace data (RF Envelope)	TRACe:WAVeform<*n*>:DATA?
Reads the raw I/Q data (WAVeform)	TRACe:WAVeform:RAWiq?

I/Q Capture

See Also: Read / Save

Initiate I/Q capture	INITiate:IQCapture
Device storage (i.e., INT, USB, or SD)	MMEMory:STORe:IQCapture:DEVice
File count	MMEMory:STORe:IQCapture:FCOunt
File count mode	MMEMory:STORe:IQCapture:FCOunt:MULTiple
File name	MMEMory:STORe:IQCapture:FNAMe
File type (i.e., CSV, TXT, SDF, or MAT)	MMEMory:STORe:IQCapture:FTYPe
Start data capture	MMEMory:STORe:IQCapture:STARt
Stop data capture	MMEMory:STORe:IQCapture:STOP

Capture length	[:SENSe]:MEASure:CAPTure:LENGth
Capture time	[:SENSe]:MEASure:CAPTure:TIME
Reads the I/Q data	TRACe:IQCapture:DATA?

Trigger Settings

Auto trigger time	TRIGger[:SEQuence]:ATRigger
Auto trigger ON/OFF	TRIGger[:SEQuence]:ATRigger:STATe
Trigger Delay (EXTernal)	TRIGger[:SEQuence]:EXTernal:DELay
Trigger Delay ON/OFF (EXTernal)	TRIGger[:SEQuence]:EXTernal:DELay:STATe
Trigger slope (Pos/Neg) - (EXTernal)	TRIGger[:SEQuence]:EXTernal:SLOPe
Trigger Delay (RFBurst)	TRIGger[:SEQuence]:RFBurst:DELay
Trigger Delay ON/OFF (RFBurst)	TRIGger[:SEQuence]:RFBurst:DELay:STATe
Glitch Mask (RFBurst)	TRIGger[:SEQuence]:RFBurst:GLIMask
Trigger Level (RFBurst)	TRIGger[:SEQuence]:RFBurst:LEVel
Trigger slope (Pos/Neg) - (RFBurst)	TRIGger[:SEQuence]:RFBurst:SLOPe
Trigger type (Freerun/External/Video/RF Burst)	TRIGger[:SEQuence]:SOURce
Trigger Delay (VIDeo)	TRIGger[:SEQuence]:VIDeo:DELay
Trigger Delay ON/OFF (VIDeo)	TRIGger[:SEQuence]:VIDeo:DELay:STATe
Trigger Level (VIDeo)	TRIGger[:SEQuence]:VIDeo:LEVel
Trigger slope (Pos/Neg) - (VIDeo)	TRIGger[:SEQuence]:VIDeo:SLOPe

Frequency Extender Head

Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head corrections from SA mode	SYSTem:HEAD:CORRections[:STATe]
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD

FFT (Spectrum)

FFT analysis length	[:SENSe]:SPECtrum:FFT:ANALysis:LENGth
FFT window length control (Enable/Disable)	[:SENSe]:SPECtrum:FFT:LENGth:AUTO
FFT window	[:SENSe]:SPECtrum:FFT:WINDow

Sample

Sample period	[:SENSe]:MEASure:SPERiod
Sample rate	[:SENSe]:MEASure:SRATe

Waveform

Start time	[:SENSe]:WAVeform:STARt
Stop time	[:SENSe]:WAVeform:STOP

Last Modified:

20apr2020	New commands (A.11.75)
14may2019	Added new commands (A.11.25)
01nov2017	Added I/Q Mode (10.15)

EMI Mode Commands

In this topic:

- Read / Save Data
- Independent Source / Tracking Generator
- Source Tracking Offset
- USB Antenna (USB)
- Frequency Extender Head
- General Status

See Also

- Commands that are Common to All Modes
- Status Registers

EMI Mode Specific

Description	Command
Set the CISPR band (A | B | C | D | E)	[:SENSe]:CISPr:BAND
Set the EMI detector trace function	[:SENSe]:EDETector:TRACe{1:4}[:FUNCtion]
Enable/Disable the log axis view	[:SENSe]:FREQuency:AXIS:LOG
Manually set the APD resolution bandwidth	[:SENSe]:BANDwidth:APD[:RESolution]
Set the APD resolution bandwidth to automatic	[:SENSe]:BANDwidth:APD[:RESolution]:AUTO
Manually set the EMI resolution bandwidth	[:SENSe]:BANDwidth:EMI[:RESolution]
Set the EMI resolution bandwidth to automatic	[:SENSe]:BANDwidth:EMI[:RESolution]:AUTO
Set the EMI measurement type (FBSC | CBSC | CZSC | SAPD)	[:SENSe]:MEASurement[:SELect]
Set the APD statistics dwell time when the internal source steps to the next frequency	[:SENSe]:SWEep:ADP:DWELl
Set the EMI dwell time when the internal source steps to the next frequency	[:SENSe]:SWEep:EMI:DWELl
Sets the trace value for the APD statistics input (CCDF | Historgram)	TRACe{1:4}:APD:INPut.

Frequency

Description	Command
Center freq	[:SENSe]:FREQuency:CENTer
Step size for up/down keys	[:SENSe]:FREQuency:CENTer:STEP

Step size auto/manual	[:SENSe]:FREQuency:CENTer:STEP:AUTO
Freq span	[:SENSe]:FREQuency:SPAN
Span to full	[:SENSe]:FREQuency:SPAN:FULL
Span to zero	[:SENSe]:FREQuency:SPAN:ZERO
Start freq	[:SENSe]:FREQuency:STARt
Stop freq	[:SENSe]:FREQuency:STOP
Frequency annotation method	[:SENSe]:FREQuency:ANNotation[:SELect]

Gain/Atten

Attenuation value	[:SENSe]:POWer[:RF]:ATTenuation
Atten Auto/Manual	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set external gain value	[:SENSe]:POWer[:RF]:EXTGain
Preamp ON/OFF	[:SENSe]:POWer[:RF]:GAIN[:STATe]
Read number of traces.	[:SENSe]:QUANtity:TACTive?

Sweep

Sweep time (Non-zerospan)	[:SENSe]:SWEep:ACQuisition
Sweep time (Zerospan)	[:SENSe]:SWEep:TIME
Read sweep time	[:SENSe]:SWEep:MTIMe?
Auto / Manual	[:SENSe]:SWEep:ACQuisition:AUTO
Sweep points	[:SENSe]:SWEep:POINts
Sweep Type	[:SENSe]:SWEep:TYPe
Reverse sweep (Step sweep and Opt. 209 only)	[:SENSe]:FREQuency:SPAN:DREVerse

Scale / Units

Auto Scale trace	DISPlay:WINDow:TRACe:Y[:SCALe]:AUTO
Per division	DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision
Reference level	DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel
Reference position	DISPlay:WINDow:TRACe:Y[:SCALe]:RPOSition
Log / Linear scale	[:SENSe]:AMPLitude:SCALe
Set Units	[:SENSe]:AMPLitude:UNIT
Read ONLY - Bottom scale value	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:BOTTom
Read ONLY - Top scale value	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:TOP

Average

Average count	[:SENSe]:AVERage:COUNt
Averaging type	[:SENSe]:AVERage:TYPE
Restart trace averaging	INITiate:RESTart

Video / Res Bandwidth

Manual Res BW value	[:SENSe]:BANDwidth[:RESolution]
Choose Auto or Manual Res BW	[:SENSe]:BANDwidth[:RESolution]:AUTO
Manual Video BW value	[:SENSe]:BANDwidth:VIDeo
Choose Auto or Manual Video BW	[:SENSe]:BANDwidth:VIDeo:AUTO
IF Output	[:SENSe]:BANDwidth:IF:OUT

Trace Type/Detector

Set Trace Type	TRACe{1:4}:TYPE
Returns the current trace X-values	TRACe{1:4}:XVALue
Detector function	[:SENSe]:DETector:FUNCtion

Alignments (InstAlign)

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:AMPLitude:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]
RF burst now (Not applicable to ERTA)	[:SENSe]:ALIGnment:BURSt:NOW
RF burst state (Not applicable to ERTA)	[:SENSe]:ALIGnment:BURSt[:STATe]

Instrument

Query a file catalog	:INSTrument:CATalog?
Enables front panel key press control	:INSTrument:GTL
Disables front panel key press control (Lockout)	:INSTrument:GTR
Set and query the status of the remote SCPI lockout	:INSTrument:RLOCkout:DISable
Sets the current mode	:INSTrument[:SELect]

Limit / Display Lines

Limit line beep	CALCulate[:SELected]:LIMit:SOUNd
Create limit lines	CALCulate:LIMit:LLData

Limit line testing state	CALCulate:LIMit[:STATe]
Limit line testing annotation	CALCulate:LIMit:WARN
Display Line level setting	DISPlay:WINDow:TRACe:Y:DLINe
Display Line state	DISPlay:WINDow:TRACe:Y:DLINe:STATe
Read Pass/Fail	STATus:QUEStionable:LIMit:CONDition?
Build Limit from Trace	None

Read / Save Data

See Also: Read Current Channel Measurement Data

Read Trace Data	TRACe{1:4}:DATA
Saves trace to CSV file.	MMEMory:STORe:FDATa

Independent Source / Tracking Generator

CW or S/R	SOURce:MODE
CW Frequency	SOURce:FREQuency[:CW]
Normalize	SOURce:NORMalize
Power Level (All models EXCEPT N9912A)	SOURce:POWer
Max Power (All models EXCEPT N9912A)	SOURce:POWer:MAXimum
Attenuation (power) N9912A ONLY	SOURce:POWer:ATTenuation
Enable Source Tracking	SOURce:TRACking

Field Strength (Corrections)

All corrections OFF	[:SENSe]:AMPLitude:CORRections:DISable
All corrections ON	[:SENSe]:AMPLitude:CORRections[:STATe] (SUPERSEDED)

Source Tracking Offset

Enable	SOURce:TOFFset:ENABle
Set frequency	SOURce:TOFFset:FREQuency
Reverse frequency	SOURce:TOFFset:REVerse

Receiver (or ONLY one) Antenna/Cables

Antenna corrections ON	[:SENSe]:AMPLitude:CORRections:ANTenna[:STATe]
Cable corrections ON	[:SENSe]:AMPLitude:CORRections:CABLe[:STATe]
Load Antenna file	MMEMory:LOAD:ANTenna
Store Antenna file	MMEMory:STORe:ANTenna

Clear Antenna correction values	[:SENSe]:AMPLitude:CORRections:ANTenna:DEFault
Load Cable file	MMEMory:LOAD:CABLe
Store Cable file	MMEMory:STORe:CABLe
Clear Cable correction values	[:SENSe]:AMPLitude:CORRections:CABLe:DEFault

Source Antenna/Cables

Antenna corrections ON	[:SENSe]:AMPLitude:CORRections:SANTenna[:STATe]
Cable corrections ON	[:SENSe]:AMPLitude:CORRections:SCABle[:STATe]
Load Antenna file	MMEMory:LOAD:SANTenna
Store Antenna file	MMEMory:STORe:SANTenna
Clear Antenna correction values	[:SENSe]:AMPLitude:CORRections:SANTenna:DEFault
Load Cable file	MMEMory:LOAD:SCABle
Store Cable file	MMEMory:STORe:SCABle
Clear Cable correction values	[:SENSe]:AMPLitude:CORRections:SCABle:DEFault

USB Triaxial Antenna

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and	[:SENSe]:ANTenna:DISPlay:POLar:ANGle

trace	
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Presets the antenna	SYSTem:PRESet:ANTenna

Frequency Extender Head

SA Mode Frequency Converter Only:	
Enable/disables frequency converter corrections of head	[:SENSe]:AMPLitude:CORRections:CONVerter:DEFault
Clears the frequency converter corrections table	[:SENSe]:AMPLitude:CORRections:CONVerter[:STATe]
Recalls a frequency converter corrections file (*csv)	MMEMory:LOAD:CONVerter
Saves a freqeuncy converter corrections file (*csv)	MMEMory:STORe:CONVerter
All Frequency Converter Compatible Modes:	
Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head corrections from SA mode	SYSTem:HEAD:CORRections[:STATe]
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD

General Status

ADC Over-range status	CALCulate:MEASurement:WAOR?

Last Modified:

01june2022	New commands (A12.4x)
17aug2021	New mode and commands (A12.3x)

A 5G NR Mode Commands (Option 378) - Requires SA and GPS

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Configure

Query the current mode	CONFigure?
Set the mode to 5G NR	CONFigure:NR5G

Data

Returns a set of values with GPS information.	NR5G:DATA:GPS?
Returns a set of values without GPS information.	NR5G:DATA?

Display

Sets the trace data type (DMRS | RSRP | RSRQ | RSSI | PSS | SSS | SINR)	DISPlay:NR5G:TRACe:DATA
Set the selected window to be displayed.	DISPlay:NR5G:WINDow[:SELect]
Sets the bar chart display color coding scheme.	DISPlay:NR5G:WINDow<*n*>:BCHart:CCODing
Set and query the component carrier (cc).	DISPlay:NR5G:WINDow<n>:CCARrier
Set the window trace type (Table, Bar Chart, Spectrum, Strip Chart).	DISPlay:NR5G:WINDow<n>:DATA
Set and query the multi-beam state for the window.	DISPlay:NR5G:WINDow<n>:MBEAm
Sets the PCI filter value of the results displayed in the window	DISPlay:NR5G:WINDow<n>:PCI
Set and query the PCI mode of the results displayed in the window.	DISPlay:NR5G:WINDow<n>:PCI:MODe
Sets the order of the data sorting (AUTO | UP | DOWN)	DISPlay:NR5G:WINDow<n>:SORT:DATA
Sets the type of data being sorted (RSRP | RSRQ |RSSI | PSS | SSS | SINR)	DISPlay:NR5G:WINDow<n>:SORT:ORDer
Set the selected window state.	DISPlay:NR5G:WINDow<n>:STATe

Frequency / Carrier (Includes SSB)

Set and query the frequency error threshold	[:SENSe]:NR5G:FERRor:THReshold
Set and query the component carrier band	[:SENSe]:NR5G:CCARrier<n>:BAND
Set and query the Channel ARFCN for the Component Carrier (CC)	[:SENSe]:NR5G:CCARrier<n>:CARFcn
Set and query the component carrier's enable/disable state	[:SENSe]:NR5G:CCARrier<n>:ENABle
Set and query the center frequency of each component carrier (CC)	[:SENSe]:NR5G:CCARrier<n>:FREQuency:CENTer

Set and query the frequency offset of each component carrier (CC)	[:SENSe]:NR5G:CCARrier<n>:FREQuency:OFFSet
Set and query the component carrier mode (CHANnel | FREQuency)	[:SENSe]:NR5G:CCARrier<n>:MODE
Set and query the NR5G raster mode (CHANnel or SYNChronization raster)	[:SENSe]:NR5G:CCARrier<n>:RMODe
Set and query the Synchronization ARFCN for the Component Carrier (CC)	[:SENSe]:NR5G:CCARrier<n>:SARFcn
Set and query the Synchronization GSCNor the Component Carrier (CC)	[:SENSe]:NR5G:CCARrier<n>:SGSCn
Set and query the measurement capture length	[:SENSe]:NR5G:CLENgth
Set and query the measurement drive speed	[:SENSe]:NR5G:DSPeed
Set and query the signal Lmax case.	[:SENSe]:NR5G:LMAX
Set and query the EMF measurement state.	[:SENSe]:NR5G:MEASure:EMF
Set and query the EMF units.	[:SENSe]:NR5G:MEASure:EMF:UNIT
Set and query the DMRS measurement state	[:SENSe]:NR5G:MEASure:SS:DRMS
Set and query the phase compensation measurement state.	[:SENSe]:NR5G:PCOMp
Set and query the signal SCS	[:SENSe]:NR5G:SCS
Set and query the SSB offset detection bandwidth.	[:SENse]:NR5G:SSB:ODETection:BANDwidth
Set and query the SSB offset detection copy Component Carrier (CC) state.	[:SENse]:NR5G:SSB:ODETection:RESults:COPY:CCARier
Copies the SSB Frequency result of the selected Component Carrier (CC) to the corresponding CC Center Frequency.	[:SENse]:NR5G:SSB:ODETection:SFReq:COPY
Copies the SSB Offset result of the selected Component Carrier (CC) to the corresponding CC Offset Frequency.	[:SENse]:NR5G:SSB:ODETection:SOFFset:COPY

Set and query the SSB offset detection is set to snap to the synchronization raster.	[:SENse]:NR5G:SSB:ODETection:SRASter:SNAP
Set and query the SSB Offset measurement state.	[:SENse]:NR5G:SSB:ODETection[:ENABle]
Set and query the signal SSB case	[:SENSe]:NR5G:SSBCase

LTE Coexistence

Set and query the component carrier (cc) to be measured.	[:SENSe]:NR5G:COEXistence:CC
Set and query the LTE coexistence duplex type.	[:SENSe]:NR5G:COEXistence:LTE:DUPLex
Set and query the display type (TABLe / Bar chart STacked).	[:SENSe]:NR5G:COEXistence:DISPlay:TYPE
Set and query the LTE coexistence state.	[:SENSe]:NR5G:COEXistence[:ENABled]

Synchronization Single Block (SSB)

Set and query the SSB offset detection bandwidth.	[:SENSe]:NR5G:SSB:ODETection:BANDwidth
Set and query the SSB offset detection copy Component Carrier (CC) state.	[:SENSe]:NR5G:SSB:ODETection:RESults:COPY:CCARier
Copies the SSB Frequency result of the selected Component Carrier (CC) to the corresponding CC Center Frequency.	[:SENSe]:NR5G:SSB:ODETection:SFREq:COPY
Copies the SSB Offset result of the selected Component Carrier (CC) to the corresponding CC Offset Frequency.	[:SENSe]:NR5G:SSB:ODETection:SOFFset:COPY
Set and query the SSB offset detection is set to snap to the synchronization raster.	[:SENSe]:NR5G:SSB:ODETection:SRASter:SNAP
Set and query the SSB Offset measurement state.	[:SENSe]:NR5G:SSB:ODETection[:ENABle]
Set and query the signal SSB case	[:SENSe]:NR5G:SSBCase

Alignments

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:AMPLitude:NOW

InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]

Measure

Set and query the OTA mode	INSTrument:SELect
Auto Scale the bar chart scan data	DISPlay:NR5G:BCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Bar Graph data	DISPlay:NR5G:BCHart:Y[:SCALe]:PDIVision
Set and query the Bar Chart reference value	DISPlay:NR5G:BCHart:Y[:SCALe]:RLEVel
Auto Scale the Strip chart scan data	DISPlay:NR5G:SCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Strip Chart data	DISPlay:NR5G:SCHart:Y[:SCALe]:PDIVision
Set and query the Strip Chart reference value	DISPlay:NR5G:SCHart:Y[:SCALe]:RLEVel
Auto Scale the Spectrum chart scan data	DISPlay:NR5G:SPECtrum:Y[:SCALe]:AUTO
Set and query the per division value of the Spectrum data	DISPlay:NR5G:SPECtrum:Y[:SCALe]:PDIVision
Set and query the Spectrum reference value	DISPlay:NR5G:SPECtrum:Y[:SCALe]:RLEVel
Set and query the reference position of the Spectrum trace	DISPlay:NR5G:SPECtrum:Y[:SCALe]:RPOSition

Power

Executes Auto-Range	[:SENSe]:POWer[:RF]:ARANge
Set the RF attenuator value manually	[:SENSe]:POWer[:RF]:ATTenuation
Set the RF attenuator to Auto	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set the external Gain	[:SENSe]:POWer[:RF]:EXTGain
Enable or disable the Gain state	[:SENSe]:POWer[:RF]:GAIN[:STATe]
Set the absolute power level	[:SENSe]:POWer[:RF]:RLEVel
Set the red bar chart limit	[:SENSe]:POWer[:RF]:RPLevel
Set the blue bar chart limit	[:SENSe]:POWer[:RF]:BPLevel

Trigger Settings

Sets the periodic trigger offset.	[:SENSe]:TRIGger[:SEQuence]:PERiodic:OFFSet
Resets the periodic trigger offset setting.	[:SENSe]:TRIGger[:SEQuence]:PERiodic:OFFSet:DISPlay:RESet

Sets the periodic trigger period between trigger events.	[:SENSe]:TRIGger[:SEQuence]:PERiodic:PERiod
Sets the sourced used to synchronize/intialize the periodic trigger.	[:SENSe]:TRIGger[:SEQuence]:PERiodic:SYNC
Auto trigger time	TRIGger[:SEQuence]:ATRigger
Auto trigger ON/OFF	TRIGger[:SEQuence]:ATRigger:STATe
Trigger Slope (Pos/Neg)	TRIGger[:SEQuence]:EXTernal:SLOPe
Trigger Delay	TRIGger[:SEQuence]:EXTernal:DELay
Trigger Delay ON/OFF	TRIGger[:SEQuence]:EXTernal:DELay:STATe
Trigger Type (Ext/Freerun)	TRIGger[:SEQuence]:SOURce

Frequency Extender Head

Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head corrections from SA mode	SYSTem:HEAD:CORRections[:STATe]
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD

Data Logging / Playback Actions

Enable or disable the log file auto-save	DLOGging:FILE:ASAVe
Sets the data log file save/recall folder location	DLOGging:FILE:FOLDer
Sets the log file save type	DLOGging:FILE:TYPe
Resume playback	DLOGging:PLAYback:PAUSe
Sets the position number of component carrier manually, when paused.	DLOGging:PLAYback:POSition
Play	DLOGging:PLAYback:STARt
Stop playback	DLOGging:PLAYback:STOP
Sets the data log playback state	DLOGging:PLAYback[:STATe]

Pause	DLOGging:RECord:PAUSe
Record	DLOGging:RECord:STARt
Stop recording	DLOGging:RECord:STOP
Query the state	DLOGging:RECord[:STATe]?
Save (.kml or .csv)	RECPlayback:ACTion:SAVE
Sets the position number of component carrier automatically, when paused.	RECPlayback:ACTion:POSition:AUTO

Record/Playback Configuration

Set the recording distance interval	DLOGgin:INTerval:DISTance
Set and query time interval in seconds	DLOGging:INTerval:TIME
Sets the measurement interval for saving records (TIME | DISTance)	DLOGging:INTerval:TYPE
Enables/Disables the measurement interval requirement for saving records	DLOGging:INTerval[:ENABled
Sets the device type storage location (INTernal | USB | SD)	RECPlayback:CONFig:FILE:DEVice
Sets the data storage type (KML | CSV)	RECPlayback:CONFig:FILE:TYPE

Sweep

Enables/disables continuous sweep	:INITiate:CONTinuous
Restarts the trace averaging	:INITiate:RESTart

USB Antenna

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt

Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STA Te
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Presets the antenna	SYSTem:PRESet:ANTenna

Mapping

Updates maps with current setting for latitude/longitude.	SYSTem:MAP:DISPlay:GOTO:GPS
Specify the name of a file in source folder and Unzip the results copied to a destination folder	SYSTem:MAP:DISPlay:IMPort

MMEMory comands - related to 5G NR

Save a file to the default folder	:MMEMory:STORe:FDATa
Load a *.csv or *.kml from an OTA recorder folder	:MMEMory:LOAD:DLOG

Last Modified:

01dec2020	Added new topic/commands (A12.1x)
01dec2019	Added new topic/commands (A11.5x)

5G NR EVM Conducted Commands (Option 378) - Requires SA and GPS

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Configure

Query the current mode	CONFigure?
Set the mode to 5G EVM Conducted	CONFigure:NREVm

Data

Returns a set of values with GPS information.	NREVm:DATA:GPS?
Returns a set of values without GPS information.	NREVm:DATA?

Display

Sets the trace data type (DMRS | RSRP | RSRQ | RSSI | PSS | SSS | SINR)	DISPlay:NREVm:TRACe:DATA

Set the selected demodulation trace type to be displayed (ALL | PSS | SSS | PBCH | PBCH DMRS)	DISPlay:NREVm:TRACe:DDATA
Set the selected window to be displayed.	DISPlay:NREVm:WINDow[:SELect]
Sets the bar chart display color coding scheme.	DISPlay:NREV:WINDow<*n*>:BCHart:CCODing
Set and query the component carrier (cc).	DISPlay:NREVm:WINDow<n>:CCARrier
Set the window trace type (Table, Bar Chart, Spectrum, Strip Chart, Constellation, and Frame).	DISPlay:NREVm:WINDow<n>:DATA
Sets the PCI filter value of the results displayed in the window	DISPlay:NREVm:WINDow<n>:PCI
Set and query the PCI mode of the results displayed in the window.	DISPlay:NREVm:WINDow<n>:PCI:MODe
Sets the order of the data sorting (AUTO | UP | DOWN)	DISPlay:NREVm:WINDow<n>:SORT:DATA
Sets the type of data being sorted (RSRP | RSRQ |RSSI | PSS | SSS | SINR)	DISPlay:NREVm:WINDow<n>:SORT:ORDer
Set the selected window state.	DISPlay:NREVm:WINDow<n>:STATe

Frequency / Carrier

Set and query the frequency band and bandwidth value	[:SENSe]:NREVm:BANDwidth
Set and query the component carrier's enable/disable state	[:SENSe]:NREVm:CCARrier<n>:ENABle
Set and query the component carrier center frequency	[:SENSe]:NREVm:CCARrier<n>:FREQuency:CENTer
Set and query the component carrier mode (CHANnel | FREQuency)	[:SENSe]:NREV:CCARrier<*n*>:MODE
Set and query the auto Cell ID value	[:SENSe]:NREVm:CID
Set and query the auto Cell ID state	[:SENSe]:NREVm:CID:AUTO
Set and query the Phase Compensation state	[:SENSe]:NREVm:PCOMp
Set and query the export Component Carrier (CC).	[:SENSe]:NREVm:RESults:EXPort:CCARrier

Export the results of the selected Component Carrier (CC) to the setup of the corresponding CC in the 5G NR submode.	[:SENSe]:NREVm:RESults:EXPort

Measure

Set and query the OTA mode	INSTrument:SELect
Auto Scale the bar chart scan data	DISPlay:NREVm:BCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Bar Graph data	DISPlay:NREVm:BCHart:Y[:SCALe]:PDIVision
Set and query the Bar Chart reference value	DISPlay:NREVm:BCHart:Y[:SCALe]:RLEVel
Auto Scale the Strip chart scan data	DISPlay:NREVm:SCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Strip Chart data	DISPlay:NREVm:SCHart:Y[:SCALe]:PDIVision
Set and query the Strip Chart reference value	DISPlay:NREVm:SCHart:Y[:SCALe]:RLEVel
Auto Scale the Spectrum chart scan data	DISPlay:NREVm:SPECtrum:Y[:SCALe]:AUTO
Set and query the per division value of the Spectrum data	DISPlay:NREVm:SPECtrum:Y[:SCALe]:PDIVision
Set and query the Spectrum reference value	DISPlay:NREVm:SPECtrum:Y[:SCALe]:RLEVel
Set and query the reference position of the Spectrum trace	DISPlay:NREVm:SPECtrum:Y[:SCALe]:RPOSition

Alignments

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:AMPLitude:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]

Power

Executes Auto-Range	[:SENSe]:POWer[:RF]:ARANge
Set the RF attenuator value manually	[:SENSe]:POWer[:RF]:ATTenuation
Set the RF attenuator to Auto	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set the external Gain	[:SENSe]:POWer[:RF]:EXTGain

Enable or disable the Gain state	[:SENSe]:POWer[:RF]:GAIN[:STATe]
Set the absolute power level	[:SENSe]:POWer[:RF]:RLEVel
Set the red bar chart limit	[:SENSe]:POWer[:RF]:RPLevel
Set the blue bar chart limit	[:SENSe]:POWer[:RF]:BPLevel

Trigger Settings

Sets the periodic trigger offset.	[:SENSe]:TRIGger[:SEQuence]:PERiodic:OFFSet
Resets the periodic trigger offset setting.	[:SENSe]:TRIGger[:SEQuence]:PERiodic:OFFSet:DISPlay:RESet
Sets the periodic trigger period between trigger events.	[:SENSe]:TRIGger[:SEQuence]:PERiodic:PERiod
Sets the sourced used to synchronize/intialize the periodic trigger.	[:SENSe]:TRIGger[:SEQuence]:PERiodic:SYNC
Auto trigger time	TRIGger[:SEQuence]:ATRigger
Auto trigger ON/OFF	TRIGger[:SEQuence]:ATRigger:STATe
Trigger Slope (Pos/Neg)	TRIGger[:SEQuence]:EXTernal:SLOPe
Trigger Delay	TRIGger[:SEQuence]:EXTernal:DELay
Trigger Delay ON/OFF	TRIGger[:SEQuence]:EXTernal:DELay:STATe
Trigger Type (Ext/Freerun)	TRIGger[:SEQuence]:SOURce

Frequency Extender Head

Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head corrections from SA mode	SYSTem:HEAD:CORRections[:STATe]
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD

Data Logging / Playback Actions

Enable or disable the log file auto-save	DLOGging:FILE:ASAVe
Sets the data log file save/recall folder location	DLOGging:FILE:FOLDer

Sets the log file save type	DLOGging:FILE:TYPe
Resume playback	DLOGging:PLAYback:PAUSe
Sets the position number of component carrier manually, when paused.	DLOGging:PLAYback:POSition
Play	DLOGging:PLAYback:STARt
Stop playback	DLOGging:PLAYback:STOP
Sets the data log playback state	DLOGging:PLAYback[:STATe]
Pause	DLOGging:RECord:PAUSe
Record	DLOGging:RECord:STARt
Stop recording	DLOGging:RECord:STOP
Query the state	DLOGging:RECord[:STATe]?
Sets the position number of component carrier automatically, when paused.	RECPlayback:ACTion:POSition:AUTO
Save (.kml or .csv)	RECPlayback:ACTion:SAVE

Record/Playback Configuration

Sets the device type storage location (INTernal | USB | SD)	RECPlayback:CONFig:FILE:DEVice
Sets the data storage type (KML | CSV)	RECPlayback:CONFig:FILE:TYPE
Set the recording distance interval	DLOGing:INTerval:DISTance
Enables/Disables the measurement interval requirement for saving records	DLOGging:INTerval[:ENABled]
Set and query time interval in seconds	DLOGing:INTerval:TIME
Sets the measurement interval for saving records (TIME | DISTance)	DLOGing:INTerval:TYPE

Sweep

Enables/disables continuous sweep	:INITiate:CONTinuous
Restarts the trace averaging	:INITiate:RESTart

USB Antenna

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence

Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Presets the antenna	SYSTem:PRESet:ANTenna

Mapping

Updates maps with current setting for latitude/longitude.	SYSTem:MAP:DISPlay:GOTO:GPS
Specify the name of a file in source folder and Unzip the results	SYSTem:MAP:DISPlay:IMPort

copied to a destination folder

MMEMory comands - related to 5G NR EVM Conducted

Save a file to the default folder	:MMEMory:STORe:FDATa
Load a *.csv or *.kml from an OTA recorder folder	:MMEMory:LOAD:DLOG

Last Modified:

01dec2020	Added new topic/commands (A12.1x)
01dec2019	Added new topic/commands (A11.5x)

5G TF Mode (Option 377) Commands - Requires SA and GPS

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Data

Returns a set of values with GPS information.	V5G:DATA:GPS?
Returns a set of values without GPS information.	V5G:DATA?

Sets the trace data type (PSS | SSS | POW)	DISPlay:V5G:TRACe:DATA

Display

Set the selected window to be displayed.	DISPlay:V5G:WINDow[:SELect]
Sets the bar chart display color coding scheme.	DISPlay:V5G:WINDow<*n*>:BCHart:CCODing
Set and query the component carrier (cc).	DISPlay:V5G:WINDow<n>:CCARrier
Set the window trace type (Table, Bar Chart, Spectrum, Strip Chart).	DISPlay:V5G:WINDow<n>:DATA
Sets the PCI filter value of the results displayed in the window	DISPlay:V5G:WINDow<n>:PCI
Set and query the PCI mode of the results displayed in the window.	DISPlay:V5G:WINDow<n>:PCI:MODe
Sets the order of the data sorting (AUTO | UP | DOWN)	DISPlay:V5G:WINDow<n>:SORT:DATA
Sets the type of data being sorted (PSS | SSS | POW)	DISPlay:V5G:WINDow<n>:SORT:ORDer
Set the selected window state.	DISPlay:V5G:WINDow<n>:STATe

Frequency / Carrier

Set and query the sync correlation threshold percentage	[:SENSe]:V5G:SCORr:THReshold
Set and query the selected carrier	[:SENSe]:V5G:CCARrier[1]|2|3|4|5|6|7|8:ENABle
Set and query the center frequency of each component carrier (CC)	[:SENSe]:V5G:CCARrier[1]|2|3|4|5|6|7|8:FREQuency:CENTer

Scale / Units

Auto Scale the bar chart scan data	DISPlay:V5G:BCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Bar Graph data	DISPlay:V5G:BCHart:Y[:SCALe]:PDIVision
Set and query the Bar Chart reference value	DISPlay:V5G:BCHart:Y[:SCALe]:RLEVel
Auto Scale the Strip chart scan data	DISPlay:V5G:SCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Strip Chart data	DISPlay:V5G:SCHart:Y[:SCALe]:PDIVision
Set and query the Strip Chart reference value	DISPlay:V5G:SCHart:Y[:SCALe]:RLEVel

Auto Scale the Spectrum chart scan data	DISPlay:V5G:SPECtrum:Y[:SCALe]:AUTO
Set and query the per division value of the Spectrum data	DISPlay:V5G:SPECtrum:Y[:SCALe]:PDIVision
Set and query the per division reference value of the Spectrum trace	DISPlay:V5G:SPECtrum:Y[:SCALe]:RLEVel
Set and query the reference position of the Spectrum trace	DISPlay:V5G:SPECtrum:Y[:SCALe]:RPOSition

Alignments (InstAlign)

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:AMPLitude:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]

Power

Executes Auto-Range	[:SENSe]:POWer[:RF]:ARANge
Set the RF attenuator value manually	[:SENSe]:POWer[:RF]:ATTenuation
Set the RF attenuator to Auto	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set the external Gain	[:SENSe]:POWer[:RF]:EXTGain
Enable or disable the Gain state	[:SENSe]:POWer[:RF]:GAIN[:STATe]
Set the absolute power level	[:SENSe]:POWer[:RF]:RLEVel
Set the red bar chart limit	[:SENSe]:POWer[:RF]:RPLevel
Set the blue bar chart limit	[:SENSe]:POWer[:RF]:BPLevel

Trigger Settings

Auto trigger time	TRIGger[:SEQuence]:ATRigger
Auto trigger ON/OFF	TRIGger[:SEQuence]:ATRigger:STATe
Trigger Type (Ext/Freerun)	TRIGger[:SEQuence]:SOURce
Trigger Slope (Pos/Neg)	TRIGger[:SEQuence]:EXTernal:SLOPe
Trigger Delay	TRIGger[:SEQuence]:EXTernal:DELay
Trigger Delay ON/OFF	TRIGger[:SEQuence]:EXTernal:DELay:STATe

Frequency Extender Head

Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head	SYSTem:HEAD:CORRections[:STATe]

corrections from SA mode	
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD

Data Logging / Playback Actions

Enable or disable the log file auto-save	DLOGging:FILE:ASAVe
Sets the data log file save/recall folder location	DLOGging:FILE:FOLDer
Sets the log file save type	DLOGging:FILE:TYPe
Resume playback	DLOGging:PLAYback:PAUSe
Sets the position number of component carrier manually, when paused.	DLOGging:PLAYback:POSition
Play	DLOGging:PLAYback:STARt
Stop playback	DLOGging:PLAYback:STOP
Sets the data log playback state	DLOGging:PLAYback[:STATe]
Pause	DLOGging:RECord:PAUSe
Record	DLOGging:RECord:STARt
Stop recording	DLOGging:RECord:STOP
Query the state	DLOGging:RECord[:STATe]?
Sets the position number of component carrier automatically, when paused.	RECPlayback:ACTion:POSition:AUTO
Save (.kml or .csv)	RECPlayback:ACTion:SAVE

Record/Playback Configuration

Sets the device type storage location (INTernal | USB | SD)	RECPlayback:CONFig:FILE:DEVice
Enables/Disables overwrite data filename	RECPlayback:CONFig:FILE:OWRite
Sets the data storage type (KML | CSV)	RECPlayback:CONFig:FILE:TYPE

Set the recording distance interval	DLOGing:INTerval:DISTance
Enables/Disables the measurement interval requirement for saving records	DLOGging:INTerval[:ENABled
Set and query time interval in seconds	DLOGing:INTerval:TIME
Sets the measurement interval for saving records (TIME | DISTance	DLOGging:INTerval:TYPE

USB Antenna

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency

Query the last measured point	[:SENSe]:ANTenna:RESult?
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Presets the antenna	SYSTem:PRESet:ANTenna

Mapping

Updates maps with current setting for latitude/longitude.	SYSTem:MAP:DISPlay:GOTO:GPS
Specify the name of a file in source folder and Unzip the results copied to a destination folder	SYSTem:MAP:DISPlay:IMPort

Sweep

Enables/disables continuous sweep	:INITiate:CONTinuous
Enable or Disable the averaging state	:INITiate:RESTart

MMEMory comands - related to 5GTF

Save a file to the default folder	:MMEMory:STORe:FDATa
Load a *.csv or *.kml from an OTA recorder folder	:MMEMory:LOAD:DLOG

Last Modified:

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01dec2019	Added new topic/commands (A11.5x)

LTE FDD Mode (Option 370) Commands - Requires SA and GPS

In this topic:

- Trigger Settings
- Frequency Extender Head
- Data Logging / Playback Actions
- Record Playback Configurations
- Sweep
- USB Antenna
- Related MMEMory commands

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Data

Returns a set of values with GPS information.	LTEFdd:DATA:GPS?
Returns a set of values without GPS information.	LTEFdd:DATA?

Display

Sets the trace data type (RSRP | RSRQ |RSSI | PSS | SSS | SINR)	DISPlay:LTEFdd:TRACe:DATA
Sets the bar chart display color coding scheme.	DISPlay:LTEFdd:WINDow[:SELect]
Sets the bar chart color coding scheme.	DISPlay:LTEFdd:WINDow<*n*>:BCHart:CCODing
Set and query the component carrier (cc).	DISPlay:LTEFdd:WINDow<n>:CCARrier
Set the window trace type (Table, Bar Chart, Spectrum, Strip Chart).	DISPlay:LTEFdd:WINDow<n>:DATA
Sets the PCI filter value of the results displayed in the window	DISPlay:LTEFdd:WINDow<n>:PCI
Set and query the PCI mode of the results displayed in the window.	DISPlay:LTEFdd:WINDow<n>:PCI:MODe
Sets the order of the data sorting (AUTO | UP | DOWN)	DISPlay:LTEFdd:WINDow<n>:SORT:DATA
Sets the type of data being sorted (RSRP | RSRQ |RSSI | PSS | SSS | SINR)	DISPlay:LTEFdd:WINDow<n>:SORT:ORDer
Set the selected window state.	DISPlay:LTEFdd:WINDow<n>:STATe

Favorites List

Set the current channel and band	[:SENSe]:LTEFdd:CCARrier:LIST[1]|2|3|4|5:ADD_

to a favorites setup	
Query the band in the current selected favorites setup	[:SENSe]:LTEFdd:CCARrier:LIST[1]|2|3|4|5:BAND?
Query the channel in the current selected favorites setup	[:SENSe]:LTEFdd:CCARrier:LIST[1]|2|3|4|5:CHANnel?
Remove the current channel and band favorites setup	[:SENSe]:LTEFdd:CCARrier:LIST[1]|2|3|4|5:REMove
Apply a favorites setup--band and channel--to a measurement	[:SENSe]:LTEFdd:CCARrier[1]|2|3|4|5:LIST[1]|2|3|4|5:APPLy

Frequency / Carrier

Set and query the frequency error threshold	[:SENSe]:LTEFdd:FERRor:THReshold
Set and query the extended frequency lock	[:SENSe]:LTEFdd:FLRange:EXTended
Set and query the component carrier band	[:SENSe]:LTEFdd:CCARrier[1]|2|3|4|5:BAND
Set and query the component carrier channel	[:SENSe]:LTEFdd:CCARrier[1]|2|3|4|5:CHANnel
Set and query the selected carrier	[:SENSe]:LTEFdd:CCARrier[1]|2|3|4|5:ENABle
Set and query the center frequency of each component carrier (CC)	[:SENSe]:LTEFdd:CCARrier[1]|2|3|4|5:FREQuency:CENTer
Set and query the component carrier mode (CHANnel | FREQuency)	[:SENSe]:LTEFdd:CCARrier[1]|2|3|4|5:MODE

Scale / Units

Auto Scale the bar chart scan data	DISPlay:LTEFdd:BCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Bar Graph data	DISPlay:LTEFdd:BCHart:Y[:SCALe]:PDIVision
Set and query the Bar Chart reference value	DISPlay:LTEFdd:BCHart:Y[:SCALe]:RLEVel
Auto Scale the Strip chart scan data	DISPlay:LTEFdd:SCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Strip Chart data	DISPlay:LTEFdd:SCHart:Y[:SCALe]:PDIVision
Set and query the Strip Chart reference valuef	DISPlay:LTEFdd:SCHart:Y[:SCALe]:RLEVel
Auto Scale the Spectrum chart scan data	DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:AUTO
Set and query the per division	DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:PDIVision

value of the Spectrum data	
Set and query the Spectrum reference value	DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:RLEVel
Set and query the reference position of the Spectrum trace	DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:RPOSition

Alignments (InstAlign)

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:AMPLitude:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]

Power

Executes Auto-Range	[:SENSe]:POWer[:RF]:ARANge
Set the RF attenuator value manually	[:SENSe]:POWer[:RF]:ATTenuation
Set the RF attenuator to Auto	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set the external Gain	[:SENSe]:POWer[:RF]:EXTGain
Enable or disable the Gain state	[:SENSe]:POWer[:RF]:GAIN[:STATe]
Set the absolute power level	[:SENSe]:POWer[:RF]:RLEVel
Set the red bar chart limit	[:SENSe]:POWer[:RF]:RPLevel
Set the blue bar chart limit	[:SENSe]:POWer[:RF]:BPLevel

Trigger Settings

Auto trigger time	TRIGger[:SEQuence]:ATRigger
Auto trigger ON/OFF	TRIGger[:SEQuence]:ATRigger:STATe
Trigger Slope (Pos/Neg)	TRIGger[:SEQuence]:EXTernal:SLOPe
Trigger Delay	TRIGger[:SEQuence]:EXTernal:DELay
Trigger Delay ON/OFF	TRIGger[:SEQuence]:EXTernal:DELay:STATe
Trigger Type (Ext/Freerun)	TRIGger[:SEQuence]:SOURce

Frequency Extender Head

Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head corrections from SA mode	SYSTem:HEAD:CORRections[:STATe]
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]

Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD

Data Logging / Playback Actions

Enable or disable the log file auto-save	DLOGging:FILE:ASAVe
Sets the data log file save/recall folder location	DLOGging:FILE:FOLDer
Sets the log file save type	DLOGging:FILE:TYPe
Resume playback	DLOGging:PLAYback:PAUSe
Sets the position number of component carrier manually, when paused.	DLOGging:PLAYback:POSition
Play	DLOGging:PLAYback:STARt
Stop playback	DLOGging:PLAYback:STOP
Sets the data log playback state	DLOGging:PLAYback[:STATe]
Pause	DLOGging:RECord:PAUSe
Record	DLOGging:RECord:STARt
Stop recording	DLOGging:RECord:STOP
Query the state	DLOGging:RECord[:STATe]?
Sets the position number of component carrier automatically, when paused.	RECPlayback:ACTion:POSition:AUTO
Save (.kml or .csv)	RECPlayback:ACTion:SAVE

Record/Playback Configuration

Sets the device type storage location (INTernal | USB | SD)	RECPlayback:CONFig:FILE:DEVice
Enables/Disables overwrite data filename	RECPlayback:CONFig:FILE:OWRite
Sets the data storage type (KML | CSV)	RECPlayback:CONFig:FILE:TYPE
Set the recording distance interval	DLOGing:INTerval:DISTance
Enables/Disables the measurement interval requirement	DLOGging:INTerval[:ENABled

for saving records	
Set and query time interval in seconds	DLOging:INTerval:TIME
Sets the measurement interval for saving records (TIME | DISTance)	DLOGing:INTerval:TYPE

USB Triaxial Antenna

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort

Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Presets the antenna	SYSTem:PRESet:ANTenna

Sweep

Enables/disables continuous sweep	:INITiate:CONTinuous
Restarts the trace averaging	:INITiate:RESTart

MMEMory comands - related to LTE FDD

Save a file to the default folder	:MMEMory:STORe:FDATa
Load a *.csv or *.kml from an OTA recorder folder	:MMEMory:LOAD:DLOG

Last Modified:

01dec2020	Added new topic/commands (A12.1x)
01dec2019	Added new topic/commands (A11.5x)

LTE TDD Mode (Option 372) Commands - Requires SA and GPS

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands

- Status Registers

Data

Returns a set of values with GPS information.	LTETdd:DATA:GPS?
Returns a set of values without GPS information.	LTETdd:DATA?

Display

Sets the trace data type (RSRP | RSRQ |RSSI | PSS | SSS | SINR)	DISPlay:LTETdd:TRACe:DATA
Sets the bar chart display color coding scheme.	DISPlay:LTETdd:WINDow[:SELect]
Sets the bar chart color coding scheme.	DISPlay:LTETdd:WINDow<*n*>:BCHart:CCODing
Set and query the component carrier (cc).	DISPlay:LTETdd:WINDow<n>:CCARrier
Set the window trace type (Table, Bar Chart, Spectrum, Strip Chart).	DISPlay:LTETdd:WINDow<n>:DATA
Sets the PCI filter value of the results displayed in the window	DISPlay:LTETdd:WINDow<n>:PCI
Set and query the PCI mode of the results displayed in the window.	DISPlay:LTETdd:WINDow<n>:PCI:MODe
Sets the order of the data sorting (AUTO | UP | DOWN)	DISPlay:LTETdd:WINDow<n>:SORT:DATA
Sets the type of data being sorted (RSRP | RSRQ |RSSI | PSS | SSS | SINR)	DISPlay:LTETdd:WINDow<n>:SORT:ORDer
Set the selected window state.	DISPlay:LTETdd:WINDow<n>:STATe

Favorites List

Set the current channel and band to a favorites setup	[:SENSe]:LTETdd:CCARrier:LIST[1]|2|3|4|5:ADD
Query the band in the current selected favorites setup	[:SENSe]:LTETdd:CCARrier:LIST[1]|2|3|4|5:BAND?
Query the channel in the current selected favorites setup	[:SENSe]:LTETdd:CCARrier:LIST[1]|2|3|4|5:CHANnel?
Remove the current channel and band favorites setup	[:SENSe]:LTETdd:CCARrier:LIST[1]|2|3|4|5:REMove
Apply a favorites setup--band and channel--to a measurement	[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:LIST[1]|2|3|4|5:APPLy

Frequency / Carrier

Set and query the frequency error threshold	[:SENSe]:LTETdd:FERRor:THReshold

Set and query the extended frequency lock	[:SENSe]:LTETdd:FLRange:EXTended
Set and query the component carrier band	[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:BAND
Set and query the component carrier channel	[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:CHANnel
Set and query the selected carrier	[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:ENABle
Set and query the center frequency of each component carrier (CC)	[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:FREQuency:CENTer
Set and query the component carrier mode (CHANnel | FREQuency)	[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:MODE

Scale / Units

Auto Scale the bar chart scan data	DISPlay:LTETdd:BCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Bar Graph data	DISPlay:LTETdd:BCHart:Y[:SCALe]:PDIVision
Set and query the Bar Chart reference value	DISPlay:LTETdd:BCHart:Y[:SCALe]:RLEVel
Auto Scale the Strip chart scan data	DISPlay:LTETdd:SCHart:Y[:SCALe]:AUTO
Set and query the per division value of the Strip Chart data	DISPlay:LTETdd:SCHart:Y[:SCALe]:PDIVision
Set and query the Strip Chart reference valuef	DISPlay:LTETdd:SCHart:Y[:SCALe]:RLEVel
Auto Scale the Spectrum chart scan data	DISPlay:LTETdd:SPECtrum:Y[:SCALe]:AUTO
Set and query the per division value of the Spectrum data	DISPlay:LTETdd:SPECtrum:Y[:SCALe]:PDIVision
Set and query the Spectrum reference value	DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:RLEVel
Set and query the reference position of the Spectrum trace	DISPlay:LTETdd:SPECtrum:Y[:SCALe]:RPOSition

Alignments (InstAlign)

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:AMPLitude:NOW

InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]

Power

Executes Auto-Range	[:SENSe]:POWer[:RF]:ARANge
Set the RF attenuator value manually	[:SENSe]:POWer[:RF]:ATTenuation
Set the RF attenuator to Auto	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set the external Gain	[:SENSe]:POWer[:RF]:EXTGain
Enable or disable the Gain state	[:SENSe]:POWer[:RF]:GAIN[:STATe]
Set the absolute power level	[:SENSe]:POWer[:RF]:RLEVel
Set the red bar chart limit	[:SENSe]:POWer[:RF]:RPLevel
Set the blue bar chart limit	[:SENSe]:POWer[:RF]:BPLevel

Trigger Settings

Auto trigger time	TRIGger[:SEQuence]:ATRigger
Auto trigger ON/OFF	TRIGger[:SEQuence]:ATRigger:STATe
Trigger Slope (Pos/Neg)	TRIGger[:SEQuence]:EXTernal:SLOPe
Trigger Delay	TRIGger[:SEQuence]:EXTernal:DELay
Trigger Delay ON/OFF	TRIGger[:SEQuence]:EXTernal:DELay:STATe
Trigger Type (Ext/Freerun)	TRIGger[:SEQuence]:SOURce

Frequency Extender Head

Sets frequency converter corrections to "Auto" or "Edit SA"	SYSTem:HEAD:CORRections:ASETup
Shares frequency extender head corrections from SA mode	SYSTem:HEAD:CORRections[:STATe]
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD

Data Logging / Playback Actions

Enable or disable the log file auto-save	DLOGging:FILE:ASAVe
Sets the data log file save/recall folder location	DLOGging:FILE:FOLDer

Sets the log file save type	DLOGging:FILE:TYPe
Resume playback	DLOGging:PLAYback:PAUSe
Sets the position number of component carrier manually, when paused.	DLOGging:PLAYback:POSition
Play	DLOGging:PLAYback:STARt
Stop playback	DLOGging:PLAYback:STOP
Sets the data log playback state	DLOGging:PLAYback[:STATe]
Pause	DLOGging:RECord:PAUSe
Record	DLOGging:RECord:STARt
Stop recording	DLOGging:RECord:STOP
Query the state	DLOGging:RECord[:STATe]?
Sets the position number of component carrier automatically, when paused.	RECPlayback:ACTion:POSition:AUTO
Save (.kml or .csv)	RECPlayback:ACTion:SAVE

Record/Playback Configuration

Sets the device type storage location (INTernal | USB | SD)	RECPlayback:CONFig:FILE:DEVice
Enables/Disables overwrite data filename	RECPlayback:CONFig:FILE:OWRite
Sets the data storage type (KML | CSV)	RECPlayback:CONFig:FILE:TYPE
Set the recording distance interval	DLOGing:INTerval:DISTance
Enables/Disables the measurement interval requirement for saving records	DLOGging:INTerval[:ENABled
Set and query time interval in seconds	DLOging:INTerval:TIME
Sets the measurement interval for saving records (TIME | DISTance)	DLOGing:INTerval:TYPE

USB Triaxial Antenna

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt

Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Presets the antenna	SYSTem:PRESet:ANTenna

Sweep

Enables/disables continuous sweep	:INITiate:CONTinuous
Restarts the trace averaging	:INITiate:RESTart

MMEMory comands - related to LTE FDD

Save a file to the default folder	:MMEMory:STORe:FDATa

Load a *.csv or *.kml from an OTA recorder folder	:MMEMory:LOAD:DLOG

Last Modified:

01dec2020	New mode (A12.2x)

Phased Array Antenna (PAA) Mode Commands

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Antenna

Set and query the antenna's angle of azimuth reference	[:SENSe]:ANTenna:ANGLe:AZIMuth:REFerence

value	
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
Presets the antenna	SYSTem:PRESet:ANTenna

Data

Set/query the data format for data transfer	:FORMat:BORDer
Set/query the data format that data is read (binary or ASCii)	:FORMat[:DATA]
Returns a set of values	:PAA:DATA?
Set and query the current measurement	:CALCulate:PARameter:DEFine

Display

Set/query display brightness	DISPlay:BRIGhtness
Set/query system date format	DISPlay:DATE:FMT
Enables/disables the FieldFox display	DISPlay:ENABle
Clears the heat graphics value	DISPlay:HEAT;GRAPhics:CLEar
Set and query the antenna's heat map marker azimuth value	DISPlay:HEAT:AZIMuth
Set and query the antenna's heat map marker elevation value	DISPlay:HEAT;MARKer:ELEVation
Set and query the antenna's heat map marker's status	DISPlay:HEAT:MARKer[:STATe]
Set/query keywords for creating filenames	DISPlay:KEYWord[:DATA]
Reset filename keywords to their default values	DISPlay:KEYWord:DEFault
new scpi?	DISPlay:SCREen:GEOMetry
Set/query the formatting of the system time	DISPlay:TIME:FMT
Set/query the FieldFox display data title	DISPlay:TITLe:DATA
Set/query the display title state	DISPlay:TITLe[:STATe]
Set display window trace Y Pow division	DISPLay:WINDow:TRACe:Y[:SCALe]:AUTO
Set display window trace Y Ref level	DISPLAy:WINDow:TRACe:Y[:SCALe]:RLEVel

Markers

Activate a marker	CALCulate[:SELected]:MARKer:ACTivate
Markers - all off	CALCulate[:SELected]:MARKer:AOFF
Markers - Fixed delta reference marker state.	CALCulate[:SELected]:MARKer:DREF:FIXed
Marker search - Max	CALCulate[:SELected]:MARKer:FUNCtion:MAXimum
Marker search - Min	CALCulate[:SELected]:MARKer:FUNCtion:MINimum
Marker search - Peak excursion	CALCulate[:SELected]:MARKer:FUNCtion:PEXCursion
Marker search - Peak next (left)	CALCulate[:SELected]:MARKer:FUNCtion:PLEFt
Marker search - Peak Next	CALCulate[:SELected]:MARKer:FUNCtion:PNEXt
Marker search - Peak next (right)	CALCulate[:SELected]:MARKer:FUNCtion:PRIGht

Marker search - Peak threshold	CALCulate[:SELected]:MARKer:FUNCtion:PTHReshold
Marker search - Target	CALCulate[:SELected]:MARKer:FUNCtion:TARGet
Marker search - Wrap/No Wrap	CALCulate[:SELected]:MARKer:FUNCtion:TDIRection
Tracking On/Off	CALCulate[:SELected]:MARKer:FUNCtion:TRACking
FieldFox setting => to marker location	CALCulate[:SELected]:MARKer:SET
Sets the marker to the center frequency	CALCulate[:SELected]:MARKer:SET:CENTer
Sets the marker to the reference level	CALCulate[:SELected]:MARKer:SET:REFLevel
Marker On/Off	CALCulate[:SELected]:MARKer[:STATe]
Marker => specified trace	CALCulate[:SELected]:MARKer:TRACe
Marker => specified X-axis location	CALCulate[:SELected]:MARKer:X
Read Marker Y-axis location	CALCulate[:SELected]:MARKer:Y?

Field Strength (Corrections)

All corrections OFF	[:SENSe]:AMPLitude:CORRections:DISable
All corrections ON	[:SENSe]:AMPLitude:CORRections[:STATe] (SUPERSEDED)

Calibration

Antenna corrections ON	[:SENSe]:AMPLitude:CORRections:ANTenna[:STATe]
Cable corrections ON	[:SENSe]:AMPLitude:CORRections:CABLe[:STATe]
Amplitude corrections ON	[:SENSe]:AMPLitude:CORRections[:STATe]
Clear Antenna correction values	[:SENSe]:AMPLitude:CORRections:ANTenna:DEFault
Clear Cable correction values	[:SENSe]:AMPLitude:CORRections:CABLe:DEFault

Receiver (or ONLY one) Antenna/Cables

Load Antenna file	MMEMory:LOAD:ANTenna
Store Antenna file	MMEMory:STORe:ANTenna
Load Cable file	MMEMory:LOAD:CABLe
Store Cable file	MMEMory:STORe:CABLe
Load image for Polar background	`MMEMory:LOAD:IMAGe:POLar`
Load a *.csv or *.kml log file	MMEMory:LOAD:DLOG

Saves a CSV, DREC, or KML file	MMEMory:STORe:DLOG
Data Logging and Recording	
Enable or disable the log file auto-save	DLOGging:FILE:ASAVe
Sets the data log file save/recall folder location	DLOGging:FILE:FOLDer
Sets the log file save type	DLOGging:FILE:TYPe
Read and writes the distance interval	DLOGging:INTerval:DISTance
Read and write the time interval	DLOGging:INTerval:TIMe
Set type of interval	DLOGging:INTerval:TYPe
Enable or disable the measurement interval	DLOGging:INTerval[:ENABled]
Resume playback	DLOGing:PLAYback:PAUSe
Sets the position number of component carrier manually, when paused.	DLOGging:PLAYback:POSition
Play	DLOGging:PLAYback:STARt
Stop playback	DLOGging:PLAYback:STOP
Sets the data log playback state	DLOGging:PLAYback[:STATe]
Pause	DLOGing:RECord:PAUSe
Begin recording results	DLOGging:RECord:STARt
Stop recording	DLOGging:RECord:STOP
Query the state	[:SENSe]:ANTenna:LOG[:STATe]?
File Commands	
Sets the user folder path to default or system	[:SENSe]:ANTenna:USER:FOLDer
Video / Res Bandwidth	
Manual Res BW value	[:SENSe]:BANDwidth[:RESolution]
Manual Video BW value	[:SENSe]:BANDwidth:VIDeo
Alignments (InstAlign)	
Enables Instalign, before the next sweep	[:SENSe]:ALIGnment:AMPLitude:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now (coupled to all individual	[:SENSe]:ALIGnment:AMPLitude:NOW

alignments)	
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]
Instrument	
Query a file catalog	INSTrument:CATalog?
Enables front panel key press control	INSTrument:GTL
Disables front panel key press control (Lockout)	INSTrument:GTR
Sets the remote lockout message	INSTrument:RLOCkout:DISable
Sets the current mode	INSTrument[:SELect]
Frequency Extender Head	
Enables/disables the high sensitivity state.	SYSTem:HEAD:HIGHsense[:STATe]
Sets the LO power for any installed OML head	SYSTem:HEAD:POWer
Enables/disables the frequency extender.	SYSTem:HEAD[:STATe]
Selects a frequency extender head file to load.	MMEM:LOAD:HEAD
GPS	
Sets the minimum satellite power, before computation	:SYSTem:GPS:AVERage:MINP
Enables/disables the satellite average settings	:SYSTem:GPS:AVERage[:STATe]
Sets the number of satellites to be viewed	:SYSTem:GPS:AVERage:TOPN
Query satellite carrier to noise	:SYSTem:GPS:CNOise?
Returns GPS data	:SYSTem:GPS:DATA?
Returns the last locked GPS data	:SYSTem:GPS:DATA:LAST?
Set and qjuery the coordinates (i.e., lat. & long.)	:SYSTem:GPS:DISPlay:COORdinate:FORMat
Set and query the elevation units	:SYSTem:GPS:DISPlay:DISTance:UNIT
Set and query the status line display state	:SYSTem:GPS:DISPlay:STATe
Set and query the type of satellite being measured	:SYSTem:GPS:GNSS
Returns the GPS lock state	:SYSTem:GPS:LSTate?

Set and query the GPS state	:SYSTem:GPS[:STATe]
Set and query the GPS clock sync state	:SYSTem:GPS:SYNChronize

Mapping

Updates maps with current setting for latitude/longitude.	SYSTem:MAP:DISPlay:GOTO:GPS
Specify the name of a file in source folder and Unzip the results copied to a destination folder	SYSTem:MAP:DISPlay:IMPort

Units

Set Units	[:SENSe]:AMPLitude:UNIT

Gain/Atten

Attenuation value	[:SENSe]:POWer[:RF]:ATTenuation
Atten Auto/Manual	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set external gain value	[:SENSe]:POWer[:RF]:EXTGain
Preamp ON/OFF/AUTO	[:SENSe]:POWer[:RF]:GAIN[:STATe]

Sweep

Enables/disables continuous sweep	:INITiate:CONTinuous
Enable single trace and then hold	:INITiate[:IMMediate
Restarts the trace averaging	:INITiate:RESTart

Average

Average count	[:SENSe]:AVERage:COUNt
Set and query the averaging state	[:SENSe]:AVERage[:ENABle]
Restart trace averaging	INITiate:RESTart

MMEMory comands - some of the compatible :MMEM commands

Returns file names	:MMEMory:CATalog?
Sets the active drive/directory	:MMEMory:CDIRectory
Copy file 1 to file 2	:MMEMory:COPY
Read/store block data	:MMEMory:DATA
Delete a file	:MMEMory:DELete
Loads a memory state file	:MMEMory:LOAD[:STATe]
Create a new folder	:MMEMory:MDIRectory
Renames/moves a file	:MMEMory:MOVE

Removes a folder, if it is empty	:MMEMory:RDIRectory
Saves the current formatted trace to a CSV/KML file	:MMEMory:STORe:FDATa
Saves the current FieldFox display to a PNG file.	:MMEMory:STORe:IMAGe
Saves the current FieldFox display (without the softkeys) to a PNG	:MMEMory:STORe:IMAGe:NOKeys
Saves antenna data as a MATLAB (MAT) file	:MMEMory:STORe:STORe:MAT
Saves antenna data as an SDF file	:MMEMory:STORe:SDF
Saves antenna data as an SNP file	:MMEMory:STORe:SNP[:DATa]
Saves the current settings to an instrument state file	:MMEMory:STORe[:STATe]
Save antenna data as TXT file	:MMEMory:STORe:TXT

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01dec2019	Added new topic/commands (A11.5x)

Antenna Mode Commands (PAA)

In this topic:

- Antenna

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers
- FOPS Feature

Antenna

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP

angle of azimuth stop value	
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVation:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP
Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Presets the antenna	SYSTem:PRESet:ANTenna

Last modified:

01-june-2018	New command (A.11.5x)

Mapping (Indoor/Outdoor) Commands

In this topic:

- Antenna
- Data
- Display
- Mapping
- Field Strength (Corrections)
- Calibration
- Receiver (or Only one) Antenna/Cables
- Data Logging and Recording
- File Commands
- Video / Res Bandwidth
- Alignments (InstAlign)
- Instrument
-
- GPS
- Units
- Gain/Atten
- Sweep
- Average
- Related MMEMory commands

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Antenna (Mapping Related)

Set and query the antenna's angle of azimuth reference value	[:SENSe]:ANTenna:ANGLe:AZImuth:REFerence
Set and query the antenna's angle of azimuth start value	[:SENSe]:ANTenna:ANGLe:AZImuth:STARt
Set and query the antenna's angle of azimuth step value	[:SENSe]:ANTenna:ANGLe:AZImuth:STEP
Set and query the antenna's angle of azimuth stop value	[:SENSe]:ANTenna:ANGLe:AZImuth:STOP
Set and query the elevation angle reference value	[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence
Set and query the antenna's angle of elevation start value	[:SENSe]:ANTenna:ANGLe:ELEVa on:STARt
Set and query the antenna's angle of elevation step value	[:SENSe]:ANTenna:ANGLe:ELEVation:STEP

Set and query the antenna's angle of elevation stop value	[:SENSe]:ANTenna:ANGLe:ELEVation:STOP
Sets the current azimuth angle	[:SENSe]:ANTenna:ANGLe:INDex:X
Sets the current elevation angle	[:SENSe]:ANTenna:ANGLe:INDex:Y
Sets the North angle on compass	[:SENSe]:ANTenna:COMPass:NORth
Display size of Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:ANGle
Sets the Polar display background image (i.e., if image loaded)	[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe
Sets the display compass on the polar display	[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe
Sets the display size of the Polar graph and trace	[:SENSe]:ANTenna:DISPlay:POLar:TYPe
Sets the antenna center frequency	[:SENSe]:ANTenna:FREQuency
Query the last measured point	[:SENSe]:ANTenna:RESult?
Presets the antenna	SYSTem:PRESet:ANTenna

Data

Set/query the data format for data transfer	:FORMat:BORDer
Set/query the data format that data is read (binary or ASCii)	:FORMat[:DATA]
Read data	:TRACe:DATA
Set and query the current measurement	:CALCulate:PARameter:DEFine

Display

Set/query display brightness	:DISPlay:BRIGhtness
Set/query system date format	:DISPlay:DATE:FMT
Enables/disables the FieldFox display	:DISPlay:ENABle
Clears the heat graphics value	:DISPlay:HEAT;GRAPhics:CLEar
Set and query the antenna's heat map marker azimuth value	:DISPlay:HEAT:MARKer:AZIMuth
Set and query the antenna's heat map marker elevation value	:DISPlay:HEAT:MARKer:ELEVation
Set and query the antenna's heat map marker's status	:DISPlay:HEAT:MARKer[:STATe]

Set/query keywords for creating filenames	:DISPlay:KEYWord[:DATA]
Reset filename keywords to their default values	:DISPlay:KEYWord:DEFault
new scpi?	:DISPlay:SCREen:GEOMetry
Set/query the formatting of the system time	:DISPlay:TIME:FMT
Set/query the FieldFox display data title	:DISPlay:TITLe:DATA
Set/query the display title state	:DISPlay:TITLe[:STATe]
Set display window trace Y Pow division	:DISPLay:WINDow:TRACe:Y[:SCALe]:AUTO
Set display window trace Y Ref level	:DISPLAy:WINDow:TRACe:Y[:SCALe]:RLEVel

Mapping

Define the maps source device (i.e.,location of .zip map file)	:SYSTem:MAP:DISPlay:DEVice:SOURce
Define the maps storage device	:SYSTem:MAP:DISPlay:DEVice[:DESTination]
Define icon types	:SYSTem:MAP:DISPlay:ICONs
Define map labels on or off	:SYSTem:MAP:DISPlay:LABels
Define latitude for a map search	:SYSTem:MAP:DISPlay:LATitude
Define longitude for a map search	:SYSTem:MAP:DISPlay:LONGitude
Do update maps with current setting for lat/long	:SYSTem:MAP:DISPlay:GOTO:GPS
Specify the name of file in source folder and Unzip results copied to a destination folder	:SYSTem:MAP:DISPlay:IMPort
Integer parameter sets map zoom levels	:SYSTem:MAP:DISPlay:ZOOM
Set map display to On (1) or Off (0).	:SYSTem:MAP:DISPlay[:STATe]

Field Strength (Corrections)

All corrections ON	[:SENSe]:AMPLitude:CORRections[:STATe]

Calibration

Antenna corrections ON	[:SENSe]:AMPLitude:CORRections:ANTenna[:STATe]
Cable corrections ON	[:SENSe]:AMPLitude:CORRections:CABLe[:STATe]

Amplitude corrections ON	[:SENSe]:AMPLitude:CORRections[:STATe]
Clear Antenna correction values	[:SENSe]:AMPLitude:CORRections:ANTenna:DEFault
Clear Cable correction values	[:SENSe]:AMPLitude:CORRections:CABLe:DEFault

Receiver (or ONLY one) Antenna/Cables

Load Antenna file	MMEMory:LOAD:ANTenna
Store Antenna file	MMEMory:STORe:ANTenna
Load Cable file	MMEMory:LOAD:CABLe
Store Cable file	MMEMory:STORe:CABLe
Load image for Polar background	MMEMory:LOAD:IMAGe:POLar
Load a *.csv or *.kml log file	MMEMory:LOAD:LOG
Saves a CSV, KML, or DREC file	MMEMory:STORe:DLOG
Display corrections window	[:SENSe]:AMPLitude:CORRections:VIEW

Log and Recording

Enable or disable the log file auto-save	DLOGging:FILE:ASAVe
Sets the data log file save/recall folder location	DLOGging:FILE:FOLDer
Sets the log file save type	DLOGging:FILE:TYPe
Read and writes the distance interval	DLOGging:INTerval:DISTance
Read and write the time interval	DLOGging:INTerval:TIMe
Set type of interval	DLOGging:INTerval:TYPe
Enable or disable the measurement interval	DLOGging:INTerval:ENABled
Begin recording results	DLOGgin:RECord:STARt
Stop recording	DLOGging:RECord:STOP
Query the state	[:SENSe]:ANTenna:LOG[:STATe]?

File Commands

Sets the user folder path to default or system	[:SENSe]:ANTenna:USER:FOLDer

Video / Res Bandwidth

Manual Res BW value	[:SENSe]:BANDwidth[:RESolution]
Manual Video BW value	[:SENSe]:BANDwidth:VIDeo

Alignments (InstAlign)

Enables Instalign, before the next sweep	[:SENSe]:ALIGnment:AMPLitude:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now (coupled to all individual alignments)	[:SENSe]:ALIGnment:AMPLitude:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]

Instrument

Query a file catalog	:INSTrument:CATalog?
Enables front panel key press control	:INSTrument:GTL
Disables front panel key press control (Lockout)	:INSTrument:GTR
Set and query the status of the remote SCPI lockout	:INSTrument:RLOCkout:DISable
Sets the current mode	:INSTrument[:SELect]

GPS

Sets the minimum satellite power, before computation	:SYSTem:GPS:AVERage:MINP
Enables/disables the satellite average settings	:SYSTem:GPS:AVERage[:STATe]
Sets the number of satellites to be viewed	:SYSTem:GPS:AVERage:TOPN
Query satellite carrier to noise	:SYSTem:GPS:CNOise?
Returns GPS data	:SYSTem:GPS:DATA?
Returns the last locked GPS data	:SYSTem:GPS:DATA:LAST?
Set and qjuery the coordinates (i.e., lat. & long.)	:SYSTem:GPS:DISPlay:COORdinate:FORMat
Set and query the elevation units	:SYSTem:GPS:DISPlay:DISTance:UNIT
Set and query the status line display state	:SYSTem:GPS:DISPlay:STATe
Set and query the type of satellite being measured	:SYSTem:GPS:GNSS
Returns the GPS lock state	:SYSTem:GPS:LSTate?

Set and query the GPS state	:SYSTem:GPS[:STATe]
Set and query the GPS clock sync state	:SYSTem:GPS:SYNChronize

Units

Set Units	[:SENSe]:AMPLitude:UNIT

Gain/Atten

Attenuation value	[:SENSe]:POWer[:RF]:ATTenuation
Atten Auto/Manual	[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set external gain value	[:SENSe]:POWer[:RF]:EXTGain
Preamp ON/OFF/AUTO	[:SENSe]:POWer[:RF]:GAIN[:STATe]

Sweep

Enables/disables continuous sweep	:INITiate:CONTinuous
Enable single trace and then hold	:INITiate[:IMMediate
Restarts the trace averaging	:INITiate:RESTart

Average

Average count	[:SENSe]:AVERage:COUNt
Set and query the averaging state	[:SENSe]:AVERage[:ENABle]
Restart trace averaging	INITiate:RESTart

MMEMory comands - some of the compatible :MMEM commands

Returns file names	:MMEMory:CATalog?
Sets the active drive/directory	:MMEMory:CDIRectory
Copy file 1 to file 2	:MMEMory:COPY
Read/store block data	:MMEMory:DATA
Delete a file	:MMEMory:DELete
Loads a memory state file	:MMEMory:LOAD[:STATe]
Create a new folder	:MMEMory:MDIRectory
Renames/moves a file	:MMEMory:MOVE
Removes a folder, if it is empty	:MMEMory:RDIRectory
Saves the current formatted trace to a CSV/KML file	:MMEMory:STORe:FDATa
Saves the current FieldFox display to a PNG file.	:MMEMory:STORe:IMAGe
Saves the current FieldFox display	:MMEMory:STORe:IMAGe:NOKeys

(without the softkeys) to a PNG	
Saves antenna data as a MATLAB (MAT) file	:MMEMory:STORe:STORe:MAT
Saves antenna data as an SDF file	:MMEMory:STORe:SDF
Saves antenna data as an SNP file	:MMEMory:STORe:SNP[:DATa]
Saves the current settings to an instrument state file	:MMEMory:STORe[:STATe]
Save antenna data as TXT file	:MMEMory:STORe:TXT

Last Modified:

09dec2019	Added new topic/commands

Built-in Power Meter (CPM) Mode Commands

- Frequency and Power
- Radio Standards
- Read Data
- Alignments (InstAlign)
- USB/LAN Power Sensors
- Display
- Limit Lines

See Also

- Commands that are Common to All Modes
- Status Registers

Frequency and Power

Description	Command
Set frequency	[:SENSe]:FREQuency
Step size for up/down keys	[:SENSe]:FREQuency:CENTer:STEP
Freq span	[:SENSe]:FREQuency:SPAN
Attenuation value	[:SENSe]:POWer[:RF]:ATTenuation
Radio Standard	
Channel number center	[:SENSe]:RADio:CHANnel:CENTer
Uplink or Downlink	[:SENSe]:RADio:CHANnel:DIRection

Channel step size	[:SENSe]:RADio:CHANnel:STEP
Select standard	[:SENSe]:RADio:STANdard[:SELect]
Freq or Chan	[:SENSe]:RADio:TEUNit

Read Data

Read measurement data	[:SENSe]:TRACe[:DATA]?

Alignments (InstAlign)

Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:AMPLitude:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]

USB/LAN Power Sensor

Query the sensor's model number string and serial number string values	DISPlay:MODel:DATA
Enable/disable the model annotations	DISPlay:MODel:STATe
Set and query the LAN sensor's IP address	INPut:LAN:ADDRess
Set and query the LAN sensor's IP address	INPut:LAN:ID:NAME
Set and query the autogenerated hostname	INPut:LAN:ID:SNUMber
Set and query the hostname.	INPut:LAN:ID:TYPe
Set/query the USB or LAN power sensor type	INPut:TYPe

Display

Display units	[:SENSe]:AMPLitude:UNIT
Set Minimum scale value	DISPlay[:WINDow]:ANALog:LOWer
Set Maximum scale value	DISPlay[:WINDow]:ANALog:UPPer
Set PM resolution	DISPlay[:WINDow][:NUMeric]:RESolution
Enable averaging	[:SENSe]:AVERage[:ENABle]
Set number of sweep averages.	[:SENSe]:AVERage:COUNt
Make relative measurements	CALCulate:RELative[:MAGNitude]:AUTO
Set Offset value.	[:SENSe]:CORRection:GAIN2[:INPut][:MAGNitude]

Set Offset ON | OFF state	[:SENSe]:CORRection:GAIN2:STATe

Limit Lines

Set the minimum (lower) limit value.	[:SENSe]:TRACe:LIMit:LOWer
Set the lower ON | OFF State.	[:SENSe]:TRACe:LIMit:LOWer:STATe
Set the maximum (upper) limit value.	[:SENSe]:TRACe:LIMit:UPPer
Set the upper ON | OFF State.	[:SENSe]:TRACe:LIMit:UPPer:STATe

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Last Modified:

1-Apr-2014 Added CPM commands (A.07.50)

Pulse Measurements (Option 330) Commands

The following commands are part of the USB Power Meter mode.

- Select a Measurement / Trace
- Time / Frequency
- Average and Bandwidth Video
- Scale
- Display
- Trigger
- Markers
- Limits
- Read / Save Data

See Also

- USB PM Mode Commands
- Commands that are Common to All Modes
- Status Registers

Select a Measurement / Trace

Description	Command
Set measurement.	CALCulate:FEED:MODE

Time / Frequency

Description	Command
Center time of zoom window	CALCulate[:SELected]:TIME:AUX:CENTer
Time/div of zoom window	CALCulate[:SELected]:TIME:AUX:PDIVision
Center time of trace graph	CALCulate[:SELected]:TIME:CENTer

Span time of trace graph	CALCulate[:SELected]:TIME:LENGth
Time/div of trace graph	CALCulate[:SELected]:TIME:PDIVision
Start time of trace graph	CALCulate[:SELected]:TIME:STARt
Frequency of meas	[:SENSe]:FREQuency
Number of points	[:SENSe]:RESolution

Average and Bandwidth Video

Description	Command
Number of averages	[:SENSe]:AVERage:COUNt
Averaging Auto, Man, Off	[:SENSe]:AVERage[:MODE]
Step detection mode	[:SENSe]:AVERage:SDETect
Set and query the IF bandwidth	[:SENSe]:BWID
Video bandwidth	[:SENSe]:BWIDth:VIDeo

Scale

Meter = Meter-style only; **TG** = Trace Graph only; **Both** = Meter and Trace Graph

Description	Command
Meter - Relative ON/OFF	CALCulate:RELative[:MAGNitude]:AUTO
Meter - Min Scale	DISPlay:WINDow:ANALog:LOWer
Meter - Max Scale	DISPlay:WINDow:ANALog:UPPer
Meter - Resolution	DISPlay:WINDow[:NUMeric]:RESolution
TG - Autoscale	None
TG - Scale	None
TG - Ref Lv	None
TG - Ref Pos	None
Both - Scale Offset ON/OFF	[:SENSe]:CORRection:GAIN2:STATe
Both - Scale Offset value	[:SENSe]:CORRection:GAIN2[:INPut][:MAGNitude]

Display

Description	Command
Grid ON/OFF	DISPlay:GRID
Marker Table ON/OFF	DISPlay:TABLe:MARKer

Auto Analysis ON/OFF	DISPlay:TABLe:RESults
Read Auto Analysis data	DISPlay:TABLe:RESults:DATA
Zoom window ON/OFF	DISPlay:WINDow:ZOOM

Trigger

Description	Command
Internal, External, Freerun	TRIGger:SOUrce
Trigger delay value	TRIGger:DELay
Trigger level value	TRIGger:LEVel
Auto or Manual level	TRIGger:LEVel:AUTO
Pos or Neg edge	TRIGger:SLOPe

Markers

Description	Command
Select a marker	CALCulate[:SELected]:MARKer:ACTivate
Marker ON/OFF	CALCulate[:SELected]:MARKer[:STATe]
Move a marker	CALCulate[:SELected]:MARKer:X
Read marker amplitude	CALCulate[:SELected]:MARKer:Y?
Set markers to Falltime	CALCulate[:SELected]:MARKer:FUNCtion:FALLtime
Set markers to Risetime	CALCulate[:SELected]:MARKer:FUNCtion:RISetime
Set marker to Max	CALCulate[:SELected]:MARKer:FUNCtion:MAXimum
Set marker to Min	CALCulate[:SELected]:MARKer:FUNCtion:MINimum
Peak Excursion value	CALCulate[:SELected]:MARKer:FUNCtion:PEXCursion
Peak Threshold value	CALCulate[:SELected]:MARKer:FUNCtion:PTHReshold
Find Next Peak	CALCulate[:SELected]:MARKer:FUNCtion:PNEXt
Find Target value	CALCulate[:SELected]:MARKer:FUNCtion:TARGet
Marker search - Wrap/No Wrap	CALCulate[:SELected]:MARKer:FUNCtion:TDIRection
Set marker tracking	CALCulate[:SELected]:MARKer:FUNCtion:TRACking
Search zoom window or primary trace.	CALCulate[:SELected]:MARKer:FUNCtion:ZONE
Delta Amp. markers ON/OFF	CALCulate[:SELected]:AMPLitude:MARKer:DELTa:STATe
Amp. markers ON/OFF	CALCulate[:SELected]:AMPLitude:MARKer:STATe

Amp. marker 1	CALCulate[:SELected]:AMPLitude:MARKer:Y1|Y
Amp. marker 2	CALCulate[:SELected]:AMPLitude:MARKer:Y2
Pulse top	[SENSe]:TRACe:MEASurement:REFerence

Read / Save Data

Description	Command
Read trace graph data.	CALCulate[:SELected]:TRACe:DATA
Read Meter-style data	[:SENSe]:TRACe[:DATA]?
Save to *.csv file	MMEMory:STORe:FDATa

Limits (Meter-style ONLY)

Description	Command
Lower limit value	[:SENSe]:TRACe:LIMit:LOWer
Lower limit state	[:SENSe]:TRACe:LIMit:LOWer:STATe
Upper limit value	[:SENSe]:TRACe:LIMit:UPPer
Upper limit state	[:SENSe]:TRACe:LIMit:UPPer:STATe

USB Power Meter Mode Commands

- Core USB Power Meter commands
- FOPS-(Option 208) unique commands

See Also

- Commands that are Common to All Modes
- Pulse Measurements (Option 330) commands
- Status Registers

Core USB Power Meter commands - (and FOPS Feature)

Description	Command
Set relative Power Meter measurements	CALCulate:RELative[:MAGNitude]:AUTO
Performs external power meter zeroing.	CALibration:ZERO:TYPE:EXT
Set Minimum scale value	DISPlay[:WINDow]:ANALog:LOWer
Set Maximum scale value	DISPlay[:WINDow]:ANALog:UPPer
Set PM resolution	DISPlay[:WINDow][:NUMeric]:RESolution

Query USB sensor for serial number & model	DISPlay:MODel:DATA?
Query the sensor's model number string and serial number string values	DISPlay:MODel:DATA
Enable/disable the model annotations	DISPlay:MODel:STATe
Set/query the LAN sensor's IP address	INPut:LAN:ADDRess
Set/query the LAN sensor's IP address	INPut:LAN:ID:NAME
Set and query the autogenerated hostname	INPut:LAN:ID:SNUMber
Set/query the hostname.	INPut:LAN:ID:TYPe
Set/query the USB or LAN power sensor type	INPut:TYPe
Set number of sweep averages.	[:SENSe]:AVERage:COUNt
Set averaging mode	[:SENSe]:AVERage[:MODE]
Set Step Detection	[SENSe]:AVERage:SDETect
Set Offset value.	[:SENSe]:CORRection:GAIN2[:INPut][:MAGNitude]
Set Offset ON | OFF state	[:SENSe]:CORRection:GAIN2:STATe
Set frequency	[:SENSe]:FREQuency
Read measurement data	[:SENSe]:TRACe[:DATA]?
Set the minimum (lower) limit value.	[:SENSe]:TRACe:LIMit:LOWer
Set the lower ON | OFF State.	[:SENSe]:TRACe:LIMit:LOWer:STATe
Set the maximum (upper) limit value.	[:SENSe]:TRACe:LIMit:UPPer
Set the upper ON | OFF State.	[:SENSe]:TRACe:LIMit:UPPer:STATe
Set Source Enable	SOURce:ENABle
Set Source power level	SOURce:POWer
Set PM units	UNIT:POWer

FOPS (Option 208) unique commands

- Normalization
- Setup

- Display Annotation and Scaling
- USB and LAN Power Sensors
- Markers
- Trace Math

See Also: Example Program

Perform Normalization

There is NO unique FOPS command to MEASURE the source power.

Instead, use the following method:

1. Prompt to connect the power sensor to port 1 RF Output reference plane.
2. Send INIT:CONT 0
3. Send INITiate[:IMMediate]
4. Send SOURce:POWer:MEMorize to store the data trace to memory.
5. Send [:SENSe]:TRACe:MEASurement to display your measurement choice.

FOPS Setup

Description	Command
Specify swept frequency	[:SENSe]:SWEep:TYPE
Frequency span	[SENSe]:SPECtrum:FREQuency:SPAN
Number of points	[:SENSe]:SWEep:POINts
Frequency step size	[:SENSe]:FREQuency:STEP
Set dwell time	[:SENSe]:POINt:DWELl
Receiver sweep direction	[:SENSe]:SWEep:RX
Power sensor tolerance	[:SENSe]:TOL
Max number of PS readings	[:SENSe]:POINt:READ:MAX
Center frequency	SOURce:FREQuency:CENTer
Start frequency	SOURce:FREQuency:STARt
Stop frequency	SOURce:FREQuency:STOP
Offset frequency	SOURce:RECeiver:OFFSet

Display Annotation and Scaling

Description	Command
Grid ON/OFF	DISPlay:GRID
Method used to	DISPlay:ANNotation:FREQuency

annotate frequency	
Autoscale the trace	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:AUTO
Scaling - per division	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:PDIVision
Scaling - reference position	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:RPOSition
Scaling - reference level	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:RLEVel

USB and LAN Power Sensor

Description	Command
Query the sensor's model number string and serial number string values	DISPlay:MODel:DATA
Enable/disable the model annotations	DISPlay:MODel:STATe
Set/query the LAN sensor's IP address	INPut:LAN:ADDRess
Set/query the LAN sensor's IP address	INPut:LAN:ID:NAME
Set and query the autogenerated hostname	INPut:LAN:ID:SNUMber
Set/query the hostname.	INPut:LAN:ID:TYPe
Set/query the USB or LAN power sensor type	INPut:TYPe

Markers

Description	Command
Select a marker	CALCulate[:SELected]:MARKer:ACTivate
Marker ON/OFF	CALCulate[:SELected]:MARKer[:STATe]
Move a marker	CALCulate[:SELected]:MARKer:X
Read marker amplitude	CALCulate[:SELected]:MARKer:Y?
Set marker to Max	CALCulate[:SELected]:MARKer:FUNCtion:MAXimum
Set marker to Min	CALCulate[:SELected]:MARKer:FUNCtion:MINimum
Amp. markers ON/OFF	CALCulate[:SELected]:AMPLitude:MARKer:STATe

Amp. marker 1	CALCulate[:SELected]:AMPLitude:MARKer:Y1|Y
Amp. marker 2	CALCulate[:SELected]:AMPLitude:MARKer:Y2
Delta Amp. markers ON/OFF	CALCulate[:SELected]:AMPLitude:MARKer:DELTa:STATe

Trace Math

Description	Command
Store a data trace to memory	CALCulate[:SELected]:MATH:MEMorize
Read data trace	CALCulate[:SELected]:TRACe:DATA
Read memory trace	CALCulate:[SELected]:FMEM:DATA?
Show Data /Mem trace	DISPlay:WINDow:TRACe

USB Power Meter Mode

USB Power Meter Mode Commands

- Core USB Power Meter commands
- FOPS-(Option 208) unique commands

See Also

- Commands that are Common to All Modes
- Pulse Measurements (Option 330) commands
- Status Registers

Core USB Power Meter commands - (and FOPS Feature)

Description	Command
Set relative Power Meter measurements	CALCulate:RELative[:MAGNitude]:AUTO
Performs external power meter zeroing.	CALibration:ZERO:TYPE:EXT
Set Minimum scale value	DISPlay[:WINDow]:ANALog:LOWer
Set Maximum scale value	DISPlay[:WINDow]:ANALog:UPPer
Set PM resolution	DISPlay[:WINDow][:NUMeric]:RESolution
Query USB sensor for serial number & model	DISPlay:MODel:DATA?
Query the sensor's model number string and serial number string values	DISPlay:MODel:DATA
Enable/disable the model	DISPlay:MODel:STATe

annotations

Set/query the LAN sensor's IP address	INPut:LAN:ADDRess
Set/query the LAN sensor's IP address	INPut:LAN:ID:NAME
Set and query the autogenerated hostname	INPut:LAN:ID:SNUMber
Set/query the hostname.	INPut:LAN:ID:TYPe
Set/query the USB or LAN power sensor type	INPut:TYPe
Set number of sweep averages.	[:SENSe]:AVERage:COUNt
Set averaging mode	[:SENSe]:AVERage[:MODE]
Set Step Detection	[SENSe]:AVERage:SDETect
Set Offset value.	[:SENSe]:CORRection:GAIN2[:INPut][:MAGNitude]
Set Offset ON | OFF state	[:SENSe]:CORRection:GAIN2:STATe
Set frequency	[:SENSe]:FREQuency
Read measurement data	[:SENSe]:TRACe[:DATA]?
Set the minimum (lower) limit value.	[:SENSe]:TRACe:LIMit:LOWer
Set the lower ON | OFF State.	[:SENSe]:TRACe:LIMit:LOWer:STATe
Set the maximum (upper) limit value.	[:SENSe]:TRACe:LIMit:UPPer
Set the upper ON | OFF State.	[:SENSe]:TRACe:LIMit:UPPer:STATe
Set Source Enable	SOURce:ENABle
Set Source power level	SOURce:POWer
Set PM units	UNIT:POWer

FOPS (Option 208) unique commands

- Normalization
- Setup
- Display Annotation and Scaling
- USB and LAN Power Sensors
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- Trace Math

See Also: Example Program

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2. Send INIT:CONT 0
3. Send INITiate[:IMMediate]
4. Send SOURce:POWer:MEMorize to store the data trace to memory.
5. Send [:SENSe]:TRACe:MEASurement to display your measurement choice.

FOPS Setup

Description	Command
Specify swept frequency	[:SENSe]:SWEep:TYPE
Frequency span	[SENSe]:SPECtrum:FREQuency:SPAN
Number of points	[:SENSe]:SWEep:POINts
Frequency step size	[:SENSe]:FREQuency:STEP
Set dwell time	[:SENSe]:POINt:DWELl
Receiver sweep direction	[:SENSe]:SWEep:RX
Power sensor tolerance	[:SENSe]:TOL
Max number of PS readings	[:SENSe]:POINt:READ:MAX
Center frequency	SOURce:FREQuency:CENTer
Start frequency	SOURce:FREQuency:STARt
Stop frequency	SOURce:FREQuency:STOP
Offset frequency	SOURce:RECeiver:OFFSet

Display Annotation and Scaling

Description	Command
Grid ON/OFF	DISPlay:GRID
Method used to annotate frequency	DISPlay:ANNotation:FREQuency
Autoscale the trace	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:AUTO
Scaling - per division	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:PDIVision
Scaling - reference position	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:RPOSition
Scaling - reference	DISPlay:WINDow:TRACe{1:4}:Y[:SCALe]:RLEVel

level

USB and LAN Power Sensor

Description	Command
Query the sensor's model number string and serial number string values	DISPlay:MODel:DATA
Enable/disable the model annotations	DISPlay:MODel:STATe
Set/query the LAN sensor's IP address	INPut:LAN:ADDRess
Set/query the LAN sensor's IP address	INPut:LAN:ID:NAME
Set and query the autogenerated hostname	INPut:LAN:ID:SNUMber
Set/query the hostname.	INPut:LAN:ID:TYPe
Set/query the USB or LAN power sensor type	INPut:TYPe

Markers

Description	Command
Select a marker	CALCulate[:SELected]:MARKer:ACTivate
Marker ON/OFF	CALCulate[:SELected]:MARKer[:STATe]
Move a marker	CALCulate[:SELected]:MARKer:X
Read marker amplitude	CALCulate[:SELected]:MARKer:Y?
Set marker to Max	CALCulate[:SELected]:MARKer:FUNCtion:MAXimum
Set marker to Min	CALCulate[:SELected]:MARKer:FUNCtion:MINimum
Amp. markers ON/OFF	CALCulate[:SELected]:AMPLitude:MARKer:STATe
Amp. marker 1	CALCulate[:SELected]:AMPLitude:MARKer:Y1|Y
Amp. marker 2	CALCulate[:SELected]:AMPLitude:MARKer:Y2
Delta Amp. markers ON/OFF	CALCulate[:SELected]:AMPLitude:MARKer:DELTa:STATe

Trace Math

Description	Command
Store a data trace to memory	CALCulate[:SELected]:MATH:MEMorize

Read data trace	CALCulate[:SELected]:TRACe:DATA
Read memory trace	CALCulate:[SELected]:FMEM:DATA?
Show Data /Mem trace	DISPlay:WINDow:TRACe

VVM Mode Commands

See Also:

VVM Cable Trimming Example

Commands that are Common to All Modes

Description	Command
Create measurement	CALCulate:PARameter:DEFine
Averaging	[:SENSe]:AVERage:COUNt
Zeroing	[:SENSe]:CORRection:ZERO:STATe [:SENSe]:CORRection:ZERO:REFerence
Set frequency	[:SENSe]:FREQuency:CENTer
Read points (always 2)	[:SENSe]:SWEep:POINts
Set power	SOURce:POWer
Read data	TRACe:DATA
IF Bandwidth	[:SENSe]:BWID
Resolution	DISPlay[:WINDow][:NUMeric]:RESolution

ERTA Mode Commands

ONLY ERTA specific commands are shown here.

Use SA Mode Commands for all other relevant settings not listed here. For example, Frequency range and Tracking Offset commands.

Description	Command
Set and query the partner network identity.	[:SENSe]:MEASurement:ERTA:PNID
Verify the identified partner is ERTA capable.	[:SENSe]:MEASurement:ERTA:PVERify?
Set ERTA stimulus-response role.	[:SENSe]:MEASurement:ERTA:ROLE?

Set and read Partnership status.	[:SENSe]:MEASurement:ERTA:PSTatus
Trace Receiver Input, valid during ERTA partnership	TRACe:ERTA:RINPut
Returns the current trace X-values	TRACe<n>:XVALue

See Also

- Commands that are Common to All Modes
- Status Registers

AM/FM Metrics (Option 355) Commands - Requires SA

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Metrics

Set the AM/FM Metrics measurement type (Select 1 of *n* measurement choices)	[:SENSe]:MEASurement:ADEMod
Set the AM demodulation window's Y axis--top amplitude	[:SENSe]:ADEMod:METRics:AMTY
Select type of metrics AM FW wideband or narrow band	[:SENSe]:ADEMod:METRics:DTYPe
Set the FM demodulation window's Y axis--top amplitude	[:SENSe]:ADEMod:METRics:FMTY
Enables/disables the Audio ON or OFF while metrics enabled	[:SENSe]:ADEMod:METRics:LON
Sets the Listen time for the measurement	[:SENSe]:ADEMod:METRics:LTIMe
Enable display of Peak+ and Peak – in the demodulation window	[:SENSe]:ADEMod:METRics:MMENable
Sets the time span of the demodulation window	[:SENSe]:ADEMod:METRics:STIMe
Sets the Tune (Center) frequency	[:SENSe]:ADEMod:METRics:TFReq
Returns 8 doubles of the AM measurement (query only)	:DISPlay:ADEMod:METRics:AM:RESults:DATA?

Returns 8 doubles of the FM measurement (query only)	:DISPlay:ADEMod:METRics:FM:RESults:DATA?

Channel Scanner Mode (Option 312) Commands - Requires SA

In this topic:

See Also

- Commands that are Common to All Modes
- Correction Methods Explained
- New Programming Commands
- Status Registers

Data

Returns a set of values	:CHSCanner:DATA?
Sets the folder path to Default or System	:CHSCanner:USER:FOLDer

Display

Set freq and pow	:CHSCanner:DISPlay:SORT
Set up and down sort order	:CHSCanner:DISPLAy:SORT:ORDer
Set display window trace Y Pow division	:CHSCanner:DISPLAy:WINDow:TRACe:Y[:SCALe]:PDIVsion
Set display window trace Y Ref	:CHSCanner:DISPLAy:WINDow:TRACe:Y[:SCALe]:RLEVel

level

Edit List

Returns a set of values	:CHSCanner:EDIT:LIST?
Add comma separated list item	:CHSCanner:EDIT:LIST:ADD
Clears all items from list	:CHSCanner:EDIT:LIST:CLEar

Range

Reads or writes items in Range mode	:CHSCanner:EDIT:RANGe:COUNt
Set integration bandwidth	:CHSCanner:EDIT:RANGE:IBW
Set CF of first channel defined in Range mode	:CHSCanner:EDIT:RANGe:STARt
Set freq separation between channels in Range mode	:CHSCanner:EDIT:RANGe:STEP

Field Strength (Corrections)

All corrections OFF	[:SENSe]:AMPLitude:CORRections:DISable
All corrections ON	[:SENSe]:AMPLitude:CORRections[:STATe] (SUPERSEDED)

Receiver (or ONLY one) Antenna/Cables

Load Antenna file	MMEMory:LOAD:ANTenna
Store Antenna file	MMEMory:STORe:ANTenna
Load Cable file	MMEMory:LOAD:CABLe
Store Cable file	MMEMory:STORe:CABLe
Antenna corrections ON	[:SENSe]:AMPLitude:CORRections:ANTenna[:STATe]
Cable corrections ON	[:SENSe]:AMPLitude:CORRections:CABLe[:STATe]
Clear Antenna correction values	[:SENSe]:AMPLitude:CORRections:ANTenna:DEFault
Clear Cable correction values	[:SENSe]:AMPLitude:CORRections:CABLe:DEFault
Display corrections window	[:SENSe]:AMPLitude:CORRections:VIEW

Data Logging and Recording

Enable or disable the log file auto-save	DLOGging:FILE:ASAVe
Sets the data log file save/recall folder location	DLOGging:FILE:FOLDer
Sets the log file save type	DLOGging:FILE:TYPe
Read and writes the distance interval	DLOGging:INTerval:DISTance

Read and write the time interval	DLOGging:INTerval:TIMe
Set type of interval	DLOGging:INTerval:TYPe
Enable or disable the measurement interval	DLOGging:INTerval[:ENABled]
Resume playback	DLOGing:PLAYback:PAUSe
Sets the position number of component carrier manually, when paused.	DLOGging:PLAYback:POSition
Play	DLOGging:PLAYback:STARt
Stop playback	DLOGging:PLAYback:STOP
Sets the data log playback state	DLOGging:PLAYback[:STATe]
Pause	DLOGging:RECord:PAUSe
Begin recording results	DLOGging:RECord:STARt
Stop recording	DLOGging:RECord:STOP
Query the state	DLOGging:RECord[:STATe]?
File Commands	
Sets the user folder path to default or system	:CHSCanner:USER:FOLDer
Search Channels	
Set the number of channels to scan	:CHSCanner:SEARch:COUNt
Set top or bottom number of channels	:CHSCanner:SEARch:TYPe
Alignments (InstAlign)	
Align all now (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL:NOW
Align all state (coupled to all individual alignments)	[:SENSe]:ALIGnment:ALL[:STATe]
Align now	[:SENSe]:ALIGnment:AMPLitude:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]
Channel Power	
Set the active channel	:CHSCanner[:SENSe]:CHANnel:SELect
Set the RF attenuator value manually	:CHSCanner[:SENSe]:POWer[:RF]:ATTenuation
Set the RF attenuator to Auto	:CHSCanner[:SENSe]:POWer[:RF]:ATTenuation:AUTO
Set the external Gain	:CHSCanner[:SENSe]:POWer[:RF]:EXTGain

Enable or disable the Gain state	:CHSCanner[:SENSe]:POWer[:RF]:GAIN[:STATe

Units

Set Units	[:SENSe]:AMPLitude:UNIT

Sweep

Set the averaging count	:CHSCanner:SWEep:AVERage:COUNt
Enable or Disable the averaging state	:CHSCanner:SWEep:AVERage[:STATe]
Set the displayed sweep type	:CHSCanner:SWEep:DISPlay:TYPE
Set the sweep mode	:CHSCanner:SWEep:MODE

USB Triaxial Antenna

IMPort Import antenna correction factors from USB antenna.	SYSTem:ANTenna:USB:IMPort
Sets the antenna orientation	SYSTem:ANTenna:USB:AXIS
Sets antenna type	SYSTem:ANTenna:USB:TYPe
Set the X-axis dipole in a triaxial antenna to its default values	[:SENSe]:AMPlitude:CORRections:XANTenna:DEFault
Set and query the X-axis antenna corrections ON/OFF state	[:SENSe]:AMPlitude:CORRections:XANTenna[:STATe]
Set the Y-axis dipole in a triaxial antenna to its default values	[:SENSe]:AMPlitude:CORRections:YANTenna:DEFault
Set and query the Y-axis antenna corrections ON/OFF state	[:SENSe]:AMPlitude:CORRections:YANTenna[:STATe]
Set the Z-axis dipole in a triaxial antenna to its default values	[:SENSe]:AMPlitude:CORRections:ZANTenna:DEFault
Set and query the Z-axis antenna corrections ON/OFF state	[:SENSe]:AMPlitude:CORRections:XANTenna:DEFault

Mapping

Updates maps with current setting for latitude/longitude.	SYSTem:MAP:DISPlay:GOTO:GPS
Specify the name of a file in source folder and Unzip the results copied to a destination folder	SYSTem:MAP:DISPlay:IMPort

SA Listen

Set SA Listen D type	:CHSCanner[:SENSe]:SAListen:DTYPE
Set SA Listen L Time value	:CHSCanner[:SENSe]:SAListen:LTIMe
Pause data recording	:CHSCanner[:SENSe]:SAListen:PAUSe
Resume date recording	:CHSCanner[:SENSe]:SAListen:RESume

MMEMory comands - related to Channel Scanner

Save a CSV|KML formatted file to Channel Scanner folder	:MMEMory:STORe:DLOG
Load a *.csv or *.kml log file	:MMEMory:LOAD:DLOG
Load a *.csv custom list file	:MMEMory:LOAD:LIST
Save a *csv custom list file	:MMEMory:STATe:STORe:LIST

Last Modified:

01dec2020	Added new topic/commands (A12.1x)
01dec2019	Added new topic/commands (A11.5x)

Noise Figure (NF) Mode (Option 356) Commands (A.10.3x and Greater Firmware Only)

In NF (Noise Figure) mode there are four types of measurements: Noise Figure, Noise Factor, Gain, Noise Temperature, and Y-Factor.

Here is the an example procedure for setting up a noise figure measurement using SCPI commands:

1. Set up the noise source and ENR table, using: CORR:ENR:MOD and set to SMARt (default), TABLe, or SPOT
2. And then
   - For SPOT commands in the Noise Source / ENR table below (*.enr)
4. Set the noise bandwidth, using the NBANDwidth command
5. Set the number of points, using SWE:POIN
6. Enter a DUT setup type, using the DUT commands table
7. Set the frequency range, using Frequency commands table
8. Setup Integration, using the Integration commands table
9. Set the uncertainty contributions, using Uncertainty commands table
10. If you haven't run a receiver calibration, then perform a Receiver Cal, using the Calibration commands table
11. Run a user calibration, using Calibration commands table
12. Set the type of noise figure measurement (Noise Figure (NFIG), Noise Factor (NFAC), Gain (GAIN), Noise Temperature (NTEM), or Y-Factor (YFAC)), using the CALCulate:PARameter:DEFine

For more information on the calibration and DUT measurement setup user interface, refer to the User's Guide (N9927-90020 or to the N9938-90006).

In this topic:

See Also

- Commands that are Common to All Modes
- Status Registers

Frequency

Description	Command
Set and query the frequency (X-axis) annotation method.	[:SENSe]:FREQuency:ANNotation[:SELect]
Center freq	[:SENSe]:FREQuency:CENTer
Frequency context	[:SENSe]:FREQuency:CONText
Read X-axis values	[:SENSe]:FREQuency:DATA?
IF (DUT Out) start frequency	[:SENSe]:FREQuency:IF:STARt?
LO	[:SENSe]:FREQuency:LO
RF (DUT In) Start Frequency	[:SENSe]:FREQuency:RF:STARt?
Freq span	[:SENSe]:FREQuency:SPAN
Start	[:SENSe]:FREQuency:STARt
Stop	[:SENSe]:FREQuency:STOP

DUT

After DUT loss (double)	[:SENSe]:CORRection:LOSS:AFTer[:VALue]
Before DUT loss (double)	[:SENSe]:CORRection:LOSS:BEFore[:VALue]
After loss enabled (bool)	[:SENSe]:CORRection:LOSS:AFTer:ENABled
Before loss enabled (bool)	[:SENSe]:CORRection:LOSS:BEFore:ENABLed
Before DUT temp (double)	[:SENSe]:CORRection:BEFore:TEMPerature
After DUT temp (double)	[:SENSe]:CORRection:AFTer:TEMPerature
Set DUT type	[:SENSe]:DUT[:TYPe]
Set Sideband	[:SENSe]:DUT:SIDEband
Sweep	
Sweep points	[:SENSe]:SWEep:POINts
Scale / Units	
Scaling - auto	DISPlay:WINDow:TRACe<n>:Y[:SCALe]:AUTO
Scaling - Set bottom of scale	DISPlay:WINDow:TRACe<n>:Y[:SCALe]:BOTTom
Scaling - Set per division	DISPlay:WINDow:TRACe<n>:Y[:SCALe]:PDIVision
Scaling - Set reference level	DISPlay:WINDow:TRACe<n>:Y[:SCALe]:RLEVel
Scaling - Set reference position	DISPlay:WINDow:TRACe<n>:Y[:SCALe]:RPOSition
Scaling - Set top of scale	DISPlay:WINDow:TRACe<n>:Y[:SCALe]:TOP
Traces	
Create measurement	CALCulate:PARameter:DEFine
Set and read number of traces	CALCulate:PARameter:COUNt
Select Measurement	CALCulate:PARameter:SELect
Multi-trace Configurations	DISPlay:WINDow:SPLit
View Memory trace	DISPlay:WINDow:TRACe<n>:MEMory:STATe
View Data trace	DISPlay:WINDow:TRACe<n>:STATe
Stores current trace points	DISPlay:WINDow:TRACe<n>:STORe
Integration	
Jitter goal	[:SENSe]:INTegration:JITTer
Maximum time per point	[:SENSe]:INTegration:MAXTime
Mode	[:SENSe]:INTegration:MODe
Time per point	[:SENSe]:INTegration:TIMe
Jitter warning	[:SENSe]:INTegration:WARNing
Jitter goal exceeded warning (query)	TRACe<n>:JITTer:WARNing:DATA?

Jitter goal exceeded memory warning (query)	TRACe<n>:MEMory;JITTer:WARNing:DATA?

Noise / ENR Data

Sets the smart noise source to autoload ENR data	[:SENSe]:CORRection:ENR:AUTOload
ENR Extrapolation state (query only)	[:SENSe]:CORRection:ENR:EXTRapolated?
Spot ENR uncertainty coverage	[:SENSe]:CORRection:ENR:SPOT:COVerage
Spot ENR gamma distribution	[:SENSe]:CORRection:ENR:SPOT:DISTribution
ENR mode (see also CORR:ENR:AUTO)	[:SENSe]:CORRection:ENR:MODe
Enables autoload of the smart noise source ENR data to TABLe	[:SENSe]:CORRection:ENR:NOISe:AUTOload
Enables autoconnect to a smart source	[:SENSe]:CORRection:ENR:NOISe:CONNect
Enables/disables the smart source	[:SENSe]:CORRection:ENR:NOISe:STATe
Spot ENR off gamma	[:SENSe]:CORRection:ENR:SPOT:OFFGamma
Spot ENR on gamma	[:SENSe]:CORRection:ENR:SPOT:ONGamma
Spot ENR gamma specify style	[:SENSe]:CORRection:ENR:SPOT:SPEC
Spot ENR value	[:SENSe]:CORRection:ENR:SPOT:ENR
Spot ENR uncertainty	[:SENSe]:CORRection:ENR:SPOT:UNCertainty
T Cold	[:SENSe]:CORRection:TCOLd
Recall ENR data	MMEMory:LOAD:ENR
Save ENR data	MMEMory:STORe:ENR

DUT Data

Spot DUT distribution	[:SENSe]:CORRection:DUT:SPOT:DISTribution
Spot DUT in gamma	[:SENSe]:CORRection:DUT:SPOT:INGamma
DUT mode	[:SENSe]:CORRection:DUT:MODe
Spot DUT out gamma	[:SENSe]:CORRection:DUT:SPOT:OUTGamma
Spot DUT specify style	[:SENSe]:CORRection:DUT:SPOT:SPEC
Import DUT match data	MMemory:IMPort:DUT
Recall DUT data	MMemory:LOAD:DUT
Save DUT data	MMemory:STORe:DUT

Preamplifier Data

Spot preamp distribution	[:SENSe]:CORRection:PAMPLifier:SPOT:DISTribution
Spot preamp in gamma	[:SENSe]:CORRection:PAMPLifier:SPOT:INGamma
Preamp mode	[:SENSe]:CORRection:PAMPLifier:MODe
Spot preamp out gamma	[:SENSe]:CORRection:PAMPLifier:SPOT:OUTGamma
Spot preamp specify style	[:SENSe]:CORRection:PAMPLifier:SPOT:SPEC
Import preamplifier match data	MMEMory:IMPort:PAMPlifier
Recall preamplifier data	MMEMory:LOAD:PAMPlifier
Save preamplifier data	MMEMory:STORe:PAMPlifier
Uncertainty	
Error bars (Enable/Disable)	[:SENSe]:CORRection:UNCertainty:BARS
Apply calibration uncertainty	[:SENSe]:CORRection:UNCertainty:CALibration
Uncertainty coverage	[:SENSe]:CORRection:UNCertainty:COVerage
Apply noise source uncertainty	[:SENSe]:CORRection:UNCertainty:ENR
Apply jitter uncertainty	[:SENSe]:CORRection:UNCertainty:JITTer
Apply mismatch uncertainty	[:SENSe]:CORRection:UNCertainty:MISMatch
Uncertainty questionable state (query only)	[:SENSe]:CORRection:UNCertainty:QUEStionable?
Resolution Bandwidth	
Manual resolution bandwidth value	[:SENSe]:NBANdwidth
Alignments	
Align now	[:SENSe]:ALIGnment:AMPLitude:NOW
InstAlign state	[:SENSe]:ALIGnment:AMPLitude[:STATe]
Limit / Display Lines	
Limit line beep	CALCulate[:SELected]:LIMit:SOUNnd
Create limit lines	CALCulate[:SELected]:LIMit:LLData
Limit line testing state	CALCulate:LIMit[:STATe]
Limit line testing annotation	CALCulate:LIMit:WARN
Display Line level setting	DISPlay:WINDow:TRACe:Y:DLINe
Display Line state	DISPlay:WINDow:TRACe:Y:DLINe:STATe
Read Pass / Fail	STATus:QUEStionable:LIMit:CONDition?
Build Limit from Trace	None
Markers	

Select a marker	CALCulate[:SELected]:MARKer:ACTivate
Markers - all off	CALCulate[:SELected]:MARKer:AOFF
Marker search - Max	CALCulate[:SELected]:MARKer:FUNCtion:MAXimum
Marker search - Min	CALCulate[:SELected]:MARKer:FUNCtion:MINimum
Marker search - Peak excursion	CALCulate[:SELected]:MARKer:FUNCtion:PEXCursion
Marker search - Peak left	CALCulate[:SELected]:MARKer:FUNCtion:PLEFt
Marker search - Peak Next	CALCulate[:SELected]:MARKer:FUNCtion:PNEXt
Marker search - Peak right	CALCulate[:SELected]:MARKer:FUNCtion:PRIGht
Marker search - Peak threshold	CALCulate[:SELected]:MARKer:FUNCtion:PTHReshold
Marker -> Setting	CALCulate[:SELected]:MARKer:SET
Move marker to center freq	CALCulate[:SELected]:MARKer:SET:CENTer
Move marker to ref level	CALCulate[:SELected]:MARKer:SET:REFLevel
Marker On/Off	CALCulate[:SELected]:MARKer[:STATe]
Move marker to other trace	CALCulate[:SELected]:MARKer:TRACe
Move/read marker X-axis position	CALCulate[:SELected]:MARKer:X
Read marker Y-axis position	CALCulate[:SELEcted]:MARKer:Y?
Read marker Y-axis uncertainty position	CALCulate[:SELected]:MARKer:Y:UNCertainty?
Markers - coupled	CALCulate[:SELected]:MARKer:COUPled
Marker search - Target	CALCulate[:SELected]:MARKer:FUNCtion:TARGet
Tracking On/Off	CALCulate[:SELected]:MARKer:FUNCtion:TRACking

Calibration

Receiver calibration (Cancel)	[:SENSe]:CORRection:RCALibration:CANCel
Receiver calibration (Run)	[:SENSe]:CORRection:RCALibration:RUN

Receiver calibration state (query only)	[:SENSe]:CORRection:RCALibration[:STATe]?
User calibration (Cancel)	[:SENSe]:CORRection:UCALibration:CANCel
Users calibration interpolated state (query only)	[:SENSe]:CORRection:UCALibration:INTerpolated?
User calibration (Run)	[:SENSe]:CORRection:UCALibration:RUN
User calibration state (Enable/Disable)	[:SENSe]:CORRection:UCALibration[:STATe]

Read / Save Data

Set read format	FORMat[:DATA]
Saves trace to CSV file.	MMEMory:STORe:FDATa
Read Trace Data	TRACe<n>:DATA?
Trace Data (Query the trace memory data)	TRACe<n>:MEMory:DATA?
Read the uncertainty memory trace data	TRACe<n>:MEMory:UNCertainty:DATA?
Read the uncertainty lower memory trace data	TRACe<n>:MEMory:UNCertainty:LOWer:DATA?
Read the uncertainty upper memory trace data	TRACe<n>:MEMory:UNCertainty:UPPer:DATA?
Trace Data (Query trace data)	TRACe<n>:UNCertainty:DATA?
Trace Data (Query trace data lower values)	TRACe<n>:UNCertainty:LOWer:DATA?
Trace Data (Query trace data upper values)	TRACe<n>:UNCertainty:UPPer:DATA?

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01june2018	Added NF mode Opt. 356 (10.3)

Commands that are Common to All Modes

In this topic:

- Catalog and Select Mode
- Mass Memory - Files
- External Reference Source
- Status Registers
- System
- Battery information
- GPS
- Variable Voltage Source
- Power OFF / ON
- IEEE - Common Commands

Notes:

- There is NO command to set the Security Level.
- There is NO command to set Startup Mode.
- There is NO commands to set Date/Time using Internet.

See Also

- CAT Mode Commands
- NA Mode Commands
- PM Mode Commands
- SA Mode Commands
- VVM Mode Commands
- ERTA Mode Commands
- Pulse Measurements Mode Commands
- Status Registers

Lockout Front-Panel Operation

Description	Command
Lockout keypresses	INSTrument:GTR
Return local control	INSTrument:GTL
Remote lockout disable	INSTrument:RLOCkout:DISable

Preset / User Preset

Preset all modes to Factory settings.	SYSTem:PRESet
Preset the current mode only to Factory settings.	SYSTem:PRESet:MODE
Preset all modes to User settings.	SYSTem:UPReset
Preset the current mode only to User settings.	SYSTem:UPReset:MODE
Save User Preset settings	SYSTem:UPReset:SAVE

Display Control

Display OFF	DISPlay:ENABle
Set brightness	DISPlay:BRIGhtness
Set date format	DISPlay:DATE:FMT
Change keywords	DISPlay:KEYWord[:DATA]
Reset default keywords	DISPlay:KEYWord:DEFault
Display marker table	DISPlay:TABLe:MARKer
Set time format	DISPlay:TIME:FMT
Set title string	DISPlay:TITLe:DATA
Display title	DISPlay:TITLe:STATe

Triggering

Continuous triggering	INITiate:CONTinuous
Single trigger	INITiate[:IMMediate]

Data Transfer Format and Order

Format	FORMat[:DATA]
Byte Order	FORMat:BORDer

Catalog and Select Mode

Read available modes	INSTrument:CATalog?
Set mode	INSTrument[:SELect]

Mass Memory - Files

Read files	MMEMory:CATalog?
Change folder	MMEMory:CDIRectory
Copy files	MMEMory:COPY
Read any file	MMEMory:DATA
Delete file	MMEMory:DELete
Recall an instrument state file	MMEMory:LOAD:STATe
Make a new folder	MMEMory:MDIRectory
Rename a file	MMEMory:MOVE
Remove a folder	MMEMory:RDIRectory
Save a picture file	MMEMory:STORe:IMAGe
Save an instrument state file	MMEMory:STORe:STATe

See Also (Mode-specific MMEM commands)

Save data trace to csv file	MMEMory:STORe:FDATa
Save SNP data	MMEMory:STORe:SNP[:DATA]
Recall antenna data	MMEMory:LOAD:ANTenna
Recall cable data	MMEMory:LOAD:CABLe
Save antenna data	MMEMory:STORe:ANTenna
Save cable data	MMEMory:STORe:CABLe

External Reference Source

Set external reference source	[:SENSe]:ROSCillator:SOURce
Read external source status	[:SENSe]:ROSCillator:STATus?

Status Registers

Read RecordPlayback status	STATus:OPERation:SAMode:CONDition?
Read external source status	STATus:QUEStionable:FREQuency:CONDition?
Read ADC Overrange errors.	STATus:QUEStionable:INTegrity:CONDition?
Read limit line failure	STATus:QUEStionable:LIMit:CONDition?

Battery Information

Read presence of battery	SYSTem:BATTery
Read absolute charge	SYSTem:BATTery:ABSCharge?
Read average current flow	SYSTem:BATTery:ACURrent?
Read remaining run time	SYSTem:BATTery:ARTTe?
Read chemistry type	SYSTem:BATTery:CHEMistry?
Read current flow	SYSTem:BATTery:CURRent?
Read number of charge cycles the battery has experienced	SYSTem:BATTery:CYCLes?
Read manufacture date of the battery.	SYSTem:BATTery:DATE?
Read capacity	SYSTem:BATTery:FCAPacity?
Read accuracy of the battery gauge	SYSTem:BATTery:MAXError?
Read manufacturer name	SYSTem:BATTery:MFGname?
Read remaining battery capacity	SYSTem:BATTery:RCAPacity?
Read current charge compared to full capacity	SYSTem:BATTery:RELCharge?

Read remaining run time	SYSTem:BATTery:RTTE?
Set and read battery saver state. OFF leaves the source ON between sweeps.	SYSTem:BATTery:SAVer
Read serial number of the battery.	SYSTem:BATTery:SN?
Read use status	SYSTem:BATTery:STATus
Read battery temperature	SYSTem:BATTery:TEMPerature?
Read vendor / distributor of the battery.	SYSTem:BATTery:VENDor?
Read battery voltage.	SYSTem:BATTery:VOLTage?

System

Set and read the system date	SYSTem:DATE
Set and read the system time	SYSTem:TIME
Immediately erase all user data	SYSTem:ERASe
Immediately erase the error log	SYSTem:ERRor:LOG:ERASe
Read the FieldFox error queue	SYSTem:ERRor[:NEXT]?
Reset default preferences	SYSTem:PREFerences:DFLT
Save system preferences	SYSTem:PREFerences:SAVE
Set time zone.	SYSTem:TZONe
Catalog time zones.	SYSTem:TZONe:CATalog?
Set and read system volume	SYSTem:AUDio:VOLume
Set and read system volume mute state	SYSTem:AUDio:MUTe
Read the SCPI version	SYSTem:VERSion?

GPS

Set and read GPS ON|OFF state.	SYSTem:GPS[:STATe]
Query returns a string containing Carrier to Noise (C/No dBHz) data.	SYSTem:GPS:CNOise?
Read the locked state.	SYSTem:GPS:LSTate?
Set and read the display state.	SYSTem:GPS:DISPlay:STATe
Set and read the clock sync state.	SYSTem:GPS:SYNChronize

Set and read the lat/long format.	SYSTem:GPS:DISPlay:COORdinate:FORMat
Set and read the distance units.	SYSTem:GPS:DISPlay:DISTance:UNIT
Read the last locked reading.	SYSTem:GPS:DATA:LAST?
Read the current GPS data	SYSTem:GPS:DATA?

Variable Voltage Source

Current draw	SYSTem:VVS:CURRent?
Enable Voltage Source	SYSTem:VVS:ENABle
Set the high impedance load state	SYSTem:VVS:HIMD
Max current draw	SYSTem:VVS:MAXCurrent?
Read measured voltage	SYSTem:VVS:MVOLtage?
Read state (On/ Off/ Tripped)	SYSTem:VVS:[STATe]?
Read the present requested voltage	SYSTem:VVS:RVOLtage?
Set voltage	SYSTem:VVS:VOLTage

Power OFF / ON

Automatically turns the FieldFox ON when power is applied.	SYSTem:PWR:AUTO
Turns the FieldFox OFF	SYSTem:PWR:SHUTdown
Sets delay before turning the FieldFox OFF.	SYSTem:PWR:SHUTdown:DLY
Set time to wait before rebooting the FieldFox	SYSTem:PWR:SHUTdown:DURation
Reads whether the DC supply is connected	SYSTem:DCSupply?

IEEE - Common Commands

Clear status	*CLS
Event Status Enable	*ESE
Event Status Enable Query	*ESR?
Identify	*IDN?
Operation complete command	*OPC
Operation complete query	*OPC?
Identify Options Query	*OPT?
Reset	*RST

Wait	*WAI

Last Modified:

17-Jul-2012	Added many commands (5.75)
1-Feb-2011	Added GPS (5.33)

Calibration Commands

See Also

- Correction Methods Explained
- Calibration Examples
- Status Registers

Set and read error term data	[:SENSe]:CORRection:COEFficient[:DATA]
Read number of cal steps	[:SENSe]:CORRection:COLLect:GUIDed:SCOunt
Measure step number	[:SENSe]:CORRection:COLLect:GUIDed:STEP:ACQuire
Prompt for step number	[:SENSe]:CORRection:COLLect:GUIDed:STEP:PROMpt
Measure Quick Cal	[:SENSe]:CORRection:COLLect[:ACQuire]:INT
Measure load	[:SENSe]:CORRection:COLLect[:ACQuire]:LOAD
Measure open	[:SENSe]:CORRection:COLLect[:ACQuire]:OPEN
Measure short	[:SENSe]:CORRection:COLLect[:ACQuire]:SHORt
Measure thru	[:SENSe]:CORRection:COLLect[:ACQuire]:THRU
Set Cal Kit	[:SENSe]:CORRection:COLLect:CKIT:LABel
Catalog all cal kits	[:SENSe]:CORRection:COLLect:CKIT:LABel:CATalog?
Set connectors	[:SENSe]:CORRection:COLLect:CONNector
Select method - Enhanced Response	[:SENSe]:CORRection:COLLect:METHod:ERES
Select method - QuickCal	[:SENSe]:CORRection:COLLect:METHod:QCALibrate:CALibrate
Select method - QuickCal Enhanced Response	[:SENSe]:CORRection:COLLect:METHod:QCALibrate:ERESponse
Select method - Simple Open response	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:OPEN
Select method - Simple Short response	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:SHORt

Select method - Thru response	[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:THRU
Select method - Short response	[:SENSe]:CORRection:COLLect:METHod:SRESponse
Select method - Open response	[:SENSe]:CORRection:COLLect:METHod:ORESponse
Select method - 1-port SOLT	[:SENSe]:CORRection:COLLect:METHod:SOLT1
Select method - TRL	[:SENSe]:CORRection:COLLect:METHod:TRL
Read method	[:SENSe]:CORRection:COLLect:METHod:TYPE?
Set AutoOrient for ECal	[:SENSe]:CORRection:COLLect:ECAL:AORient
Set simple ECal	[:SENSe]:CORRection:COLLect:ECAL:SIMPle
Omit Isolation	[:SENSe]:CORRection:COLLect:OISolation
Select Medium	[:SENSe]:CORRection:MEDium
Set Waveguide cutoff	[:SENSe]:CORRection:WGCutoff
Select Waveguide standard (CAT only)	[:SENSe]:CORRection:WAVeguide:STANdard
Finish Cal	[:SENSe]:CORRection:COLLect:SAVE
Turn ALL Correction ON and OFF	[:SENSe]:CORRection[:STATe]
Turn User Correction ON and OFF	[:SENSe]:CORRection:USER[:STATe]
Set system impedance	[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude]
Set CalReady type	[:SENSe]:CORRection:CALReady:TYPE

Last Modified:

11sep2017 Added this topic

Replacement Commands

The following is a list of commands that have been replaced.

Superseded Commands

Superseded commands will continue to work in existing programs. However, the replacement command usually has more functionality and is recommended.

Superseded command	Replacement command

CALCulate:MARKer:NOISe[:STATe]	CALCulate:MARKer:FUNCtion
RECPlayback:CONFig:FMTRigger:DATA	RECPlayback:CONFig:FMTRigger:LLData
CALCulate[:SELected]:LIMit:DATA	CALCulate:LIMit:LLData
CALCulate[:SELected]:LIMit:BEEP	CALCulate[:SELected]:LIMit:SOUNd
[:SENSe]:AMPLitude:ALIGnment:NOW (i.e., now reads: [:SENSe]:AMPLitude:ALIGnment[:OBSOLETE]:NOW)	[:SENSe]:ALIGnment:AMPLitude:NOW
[:SENSe]:AMPLitude:ALIGnment[:STATe]	[:SENSe]:ALIGnment:AMPLitude[:STATe]
[:SENSe]:AMPLitude:CORRections[:STATe]	[:SENSe]:AMPLitude:CORRections:DISable
[:SENSe]:BURSt:AMPLitude:ALIGnment:NOW	[:SENSe]:ALIGnment:BURSt:NOW
[:SENSe]:BURSt:AMPLitude:ALIGnment[:STATe]	[:SENSe]:ALIGnment:BURSt[:STARt]
[:SENSe]:IFFLatness:AMPLitude:ALIGnment:NOW	[:SENSe]:ALIGnment:CHEQ:NOW
[:SENSe]:IFFLatness:AMPLitude:ALIGnment["STATe]	[:SENSe]:ALIGnment:CHEQ[:STATe]
SYSTem:PREFerences:SAADC	SYSTem:PREFerences:SA:EAOR

OBSOLETE commands

These commands will NOT continue to work in existing programs.

Obsolete command	Replacement command
[:SENSe]:TAListen:AVOLume (A.05.50)	SYSTem:AUDio:VOLume
[:SENSe]:RADio:STANdard (A.05.50)	[:SENSe]:RADio:STANdard[:SELect]

Last Modified:

01dec2020	Updated commands for (A.12.1x)
22nov2017	New alignment commands (A.10.15)
5-Aug-2011	New topic (A.05.50)

Status Registers

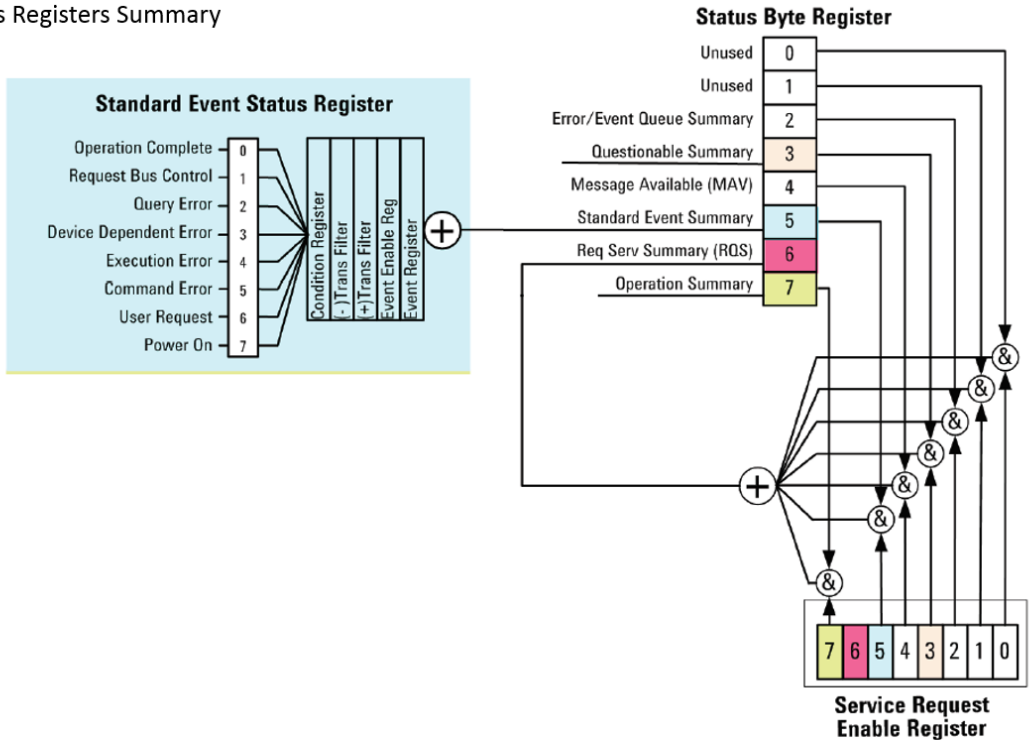
This topic contains images of the FieldFox status registers.

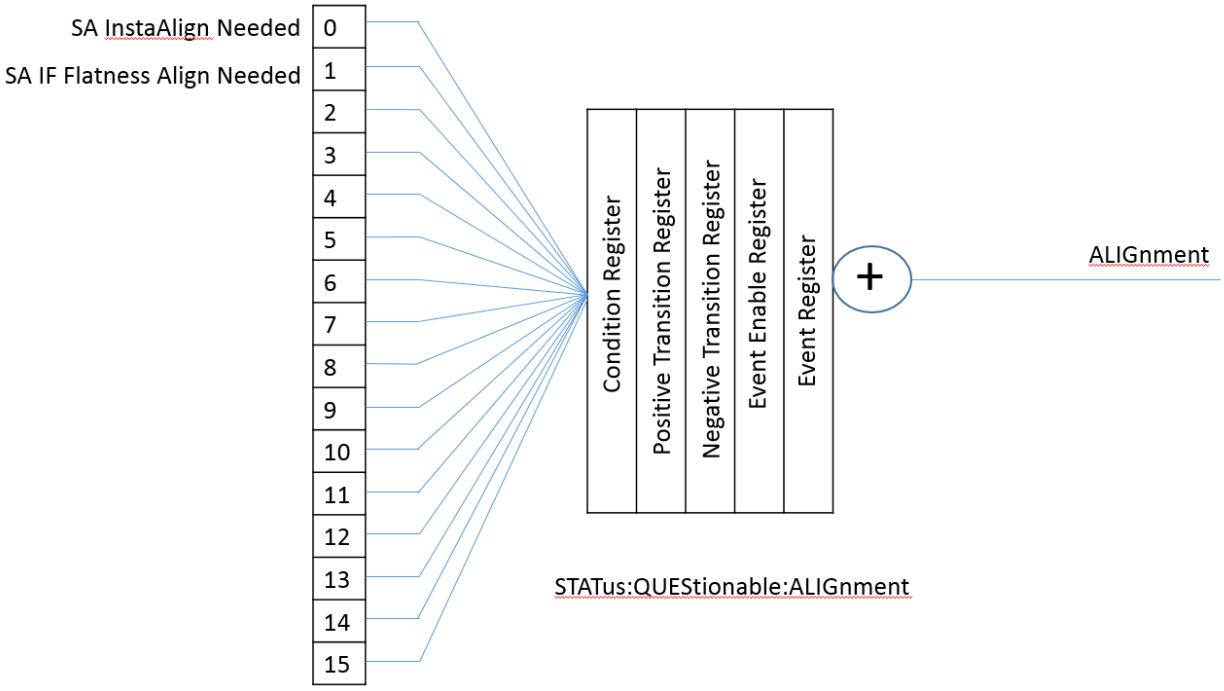
This topic contains the following registers:

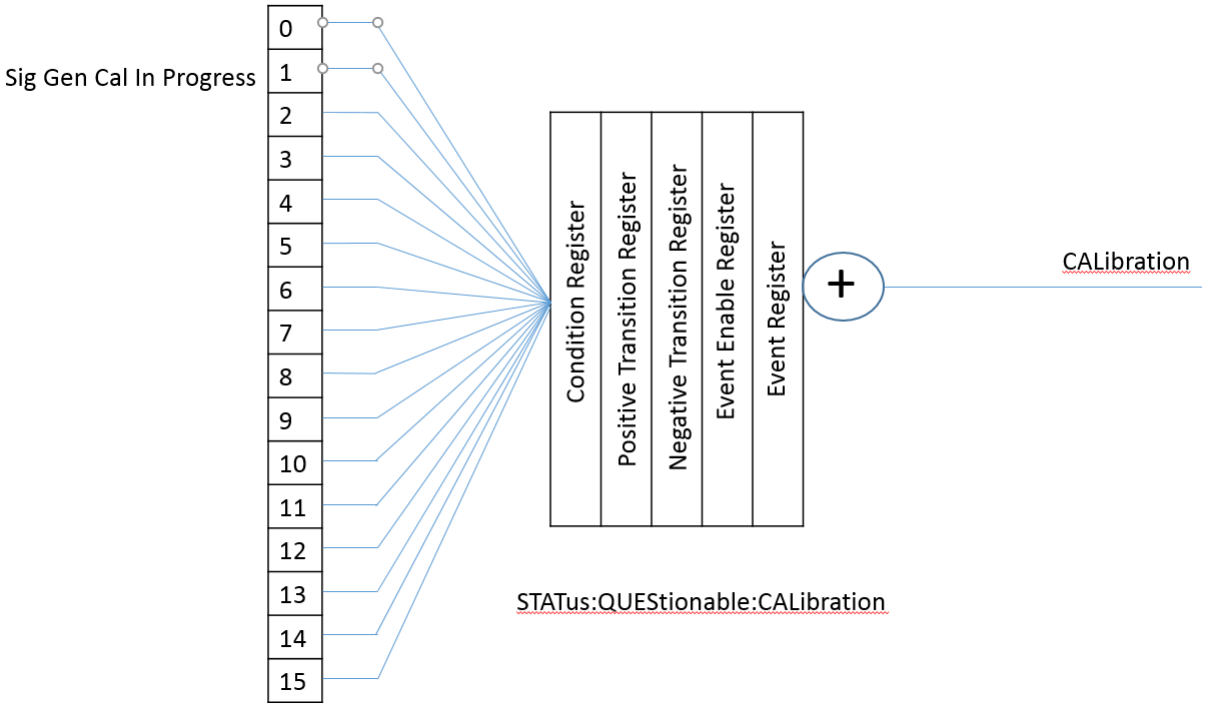
- Summary Status
- Status Questionable Alignment

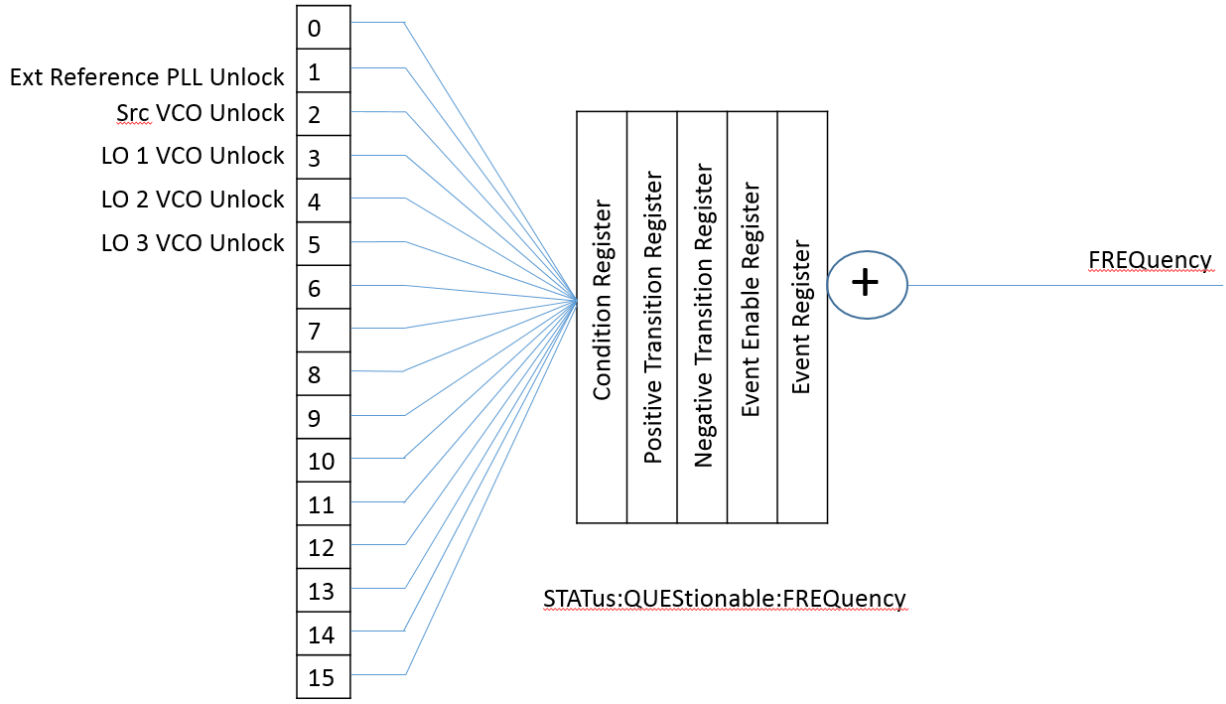
- Status Questionable Calibration
- Status Questionable Frequency
- Status Questionable Integrity
- Status Questionable Limit
- Status Questionable
- Status Operation SA Mode
- Status Operation

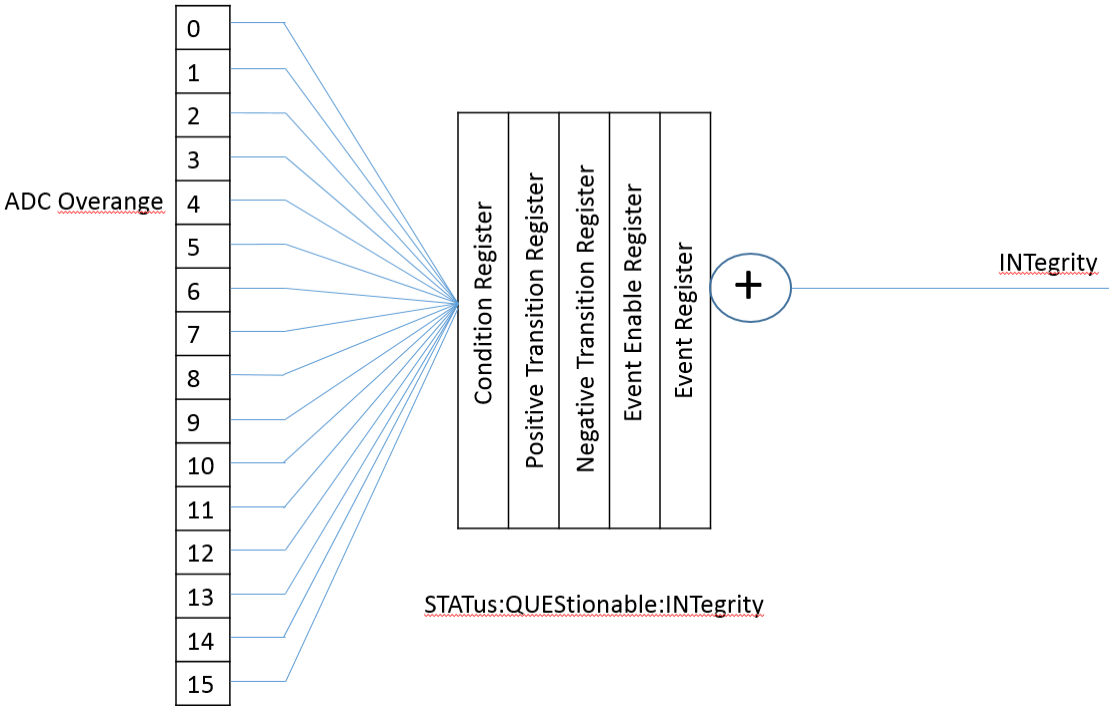
Field Fox Status Registers Summary

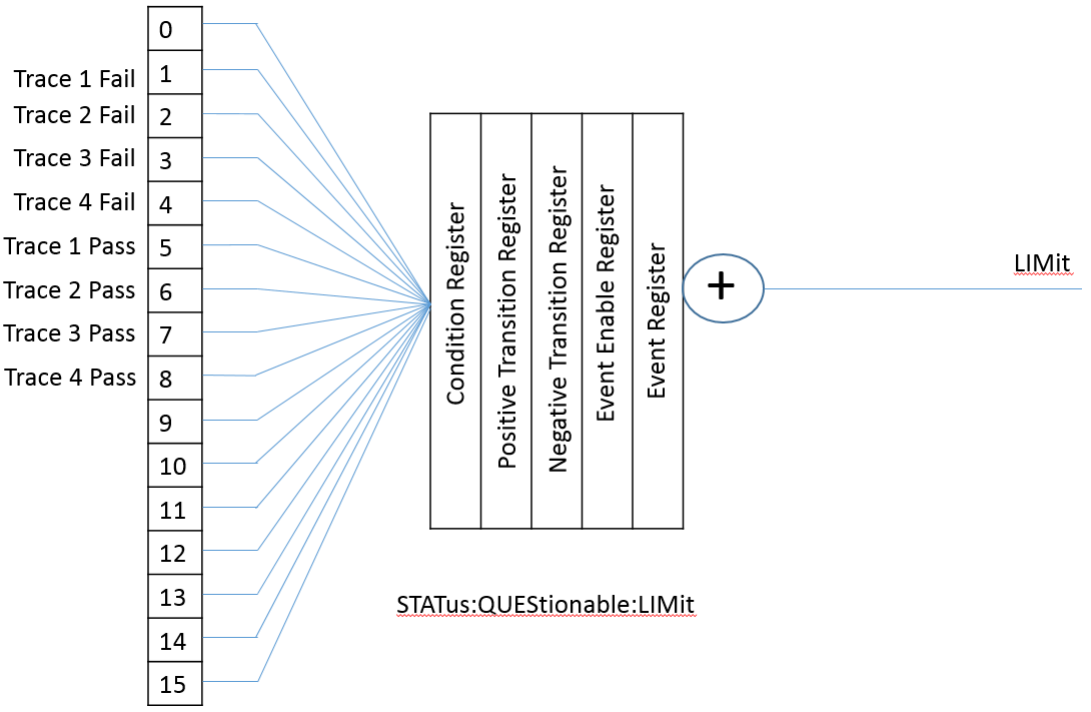


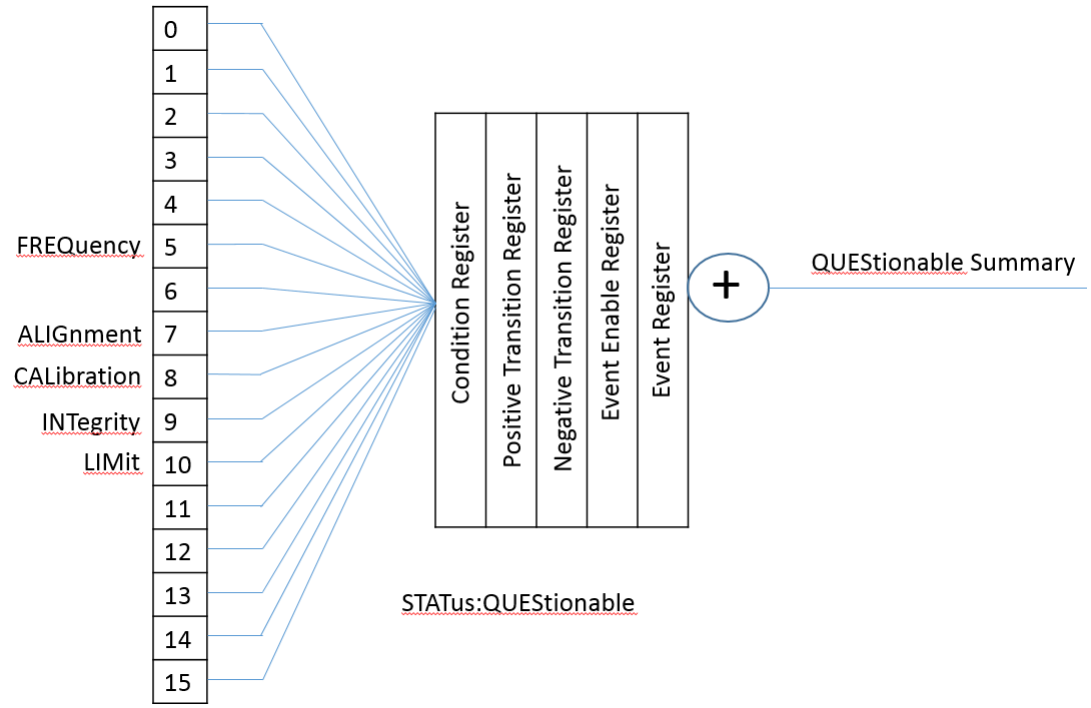

SA InstaAlign Needed
SA IF Flatness Align Needed
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Condition Register
Positive Transition Register
Negative Transition Register
Event Enable Register
Event Register
+
ALIGnment
STATus:QUEStionable:ALIGnment

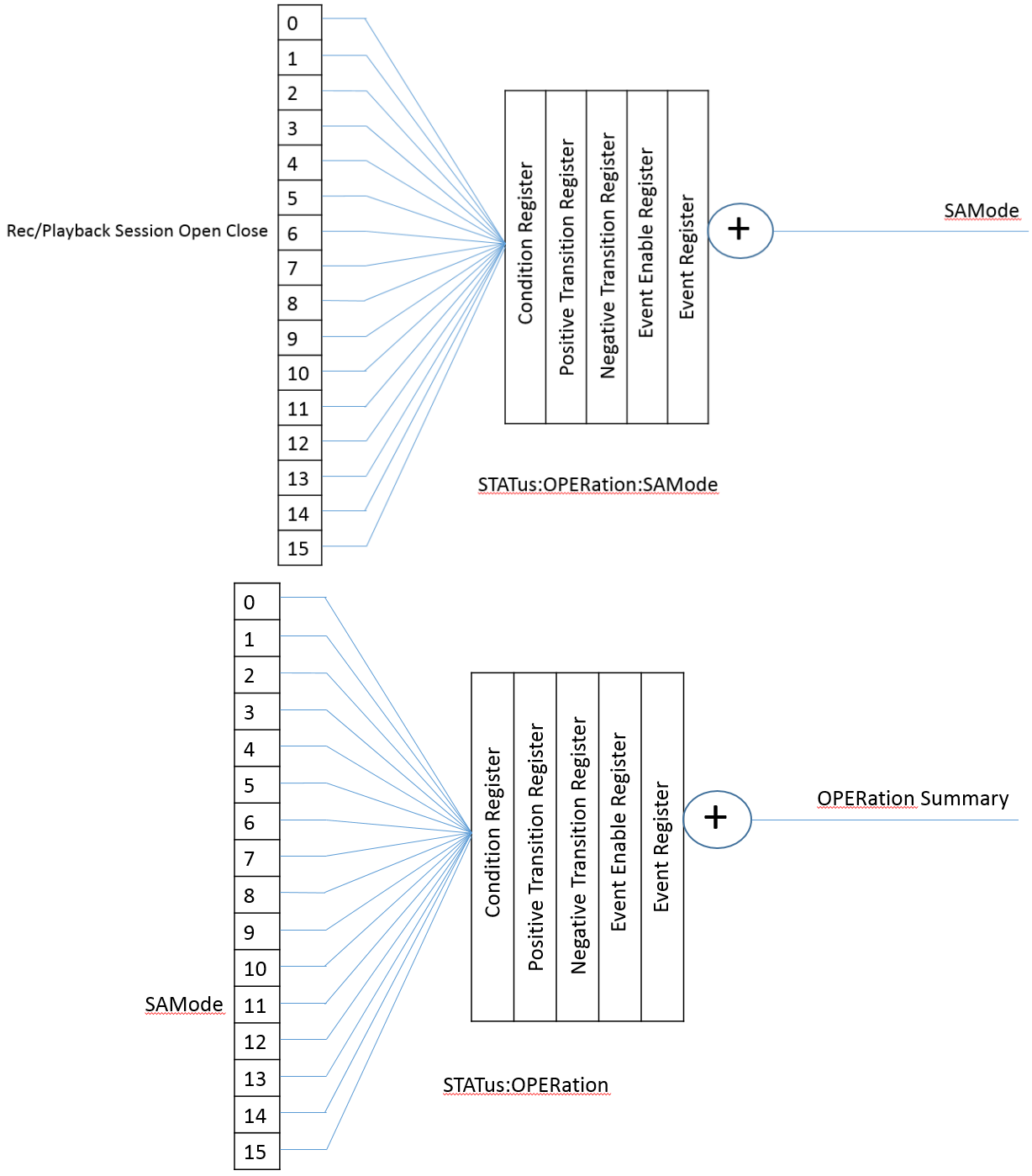

Sig Gen Cal In Progress
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Condition Register
Positive Transition Register
Negative Transition Register
Event Enable Register
Event Register
+
CALibration
STATus:QUEStionable:CALibration


Ext Reference PLL Unlock
Src VCO Unlock
LO 1 VCO Unlock
LO 2 VCO Unlock
LO 3 VCO Unlock
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Condition Register
Positive Transition Register
Negative Transition Register
Event Enable Register
Event Register
+
FREQuency
STATus:QUEStionable:FREQuency


ADC Overange
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Condition Register
Positive Transition Register
Negative Transition Register
Event Enable Register
Event Register
+
INTegrity
STATus:QUEStionable:INTegrity


0
1
Trace 1 Fail
2
Trace 2 Fail
3
Trace 3 Fail
4
Trace 4 Fail
5
Trace 1 Pass
6
Trace 2 Pass
7
Trace 3 Pass
8
Trace 4 Pass
9
10
11
12
13
14
15
Condition Register
Positive Transition Register
Negative Transition Register
Event Enable Register
Event Register
+
LIMit
STATus:QUEStionable:LIMit


0
1
2
3
4
FREQuency
5
6
ALIGnment
7
CALibration
8
INTegrity
9
LIMit
10
11
12
13
14
15
Condition Register
Positive Transition Register
Negative Transition Register
Event Enable Register
Event Register
+
QUEStionable Summary
STATus:QUEStionable



Last Modified:

22oct2017 Added this topic

New Programming Commands

The following is a list of new commands for each major release:

A.12.5x NEW!

IQA Mode
[:SENSe]:ALIGnment:CHEQ:FAST

NA Mode
[:SENSe]:CORRection:APPLy:NEARest

NF Mode
[:SENSe]:CORRection:ENR:AUTOload
[:SENSe]:CORRection:ENR:MODe (New capability)
[:SENSe]:CORRection:ENR:NOISe:AUTOload
[:SENSe]:CORRection:ENR:NOISe:CONNect
[:SENSe]:CORRection:ENR:NOISe:STATe
[:SENSe]:CORRection:TCOLd (New capability)

OTA Mode
(5G NR, 5G NR EVM, 5G TF, LTE FDD, LTE TDD)
[:SENSe]:POWer[:RF]:ARANge

(5G NR EVM Only)
DISPlay:NREVm:TRACe:DDATA

SA Mode
SYSTem:HEAD:POWer
SYSTem:PREFerences:SA:EAOR
[:SENSe]:ALIGnment:CHEQ:FAST

RTSA Mode
[:SENSe]:ALIGnment:CHEQ:FAST

A.12.3x

EMI Mode (Option 361)
[:SENSe]:CISPr:BAND
[:SENSe]:EDETector:TRACe{1:4}[:FUNCtion]
[:SENSe]:FREQuency:AXIS:LOG
[:SENSe]:BANDwidth:APD[:RESolution]

[:SENSe]:BANDwidth:APD[:RESolution]:AUTO
[:SENSe]:BANDwidth:EMI[:RESolution]
[:SENSe]:BANDwidth:EMI[:RESolution]:AUTO
[:SENSe]:MEASurement[:SELect]
[:SENSe]:SWEep:ADP:DWELl
[:SENSe]:SWEep:EMI:DWELl
TRACe{1:4}:APD:INPut.

Analog Demod Audio Capture and Playback (Compatible with SA mode)
[:SENSe]:AUDio:CAPTure:COUNt
[:SENSe]:AUDio:CAPTure:PLAYback:ALOad
[:SENSe]:AUDio:CAPTure:PLAYback:STARt
[:SENSe]:AUDio:CAPTure:PLAYback:STOP
[:SENSe]:AUDio:CAPTure:PLAYback:SCHannel
[:SENSe]:AUDio:CAPTure:STARt
[:SENSe]:AUDio:CAPTure:STOP
[:SENSe]:AUDio:CAPTure:TIME
[:SENSe]:ADEMod:METRics:AMTY
[:SENSe]:ADEMod:METRics:DTYPe
[:SENSe]:ADEMod:METRics:FILTer:BPF[:TYPe]
[:SENSe]:ADEMod:METRics:FILTer:DEEMphasis:TAO
[:SENSe]:ADEMod:METRics:FILTer:DEEMphasis[:STATe]
[:SENSe]:ADEMod:METRics:FILTer:HPF:CUToff
[:SENSe]:ADEMod:METRics:FILTer:HPF[:TYPe]
[:SENSe]:ADEMod:METRics:FILTer:LPF:CUToff
[:SENSe]:ADEMod:METRics:FILTer:LPF[:TYPe]
[:SENSe]:ADEMod:METRics:FMTY
[:SENSe]:ADEMod:METRics:LON
[:SENSe]:ADEMod:METRics:LTIMe
[:SENSe]:ADEMod:METRics:TFReq

MMEMory:STORe:AUDio:DEVice
MMEMory:STORe:AUDio:FNAMe
MMEMory:STORe:AUDio:FNAMe:TSTamp

Tune and Listen Commands (Compatible with SA mode)
[:SENSe]:TAListen:AM:SSB:GAIN

IQ Streaming Commands (Requires Option 353; Compatible with SA mode)
[:SENSe]:IQSTream:DHOSt
[:SENSe]:IQSTream:DPORt
[:SENSe]:IQSTream:PROTocol

[:SENSe]:IQSTream:SPP
[:SENSe]:IQSTream:SRATe
[:SENSe]:IQSTream:STARt
[:SENSe]:IQSTream:STOP
[:SENSe]:IQSTream:VITA:MRESend
[:SENSe]:IQSTream:VITA:MRIP
[:SENSe]:IQSTream:SIDentifier
[:SENSe]:MEASurement:IQANalysis

Data Logging Commands (Compatible with Channel Scanner, PAA, OTA (i.e., LTE FDD, LTE TDD, 5G NR, 5G TF, 5G NR EVM)
DLOGging:RECord[:STATe]?
DLOGging:PLAYback[:STATe]

OTA Commands (New)

Updates to OTA (5G NR) commands:
Now:
[:SENse]:NR5G:SSB:ODETection:BANDwidth (Was:
[:SENse]:NR5G:MEASure:SSB:ODETection:BANDwidth)
[:SENse]:NR5G:SSB:ODETection:RESults:COPY:CCARrier (Was:
[:SENse]:NR5G:MEASure:SSB:ODETection:RESults:COPY:CCARrier)
[:SENse]:NR5G:SSB:ODETection:SFReq:COPY (Was:
[:SENse]:NR5G:MEASure:SSB:ODETection:SFReq:COPY)
[:SENse]:NR5G:SSB:ODETection:SOFFset:COPY (Was:
[:SENse]:NR5G:MEASure:SSB:ODETection:SOFFset:COPY)
[:SENse]:NR5G:SSB:ODETection:SRASter:SNAP (Was:
[:SENse]:NR5G:MEASure:SSB:ODETection:SRASter:SNAP)
[:SENse]:NR5G:SSB:ODETection[:ENABle] (Was :[:SENse]:NR5G:MEASure:SSB:ODETection[:ENABle])

Updates to SA Mode commands:
- Was: [:SENSe]:MEAS:TAListen Now: [:SENSe]:MEAS:TAListen[:OBSOLETE] and
is **not** completelycompatible, so it is strongly recommended that this command is used:
[:SENSe]:ADEMod:METRics:DTYPe

- [:SENSe]:MEASurement:ADEMod has a **new** behavior and
supersedes this command behavior: [:SENSe]:MEASurement:ADEMod (LEGACY BEHAVIOR)

A.12.2x
Commands (Compatible with **new** mode:LTE TDD)
DISPlay:LTETdd:BCHart:Y[:SCALe]:AUTO
DISPlay:LTETdd:BCHart:Y[:SCALe]:PDIVision
DISPlay:LTETdd:BCHart:Y[:SCALe]:RLEVel

DISPlay:LTETdd:SCHart:Y[:SCALe]:AUTO
DISPlay:LTETdd:SCHart:Y[:SCALe]:PDIVision
DISPlay:LTETdd:SCHart:Y[:SCALe]:RLEVel
DISPlay:LTETdd:SPECtrum:Y[:SCALe]:AUTO
DISPlay:LTETdd:SPECtrum:Y[:SCALe]:PDIVision
DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:RLEVel
DISPlay:LTETdd:SPECtrum:Y[:SCALe]:RPOSition
DISPlay:LTETdd:TRACe:DATA
DISPlay:LTETdd:WINDow[:SELect]
DISPlay:LTETdd:WINDow<*n*>:BCHart:CCODing
DISPlay:LTETdd:WINDow<n>:CCARrier
DISPlay:LTETdd:WINDow<n>:DATA
DISPlay:LTETdd:WINDow<n>:PCI
DISPlay:LTETdd:WINDow<n>:PCI:MODe
DISPlay:LTETdd:WINDow<n>:SORT:DATA
DISPlay:LTETdd:WINDow<n>:SORT:ORDer
DISPlay:LTETdd:WINDow<n>:STATe
LTETdd:DATA:GPS?
LTETdd:DATA?
[:SENSe]:LTETdd:CCARrier:LIST[1]|2|3|4|5:ADD
[:SENSe]:LTETdd:CCARrier:LIST[1]|2|3|4|5:BAND?
[:SENSe]:LTETdd:CCARrier:LIST[1]|2|3|4|5:CHANnel?
[:SENSe]:LTETdd:CCARrier:LIST[1]|2|3|4|5:REMove
[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:BAND
[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:CHANnel
[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:ENABle
[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:FREQuency:CENTer
[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:LIST[1]|2|3|4|5:APPLy
[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:MODE
[:SENSe]:LTETdd:FERRor:THReshold
[:SENSe]:LTETdd:FLRange:EXTended

A.12.15

LTE Coexistence Commands (Compatible with:5GNR)
[:SENSe]:NR5G:COEXistence:CC
[:SENSe]:NR5G:COEXistence:DISPlay:TYPE
[:SENSe]:NR5G:COEXistence:LTE:DUPLex
[:SENSe]:NR5G:COEXistence[:ENABled]

A.12.0x

Commands (Compatible with:CS and PAA)
[:SENSe]:AMPLitude:CORRections:DISable

Commands (Compatible with: :CS, PAA, and OTA (LTE FDD, LTE TDD, 5G NR, 5G TF, 5G NR EVM))
DLOGging:FILE:ASAVe
DLOGging:FILE:FOLDer
DLOGging:FILE:TYPE
DLOGging:INT:DISTance
DLOGging:INT:TIME
DLOGging:INT:TYPE
DLOGging:INT[:ENABled]
DLOGging:PLAYback:PAUSe
DLOGging:PLAYback:POSition
DLOGging:PLAYback:STARt
DLOGging:PLAYback:STOP
DLOGging:RECord:PAUSe
DLOGging:RECord:STARt
DLOGging:RECord:STOP
MMEMory:LOAD:DLOG
MMEMory:STORe:DLOG

Commands (Compatible with:5GNR)
DISP:NR5G:WIND<*n*>:SSB
DISP:NR5G:WIND<*n*>:SSB:MOD

A.12.00
Frequency Extender Head Commands (Compatible with: IQA, OTA (LTE FDD, LTE TDD, 5G NR, 5G TF, 5G NR EVM), PAA, RTSA, and SA):
MMEMory:LOAD:HEAD
SYSTem:HEAD:HIGHsense[:STATe]
SYSTem:HEAD[:STATe]

Corrections support for Frequency Extender Menu (Compatible with: IQA, OTA, PAA, RTSA, and SA):
SYSTem:HEAD:CORRections:ASETup
SYSTem:HEAD:CORRections[:STATe]

Frequency Converter Commands supported indirectly by SA mode only:
MMEMory:LOAD:CONVerter
MMEMory:STORe:CONVerter
[:SENSe]:AMPLitude:CORRections:CONVerter:DEFault
[:SENSe]:AMPLitude:CORRections:CONVerter[:STATe]

Frequency Extender Head Commands (Compatible with: OTA only)
DISPlay:LTEFdd:WINDow<n>:BCHart:CCODing

DISPlay:NR5G:WINDow<n>:BCHart:CCODing

DISPlay:NREVm:WINDow<n>:BCHart:CCODing

DISPlay:V5G:WINDow<n>:BCHart:CCODing

[:SENse]:NR5G:MEASure:SSB:ODETection:BANDwidth - Refer to [:SENse]:NR5G:SSB:ODETection:BANDwidth.

[:SENse]:NR5G:MEASure:SSB:ODETection:RESults:COPY:CCARrier - Refer to [:SENse]:NR5G:SSB:ODETection:RESults:COPY:CCARrier.

[:SENse]:NR5G:MEASure:SSB:ODETection:SFReq:COPY - Refer to [:SENse]:NR5G:SSB:ODETection:SFReq:COPY.

[:SENse]:NR5G:MEASure:SSB:ODETection:SOFFset:COPY- Refer to [:SENse]:NR5G:SSB:ODETection:SOFFset:COPY.

[:SENse]:NR5G:MEASure:SSB:ODETection:SRASter:SNAP - Refer to [:SENse]:NR5G:SSB:ODETection:SRASter:SNAP.

[:SENse]:NR5G:MEASure:SSB:ODETection[:ENABle] - Refer to [:SENse]:NR5G:SSB:ODETection[:ENABle].

[:SENSe]:NREV:CCARrier<*n*>:MODE

Relatedly (from A.11.5x), see also, [:SENSe]:NR5G:CCARrier<n>:MODE

A.11.5x

See Phased Array Antenna (PAA) Commands

See 5G NR commands

See 5G NR EVM Conducted commands

See EMF commands

See USB (EMF) Antenna commands

See Indoor/Outdoor Mapping commands

See GPS commands

Spectral Emission Mask (SEM): See SA commands

See Mapping commands

A.11.26

DISPlay:MODel:DATA

DISPlay:MODel:STATe

INPut:LAN:ADDRess

INPut:LAN:ID:NAME

INPut:LAN:ID:SNUMber

INPut:LAN:ID:TYPe

INPut:TYPe

TRACe<n>:XVALue

A.11.25

RECPlayback:CONFig:PRFTrace

RECPlayback:CONFig:PRLTrace

A.11.xx

See LTE FDD Commands
See 5VG Commands

A.10.3x

See NF Mode Commands
See also programming Python programming example and MATLAB examples (VISA and LAN)
In the Common Commands topic:
SYSTem:VVS:HIMD
SYSTem:VVS:RVOLtage?

A.10.15

See IQA Mode Commands
See also Status Registers
See also Memory Command Examples

A.09.53

CALCulate:MARKer:STRack

A.09.50

[:SENSe]:ACQuisition:TIME
[:SENSe]:ACQuisition:TIME:AUTO
[:SENSe]:DENSity:BPLevel
[:SENSe]:DENSity:RPLevel
[:SENSe]:DETector:TRACe{1:4}:FUNCtion
[:SENSe]:FREQuency:SPAN:BANDwidth[:RESoulution]:RATio?
[:SENSe]:IFFLatness:ALIGnment[:STATe]
[:SENSe]:MEASure
[:SENSe]:SPECtrogram:TPDivision
:DISPlay:VIEW:DENSity:PERSistence
:DISPlay:VIEW:DENSity:PERSistence:INFinite
:DISPlay:VIEW:DENSity:STATe
:TRACe:PRESet:ALL
:TRIGger[:SEQuence]:FRAMe:OFFSet
:TRIGger[:SEQuence]:FRAMe:OFFSet:DISPlay:RESet
:TRIGger[:SEQuence]:FRAMe:PERiod
:TRIGger[:SEQuence]:HOLDoff
:TRIGger[:SEQuence]:LEVel
See also, RTSA Mode Commands

A.09.25

:CHSCanner:USER:FOLDer
:DISPlay:SCREen:GEOMetry
:INPut:LAN:IDENtify:SNUMber

:INPut:LAN:IDENtify:TYPe
:MMEMory:STOReIMAGe:NOKeys

A.08.15 and A.09.15

AM/FM Metrics

[:SENSe]:MEASurement:ADEMod
[:SENSe]:ADEMod:METRics:AMTY
[:SENSe]:ADEMod:METRics:DTYPe
[:SENSe]:ADEMod:METRics:FMTY
[:SENSe]:ADEMod:METRics:LON
[:SENSe]:ADEMod:METRics:LTIMe
[:SENSe]:ADEMod:METRics:MMENable
[:SENSe]:ADEMod:METRics:STIMe
[:SENSe]:ADEMod:METRics:TFReq
:DISPlay:ADEMod:METRics:AM:RESults:DATA?
:DISPlay:ADEMod:METRics:FM:RESults:DATA?

Channel Scanner

:CHSCanner:DATA?
:CHSCanner:DISPlay:SORT
:CHSCanner:DISPlay:SORT:ORDer
:CHSCanner:DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVision
:CHSCanner:DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel
:CHSCanner:EDIT:LIST?
:CHSCanner:EDIT:LIST:ADD
:CHSCanner:EDIT:LIST:CLEar
:CHSCanner:EDIT:RANGe:COUNt
:CHSCanner:EDIT:RANGE:IBW
:CHSCanner:EDIT:RANGe:SPAN
:CHSCanner:EDIT:RANGe:STARt
:CHSCanner:EDIT:RANGe:STEP
DLOGging:RECord:STARt
DLOGging:RECord:STOP
DLOGging:INTerval:DISTance
DLOGging:INTerval[:ENABled]
DLOGging:INTerval:TIMe
DLOGging:INTerval:TYPe
DLOGging:FILE:ASAVe
:CHSCanner:LOG[:STATe]
:CHSCanner:SEARch:COUNt
:CHSCanner:SEARch:TYPe
:CHSCanner[:SENSe]:CHANnel:SELect

:CHSCanner[:SENSe]:POWer[:RF]:ATTenuation
:CHSCanner[:SENSe]:POWer[:RF]:ATTenuation:AUTO
:CHSCanner[:SENSe]:POWer[:RF]:EXTGain
:CHSCanner[:SENSe]:POWer[:RF]:GAIN[:STATe]
:CHSCanner:SWEep:AVERage:COUNt
:CHSCanner:SWEep:AVERage[:STATe]
:CHSCanner:SWEep:DISPlay:TYPE
:CHSCanner:SWEep:MODE
:CHSCanner:USER:FOLDer
:CHSCanner[:SENSe]:SAListen:DTYPE
:CHSCanner[:SENSe]:SAListen:LTIMe
:CHSCanner[:SENSe]:SAListen:PAUSe
:CHSCanner[:SENSe]:SAListen:RESume
:MMEMory:LOAD:LOG
:MMEMory:LOAD:LIST
:MMEMory:STATe:STORe:LIST

A.08.04

ERTA Mode

[:SENSe]:MEASurement:ERTA:PNID
[:SENSe]:MEASurement:ERTA:PVERify?

GPS Mode

SYSTem:GPS:CNOise?

A.08.00

All Modes

SYSTem:PREFerences:SNP

CAT Mode

CALCulate[:SELected]:SMOothing:APERture
CALCulate[:SELected]:SMOothing[:STATe]

CAT - TDR

CALculate:PARameter:DEFine
CALCulate:[SELected]:MARKer:TDR:FORMat
[:SENSe]:SWEep:TDR:AUTO:FREQuency:STOP:MAXimum
[:SENSe]:SWEep:TDR:RES

NA Mode

CALCulate[:SELected]:OFFSet:SLOPe
CALCulate[:SELected]:OFFSet[:MAGNitude]

ERTA Mode

[:SENSe]:MEASurement:ERTA:PIP
[:SENSe]:MEASurement:ERTA:VPIP?
[:SENSe]:MEASurement:ERTA:ROLE?

[:SENSe]:MEASurement:ERTA:PSTatus
TRACe:ERTA:RINPut

SA Mode

Source Tracking Offset

SOURce:TOFFset:ENABle
SOURce:TOFFset:FREQuency
SOURce:TOFFset:REVerse

Reverse sweep (Opt. 209 only)

[:SENSe]:SWEep:FREVerse

Select freq axis annotation

[:SENSe]:FREQuency:ANNotation[:SELect]

Read ADC over-range status

CALCulate:MEASurement:WAOR?

Source-side corrections

MMEMory:LOAD:SANTenna
MMEMory:LOAD:SCABle
MMEMory:STORe:SANTenna
MMEMory:STORe:SCABle
[:SENSe]:AMPLitude:CORRections:SANTenna:DEFault
[:SENSe]:AMPLitude:CORRections:SANTenna[:STATe]
[:SENSe]:AMPLitude:CORRections:SCABle:DEFault
[:SENSe]:AMPLitude:CORRections:SCABle[:STATe]

A.07.75

All Modes

INSTrument:GTL
INSTrument:GTR

NA Mode

Big Marker Display States (A and B)

VVM Mode

[:SENSe]:CORRection:ZERO:REFerence

A.07.50

Frequency Offfset Power Sensor (FOPS) commands
Built-in Power Meter (CPM) Mode Commands
MMEMory:RDIRectory - Added optional argument

SA Mode

[:SENSe]:SWEep:MTIMe?

Renamed commands:

- SOURce:ENABle
- SOURce:FREQuency[:CW]
- SOURce:MODE
- SOURce:NORMalize

SOURce:POWer
SOURce:POWer:MAXimum

NA Mode

CALCulate:PARameter:DEFine (New arguments)
CALCulate[:SELected]:CONVersion:FUNCtion

CAT Mode

[:SENSe]:CORRection:WAVeguide:STANdard

CAT and NA Mode

[:SENSe]:CORRection:COLLect:METHod:SRESponse
[:SENSe]:CORRection:COLLect:METHod:ORESponse

A.07.25

Pulse Measurement Mode Commands

CAT and NA modes

[:SENSe]:CORRection:COLLect:CKIT:LABel <ECal module>
[:SENSe]:CORRection:COLLect:ECAL:AORient
[:SENSe]:CORRection:COLLect:ECAL:SIMPle
[:SENSe]:CORRection:COLLect:METHod:TRL
[:SENSe]:CORRection:COLLect:OISolation
[:SENSe]:CORRection:MEDium
[:SENSe]:CORRection:WGCutoff

SA Mode

CALCulate:MARKer:TZERo:FIXed

USB Power Meter Mode

SOURce:ENABle
SOURce:POWer

Common to ALL Modes

FORMat:BORDer

User Preset

SYSTem:UPReset
SYSTem:UPReset:FPANel[:STATe]
SYSTem:UPReset:MODE
SYSTem:UPReset:SAVE

A.07.00

NA mode

TRIGger:SOURce
TRIGger:SLOPe

CALCulate[:SELected]:MARKer:FORMat

SA mode

TRIGger[:SEQuence]:SOURce (New argument)

CALCulate:MEASurement:QAMPlitude

[:SENSe]:BURSt:ALIGnment:NOW

[:SENSe]:BURSt:ALIGnment[:STATe]

TRIGger[:SEQuence]:POSition

TRIGger[:SEQuence]:POSition:STATe

TRIGger[:SEQuence]:DELay:STATe

TRIGger[:SEQuence]:FGATe:DELay

TRIGger[:SEQuence]:FGATe:VIEW:TIME

TRIGger[:SEQuence]:FGATe:VIEW[:STATe]

TRIGger[:SEQuence]:FGATe:WIDTh

TRIGger[:SEQuence]:FGATe[:STATe]

Multiple modes

CALCulate[:SELected]:LIMit:SOUNd

A.06.17

Multiple modes

SYSTem:PWR:AUTO

SYSTem:DCSupply?

CAT / NA mode

[:SENSe]:CORRection:CALReady:TYPE

[:SENSe]:CORRection:COLLect:GUIDed:STEP:ACQuire

[:SENSe]:CORRection:COLLect:GUIDed:SCOunt

[:SENSe]:CORRection:COLLect:GUIDed:STEP:PROMpt

A.06.00

Multiple modes

CALCulate:LIMit:LLData

STATus:QUEStionable:LIMit:CONDition?

SYSTem:VVS:CURRent?

SYSTem:VVS:ENABle

SYSTem:VVS:MAXCurrent?

SYSTem:VVS:MVOLtage?

SYSTem:VVS[:STATe]?

SYSTem:VVS:VOLTage

SYSTem:DCSupply?

NA mode

[:SENSe]:AVERage:MODE

Time Domain Transform

CALCulate[:SELected]:FILTer[:GATE]:TIME:CENTer
CALCulate[:SELected]:FILTer[:GATE]:TIME:SHAPe
CALCulate[:SELected]:FILTer[:GATE]:TIME:SPAN
CALCulate[:SELected]:FILTer[:GATE]:TIME:STARt
CALCulate[:SELected]:FILTer[:GATE]:TIME:STATe
CALCulate[:SELected]:FILTer[:GATE]:TIME:STOP
CALCulate[:SELected]:FILTer[:GATE]:TIME[:TYPE]
CALCulate[:SELected]:TRANsform:TIME: [TYPE]
CALCulate[:SELected]:TRANsform:TIME:CENTer
CALCulate[:SELected]:TRANsform:TIME:IMPulse:WIDTh
CALCulate[:SELected]:TRANsform:TIME:KBESsel
CALCulate[:SELected]:TRANsform:TIME:LPFRequency
CALCulate[:SELected]:TRANsform:TIME:SPAN
CALCulate[:SELected]:TRANsform:TIME:STARt
CALCulate[:SELected]:TRANsform:TIME:STATe
CALCulate[:SELected]:TRANsform:TIME:STEP:RTIMe
CALCulate[:SELected]:TRANsform:TIME:STIMulus
CALCulate[:SELected]:TRANsform:TIME:STOP

CAT mode

CALCulate:PARameter:SELect
DISPlay:WINDow:SPLit
CALCulate:MARKer:COUPle

SA mode

[:SENSe]:AMPLitude:CORRections:ANTenna:DEFault
[:SENSe]:AMPLitude:CORRections:CABLe:DEFault
[:SENSe]:AMPLitude:ALIGnment[:STATe]
[:SENSe]:AMPLitude:ALIGnment:NOW
[:SENSe]:BANDwidth:IF:OUT

Power Meter Mode

[SENSe]:AVERage:SDETect

A.05.50

DISPlay:WINDow:TRACe:Y:DLINe <level>
DISPlay:WINDow:TRACe:Y:DLINe:STATe <ON/OFF>
CALCulate:MARKer:BWIDth:DATA
CALCulate:MARKer:BWIDth[:STATe]
CALCulate:MARKer:FUNCtion:BWIDth:THReshold

CALCulate:MARKer:FUNCtion:TRACking
CALCulate:MARKer:FUNCtion:TARGet
SYSTem:AUDio:MUTe
SYSTem:AUDio:VOLume
[:SENSe]:RADio:STANdard[:SELect]
[:SENSe]:AVERage:CLEar

A.05.30

CALCulate:MARKer:FUNCtion
CALCulate:MARKer:FUNCtion:BAND:SPAN
CALCulate:MARKer:FUNCtion:BAND:SPAN:AUTO
CALCulate:MARKer:SET
CALCulate[:SELected]:SMOothing:APERture
CALCulate[:SELected]:SMOothing[:STATe]
DISPlay[:WINDow][:NUMeric]:RESolution
[:SENSe]:BWID
[:SENSe]:CORRection:EXTension:PORT1
[:SENSe]:CORRection:EXTension:PORT2
[:SENSe]:CORRection:EXTension[:STATe]
[:SENSe]:ISOurce:ENABle
[:SENSe]:ISOurce:FREQuency[:CW]
[:SENSe]:ISOurce:MODE
[:SENSe]:ISOurce:POWer
SYSTem:TZONe
SYSTem:TZONe:CATalog?

Replacement Commands

The following is a list of commands that have been replaced.

Superseded Commands

Superseded commands will continue to work in existing programs. However, the replacement command usually has more functionality and is recommended.

Superseded command	Replacement command
CALCulate:MARKer:NOISe[:STATe]	CALCulate:MARKer:FUNCtion
RECPlayback:CONFig:FMTRigger:DATA	RECPlayback:CONFig:FMTRigger:LLData
CALCulate[:SELected]:LIMit:DATA	CALCulate:LIMit:LLData
CALCulate[:SELected]:LIMit:BEEP	CALCulate[:SELected]:LIMit:SOUNd

[:SENSe]:AMPLitude:ALIGnment:NOW (i.e., now reads: [:SENSe]:AMPLitude:ALIGnment[:OBSOLETE]:NOW)	[:SENSe]:ALIGnment:AMPLitude:NOW
[:SENSe]:AMPLitude:ALIGnment[:STATe]	[:SENSe]:ALIGnment:AMPLitude[:STATe]
[:SENSe]:AMPLitude:CORRections[:STATe]	[:SENSe]:AMPLitude:CORRections:DISable
[:SENSe]:BURSt:AMPLitude:ALIGnment:NOW	[:SENSe]:ALIGnment:BURSt:NOW
[:SENSe]:BURSt:AMPLitude:ALIGnment[:STATe]	[:SENSe]:ALIGnment:BURSt[:STARt]
[:SENSe]:IFFLatness:AMPLitude:ALIGnment:NOW	[:SENSe]:ALIGnment:CHEQ:NOW
[:SENSe]:IFFLatness:AMPLitude:ALIGnment["STATe]	[:SENSe]:ALIGnment:CHEQ[:STATe]
SYSTem:PREFerences:SAADC	SYSTem:PREFerences:SA:EAOR

OBSOLETE commands

These commands will NOT continue to work in existing programs.

Obsolete command	Replacement command
[:SENSe]:TAListen:AVOLume (A.05.50)	SYSTem:AUDio:VOLume
[:SENSe]:RADio:STANdard (A.05.50)	[:SENSe]:RADio:STANdard[:SELect]

Last Modified:

01dec2020	Updated commands for (A.12.1x)
22nov2017	New alignment commands (A.10.15)
5-Aug-2011	New topic (A.05.50)

Common Commands

The following IEEE 488.2 Common Commands can be used with the FieldFox:

***CLS**

Clears the instrument status byte by emptying the error queue and clearing all event registers. Also cancels any preceding *OPC command or query.

***ESE - Event Status Enable**

Sets bits in the standard event status enable register.

***ESE? - Event Status Enable Query**

Returns the results of the standard event enable register. The register is cleared after reading it.

***ESR? - Event Status Enable Register**

Reads and clears event status enable register.

***IDN? - Identify**

Returns a string that uniquely identifies the FieldFox. The string is of the form "Keysight Technologies",<model number>,<serial number>,<software revision> and so forth.

***OPC - Operation complete command**

Generates the OPC message in the standard event status register when all pending overlapped operations have been completed (for example, a sweep, or a Default).

***OPC? - Operation complete query**

Returns an ASCII "+1" when all pending overlapped operations have been completed.

***OPT? - Identify Options Query**

Returns a string identifying the analyzer option configuration.

***RST - Reset**

Executes a device reset and cancels any pending *OPC command or query. All trigger features in HOLD. The contents of the FieldFox non-volatile memory are not affected by this command.

***SRE - Service Request Enable**

Before reading a status register, bits must be enabled. This command enables bits in the service request register. The current setting is saved in non-volatile memory.

***SRE? - Service Request Enable Query**

Reads the current state of the service request enable register. The register is cleared after reading it.

***WAI - Wait**

Prohibits the instrument from executing any new commands until all pending overlapped commands have been completed.

CALCulate:FEED:MODE <char>

(Read-Write) Set and query the current measurement.

Relevant Modes

Parameters Pulse Measurements

<char> Measurement parameter. Choose from:

- **PEAK** - Peak (Meter-style)
- **AVER** - Average (Meter-style)
- **PTAV** - Peak to Average (Meter-style)
- **TMOD** - Trace Graph mode

Examples CALC:FEED:MODE AVER

Query Syntax CALCulate:FEED:MODE?

Return Type Character

Default PEAK

Last Modified:

30-Oct-2013	New command

CALCulate:IREJection:LEVel <char>

(Read-Write) Set and query the Interference rejection level.

Relevant Modes CAT

Parameters

<char> Interference rejection level. Choose from:
OFF – no interference rejection.
LEV1 – level 1
LEV2 – level 2
LEV3 – level 3

Examples

```
CALC:IREJ:LEV LEV1
```

Query Syntax CALCulate:IREJection:LEVel?

Return Type Character

Default OFF

Last Modified:

1-Aug-2011 New command

CALCulate:MARKer:AUDio:BEEP <bool>

(Read-Write) Set or return the state of an Audio Beep on the active SA mode marker. Audio Beep ON creates a marker if not already ON. Set beep volume using SYSTem:AUDio:VOLume <num>.

Relevant Modes SA

Parameters

<bool> Choose from:
ON (or 1) - Audio beep ON
OFF (or 0) - Audio beep OFF

Examples

```
CALC:MARK:AUD:BEEP ON
```

Query Syntax CALCulate:MARKer:AUDio:BEEP?

Return Type Boolean

Default Off

Last Modified:

1-Aug-2011 New command (A.05.50)

CALCulate:MARKer<n>:DREF:FIXed <bool>

(Read-Write) Set and query the state of fixed delta / reference markers. Created delta markers using CALCulate:MARKer[:STATe]

Relevant Modes PAA, SA, RTSA

Parameters

<n> Existing marker to fix or let float. Choose from 1 to 6.

<bool> Choose from:

OFF or **0** - Reference marker floats with each sweep at the Y-axis position of the data trace

ON or **1** - Reference marker is fixed at the Y-axis position of the data trace when the marker was created.

Examples

```
CALC:MARK2:DREF:FIX OFF
```

Query Syntax CALCulate:MARKer<n>:DREF:FIXed?

Return Type Boolean

Default ON

Last Modified:

10-june-2016 Added RTSA mode (9.50)

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

(Read-Write) Set and query the Frequency counter marker ON/OFF state.

Use CALCulate:MARKer[:STATe] to first create a marker.

Use CALCulate:MARKer:X to move the marker to the frequency of interest.

Use CALCulate:MARKer:FCOunt:X? to read the frequency counter marker.

Relevant Modes SA

Parameters

<n> Marker number to become a frequency counter marker. A marker is created if not already ON. Choose from 1 to 6. If unspecified, value is set to 1.

<bool> Frequency counter marker state. Choose from:

ON (or 1) - Frequency counter marker ON.

OFF (or 0) - Frequency counter marker OFF.

Examples

```
CALC:MARK2:FCO 1
```

Query Syntax CALCulate:MARKer<n>:FCOunt?

Return Type Boolean

Default OFF

Last Modified:

20-Oct-2010 New command (5.30)

:CALCulate:MARKer:FCOunt:PRECion <enumerated>

(Read-Write) Set and query the marker frequency counter's precision value (e.g., FINe, MEDium, COARse).

Relevant Modes SA

Parameters

<enumerated> Enter the marker frequency counter's precision value:

FINe - sets the frequency counter's precision to 0.1 Hz.

MEDium - sets the frequency counter's precision to 1 Hz.

COARse - sets the frequency counter's precision to 10 Hz.

Examples

```
CALC:MARK:FCO:PREC FIN 'Sets the marker precision value to 0.1 Hz
CALC:MARK:FCO:PREC COAR 'Sets the marker precision value to 10 Hz
```

Query Syntax CALC:MARK:FCO:PREC?

Return Type enumerated

Default FIN (0.1 Hz)

Last Modified:

05apr2021 New command (A.12.3x)

CALCulate:MARKer:FCOunt:X?

(Read-only) Read the frequency of the frequency counter marker in Hz. Use CALCulate:MARKer:FCOunt[:STATe] to make a marker a frequency counter marker.

Caution: For firmware A.09.59 and greater the returned x-axis value will now return up to 15 decimal places to the right of the decimal for distance x-axis or time x-axis units, instead of truncating all digits to the right of the decimal.
Example 1: Old DTF x-axis format for 82.5 meters would return 83. New x-axis format returns: 8.250000000E+1.
Example 2: Old RL measured marker x-axis value for 2.1862505 GHz would return 2186250500. New marker x-axis value returns: 2.186250500E+10.
Be aware that as a result some software content may need to be modified to accept this new behavior.

Relevant Modes SA

Parameters None

Examples CALC:MARK:FCO:X?

Return Type Numeric

Default N/A

Last Modified:

20-Oct-2010 New command (5.30)

CALCulate:MARKer<n>:FUNCtion <char>

(Read-Write) Causes the specified marker to become one of the SA Marker functions. Also causes the specified marker to be turned ON if it is not already.

Relevant Modes SA

Parameters

<n> Existing marker to become a marker function. Choose from 1 to 6.

<char> Marker function. Choose from:

OFF - Marker is returned to it's previous state (normal or delta).

NOISe - Marker becomes a noise marker.

BPOWer - Marker becomes a Band/Interval Power marker.

For non-zero span measurements, a Band Power marker integrates total power over the Band Power Span, which is set using:

- CALCulate:MARKer:FUNCtion:BAND:SPAN and
- CALCulate:MARKer:FUNCtion:BAND:SPAN:AUTO.

For Zero-span measurements, an Interval Power marker calculates the average power over the Interval Power Span, which is set using:

- CALCulate:MARKer:FUNCtion:BAND:SPAN and
- CALCulate:MARKer:FUNCtion:BAND:SPAN:AUTO.

Examples

```
CALC:MARK1:FUNC NOIS
```

Query Syntax CALCulate:MARKer<n>:FUNCtion?

Default OFF

Last Modified:

19-Oct-2010 New command (5.30)

CALCulate:MARKer:FUNCtion:BAND:SPAN <num>

(Read-Write) Set and read the frequency span for ALL SA mode Band Power Markers.

Set CALCulate:MARKer:FUNCtion:BAND:SPAN:AUTO to OFF.

Relevant Modes SA

Parameters

<num> Band power markers frequency span in Hz. Choose a value equal to or less than the FieldFox frequency span.

Examples
```
CALC:MARK:FUNC:BAND:SPAN 1e6  'Set span to 1 MHz
```

Query Syntax CALCulate:MARKer:FUNCtion:BAND:SPAN?

Default 5% of existing frequency span.

Last Modified:

19-Oct-2010 New command (5.30)

CALCulate:MARKer:FUNCtion:BAND:SPAN:AUTO <bool>

(Read-Write) Set and read the method by which the frequency span for ALL SA mode Band Power Markers is set.

Relevant Modes SA

Parameters

<bool> Band power frequency span method.

ON (or 1) - Band Power frequency span is always 5% of existing frequency span.

OFF (or 0) - Set Band Power frequency span using CALCulate:MARKer:FUNCtion:BAND:SPAN

Examples
```
CALC:MARK:FUNC:BAND:SPAN:AUTO 1
```

Query Syntax CALCulate:MARKer<n>:FUNCtion:BAND:SPAN:AUTO?

Default ON

Last Modified:

19-Oct-2010 New command (5.30)

CALCulate:MARKer:FUNCtion:INTerval:SPAN <num>

(Read-Write) Set and read the time interval for ALL SA mode Interval Markers.

Set CALCulate:MARKer:FUNCtion:INTerval:SPAN:AUTO to OFF.

Relevant Modes SA

Parameters

<num> Interval span in seconds. Choose a value between 1e-9 and 100 seconds.

Examples
```
CALC:MARK:FUNC:INT:SPAN 1e-3  'Set span to 1 mSec
```

Query Syntax CALCulate:MARKer:FUNCtion:INTerval:SPAN?

Default 5% of existing X-axis span.

Last Modified:

19-Oct-2010 New command (5.30)

CALCulate:MARKer:FUNCtion:INTerval:SPAN:AUTO <bool>

(Read-Write) Set and read the method by which the time span for ALL SA mode Interval Markers is set.

Relevant Modes SA

Parameters

<bool> Interval span method.

ON (or 1) - Interval time span is always 5% of X-axis.

OFF (or 0) - Set Interval time span using CALCulate:MARKer:FUNCtion:INTerval:SPAN

Examples

```
CALC:MARK:FUNC:INT:SPAN:AUTO 1
```

Query Syntax CALCulate:MARKer<n>FUNCtion:INTerval:SPAN:AUTO?

Default ON

Last Modified:

19-Oct-2010 New command (5.30)

CALCulate:MARKer<n>:NOISe[:STATe] <bool> - Superseded

Note: This command is replaced with CALCulate:MARKer:FUNCtion.

(Read-Write) Set and query the ON|OFF state of the SA noise marker. A marker must first be created. This command then converts it to a Noise marker.

Relevant Modes SA

Parameters

<n> Existing marker to make a noise marker. Choose from 1 to 6.

<bool> Choose from:

OFF - Noise marker OFF

ON - Noise marker ON

Examples

```
CALC:MARK:NOIS ON
```

Query Syntax CALCulate:MARKer:NOISe:[STATe]?

Return Type Boolean

Default OFF

CALCulate:MARKer:STRack

(Write-Read) Enables signal tracking utilizing the specified marker {1-6, default is 1}. If the specified marker is not already on, it is activated as a Normal marker. This marker then tracks the peak signal, via automatic changes to the Center Frequency. Any other markers that are active maintain their frequency position unless limited by Start or Stop Frequency.

Note: Signal tracking is incompatible (inactive) with Zero Span..

Relevant Modes SA

Parameters

<bool> **ON** (1) - Enables signal tracking utilizing the specified marker, activating it if necessary.

OFF (2) - Disables signal tracking.

Examples

```
CALC:MARK2:STR 1     'Marker 2 is set as the active signal tracking marker.
```

Query Syntax CALC:MARK:STR?

Default 0

Last Modified:

26-sep-2016 Added new SA command (A.09.53)

CALCulate:MARKer:TZERo:FIXed <bool>

(Read-Write) Set and query the ON|OFF state of the Time Zero Fixed setting.

This feature was created to allow recall of vintage instrument states (older than Rev. 7.0) that included Zero span sweep with a trigger delay and at least one marker. Before Rev. 7.0, these instrument states were saved and recalled with the equivalent of the ON state of this setting.

Relevant Modes SA

Parameters

<bool> Choose from:

OFF - Time zero fixed setting OFF

ON - Time zero fixed setting ON

Examples

```
CALC:MARK:TZER:FIX ON
```

Query Syntax CALCulate:MARKer:TZERo:FIXed?

Return Type Boolean

Default OFF

Last Modified:

2-Apr-2014	New command

CALCulate:MEASure:DATA?

(Read-Only) Reads data from the current channel measurement (Channel Power, Occupied Bandwidth, or Adjacent Channel Power).

- The number of values that are returned depends on the type of channel measurement.
- The units for the values depend on the currently displayed units.
- Offsets that are not defined return invalid data.

Data is returned in the following format:

Main channel - main channel power in dBm.
Main channel - main channel Power Spectral Density (PSD) in dBm/Hz.
Main channel - relative power to main channel power (this value is always zero).

Lower Offset Frequency (1) - channel power for lower offset 1 in dBm.
Lower Offset Frequency (1) - PSD for lower offset 1 in dBm/Hz.
Lower Offset Frequency (1) - relative power of lower ACPR for offset 1 in dBc or dB.

Upper Offset Frequency (1) - channel power for upper offset 1 in dBm.
Upper Offset Frequency (1) - PSD for upper offset 1 in dBm/Hz.
Upper Offset Frequency (1) - relative power of upper ACPR for offset 1 in dBc or dB.

Lower Offset Frequency (2) - channel power for lower offset 2 in dBm.
Lower Offset Frequency (2) - PSD for lower offset 2 in dBm/Hz.
Lower Offset Frequency (2) - relative power of lower ACPR for offset 2 in dBc or dB.

Upper Offset Frequency (2) - channel power for upper offset 2 in dBm.
Upper Offset Frequency (2) - PSD for upper offset 2 in dBm/Hz.
Upper Offset Frequency (2) - relative power of upper ACPR for offset 2 in dBc or dB.

Lower Offset Frequency (3) - channel power for lower offset 3 in dBm.
Lower Offset Frequency (3) - PSD for lower offset 3 in dBm/Hz.
Lower Offset Frequency (3) - relative power of lower ACPR for offset 3 in dBc or dB.

Upper Offset Frequency (3) - channel power for upper offset 3 in dBm.
Upper Offset Frequency (3) - PSD for upper offset 3 in dBm/Hz.
Upper Offset Frequency (3) - relative power of upper ACPR for offset 3 in dBc or dB.

For **Spectral Emission Mask (SEM)**:

This returns an array of 68 comma separated Values (index 0 thru index 67)

Value[0] is “1” for **Overall** FAILure, or “0” for PASS

(the next 3 entries are the primary Reference Channel measurement results, seen on-screen by varying MeasType)

Value[1] is the Total Power integrated for the reference channel

Value[2] is the Power Spectral Density (PSD) of the reference channel

Value[3] is the Spectrum Peak amplitude found in the reference channel

(the last 64 entries are 8 per offset, for up to 8 offset segments, beginning with the first offset #1)

(first indeces 4-7 are for the Lower (Negative) side of offset #1)

Value[4] is “1” for FAILure of this segment side (“0” for PASS)

Value[5] is the peak power (or PSD) value closest to the limit (noted peak, seen as column dBm or dBm/Hz)

Value[6] is the relative dB limit value for the noted peak (power relative to the limit, seen as column dB lim)

Value[7] is the offset frequency for the noted peak (seen as column pk Freq)

(next indeces 8-11 are for the Upper (Positive) side of offset #1)

Relevant Modes SA

Examples
The following data is returned for an ACPR channel measurement.
Offsets that are not defined return invalid data.
CALC:MEAS:DATA?
'With only one defined offset, returns
-6.73047890E+01,-1.303150890E+02,0.0000000E+00,
-6.78255554E+01,-1.308358553E+02,-5.207664E-01,
-6.77824583E+01,-1.307927583E+02,-4.776693E-01,
-9.876543210E+04,-9.393939111E+06,-9.876543210E+04,
-9.876543210E+04,-9.393939111E+06,-9.876543210E+04,
-9.876543210E+04,-9.393939111E+06,-9.876543210E+04,
-9.876543210E+04,-9.393939111E+06,-9.876543210E+04

Return Type Block data

Default Not Applicable

Last Modified:

18-May-2011 Modified description text

CALCulate:MEASurement:QAMPlitude?

(Read-Only) Returns the current Amplitude Alignment (InstAlign) status.

Relevant Modes SA

Examples CALC:MEAS:QAMP?

Return Type Boolean
0 - Alignment is current
1 - Alignment is questionable because Amplitude Alignment is in Hold or OFF.
See [:SENSe]:AMPLitude:ALIGnment[:STATe]

Default Not Applicable

Last Modified:

28-Mar-2013 New command

CALCulate:MEASurement:WAOR?

(Read-Only) Returns the ADC over-range status of the last sweep?

Relevant Modes SA, ERTA

Examples CALC:MEAS:WAOR?

Return Type Boolean

0 - No over-range detected.

1 - ADC over-range detected.

Default Not Applicable

Last Modified:

26-Jan-2015	New command

:CALCulate:PARameter:COUNt <n>

(Read-Write) Sets and returns the number of traces on the screen. All traces are displayed in separate windows. Use DISPlay:WINDow:SPLit to set overlay (traces in same window) configurations.

Change the measurement parameter using CALCulate:PARameter:DEFine.

Relevant Modes NA, NF

Parameters

<n> Number of traces.

For NA mode, choose from 1 to 4.

For NF mode, choose from 1 to 2.

Examples CALC:PAR:COUN 2

Query Syntax CALCulate:PARameter:COUNt?

Default 1

Last Modified:

01june2018	Added NF mode.
15-Aug-2012	New command

CALCulate:PARameter<tr>:DEFine <char>

(Read-Write) Set and query the current measurement.

Relevant Modes CAT, NA, PAA, NF, VVM

Parameters

<tr> Trace number (NA mode ONLY). Choose from 1 to 4. Choices 2, 3, 4 require that the appropriate multi-trace configuration first be created using :DISPlay:WINDow:SPLit.

Trace number (NF mode Only). Choose from 1 and 2.Choice 2 requires that the appropriate multi-trace configuration first be created using :DISPlay:WINDow:SPLit.

All other modes, do NOT specify.

<char> Measurement parameter. Choose from:

For CAT Mode:

- **RLOSs** - Return Loss
- **DTF1** - Distance To Fault
- **DTF2** - DTF + Return Loss
- **DTF3** - DTF (VSWR)
- **DTF4** - DTF Linear
- **CLOSs** - Cable loss 1 port
- **ILOSs** - 2-port Insertion loss
- **VSWR** - SWR

Available ONLY with Opt. 215

- **TDR** - Linear Rho
- **STEP** - TDR Ohm

For NA Mode:

Reverse measurements are available ONLY with full S-parameter option.

- **S11** - Forward reflection measurement
- **S21** - Forward transmission measurement
- **S12 -** Reverse transmission
- **S22 -** Reverse reflection
- **A -** A receiver measurement
- **B** - B receiver measurement
- **R1 -** Port 1 reference receiver measurement
- **R2 -** Port 2 reference receiver measurement

For NF Mode:

- **NFIG -** Noise Figure
- **NFAC** - Noise Factor
- **GAIN -** Gain
- **NTEM -** Noise temperature
- **YFAC** - Y-Factor

Available ONLY with Opt. 212

- **SCC11** - Common reflect/common incident for logical port 1
- **SDD11** - Differential reflect/differential incident for logical port 1
- **SDC11** - Differential reflect/common incident for logical port 1.
- **SCD11** - Common reflect/differential incident for logical port 1.

For VVM Mode:

- **S11** - 1-port cable trimming
- **S21** - 2-port transmission
- **AB** A/B ratio (NOT available on N9912A)
- **BA** B/A ratio (NOT available on N9912A)

Examples

```
CALC:PAR:DEF DTF2
```

```
'NA mode
CALC:PAR2:DEF S21
```

Query Syntax CALCulate:PARameter<tr>:DEFine?

Return Type Character

Default Cat Mode: S11
NA Mode: S11 (trace 1)
VVM Mode:S11

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)
22-Jan-2015	Added Opt 215
24-Mar-2014	Added Opt 212
16-Jul-2013	Edited VVM mode choices
18-Oct-2012	Edited for new models

:CALCulate:PARameter<n>:SELect

(Write-only) Select (make active) the current trace. You can only select a displayed trace.
For CAT and NA, change the measurement parameter using CALCulate:PARameter:DEFine.

Relevant Modes CAT, NA, NF, and Pulse

Parameters

<n> Trace number.
For NA mode, choose from 1 to 4.
For CAT, NF, and Pulse modes, choose from 1 or 2.

Examples

```
CALC:PAR2:SEL
```

Query Syntax Not Applicable

Default 1

Last Modified:

01june2018	Added NF mode (10.3).
26-Apr-2012	Modified for CAT (5.75)

CALCulate:RELative[:MAGNitude]:AUTO <bool>

(Read-Write) Set and query state of relative Power Meter measurements.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<bool> Choose from:
O or **OFF** - Relative measurements OFF
1 or **ON** - Relative measurements ON

Examples CALC:REL:AUTO 1

Query Syntax CALCulate:RELative[:MAGNitude]:AUTO?

Return Type Boolean

Default 0

Last Modified:

1-Apr-2014	Added CPM
31-Oct-2013	Added Pulse

:CALCulate:SPECtrum:MARKer:AOFF

(Write-Only) Turns OFF all IQA spectrum markers.

Relevant Modes IQA (Spectrum only)

Examples `CALC:SPEC:MARK:AOFF`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

22oct2017	Added IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer:CPSearch[:STATe] <bool>

(Read-Write) Sets and queries the Continuous Peak Search. Enables or disables the Continuous Peak Search. When Continuous Peak Search is on, a peak search is automatically performed for the selected marker after each sweep. The rules for finding the peak are exactly the same as for Peak Search, including the use of peak criteria rules.

Relevant Modes IQA (Spectrum only)

Parameters

<boolean>ON (1) - Enables continuos peak search.

OFF (0) - Disables continuos peak search.

CouplingsN/A

Examples

```
CALC:SPEC:MARK:CPS ON
CALC:SPEC:MARK:CPS 0
```

Query Syntax CALC:SPEC:MARK:CPS?

Default OFF (0)

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer:DREF:FIXed <bool>

(Read-Write) Set and query the state of fixed delta / reference markers.

Relevant Modes IQA (Spectrum only)

Parameters

<boolean>ON (1) - Enables fixed delta reference markers.

OFF (0) - Disables fixed delta reference markers.

CouplingsN/A

Examples

```
CALC:SPEC:MARK:DREF:FIX ON
CALC:SPEC:MARK:DREF:FIX 0
```

Query Syntax CALC:SPEC:MARK:DREF:FIX?

Default ON (1)

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer:FUNCtion:PEXCursion <num>

(Read-Only) Set and queries the minimum amplitude variation (rise and fall) required for a signal to be identified as a peak.

Relevant Modes IQA (Spectrum only)

Parameters

<numeric>Minimum: 0

Maximum: 200

CouplingsFor a signal to be identified as a peak it must meet certain criteria:

- Signals in the negative frequency range and signals very close to 0 Hz are ignored.
- Signal must satisfy peak excursion and peak threshold (:CALC:SPEC:MARK:FUNC:PTHR) criteria before being identified as a peak.

Examples

```
CALC:SPEC:MARK:FUNC:PEXC 5
```

Query Syntax CALC:SPEC:MARK:FUNC:PEXC?

Default 6.00E+00

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer:FUNCtion:PTHReshold <num>

(Read-Write) Sets and queries the peak threshold value that defines the minimum signal level (or min threshold) that the peak identification algorithm uses to recognize a peak.

Relevant Modes IQA (Spectrum only)

Parameters

<numeric>Minimum: -200

Maximum: 200

CouplingsFor a signal to be identified as a peak it must meet certain criteria:

- Signals in the negative frequency range and signals very close to 0 Hz are ignored.
- Signal must satisfy peak excursion (:CALC:SPEC:MARK:FUNC:PEXC) and peak threshold criteria before being identified as a peak.

Examples

```
CALC:SPEC:MARK:FUNC:PTHR -70
```

Query Syntax CALC:SPEC:MARK:FUNC:PTHR?

Default -9.000E+01

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer[n]:FUNCtion <char>

(Read-Write) Causes the specified marker to become one of the IQA Marker functions. Also, enables or disables the specified marker.

Relevant Modes IQA (Spectrum only)

Parameters

<n> Existing marker to become a marker function. Choose from 1 to 6.

<character> Marker function. Choose from:

OFF - Marker is returned to it's previous state (normal or delta).

NOISe - Marker becomes a noise marker.

BPOWer - Marker becomes a BandPower marker.

A Band Power marker integrates total power over the Band Power Span, which is set using:

- CALC:SPEC:MARK:FUNC:BAND:SPAN and
- CALC:SPEC:MARK:FUNC:BAND:SPAN:AUTO

Examples

```
CALC:SPEC:MARK1:FUNC NOIS
```

Query Syntax CALC:SPEC:MARK<n>:FUNC?

Default OFF

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer:FUNCtion:BAND:SPAN <freq>

(Read-Write) Set and read the frequency span for the selected I/Q marker.

Set CALCulate:MARKer:FUNCtion:BAND:SPAN:AUTO to OFF.

Relevant Modes IQA (Spectrum only)

Parameters

<frequency>Frequency span value.

CouplingsIf CALCulate:MARKer:FUNCtion:BAND:SPAN:AUTO is on, the value is 5% of the existing frequency span.

Examples

```
CALC:SPEC:MARK:FUNC:BAND:SPAN 1e6
```

Query Syntax CALC:SPEC:MARK:FUNC:BAND:SPAN?

Default 500000

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer:FUNCtion:BAND:SPAN:AUTO

(Read-Write) Set and read the method by which the frequency span for the selected I/Q marker.

Relevant Modes IQA (Spectrum only)

Parameters

<boolean> Band power frequency span method.

ON (or 1) - Band Power frequency span is 5% of existing frequency span.

OFF (or 0) - Set Band Power frequency span using CALCulate:SPECtrum:MARKer:FUNCtion:BAND:SPAN

Examples

```
CALC:SPEC:MARK:FUNC:BAND:SPAN:AUTO 1
```

Query Syntax CALCulate:SPECtrum:MARKer:FUNCtion:BAND:SPAN:AUTO?

Default ON

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>:FUNCtion:MAXimum

(Write-Only) Causes the specified marker to find the maximum amplitude of the trace.

Relevant Modes IQA (Spectrum only)

Parameters

<*n*> New or existing marker to move. Choose from 1 to 6.

Examples

```
CALC:SPEC:MARK3:FUNC:MAX
```

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>:FUNCtion:MINimum

(Read-Only) Moves the selected marker to the minimum Y-axis value on the current trace. Minimum (negative) peak searches do *not* have to meet the peak search criteria. If the selected marker is OFF, it is turned ON before the minimum search is performed.

Relevant Modes IQA (Spectrum only)

Parameters

<*n*> Existing marker to minimum (negative) peak. Choose from 1 to 6.

Couplings N/A

Examples

```
CALC:SPEC:MARK3:FUNC:MIN
```

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>:FUNCtion:PLEFt

(Read-Only) Moves the selected marker to the nearest peak left of the current marker which meets all enabled peak criteria.

If the selected marker was off, then it is turned on as a normal marker and a peak search is performed.

Relevant Modes IQA (Spectrum only)

Parameters

<*n*> Existing marker to assign to next highest peak. Choose from 1 to 6.

Couplings N/A

Examples

```
CALC:SPEC:MARK3:FUNC:PLEF
```

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>:FUNCtion:PRIGht

(Write-Only) Moves the selected marker to the nearest peak right of the current marker which meets all enabled peak criteria.

If the selected marker was off, then it is turned on as a normal marker and a peak search is performed.

Relevant Modes IQA (Spectrum only)

Parameters

<*n*> Existing marker to assign to next highest peak. Choose from 1 to 6.

Couplings N/A

Examples `CALC:SPEC:MARK3:FUNC:PRIG`

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>:PHASe?

(Read-Only) Read the frequency phase for the selected IQA marker. The unit is in radians and will be a value between ±π or ±3.14. If the marker is inactive or outside the range of the trace, a value of -9.9E+37 is returned.

If the specified marker is a delta marker, this query will return the phase delta from the reference marker.

Relevant Modes IQA (Spectrum only)

Parameters

<*n*> Existing marker to assign a frequency span. Choose from 1 to 6.

Couplings Marker needs to be active, on the spectrum trace and within the current range of the spectrum trace.

Returns 9.91E+37 if marker is inactive.

Resolution 0.01 radians

Examples `CALC:SPEC:MARK3:PHAS?`

Query Syntax CALC:SPEC:MARK<n>:PHAS?

Default Returns 9.91E+37 if marker inactive or on the IQ trace.

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>:SET:CENTer

(Write-Only) Sets the center frequency to the selected marker. The center frequency moves to the current selected marker's position at the center of the display.

Relevant Modes IQA (Spectrum only)

Parameters

<n> Existing marker that is used to set the center frequency. Choose from 1 to 6.

CouplingsN/A

Examples `CALC:SPEC:MARK3:SET:CENT`

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>:SET:RLEVel

(Read-Only) Sets the reference level to the amplitude value of the selected marker, moving the marked point to the reference level (top line of the graticule).

If the currently selected marker OFF when this control is pressed, it will be turned ON at the center of the screen as a normal type marker, and its amplitude applied to the reference level.

Relevant Modes IQA (Spectrum only)

Parameters

<*n*> Existing marker that is used to set the reference level. Choose from 1 to 6.

CouplingsN/A

Examples `CALC:SPEC:MARK3:SET:RLEV`

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer[n]:TRACe <int>

(Write-Read) Moves an existing marker to the specified trace number.

Note: This feature is called Marker Trace in the User's Guide.

Relevant Modes IQA (Spectrum only)

Parameters

<n> Existing marker to assign to trace. Choose from 1 to 6.

<trace numberr> Trace number. Choose from:
IQA:

- 1, 2 ,3, 4

Examples

```
CALC:SPEC:MARK1:TRAC 1
```

Query Syntax CALC:SPEC:MARK<n>:TRAC?

Return Type Integer

Default 1

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>:X <num>

(Read-Write) Set and query the X-axis location for the specified marker. See To Create and Move a Delta Marker.

Relevant Modes IQA (Spectrum only)

Parameters

<*n*> Existing marker for which to set X-axis location. Choose from 1 to 6.

<number> X-axis location. Choose any frequency value currently displayed on the X-axis.
Minimum: -9.9E+37 Hz
Maximum: 9.9E+37 Hz

Dependencies Range is dependent on the X axis range of the selected trace.

Examples

```
CALC:SPEC:MARK1:X 4e9
```

Query Syntax CALC:SPEC:MARK<n>:X?

Return Type Numeric

Default OFF.

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer[n]:Y?

(Read-Only) Reads the Y-axis value for the specified marker.

Relevant Modes IQA (Spectrum only) - One value is returned: Magnitude

Parameters

<*n*> Existing marker for which to read Y-axis value. Choose from 1 to 6.

Dependencies Range is dependent on the X axis range of the selected trace.

Examples

```
CALC:SPEC:MARK3:Y?
```

Return Type Numeric

Default OFF

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:SPECtrum:MARKer<n>[:STATe] <char>

(Read-Write) Create, change, or remove a marker.

Relevant Modes IQA (Spectrum only)

Parameters

<*n*> New or existing marker to create, change, or remove. Choose from 1 to 6.

<character> Choose from:

NORM - Marker is a Normal marker

DELT - Marker is a Delta marker pair.

OFF - Marker is disabled.

To create and move a delta marker:

1. Create a normal marker using this command.
2. Move the marker to the reference position using CALC:SPEC:MARK[*n*]:X <num>
3. Change the marker to a delta marker using this command.
4. Move the delta marker to the delta position using CALC:SPEC:MARKer[*n*]:X <num>

Examples

```
CALC:SPEC:MARK1 NORM
```

Query Syntax CALC:SPEC:MARKer<n>?

Return Type Character

Default OFF

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:WAVeform:MARKer:AOFF

(Write-Only) Turns OFF all IQA waveform markers.

Relevant Modes IQA (Waveform only)

Examples
```
CALC:WAV:MARK:AOFF
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:WAVeform:MARKer:COUPle:X <num>

(Read-Write) Set the X-axis coupled marker. Sets the X-axis value to the value of the other coupled markers.

See also CALC:WAV:MARK:COUP[:STAT].

Relevant Modes IQA (Waveform Only)

Parameters

<numeric> Minimum: -9.9e+37
Maximum: 9.9e+37

Examples
```
CALC:WAV:MARK:COUP 20e-6
```

Query Syntax n/a

Return Type Numeric

Default n/a

Last Modified:

21nov2017 Added IQA mode (10.1x)

:CALCulate:WAVeform:MARKer:COUPle[:STATe] <bool>

(Read-Write) Sets or reads the state of the coupled markers. If a selected marker's marker type is Normal/Delta, all active markers' X value will be coupled to selected marker's value.

If selected marker's marker type is OFF, all actCALCulate:WAVeform:MARKer<n>:Yive markers X value

still keep their own value.
See also CALC:WAV:MARK:COUP:X.

Relevant Modes IQA (Waveform Only)

Parameters

<boolean> ON (1) - Enables coupled markers.
OFF (0) - Disables coupled markers.

Examples N/A

Query Syntax
```
CALC:WAV:MARK:COUP ON
CALC:WAV:MARK:COUP 0
```

Return Type CALC:WAV:MARK:COUP?

Default OFF (0)

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:WAVeform:MARKer:CPSearch[:STATe] <bool>

(Read-Write) Sets and read the Continuous Peak Search. Enables or disables the Continuous Peak Search. When Continuous Peak Search is on, a peak search is automatically performed for the selected marker after each sweep. The rules for finding the peak are exactly the same as for Peak Search, including the use of peak criteria rules.

Relevant Modes IQA (Waveform Only)

Parameters

<boolean> ON (1) - Enables continuos peak search.
OFF (0) - Disables continuos peak search.

Couplings N/A

Examples
```
CALC:WAV:MARK:CPS ON
CALC:WAV:MARK:CPS 0
```

Query Syntax CALC:WAV:MARK:CPS?

Default OFF (0)

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:WAVeform:MARKer:DREF:FIXed <bool>

(Read-Write) Set and read the state of fixed delta / reference markers.

Relevant Modes IQA (Waveform Only)

Parameters

<boolean> ON (1) - Enables fixed delta reference markers.
OFF (0) - Disables fixed delta reference markers.

Couplings N/A

Examples

```
CALC:WAV:MARK:DREF:FIX ON
CALC:WAV:MARK:DREF:FIX 0
```

Query Syntax CALC:WAV:MARK:DREF:FIX?

Default ON (1)

Last Modified:

22sep2017 New IQA mode (10.00)

:CALCulate:WAVeform:MARKer:FUNCtion:PEXCursion <num>

(Read-Write) Set and queries the minimum value variation (rise and fall) required for a signal to be identified as a peak.

Relevant Modes IQA (Waveform Only)

Parameters

<numeric> Minimum: 0
Maximum: 200

Couplings For a signal to be identified as a peak it must meet certain criteria:
- Signals in the negative frequency range and signals very close to 0 Hz are ignored.
- Signal must satisfy peak excursion and peak threshold (:CALC:WAV:MARK:FUNC:PTHR) criteria before being identified as a peak.

Examples

```
CALC:WAV:MARK:FUNC:PEXC 2
```

Query Syntax CALC:WAV:MARK:FUNC:PEXC?

Default 0.00E+00

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:WAVeform:MARKer:FUNCtion:PTHReshold <num>

(Read-Write) Set and queries the peak threshold value that defines the minimum signal level (or min threshold) that the peak identification algorithm uses to recognize a peak.

Relevant Modes IQA (Waveform Only)

Parameters

<numeric> Minimum: -200

Maximum: 200

Couplings For a signal to be identified as a peak it must meet certain criteria:

- Signals in the negative value range and signals very close to 0 Hz are ignored.

- Signal must satisfy peak excursion (:CALC:WAV:MARK:FUNC:PEXC) and peak threshold criteria before being identified as a peak.

Examples

```
CALC:SPEC:WAV:FUNC:PTHR -20
```

Query Syntax CALC:SPEC:WAV:FUNC:PTHR?

Default -9.000E+01

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:WAVeform:MARKer<n>:DATA <char>

(Read-Write) Set and read the results of the waveform trace that a marker has been assigned.
This command operates on the selected trace. First select a trace using TRAC:WAV<*n*>:TYPE.

Relevant Modes IQA (Waveform

Parameters

<n> Existing marker

<char> Marker function.
WAV - Marker is
POL - Marker is
PHAS - Marker i
UPH - Marker is
REAL - Marker i
IMAG - Marker i

Examples

```
CALC:WAV:MAR
CALC:WAV:MAR
```

Query Syntax CALC:WAV:MA

Return Type character

Default WAV

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:WAVeform:MARKer<n>:FUNCtion <char>

(Read-Write) Causes the specified marker to become one of the IQA Marker functions. Also, enables or disables the specified marker.

Relevant Modes IQA (Waveform only)

Parameters

<*n*> Existing marker to become a marker function. Choose from 1 to 6.

<character> Marker function. Choose from:

OFF - Marker is returned to it's previous state (normal or delta).

NOISe - Marker becomes a noise marker.

BPOWer - Marker becomes a Band/Interval Power marker.

An Interval Power marker calculates the average power over the Interval Power Span, which is set using:

- CALC:WAV:MARK:FUNC:INT:SPAN and
- CALC:WAV:MARK:FUNC:INT:SPAN:AUTO.

Examples

```
CALC:WAV:MARK1:FUNC NOIS
```

Query Syntax CALC:WAV:MARK<n>:FUNC?

Default OFF

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:WAVeform:MARKer:FUNCtion:INTerval:SPAN <num>

(Read-Write) Set and read the waveform maker span for the selected IQA marker.

Set CALC:WAV:MARK:FUNC:INT:SPAN:AUTO to OFF.

Relevant Modes IQA

Parameters

<*numeric*> Assign a waveform span.

Couplings If CALC:WAV:MARK:FUNC:INT:SPAN:AUTO is on, the value is 5% of the existing frequency span.

Examples
```
CALC:WAV:MARK:FUNC:INT:SPAN 1e-9
```

Query Syntax CALC:WAV:MARK:FUNC:BAND:SPAN?

Default 5.000E-06

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:WAVeform:MARKer:FUNCtion:INTerval:SPAN:AUTO

(Read-Write) Set and read the automatic interval span setting for the selected I/Q marker.

See also CALCulate:WAVeform:MARKer:FUNCtion:INTerval:SPAN.

Relevant Modes IQA (Waveform only)

Parameters

<bool> Band power frequency span method.

ON (or 1) - Interval Power frequency span is 5% (default) of existing frequency span (Stop Time - Start Time).

OFF (or 0) - Set Interval Power frequency span manually using CALCulate:WAVeform:MARKer:FUNCtion:INTerval:SPAN

Examples
```
CALC:WAV:MARK:FUNC:INT:SPAN:AUTO 1
```

Query Syntax CALCulate:WAVeform:MARKer:FUNCtion:INT:SPAN:AUTO?

Default ON

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:WAVeform:MARKer<n>:FUNCtion:MAXimum

(Write-Only) Causes the specified marker to find the maximum amplitude of the trace. If the marker is off it activated and is set to NORMal.

Relevant Modes IQA (Waveform only)

Parameters

<*n*> New or existing marker to move. Choose from 1 to 6.

Examples
```
CALC:WAV:MARK1:FUNC:MAX
```

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:WAVeform:MARKer<n>:FUNCtion:MINimum

(Write-Only) Moves the selected waveform marker to the minimum Y-axis value on the current trace. Minimum (negative) peak searches do *not* have to meet the peak search criteria. If the selected marker is OFF, it is turned ON before the minimum search is performed.

Relevant Modes IQA (Waveform Only)

Parameters

<*n*> Existing marker to minimum (negative) peak. Choose from 1 to 6.

Couplings N/A

Examples
```
CALC:WAV:MARK3:FUNC:MIN
```

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:WAVeform:MARKer<n>:FUNCtion:PNEXt

(Write-Only) Reads the selected waveform marker. Sets the selected marker to the peak that has the next highest (but, lesser value) amplitude from the marker's current value. Only peaks which meet all enabled peak criteria are considered.

If the selected marker was off, then it is turned on as a normal marker and a peak search is performed.

Relevant Modes IQA (Waveform Only)

Parameters

<*n*> Existing marker to assign to next highest peak. Choose from 1 to 6.

Couplings N/A

Examples `CALC:WAV:MARK3:FUNC:PNEX`

Query Syntax N/A

Default N/A

Last Modified:

22oct2017 New IQA mode (10.1x)

:CALCulate:WAVeform:MARKer<n>:TRACe <int>

(Write-Read) Moves an existing marker to the specified trace number.

Note: This feature is called Marker Trace in the User's Guide.

Relevant Modes IQA (Waveform only)

Parameters

<*n*> Existing marker to assign to trace. Choose from 1 to 6.

<trace numberr> Trace number. Choose from:

IQA:

- 1, 2 ,3, 4

Examples

```
CALC:WAV:MARK1:TRAC 3
CALC:WAV:MARK2:TRAC 2
```

Query Syntax CALC:WAV:MARK<n>:TRAC?

Default 1

Last Modified:

22oct2017 Added IQA mode (10.1x)

:CALCulate:WAVeform:MARKer<n>:X

(Read-Write) Set and query the X-axis location for the specified waveform marker. No effect if the marker is Off. See To Create and Move a Delta Marker.

Relevant Modes IQA (Waveform only)

Parameters

<*n*> Marker to set on the X-axis location. Choose from 1 to 6.

<numeric> X-axis location. Choose any value currently displayed on the X-axis.
Minimum: -9.9E+37 Hz

Maximum: 9.9E+37 Hz

Dependencies Range is dependent on the X axis range of the selected trace.

Examples
```
CALC:WAV:MARK3:X 80e-6
```

Query Syntax CALC:WAV:MARK<*n*>:X?

Return Type Numeric

Default OFF

Last Modified:

22oct2017 Added IQA mode (10.1x)

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

(Read-Only) Reads the Y-axis value for the specified marker. One value is returned: Magnitude

Relevant Modes IQA (Waveform only)

Parameters

<*n*> Existing marker for which to read Y-axis value. Choose from 1 to 6.

Dependencies n/a

Examples
```
CALC:WAV:MARK1:Y?
```

Return Type numeric

Default OFF

Last Modified:

22oct2017 Added IQA mode (10.1x)

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

(Read-Write) Set or query the marker control mode. Sets the selected marker to Normal, Delta or Off.

If all markers are Off, setting a Marker sets the selected marker to Normal and places it at the center of the screen on the trace determined by the Marker Trace rules. Marker X Axis Value is displayed.

Relevant Modes IQA (Waveform only)

Parameters

<*n*> New or existing marker to create, change, or remove. Choose from 1 to 6.

<character> Choose from:

NORM - Marker is a Normal marker

DELT - Marker is a Delta marker pair.

OFF - Marker is disabled.

To create and move a delta marker:

1. Create a normal marker using this command.
2. Move the marker to the reference position using CALC:WAV:MARK[*n*]:X <time>
3. Change the marker to a delta marker using this command.
4. Move the delta marker to the delta position using CALC:WAV:MARK[*n*]:X <time>

Examples

```
CALC:WAV:MARK2 NORM
CALC:WAV:MARK2 DELT
```

Query Syntax CALC:WAV:MARK<*n*>?

Return Type Character

Default Off

Last Modified:

22oct2017 Added IQA mode (10.1x)

:DISPlay:TABLe:MARKer:SPECtrum <bool>

(Read-Write) Set and query the display of the marker table.

Relevant Modes IQA (Spectrum only)

Parameters

<boolean> Marker table display state. Choose from:

O or **OFF -** Table OFF

1 or **ON -** Table ON

Couplings If marker table is enabled, the marker table is only displayed when the active window number is 1.

Examples

```
DISP:TABL:MARK:SPEC ON
```

Query Syntax DISPlay:TABLe:MARKer:SPECtrum?

Return Type Boolean

Default OFF

Last modified:

22oct2017 Added IQA mode (10.1x)

:DISPlay:TABLe:MARKer:WAVeform <bool>

(Read-Write) Set or read the marker table. Enables the marker table to display below the graph on the FieldFox.

Relevant Modes IQA (Waveform Only)

Parameters

<boolean> Band power frequency span method.

ON (or 1) - Enables the marker table below the graph that displays the status of all six of the waveform markers.

OFF (or 0) - Disables the displayed marker table.

Couplings If marker table is enabled, the marker table is only displayed when the active window number is 1.

Examples

```
DISP:TABL:MARK:WAV 1
```

Query Syntax DISP:TABL:MARK:WAV?

Return Type Boolean

Default OFF

Last Modified:

22oct2017 New IQA mode (10.1x)

CALCulate[:SELected]:AMPLitude:MARKer:DELTa:STATe <bool>

(Read-Write) Set or query the state of the Delta Amplitude Markers. To be used as Delta markers, Amplitude Markers must first be enabled using CALCulate[:SELected]:AMPLitude:MARKer:STATe.

Relevant Modes Pulse Measurements, FOPS

Parameters

<bool> Choose from:

OFF or 0 - Delta Amplitude markers OFF

ON or 1 - Delta Amplitude markers OFF

Examples

```
CALC:AMPL:MARK:DELT:STAT 1
```

Query Syntax CALCulate[:SELected]:AMPLitude:MARKer:DELTa STATe?

Return Type Boolean

Default Off

Last Modified:

21-Mar-2014	Added FOPS
29-Oct-2013	New command

CALCulate[:SELected]:AMPLitude:MARKer:STATe <bool>

(Read-Write) Set or query the state of the two Amplitude Markers.

Relevant Modes Pulse Measurements, FOPS

Parameters

<bool> Choose from:
OFF or 0 - Amplitude markers OFF
ON or 1 - Amplitude markers OFF

Examples
```
CALC:AMPL:MARK:STAT 1
```

Query Syntax CALCulate[:SELected]:AMPLitude:MARKer:STATe?

Return Type Boolean

Default Off

Last Modified:

21-Mar-2014	Added FOPS
29-Oct-2013	New command

CALCulate[:SELected]:AMPLitude:MARKer:Y1 <num>

(Read-Write) Set or query the Y-axis location of the Amplitude Marker 1.

Relevant Modes Pulse Measurements, FOPS

Parameters

<num> Y-axis location in dBm.

Examples
```
CALC:AMPL:MARK:Y1 -1.5
```

Query Syntax CALCulate[:SELected]:AMPLitude:MARKer:Y1?

Return Type Numeric

Default 0

Last Modified:

21-Mar-2014	Added FOPS
29-Oct-2013	New command

CALCulate[:SELected]:AMPLitude:MARKer:Y2 <num>

(Read-Write) Set or query the Y-axis location of the Amplitude Marker 2.

Relevant Modes Pulse Measurements, FOPS

Parameters

<num> Y-axis location in dBm.

Examples

```
CALC:AMPL:MARK:Y2 -1.5
```

Query Syntax CALCulate[:SELected]:AMPLitude:MARKer:Y2?

Return Type Numeric

Default 0

Last Modified:

21-Mar-2014	Added FOPS
29-Oct-2013	New command

CALCulate[:SELected]:CONVersion:FUNCtion <char>

(Read-Write) Set and query measurement conversion function for the selected measurement.

First select a measurement using CALCulate:PARameter:SELect.

Relevant Modes NA

Parameters

<char> Conversion function. Choose from:

OFF - No conversion

ZAUTo - The displayed S-parameter is converted to the appropriate Z parameter: Refl for S11 and S22; Trans for S21 and S12.

YAUTo - The displayed S-parameter is converted to the appropriate Y parameter: Refl for S11 and S22; Trans for S21 and S12.

ZREFlection - The displayed S-parameter is converted to Z reflection, regardless of whether the S-parameter is reflection (S11 or S22) or transmission (S21 or S12).

YREFlection - The displayed S-parameter is converted to Y reflection, regardless of whether the S-parameter is reflection (S11 or S22) or transmission (S21 or S12)

ZTRansmissio - The displayed S-parameter is converted to Z transmission, regardless of whether the S-parameter is reflection (S11 or S22) or transmission (S21 or S12).

YTRansmissio - The displayed S-parameter is converted to Y transmission, regardless of whether the S-parameter is reflection (S11 or S22) or transmission (S21 or S12).

INVersion - The displayed S-parameter is converted to 1/S-parameter.

Examples

```
CALC:CONV:FUNC ZAUT
```

Query Syntax CALCulate[:SELected]:CONVersion:FUNCtion?

Return Type Character

Default OFF

Last Modified:

25-Mar-2014 New command (A.07.50)

CALCulate[:SELected]:CORRection:EDELay:TIME <num>

(Read-Write) Set and query the electrical delay for the selected trace. Use CALCulate:PARameter:SELect to select a trace.

Relevant Modes NA

Parameters

<num> Electrical Delay in seconds. Choose a value between 0 and 10 seconds.

Examples

```
CALC:CORR:EDEL:TIME 5e-10
```

Query Syntax CALCulate[:SELected]:CORRection:EDELay:TIME?

Return Type Numeric

Default 0

Last Modified:

19-Oct-2010 New command (5.30)

CALCulate[:SELected]:CORRection:OFFSet:PHASe <num>

(Read-Write) Set and query the phase offset for the selected trace. Use CALCulate:PARameter:SELect to select a trace.

Relevant Modes NA

Parameters

<num> Phase offset in degrees. Choose a value between 0 and 360 degrees.

Examples

```
CALC:CORR:OFFS:PHAS 20
```

Query Syntax CALCulate[:SELected]:CORRection:OFFSet:PHASe?

Return Type Numeric

Default 0

Last Modified:

19-Oct-2010	New command (5.30)

CALCulate[:SELected]:DATA:FDATa <data>

(Write-Read) Send and read the selected trace data in the current display format - one value per data point. Undefined behavior for Smith or Polar formats. (i.e., this is a screen capture from the currently displayed trace.)

Select a trace with CALCulate:PARameter:SELect

Set format with CALCulate:FORMat

Relevant Modes NA

CAT - Read-only

Parameters

<data> Comma-separated data to send.

Examples

```
'send three data points
CALC:DATA:FDAT 1,1,1
```

Query Syntax CALCulate[:SELected]:DATA:FDATa?

If correction is ON, then the returned data is corrected.

Return Type Comma-separated numeric

Default Not Applicable

CALCulate[:SELected]:DATA:FMEM <data>

(Write-Read) Send and read the selected memory trace data in the current display format - one value per data point.

Select a trace with :CALCulate:PARameter:SELect

Set format with CALCulate:FORMat

Relevant Modes NA

Parameters

<data> Comma-separated data to send.

Examples

```
'send three data points
CALC:DATA:FMEM 1,1,1
```

Query Syntax CALCulate[:SELected]:DATA:FMEM?

A memory trace must first be stored using CALCulate:MATH:MEMorize

If correction is ON, then the returned data is corrected.

Return Type Comma-separated numeric

Default Not Applicable

CALCulate[:SELected]:DATA:SDATA <data>

(Write-Read) Send and read the selected trace data - unformatted - two values per data point (Real, Imaginary). (i.e., includes any error correction that has been applied to the trace data.)

Select a trace with :CALCulate:PARameter:SELect

Relevant Modes NA

Parameters

<data> Comma-separated data to send.

Examples

```
'send three data points
CALC:DATA:SDAT 1,1,1
```

Query Syntax CALCulate[:SELected]:DATA:SDATA?

If correction is ON, then the returned data is corrected.

If imaginary data is not available, 0 is returned.

Return Type Comma-separated numeric

Default Not Applicable

CALCulate[:SELected]:DATA:SMEM <data>

(Write-Read) Send and read the selected memory trace data - unformatted - two value per data point (Real, Imaginary).

Select a trace with :CALCulate:PARameter:SELect

Relevant Modes NA

CAT - Read-only

Parameters

<data> Comma-separated data to send.

Examples

```
'send three data points
CALC:DATA:SMEM 1,1,1
```

Query Syntax CALCulate[:SELected]:DATA:SMEM?

A memory trace must first be stored using CALCulate:MATH:MEMorize

If correction is ON, then the returned data is corrected.

If imaginary data is not available, 0 is returned.

Return Type Comma-separated numeric

Default Not Applicable

CALCulate[:SELected]:FILTer[:GATE]:TIME:CENTer <num>

(Read-Write) Set and query the gate filter center time.

Relevant Modes NA

Parameters

<num>	Center time in seconds. Choose any number between: **±** (number of points-1) / frequency span.
Examples	CALC:FILT:TIME:CENT 1e-9
Query Syntax	CALCulate[:SELected]:FILTer[:GATE]:TIME:CENTer?
Return Type	Numeric
Default	0

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:FILTer[:GATE]:TIME:SHAPe <char>

(Read-Write) Set and query the gating filter shape.

Relevant Modes	NA
Parameters	
<char>	Choose from **MAXimum** - the widest gate filter available **WIDE** - **NORMal** - **MINimum** - the narrowest gate filter available
Examples	CALC:FILT:TIME:SHAP NORM
Query Syntax	CALCulate[:SELected]:FILTer[:GATE]:TIME:SHAPe?
Return Type	Character
Default	NORMal

Last Modified:

25-Jan-2012 New command

CALCulate[:SELected]:FILTer[:GATE]:TIME:SPAN <num>

(Read-Write) Set and query the gate filter span time.

Relevant Modes	NA
Parameters	
<num>	Span time in seconds. Choose any number between: 0 and 2* [(number of points-1) / frequency span]
Examples	CALC:FILT:TIME:SPAN 5ns

Query Syntax CALCulate[:SELected]:FILTer[:GATE]:TIME:SPAN?

Return Type Numeric

Default 20 ns

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:FILTer[:GATE]:TIME:STARt <num>

(Read-Write) Set and query the gate filter start time.

Relevant Modes NA

Parameters

<num> Start time in seconds. Choose any number between:
± (number of points-1) / frequency span

Examples CALC:FILT:TIME:STARt 5ns

Query Syntax CALCulate[:SELected]:FILTer[:GATE]:TIME:STARt?

Return Type Numeric

Default 10 ns

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:FILTer[:GATE]:TIME:STATe <bool>

(Read-Write) Set and query the ON | OFF gating state for the active trace. Select a trace using CALCulate:PARameter:SELect.

Relevant Modes NA

Parameters

<bool> Gating state. Choose from:
0 or **OFF** - Gating is OFF
1 or **ON -** Gating is ON

Examples CALC:FILT:TIME:STAT 1

Query Syntax CALCulate[:SELected]:FILTer[:GATE]:TIME:STATe?

Return Type Boolean

Default OFF

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:FILTer[:GATE]:TIME:STOP <num>

(Read-Write) Set and query the gate filter Stop time.

Relevant Modes NA

Parameters

<num> Stop time in seconds. Choose any number between:
± (number of points-1) / frequency span

Examples CALC:FILT:TIME:STOP 5ns

Query Syntax CALCulate[:SELected]:FILTer[:GATE]:TIME:STOP?

Return Type Numeric

Default 10 ns

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:FILTer[:GATE]:TIME[:TYPE] <char>

(Read-Write) Set and query the gate filter type.

Relevant Modes NA

Parameters

<char> Choose from:
BPASs - Includes (passes) the range between the start and stop times.
NOTCh - Excludes (attenuates) the range between the start and stop times.

Examples CALC:FILT:TIME BPAS

Query Syntax CALCulate[:SELected]:FILTer[:GATE]:TIME[:TYPE]?

Return Type Character

Default BPAS

Last Modified:

25-Jan-2012 New command

CALCulate:[SELected]:FMEM:DATA?

(Read-only) Read the data from a memory trace. A memory trace must first be stored using CALCulate[:SELected]:MATH:MEMorize.

Relevant Modes FOPS

Parameters None

Examples

```
CALC:FMEM:DATA?
```

Return Type Numeric

Default Not Applicable

Last Modified:

21-Mar-2014 New command

CALCulate[:SELected]:FORMat <char>

(Read-Write) Set and query displayed data format of the NA mode measurement.

Relevant Modes NA

Parameters

<char> Data format. Choose from:

MLOGarithmic – Log magnitude

MLINear – Linear magnitude

SWR – Standing Wave Ratio

PHASe - Phase in degrees. The trace wraps every 360 degrees, from +180 to –180

UPHase - Unwrapped phase in degrees.

SMITh – Smith chart; series resistance and reactance.

POLar - Magnitude and phase of the reflection coefficient.

GDELay – Group delay (N9912A - S11 ONLY)

ZMAG - Impedance, magnitude only.

REAL - Resistive portion of the measured complex data.

IMAGinary - Reactive portion of the measured data.

Examples

```
CALC:FORMat SWR
```

Query Syntax CALCulate[:SELected]:FORMat?

Return Type Character

Default Depends on model and measurement.

Last Modified:

22-Sep-2014	Added Real, imag, Zmag
1-Aug-2011	Added unwrapped phase (A.05.50)

CALCulate[:SELected]:GAIN:DATA?

(Read-Only) Return an array of floating point values, representing Gain. (Data – Memory).

Relevant Modes FOPS

Parameters

Examples
```
CALC:GAIN:DATA?
```

Return Type Numeric

Default Not Applicable

Last Modified:

16-Sep-2022	New FOPS command

CALCulate[:SELected]:LIMit:BEEP <bool> - Superseded

This command is replaced with CALCulate[:SELected]:LIMit:SOUNd. Learn about superseded commands.

(Read-Write) Set and query whether the FieldFox beeps when a limit line failure occurs.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, SA

Parameters

<bool> Beep state. Choose from:
OFF - No beeping
ON - Beep on Fail

Examples
```
CALC:LIM:BEEP ON
```

Query Syntax CALCulate[:SELected]:LIMit:BEEP?

Return Type Boolean

Default OFF

Last Modified:

16-Apr-2013	Replaced (6.25)

CALCulate[:SELected]:LIMit:DATA <data> - Superseded

This command is replaced with CALCulate:LIMit:LLData which can also set Relative Limits.

(Read-Write) Set and query the data to complete the limit line table.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

For **ACP** measurements, use CALCulate:ACPower:OFFSet:LIST:LIMit:NEGative[:UPPer]:DATA and CALCulate:ACPower:OFFSet:LIST:LIMit:POSitive[:UPPer]:DATA.

Relevant Modes SA, CAT, NA

Parameters

<data> Data for all limit segments in the following format:

- **n** = number of segments, followed by segment data.
- each segment: **State, Type, BegStim, EndStim, BegResp, EndResp**
- Where:

State	0 for limit line disabled 1 for limit line enabled.
Type	Type of limit segment. Choose from 0 - Upper limit 1 - Lower limit
BegStim	Start of X-axis value (freq, power, time)
EndStim	End of X-axis value
BegResp	Y-axis value that corresponds with Start of X-axis value
EndResp	Y-axis value that corresponds with End of X-axis value

Subsequent segments are appended to the data in the same manner.

Examples

```
' The following writes three upper limit segments for a 40 MHz bandpass filter.
' individual segments are highlighted for readability.
CALC:LIM:DATA 3,1,0,2e7,3e7,-30,0,1,0,3e7,5e7,0,0,1,0,5e7,6e7,0,-30
```

Query Syntax CALCulate:LIMit:DATA?

Return Type Block data

Default 0 - Limit line data off

CALCulate[:SELected]:LIMit:LLData <data>

This command replaces CALCulate:LIMit:DATA which can be used ONLY with Fixed limit lines. This command can also be used with Relative Limit Lines.

(Read-Write) Set and query the data to complete the limit line table.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

For **ACP** measurements, use CALCulate:ACPower:OFFSet:LIST:LIMit:NEGative[:UPPer]:DATA and CALCulate:ACPower:OFFSet:LIST:LIMit:POSitive[:UPPer]:DATA.

Relevant Modes SA, CAT, NA, NF

Parameters

<data> Data for all limit segments in the following format:

- **n** = number of segments, followed by segment data.
- Where:

<nL> number of limit line segments to follow

State 0 - limit line disabled
1 - limit line enabled.

Fixed/Rel 0 - Relative
1 - Fixed

Upper/Lower 1 - Upper limit
0 - Lower limit

<nP> Number of points to follow

Freq value X-axis value

Amp value Y-axis value

Subsequent points are appended to the data in the same manner.

Examples

```
'The following writes one relative, upper limit segment with 4 points for a 40 MHz bandpass filter.
' Blue-shaded numbers are values for one segment.
'following are X/Y points
CALC:LIM:LLD 1,1,0,0,4,-30e6,-20,-20e6,-10,-10e6,0,10e6,0,20e6,-10,30e6,-20
```

Query Syntax CALCulate[:SELected]:LIMit:LLData?

Return Type Block data

Default 0 - Limit line data off

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
17-Jul-2012	New command

CALCulate[:SELected]:LIMit:SOUNd <char>

Note: This command replaces CALCulate[:SELected]:LIMit:BEEP.

(Read-Write) Set and query the conditions with which the FieldFox beep occurs during limit line testing.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, SA

Parameters

<char> Beep state. Choose from:

OFF - No beeping

OPASs - Beep on Pass

OFAil - Beep on Fail

Examples

```
CALC:LIM:SOUN OPA
```

Query Syntax CALCulate:SELected:LIMit:SOUNd?

Return Type Character

Default OFF

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
16-Apr-2013	New command (6.25)

CALCulate[:SELected]:LIMit[:STATe]

(Read-Write) Set and query whether limit testing occurs.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, SA

Parameters

<bool> Testing state. Choose from:

0 or **OFF** - No limit line testing

1 or **ON -** Do limit line testing

Examples

```
CALC:LIM ON
```

Query Syntax CALCulate[:SELected]:LIMit[STATe]?

Return Type Boolean

Default OFF

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

CALCulate[:SELected]:LIMit:WARN <bool>

(Read-Write) Set and query whether the Pass and Fail warning is displayed on the FieldFox screen.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, SA

Parameters

<bool> Testing state. Choose from:

0 or **OFF**- Do NOT display onscreen warning.

1 or **ON -** Display onscreen warning.

Examples

```
CALC:LIM:WARN ON
```

Query Syntax CALCulate[:SELected]:LIMit:WARN?

Return Type Boolean

Default OFF

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

CALCulate[:SELected]:MARKer<n>:ACTivate

(Write-Only) Makes the selected marker active.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA Pulse Measurements, FOPS

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Parameter

<n> Marker number to activate. Each trace can contain up to six markers.

Examples

```
CALC:MARK2:ACTivate
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

10-june-2016	Added RTSA mode (9.50)
20-Mar-2014	Added FOPS
29-Oct-2013	Added Pulse
16-Aug-2012	New command

CALCulate[:SELected]:MARKer:AOFF

(Write-Only) Turns OFF all markers.

Relevant Modes	CAT, NA, NF, PAA, SA, RTSA
	Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.
Examples	`CALC:MARK:AOFF`
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)
10-june-2016	Added RTSA mode (9.50)

CALCulate[:SELected]:MARKer:BWIDth:DATA?

(Read-only) Read the results of the bandwidth marker search. Returns Bandwidth, Center Frequency, Q, and Loss. Use CALCulate:MARKer:BWIDth[:STATe] to create bandwidth markers.

This command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes	NA
Parameters	
Examples	CALC:MARK:BWID:DATA?
Return Type	4 Numeric values separated by commas.
Default	Not Applicable

Last Modified:

13-Aug-2012	Added select
2-Aug-2011	New command A.05.50

CALCulate[:SELected]:MARKer:BWIDth[:STATe] <bool>

(Read-Write) Set or return the state of a bandwidth marker search.

This command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Use CALCulate:MARKer:FUNCtion:BWIDth:THReshold to set the bandpass or notch value to be used in the search.

Use CALCulate:MARKer:BWIDth:DATA to read the data.

Relevant Modes NA

Parameters

<bool> Choose from:

ON (or 1) - Uses markers 1 through 4 to perform a bandwidth search.

OFF (or 0) - Turns OFF the BW search. Use CALCulate:MARKer:AOFF to turn the markers OFF.

Examples

```
CALC:MARK:BWID ON
```

Query Syntax CALCulate[:SELected]:MARKer:BWIDth[:STATe]?

Return Type Boolean

Default Off

Last Modified:

13-Aug-2012	Added select
1-Aug-2011	New command (A.05.50)

CALCulate[:SELected]:MARKer:COUPled <bool>

(Read-Write) Set and query the state of marker coupling. Marker coupling is used in multi-trace configurations. This setting affects all NA mode markers.

Relevant Modes NA, NF

Parameters

<bool> Choose from:

OFF or **0** - Markers are uncoupled.

ON or **1** - Markers are coupled.

Examples

```
CALC:MARK:COUP OFF
```

Query Syntax CALCulate[:SELected]:MARKer:COUPled?

Return Type Boolean

Default ON

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

10-Aug-2012	Edited Coupled
30-Mar-2012	Removed marker specific

CALCulate[:SELected]:MARKer:FORMat <char>

(Read-Write) Set and query marker format that appears in the upper-right of the screen and in the marker table. This format can be different from the displayed format.

All of the markers on the selected trace change to the specified format.

Use CALC:MARK:Y? to read the Y-axis values that are on the screen.

Relevant Modes NA

Parameters

<char> Marker format. Choose from:

DEF - (Default) Same as displayed format.

IMPedance - R+jX format

PHASe - Phase in degrees.

ZMAGnitude - Impedance Magnitude

MAGPhase - Magnitude and Phase

REAL -

IMAGinary -

DBA -

Examples

```
CALC:MARK:FORM IMP
```

Query Syntax CALCulate[:SELected]:MARKer:FORMat?

Return Type Character

Default Depends on model and measurement.

Last Modified:

4-Jun-2013	New topic (A.07.00)

CALCulate[:SELected]:MARKer:FUNCtion:BWIDth:THReshold <value>

(Read-Write) Set or return the value used to find the bandwidth of a bandpass or notch filter response.

Use CALCulate:MARKer:BWIDth[:STATe] to turn BW search On/Off.

Use CALCulate:MARKer:BWIDth:DATA to read the data.

Relevant Modes NA

Parameters

<value> BW search value. Specify the level in dB from the peak or valley where bandwidth is measured.

Negative numbers search for a Peak bandpass, such as a filter S21 response.

Either of the following TWO methods can be used to search for a Valley or Notch filter, such as the S11 response of a bandpass filter.

- Negative values search down from the TOP (MAX) of the response.
- Positive values search up from the BOTTOM (MIN) of the notch.

Examples

```
CALC:MARK1:FUNC:BWID:THR 3
```

Query Syntax CALCulate[:SELected]:MARKer:FUNCtion:BWIDth:THReshold?

Return Type Numeric

Default -3

Last Modified:

13-Aug-2012	Added selected
1-Aug-2011	New command (A.05.50)

CALCulate[:SELected]:MARKer<n>:FUNCtion:FALLtime <num>

(Write-Read) Set and query pulse drop in dBm. Marker 1 is created as a delta marker and placed at the first instance of the peak value and the specified fall on the trace. Read the fall time using CALCulate[:SELected]:MARKer:X?

Relevant Modes Pulse Measurements

Parameters

<num> Pulse Fall in dBm.

Examples

```
CALC:MARK:FUNC:FALL -5
```

Query Syntax CALCulate[:SELected]:MARKer<n>:FUNCtion:FALLtime?

Default -3 dBm

Last Modified:

29-Oct-2013	New command

CALCulate[:SELected]:MARKer<n>:FUNCtion:MAXimum

(Write-Only) Causes the specified marker to find the highest (maximum) amplitude of the trace.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA, Pulse Measurements, FOPS

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<n> New or existing marker to move. Choose from 1 to 6.

Examples `CALC:MARK1:FUNC:MAX`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
21-Mar-2014	Added FOPS
29-Oct-2013	Added Pulse

CALCulate[:SELected]:MARKer<n>:FUNCtion:MINimum

(Write-Only) Causes the specified marker to find the lowest (minimum) amplitude of the trace.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA, Pulse Measurements, FOPS

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<n> New or existing marker to move. Choose from 1 to 6.

Examples `CALC:MARK1:FUNC:MIN`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
21-Mar-2014	Added FOPS
29-Oct-2013	Added Pulse

:CALCulate[:SELected]:MARKer:FUNCtion:Mn:MAX

(Write-only) Sets the frequency of the frequency counter marker in Hz. See also CALC:MARK:FUNC:M*n*:MIN.

Note:

This SCPI command sets either marker 5 to a maximum value between marker 1 and 2 or it sets marker 6 to a maximum value between marker 3 and 4 (i.e., CALC:MARK:FUNC:M*n*:MAX, where n=5 or n=6). No other marker choices are possible.

For marker 5 search: If marker 1, 2, 5 are OFF or Delta when MAX is initiated:

- Markers are all changed to Normal
- Marker 1 is set to 1/4 of full span
- Marker 2 is set to 1/4 of full span

For marker 6 search: If marker 3, 4, 6 are OFF or Delta when MAX is initiated:

- Markers are all changed to Normal
- Marker 3 is set to 1/4 of full span
- Marker 4 is set to 1/4 of full span

Marker 1, 2, 3, and 4 positions are not modified, if they have been previously positioned prior to initiating this command.

Relevant Modes	CAT/TDR, NA
Parameters	None

Examples	Inserts Marker 5 at the next peak between Markers 1 and 2:
	`CALC:MARK:FUNC:M5:MAX`
	Inserts Marker 6 at the next peak between Markers 3 and 4:
	`CALC:MARK:FUNC:M6:MAX`

Return Type	n/a
Default	n/a

Last Modified:

04dec2019	Added Marker CALCulate[:SELected]:MARKer:FUNCtion:MAXimum & :MINimum
07-sep-2017	New command

:CALCulate[:SELected]:MARKer:FUNCtion:Mn:MIN

(Write-only) Sets the frequency of the frequency counter marker in Hz. See also CALC:MARK:FUNC:M*n*:MAX.

Note:

This SCPI command sets either marker 5 to a minimum value between marker 1 and 2 or it sets marker 6 to a minimum value between marker 3 and 4 (i.e., CALC:MARK:FUNC:M*n*:MIN, where n=5 or n=6). No other marker choices are possible.

For marker 5 search: If marker 1, 2, 5 are OFF or Delta when MIN is initiated:

- Markers are all changed to Normal
- Marker 1 is set to 1/4 of full span
- Marker 2 is set to 1/4 of full span

For marker 6 search: If marker 3, 4, 6 are OFF or Delta when MIN is initiated:

- Markers are all changed to Normal
- Marker 3 is set to 1/4 of full span
- Marker 4 is set to 1/4 of full span

Marker 1, 2, 3, and 4 positions are not modified, if they have been previously positioned prior to initiating this command.

Relevant Modes	CAT/TDR, NA
Parameters	None

Examples	Inserts Marker 5 at the next minimum between Markers 1 and 2:
	`CALC:MARK:FUNC:M5:MIN`
	Inserts Marker 6 at the next minimum between Markers 3 and 4:
	`CALC:MARK:FUNC:M6:MIN`

Return Type	n/a
Default	n/a

Last Modified:

07-sep-2017	New command

CALCulate[:SELected]:MARKer:FUNCtion:PEXCursion <num>

(Read-Write) Set and query the excursion value. This is the vertical distance (dB) between the peak and the valleys on both sides. To be considered a peak for subsequent marker search commands, data values must "fall off" from the peak on both sides by the excursion value.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Peak Excursion and Threshold settings apply to all markers on each trace.

These settings remain through an instrument preset, but are reset to the default values when the FieldFox power is shutdown.

Relevant Modes	CAT, NA, NF, PAA, SA, RTSA, Pulse Measurements

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<num> Excursion value in dB.

Examples `CALC:MARK:FUNC:PEXC 3`

Query Syntax CALCulate[:SELected]:MARKer:FUNCtion:PEXCursion?

Return Type Numeric

Default 0.5 dB

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
29-Oct-2013	Added Pulse

CALCulate[:SELected]:MARKer<n>:FUNCtion:PLEFt

(Write-Only) Causes the specified marker to find the next data point to the left that meets the 'Peak' criteria. When no data points to the left meet the Peak criteria, the marker does not move.

Relevant Modes NF, PAA, SA, RTSA

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<n> New or existing marker to move. Choose from 1 to 6.

Examples `CALC:MARK1:FUNC:PLEF`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)

CALCulate[:SELected]:MARKer<n>:FUNCtion:PNEXt

(Write-Only) Causes the specified marker to find the next lower amplitude peak from where it currently resides. This command is usually preceded with the MARK:FUNC:MAX command which finds the highest peak.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA Pulse Measurements

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<n> New or existing marker to move. Choose from 1 to 6.

Examples `CALC:MARK1:FUNC:PNEX`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
29-Oct-2013	Added Pulse

CALCulate[:SELected]:MARKer<n>:FUNCtion:PRIGht

(Write-Only) Causes the specified marker to search to the right of the current location for the next data point that meets the 'Peak' criteria.

Relevant Modes NF, PAA, SA, RTSA

Parameters

<n> New or existing marker to move. Choose from 1 to 6.

Examples `CALC:MARK1:FUNC:PRIG`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)

CALCulate[:SELected]:MARKer:FUNCtion:PTHReshold <num>

(Read-Write) The minimum amplitude used to find peaks in subsequent marker search commands. To be considered valid, the peak must be **above** the threshold level. The valley on either side can be below the threshold level.

For NA, NF, and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Peak Excursion and Threshold settings apply to all markers on each trace.

These settings remain through an instrument preset, but are reset to the default values when the FieldFox power is shutdown.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA Pulse Measurements

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<num> Threshold value in dB.

Examples

```
CALC:MARK:FUNC:PTHR -10
```

Query Syntax CALCulate:SELected:MARKer:FUNCtion:PTHReshold?

Default -190 dB

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
29-Oct-2013	Added Pulse

CALCulate[:SELected]:MARKer:FUNCtion:RISetime <num>

(Write-Read) Set and query pulse rise in dBm. Marker 1 is created as a delta marker and placed at the first instance of the peak value and the specified rise on the trace. Read the rise time using CALCulate[:SELected]:MARKer:X?

Relevant Modes Pulse Measurements

Parameters

<num> Pulse Rise in dBm.

Examples

```
CALC:MARK:FUNC:RIS 5
```

Query Syntax CALCulate[:SELected]:MARKer<n>:FUNCtion:RISetime?

Default dBm

Last Modified:

29-Oct-2013	Added Pulse

CALCulate[:SELected]:MARKer:FUNCtion:TARGet <value>

(Read-Write) Set and query the marker target search value.

This command operates on the selected trace AND the active marker.

First select a trace using CALC:PAR<tr>:SELect.

Then activate a marker using CALCulate[:SELected]:MARKer:ACTivate

Relevant Modes	NA, NF, PAA, Pulse Measurements
Parameters	
<value>	Target search value in dB.
Examples	`CALC:MARK:FUNC:TARG -1`
Query Syntax	CALCulate[:SELected]:MARKer:FUNCtion:TARGet?
Return Type	Numeric
Default	-3 dB

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)
17-Dec-2013	Active marker
29-Oct-2013	Added Pulse
23-Jan-2013	Removed CAT
2-Aug-2011	New command

CALCulate[:SELected]:MARKer:FUNCtion:TDIRection <value>

(Read-Write) Set and query whether the target search will 'wrap' when it gets to the end of the range. This command operates on the selected trace, AND the active marker, AND only a 'Target' search.

Note: There is NO front-panel GUI equivalent for this command.

1. Select a trace using CALC:PAR<tr>:SELect.
2. Then activate a marker using CALCulate[:SELected]:MARKer:ACTivate
3. Then start a search using CALCulate[:SELected]:MARKer:FUNCtion:TARGet.

Relevant Modes	NA, PAA, Pulse Measurements
Parameters	
<value>	Choose from: **DEFault** - Search from the current marker position to the right. Wrap around to the beginning and continue search. **LEFT** - Search to the left from the current position. When the range start is reached, end the search (no wrap). **RIGHT** - Search to the right from the current position. When the range stop is reached, end the search (no wrap)
Examples	`CALC:MARK:FUNC:TDIR LEFT`

Query Syntax CALCulate[:SELected]:MARKer:FUNCtion:TDIRection?

Return Type Character

Default Default

Last Modified:

6-Nov-2014	New command

CALCulate[:SELected]:MARKer<n>:FUNCtion:TRACking <bool>

(Read-Write) Set and query the marker tracking ON/OFF state. Marker tracking can be used with all search functions.

For NA mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes NA, NF, PAA, Pulse Measurements

Parameters

<n> Marker number for which tracking is to be set. A marker is created if not already ON. Choose from 1 to 6. If unspecified, value is set to 1.

<bool> Marker tracking state. Choose from:

ON (or 1) - Marker Tracking ON.

OFF (or 0) - Marker Tracking OFF.

Examples

```
CALC:MARK2:FUNC:TRAC 1
```

Query Syntax CALCulate:SELected:MARKer<n>:FUNCtion:TRACking?

Return Type Boolean

Default OFF

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)
29-Oct-2013	Added Pulse
2-Aug-2011	New command (5.50)

CALCulate[:SELected]:MARKer:FUNCtion:ZONE <bool>

(Write-Read) Set and query whether marker function searches occur on the entire primary trace graph or within the zoom window time span.

Relevant Modes Pulse Measurements

Parameters

<bool> Choose from:

OFF or 0 - Marker function searches occur on the entire primary trace graph

ON or 1 - Marker function searches occur within the zoom window time span.

Examples `CALC:MARK:FUNC:ZONE 1`

Query Syntax CALCulate[:SELected]:MARKer:FUNCtion:ZONE?

Default OFF

Last Modified:

29-Oct-2013 New command

CALCulate[:SELected]:MARKer<n>:SET <char>

(Write-Only) Sets the FieldFox setting <char> to the location of the specified marker.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Note: SA mode does NOT recognize the optional [:SELected] node.

Relevant Modes The following <char> arguments are valid in each mode:

An error is returned if <char> is not valid.

Mode/function	Valid <char> Arguments
CAT (non-DTF)	STARt, STOP, CENTer, RLEVel
CAT (DTF)	STARt, STOP, RLEVel
NA	STARt, STOP, CENTer, DEL
NF	STARt, STOP, CENTer, DEL, RLEVel
PAA	CENTer, RLEVel
SA (Non-Zerospan)	STARt, STOP, CENTer, RLEVel
SA (Zerospan)	RLEVel
SA (Tune and Listen)	TLFRequency

Parameters

<n> Existing marker location from which <char> will be set. Choose from 1 to 6.

<char> **STARt** - Sets the sweep Start value to the marker X-axis value.

STOP- Sets the sweep Stop value to the marker X-axis value.

CENTer - Sets the center frequency of the sweep to the marker X-axis value.

DELay - Sets the electrical delay to that of the current marker group delay value.

RLEVel - Sets the reference level value to the marker Y-axis value.

TLFRequency - Sets the SA Mode Tune and Listen frequency to the marker X-axis value.

Examples
```
CALC:MARK1:SET CENT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
19-Oct-2010	Updated with DEL (5.30)

CALCulate[:SELected]:MARKer<n>:SET:CENTer

(Write-Only) The center frequency of the measurement becomes the value of the specified marker. The frequency span is adjusted accordingly.

CALCulate[:SELected]:MARKer:SET performs the same operation.

Relevant Modes NF, PAA, SA, RTSA

Parameters

<n> Existing marker from which the center frequency will be set. Choose from 1 to 6.

Examples
```
CALC:MARK1:SET:CENT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)

CALCulate[:SELected]:MARKer<n>:SET:REFLevel

(Write-Only) The reference level of the current window becomes the value of the specified marker.

CALCulate[:SELected]:MARKer:SET performs the same operation.

Relevant Modes NF, PAA, SA, RTSA

Parameters

<n> Existing marker for which reference level will be set. Choose from 1 to 6.

Examples
```
CALC:MARK1:SET:REFL
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)

CALCulate[:SELected]:MARKer:TDR:FORMat <char>

(Read-Write) Set and query the trace marker format for the selected TDR measurement.
This command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT

Parameters

<char> Choose from:
DEFault - Marker readout is the same as the trace format.
ZMAG - Impedance magnitude readout.

Examples
```
CALC:MARK:TDR:FORM ZMAG
```

Query Syntax CALCulate[:SELected]:MARKer:TDR:FORMat?

Return Type Character

Default ZMAG

Last Modified:

20-Jan-2015	New command (5.30)

CALCulate[:SELected]:MARKer<n>[:STATe] <char>

(Read-Write) Create, change, or remove a marker.
For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA, Pulse Measurements, FOPS

Note: SA, RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<n> New or existing marker to create, change, or remove. Choose from 1 to 6.

<char> Choose from:

NORM - Marker is a Normal marker

DELT - Marker is a Delta marker pair.

OFF - Marker is disabled.

To create and move a delta marker:

1. Create a normal marker using this command.
2. Move the marker to the reference position using CALCulate:MARKer:X
3. Change the marker to a delta marker using this command.
4. Move the delta marker to the delta position using CALCulate:MARKer:X

Examples

```
CALC:MARK1 NORM
```

Query Syntax CALCulate[:SELected]:MARKer<n>[:STATe]?

Return Type Character

Default Off

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
20-Mar-2014	Added FOPS
29-Oct-2013	Added Pulse

CALCulate[:SELected]:MARKer<n>:TRACe <tnum>

(Read-Write) Moves an existing marker to the specified trace number. The marker and the CAT or NA trace must exist already. This feature is called Marker Trace in the User's Guide.

For NA and CAT mode, this command moves the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<n> Existing marker to assign to trace. Choose from 1 to 6.

<tnum> Trace number. Choose from:

CAT, NA, and NF:

- **0** - Auto. Marker resides on data trace when it is visible. Marker resides on memory trace when only IT is visible.
- **1** - Data Trace
- **2** - Memory Trace

SA:

- 1, 2 ,3, 4

Examples

```
CALC:MARK1:TRAC 1
```

Query Syntax CALCulate[:SELected]:MARKer<n>:TRACe?

Default 1

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)

CALCulate[:SELected]:MARKer<n>:X <num>

(Read-Write) Set and query the X-axis location for the specified marker. See To Create and Move a Delta Marker

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA Pulse Measurements, FOPS

Note: SA, RTSA modes do NOT recognize the optional [:SELected] node.

Parameters

<n> Existing marker for which to set X-axis location. Choose from 1 to 6.

<num> X-axis location. Choose any value currently displayed on the X-axis.

Note: In CAT or NA mode, units of **time** (Freq span of zero Hz.) are **NOT** accepted

Examples

```
CALC:MARK1:X 4e9
```

Query Syntax CALCulate[:SELected]:MARKer<n>:X?

Return Type Numeric

Default When created, markers appear at the center of the X-axis.

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
20-Mar-2014	Added FOPS

CALCulate[:SELected]:MARKer<n>:Y?

(Read-Only) Reads the Y-axis value for the specified marker.

For NA and CAT mode, this command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Note: SA & RTSA modes do NOT recognize the optional [:SELected] node.

Relevant Modes FOPS, CAT, NF, PAA - Two values are returned: Magnitude and zero.
NA - Format depends on CALCulate[:SELected]:MARKer:FORMat
SA & RTSA - One value is returned: Magnitude

Parameters

<n> Existing marker for which to read Y-axis value. Choose from 1 to 6.

Examples `CALC:MARK1:Y?`

Return Type Numeric

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
20-Mar-2014	Added FOPS
4-Jun-2013	Added NA mode format (A.07.00)

CALCulate[:SELected]:MARKer:Y<n>:UNCertainty?

(Read-Only) Reads the Y-axis uncertainty value for the specified marker.

This command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes NF - One value is returned for symmetric values (Noise Factor and Noise Temperature) and two values are returned for asymmetric values (Noise Figure).

Parameters

<n> Existing marker for which to read Y-axis value. Choose from 1 to 2.

Examples `CALC:MARK1:Y:UNC?`

Return Type Numeric

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

CALCulate[:SELected]:MATH:FUNCtion <char>

(Read-Write) Set and query the math function. A trace must already be stored into memory (CALC:MATH:MEM) for a setting other than NORM.

This command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes NA, CAT

Parameters

<char> Choose from:
NORM - Math Off
ADD - (Data + Memory)
SUBTract - (Data - Memory)
DIVide - (Data / Memory)

Examples
```
CALC:MATH:FUNC DIV
```

Query Syntax CALCulate[:SELected]:MATH:FUNCtion?

Return Type Character

Default NORM

CALCulate[:SELected]:MATH:MEMorize

(Write-Only) Stores the current data trace into memory.
This command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Relevant Modes NA, NF, CAT, FOPS

Examples
```
CALC:MATH:MEM
```

Query Syntax Not Applicable

Default Not Applicable

Last modified:

01june2018	Added NF mode Opt. 356 (10.3)
19-Mar-2014	Added FOPS

CALCulate[:SELected]:OFFSet:SLOPe<num>

(Read-Write) Set and query the magnitude offset slope.
See also: CALCulate[:SELected]:OFFSet[:MAGNitude]

Relevant Modes NA Mode

Parameters

<num> Offset magnitude slope in dB/GHz.

Examples
```
CALC:OFFS:SLOP 1.5
```

Query Syntax CALCulate[:SELected]:OFFSet:SLOPe?

Return Type Numeric

Default 0

Last Modified:

22-Jan-2015 New command (A.08.00)

CALCulate[:SELected]:OFFSet[:MAGNitude] <num>

(Read-Write) Set and query the magnitude offset value.
See also: CALCulate[:SELected]:OFFSet:SLOPe

Relevant Modes NA Mode

Parameters

<num> Offset magnitude in dB.

Examples CALC:OFFS 1.5

Query Syntax CALCulate[:SELected]:OFFSet[:MAGNitude]?

Return Type Numeric

Default 0

Last Modified:

22-Jan-2015 New command (A.08.00)

CALCulate[:SELected]:SMOothing:APERture <num>

(Read-Write) Set and query the smoothing aperture for the selected trace.
This command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.
Use CALCulate[:SELected]:SMOothing[:STATe] to enable and disable smoothing.

Relevant Modes NA, CAT

Parameters

<num> Trace smoothing in percent. Choose a value between 0 and 25.

Examples

```
CALC:SMO:APER 5
```

Query Syntax CALCulate[:SELected]:SMOothing:APERture?

Return Type Numeric

Default 1.5

Last Modified:

20-Jan-2015 Added CAT

19-Oct-2010 New command (5.30)

CALCulate[:SELected]:SMOothing[:STATe] <bool>

(Read-Write) Set and query whether trace smoothing occurs on the selected trace. Not available with Polar or Smith Chart formats.

This command operates on the selected trace. First select a trace using CALC:PAR<tr>:SELect.

Use CALCulate[:SELected]:SMOothing:APERture to set aperture.

Relevant Modes NA, CAT

Parameters

<bool> Testing state. Choose from:
0 or **OFF** - Smoothing disabled.
1 or **ON** - Smoothing enabled.

Examples

```
CALC:SMO 1
```

Query Syntax CALCulate[:SELected]:SMOothing[:STATe]?

Return Type Boolean

Default OFF

Last Modified:

20-Jan-2015 Added CAT

19-Oct-2010 New command (5.30)

CALCulate[:SELected]:TIME:AUX:CENTer <num>

(Read-Write) Set and query the center time of the zoom window.

Relevant Modes Pulse Measurements

Parameters

<num> Center time in seconds.

Examples

```
CALC:TIME:AUX:CENT 5e-5
```

Query Syntax CALCulate[:SELected]:TIME:AUX:CENTer?

Return Type Numeric

Default 5e-5

Last Modified:

29-Oct-2013 New command

CALCulate[:SELected]:TIME:AUX:PDIVision <num>

(Read-Write) Set and query the Time per division of the zoom window.

Relevant Modes Pulse Measurements

Parameters

<num> Per division time in seconds.

Examples CALC:TIME:AUX:PDIV 10e-6

Query Syntax CALCulate[:SELected]:TIME:AUX:CENTer?

Return Type Numeric

Default 5e-5

Last Modified:

29-Oct-2013 New command

CALCulate[:SELected]:TIME:CENTer <num>

(Read-Write) Set and query the center time of the primary trace graph window.

Relevant Modes Pulse Measurements

Parameters

<num> Center time in seconds.

Examples CALC:TIME:CENT 5e-5

Query Syntax CALCulate[:SELected]:TIME:CENTer?

Return Type Numeric

Default 5e-5

Last Modified:

29-Oct-2013 New command

CALCulate[:SELected]:TIME:LENGth <num>

(Read-Write) Set and query the time span of the primary trace graph window.

Relevant Modes Pulse Measurements

Parameters

<num> Time span in seconds.

Examples CALC:TIME:LENG 5e-5

Query Syntax CALCulate[:SELected]:TIME:LENGth?

Return Type Numeric

Default 100e-6

Last Modified:

29-Oct-2013 New command

CALCulate[:SELected]:TIME:PDIVision <num>

(Read-Write) Set and query the Time per division of the primary trace graph window.

Relevant Modes Pulse Measurements

Parameters

<num> Per division time in seconds.

Examples CALC:TIME:PDIV 1e-6

Query Syntax CALCulate[:SELected]:TIME:PDIVision?

Return Type Numeric

Default 10e-6

Last Modified:

29-Oct-2013 New command

CALCulate[:SELected]:TIME:STARt <num>

(Read-Write) Set and query the start time of the primary trace graph window.

Relevant Modes Pulse Measurements

Parameters

<num> Start time in seconds.

Examples CALC:TIME:STAR 1e-9

Query Syntax CALCulate[:SELected]:TIME:STARt?

Return Type Numeric

Default 0

Last Modified:

29-Oct-2013 New command

CALCulate[:SELected]:TRACe<n>:DATA?

(Read-only) Read the data from a Trace Graph measurement.

Relevant Modes Pulse Measurements, FOPS

Parameters

<n> Trace number.
For Pulse, choose from the following:
1 - Primary trace graph
2 - Zoom window
For FOPS, choose 1 or unspecify.

Examples

```
CALC:TRAC:DATA?
```

Query Syntax CALCulate[:SELected]:TRACe:DATA?

Return Type Numeric

Default Not Applicable

Last Modified:

21-Mar-2014 Added FOPS

29-Oct-2013 New command

CALCulate[:SELected]:TRANsform:DISTance:BANDpass <bool>

(Read-Write) Set and query Bandpass mode for Distance to Fault measurements. This command performs the same function as CALCulate:TRANsform:FREQuency[:TYPE].

Relevant Modes CAT

Parameters

<bool> Bandpass mode. Choose from:
0 or **OFF** - Lowpass mode
1 or **ON** - Bandpass mode

Examples

```
CALC:TRAN:DIST:BAND 1
```

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:BANDpass?

Return Type Boolean

Default 1 - **ON**

CALCulate[:SELected]:TRANsform:DISTance:FREQuency:CENTer <num>

(Read-Write) Set and query the bandpass center frequency for Distance to Fault measurements. Set Bandpass mode using CALC:TRAN:DIST:BANDpass ON.

Relevant Modes CAT

Parameters

<num> Bandpass center frequency in Hz.

Examples CALC:TRAN:DIST:FREQ:CENT 1e9

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:FREQuency:CENTer?

Return Type Numeric

Default Dependent on DTF distance.

CALCulate[:SELected]:TRANsform:DISTance:FREQuency:SPAN:MAXimum <num>

(Read-Write) Set and query the bandpass maximum frequency span for Distance to Fault measurements. Set Bandpass mode using CALC:TRAN:DIST:BANDpass ON.

Relevant Modes CAT

Parameters

<num> Bandpass maximum frequency span in Hz.

Examples CALC:TRAN:DIST:FREQ:SPAN:MAX 100e6

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:FREQuency:SPAN:MAXimum?

Return Type Numeric

Default Dependent on DTF distance.

CALCulate[:SELected]:TRANsform:DISTance:FREQuency:STARt:MINimum <num>

(Read-Write) Set and query the start frequency value in Bandpass mode for a Distance to Fault measurement.

Use CALCulate:TRANsform:DISTance:BANDpass to set Bandpass mode.

Relevant Modes CAT

Parameters

<num> Start value in hertz. This command will accept MIN and MAX as arguments.

Examples `CALC:TRAN:DIST:FREQ:STAR:MIN 1GHz`

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:FREQuency:STARt:MINimum?

Return Type Numeric

Default 2 MHz

CALCulate[:SELected]:TRANsform:DISTance:FREQuency:STOP:MAXimum <num>

(Read-Write) Set and query the stop frequency value in Bandpass mode for a Distance to Fault measurement.

Use CALCulate:TRANsform:DISTance:BANDpass to set Bandpass mode.

Relevant Modes CAT

Parameters

<num> Stop value in hertz. This command will accept MIN and MAX as arguments.

Examples CALC:TRAN:DIST:FREQ:STOP:MAX 2GHz

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:FREQuency:STOP:MAXimum?

Return Type Numeric

Default FieldFox maximum frequency

CALCulate[:SELected]:TRANsform:DISTance:STARt <num>

(Read-Write) Set and query the X-axis start value in a Distance to Fault measurement.

Relevant Modes CAT

Parameters

<num> Start value in meters. Choose a value between the MIN distance and the Stop distance. (This command will accept MIN and MAX as arguments.)

Examples

```
CALC:TRAN:DIST:STAR 10
```

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:STARt?

This value is always returned in meters - never in feet.

Return Type Numeric

Default 0

CALCulate[:SELected]:TRANsform:DISTance:STOP <num>

(Read-Write) Set and query the X-axis stop value in Distance to Fault measurement.

Relevant Modes CAT

Parameters

<num> Stop value in meters. Choose a value between the Start distance and the MAX distance. (This command will accept MIN and MAX as arguments.)

Examples CALC:TRAN:DIST:STOP .20

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:STOP?
This value will always be returned in meters - never in feet.

Return Type Numeric

Default 100 meters

CALCulate[:SELected]:TRANsform:DISTance:UNIT <char>

(Read-Write) Set and query the X-axis units in Distance to Fault measurement.

Note: DTF Start and Stop settings always return distance in meters.

Relevant Modes CAT

Parameters

<char> X-axis units. Choose from:

- METers
- FEET

Examples CALC:TRAN:DIST:UNIT

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:UNIT?

Return Type Character

Default METers

Last Modified:

14-Feb-2013	Added note

CALCulate[:SELected]:TRANsform:DISTance:WINDow <char>

(Read-Write) Set and query the DTF window setting.

Relevant Modes CAT

Parameters

<char> DTF window setting. Choose from:
RECT - Minimum window setting.
HAMM - Medium window setting.
KBES - Maximum window setting.

Examples CALC:TRAN:DIST:WIND KBES

Query Syntax CALCulate[:SELected]:TRANsform:DISTance:WINDow?

Return Type Character

Default KBES

CALCulate[:SELected]:TRANsform:FREQuency[:TYPE] <char>

(Read-Write) Set and query the DTF Frequency mode. This command performs the same function as CALCulate:TRANsform:DISTance:BANDpass.

Relevant Modes CAT

Parameters

<char> DTF frequency mode. Choose from:
BPASs - Bandpass mode.
LPASs - Lowpass mode.

Examples CALC:TRAN:FREQ BPAS

Query Syntax CALCulate[:SELected]:TRANsform:FREQuency[:TYPE]?

Return Type Character

Default BPASs

CALCulate[:SELected]:TRANsform:TIME:CENTer <num>

(Read-Write) Set and query the center time for time domain measurements.

Relevant Modes NA

Parameters

<num> Center time in seconds. Choose any number between: **±** (number of points-1) / frequency span

Examples CALC:TRAN:TIME:CENT 1e-9

Query Syntax CALCulate[:SELected]:TRANsform:TIME:CENTer?

Return Type Numeric

Default 0

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:TRANsform:TIME:IMPulse:WIDth <num>

(Read-Write) Set and query the impulse width for the transform window.

Relevant Modes NA

Parameters

<num> Impulse width in seconds; Choose any number between:
.6 / frequency span and **1.39 / frequency span**

Examples	CALC:TRAN:TIME:IMP:WIDT 10
Query Syntax	CALCulate[:SELected]:TRANsform:TIME:IMPulse:WIDth?
Return Type	Numeric
Default	.98 / Default Span

Last Modified:

24-Jan-2012	New command

CALCulate[:SELected]:TRANsform:TIME:KBESsel <num>

(Read-Write) Set and query the width for the Kaiser Bessel window.

Relevant Modes	NA
Parameters	
<num>	Window width for Kaiser Bessel in seconds; Choose any number between **0.0** and **13.0**
Examples	CALC:TRAN:TIME:KBES 10
Query Syntax	CALCulate[:SELected]:TRANsform:TIME:KBESsel?
Return Type	Numeric
Default	6

Last Modified:

24-Jan-2012	New command

CALCulate[:SELected]:TRANsform:TIME:LPFRequency

(Write-only) Sets the start frequencies in LowPass Mode.

Relevant Modes	NA
Parameters	None
Examples	CALC:TRAN:TIME:LPFR
Query Syntax	Not applicable
Default	Not applicable

Last Modified:

24-Jan-2012	New command

CALCulate[:SELected]:TRANsform:TIME:SPAN <num>

(Read-Write) Set and query the span (stop - start) time for time domain measurements. Use CALCulate[:SELected]:TRANsform:TIME:CENTer to set the center time.

Relevant Modes	NA
Parameters	
<num>	Span time in seconds. Choose any number between: **0** and 2* [(number of points-1) / frequency span]**.**
Examples	CALC:TRAN:TIME:SPAN 1e-9
Query Syntax	CALCulate[:SELected]:TRANsform:TIME:SPAN?
Return Type	Numeric
Default	20 ns

Last Modified:

24-Jan-2012	New command

CALCulate[:SELected]:TRANsform:TIME:STARt <num>

(Read-Write) Set and query the start time for time domain measurements. Use CALCulate[:SELected]:TRANsform:TIME:STOP to set the stop time.

Relevant Modes	NA
Parameters	
<num>	Start time in seconds. Choose any number between: **±** (number of points-1) / frequency span
Examples	CALC:TRAN:TIME:STAR 1e-9
Query Syntax	CALCulate[:SELected]:TRANsform:TIME:STARt?
Return Type	Numeric
Default	-10 ns

Last Modified:

24-Jan-2012	New command

CALCulate[:SELected]:TRANsform:TIME:STATe <bool>

(Read-Write) Set and query the ON |OFF Time Domain transform state for the active trace. Select a trace using CALCulate:PARameter:SELect.

Relevant Modes NA

Parameters

<num> Transform state. Choose from:
ON (or 1) - turns time domain ON.
OFF (or 0) - turns time domain OFF.

Examples CALC:TRAN:TIME:STAT 1

Query Syntax CALCulate[:SELected]:TRANsform:TIME:STATe?

Return Type Boolean

Default **OFF** (or 0).

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:TRANsform:TIME:STEP:RTIMe <num>

(Read-Write) Set and query the step rise time for the transform window.

Relevant Modes NA

Parameters

<num> Rise time in seconds. Choose any number between:
.45 / frequency span and 1.48 / frequency span

Examples CALC:TRAN:TIME:STEP:STEP:RTIM 1e-8

Query Syntax CALCulate[:SELected]:TRANsform:TIME:STEP:RTIMe?

Return Type Numeric

Default .99 / Default Span

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:TRANsform:TIME:STIMulus <char>

(Read-Write) Set and query the type of simulated stimulus that will be incident on the DUT.

Relevant Modes NA

Parameters

<char> Choose from:

- **STEP -** simulates a step DUT stimulus (will automatically set CALC:TRAN:TIME:TYPE to **LPASs)**
- **IMPulse -** simulates a pulse DUT stimulus.

Examples CALC:TRAN:TIME:STIM STEP

Query Syntax CALCulate[:SELected]:TRANsform:TIME:STIMulus?

Return Type Character

Default IMPulse

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:TRANsform:TIME:STOP <num>

(Read-Write) Set and query the stop time for time domain measurements. Use CALCulate[:SELected]:TRANsform:TIME:STARt to set the start time.

Relevant Modes NA

Parameters

<num> Stop time in seconds. Choose any number between: **±** (number of points-1) / frequency span

Examples CALC:TRAN:TIME:STOP 1e-9

Query Syntax CALCulate[:SELected]:TRANsform:TIME:STOP?

Return Type Numeric

Default 10 ns

Last Modified:

24-Jan-2012 New command

CALCulate[:SELected]:TRANsform:TIME:TYPE <char>

(Read-Write) Set and query the transform type.

Relevant Modes NA

Parameters

<num> Type of measurement. Choose from:

- **LPASs** - Lowpass; Must also send CALC:TRAN:TIME:LPFRequency before calibrating.
- **BPASs** - Bandpass; can **only** be used when

CALC:TRAN:TIME:STIM is set to IMPulse.

Examples	CALC:TRAN:TIME:STEP:TYPE LPAS
Query Syntax	CALCulate[:SELected]:TRANsform:TIME:TYPE?
Return Type	Character
Default	BPASs

Last Modified:

24-Jan-2012 New command

CALibration:ZERO:TYPE:EXT

(Write-Only) Performs external power meter zeroing.

Relevant Modes	Power meter
Parameters	None
Examples	CAL:ZERO:TYPE:EXT
Query Syntax	Not applicable
Default	Not applicable

:CHSCanner:DATA?

(Read) Query only, to return a set of comma-separated numeric values.: id, center freq, integration BW, channel power

Relevant Modes	Channel Scanner
Parameters	na
Examples	`:CHSC:DATA?`
Query Syntax	:CHSCanner:DATA?
Return Type	Comma-separated numeric
Default	Not Applicable

Last Modified:

:CHSCanner:DISPlay:SORT

(Read-Write) Set and query the current sort by frequency and power value.

Relevant Modes Channel Scanner

Parameters

Choose from:
Freq - Sort by frequency
Pow - Sort by power

Examples
```
:CHSC:DISP:SORT freq
```

Query Syntax :CHSCanner:DISPlay:SORT?

Return Type

Default Not Applicable

Last Modified:

CHSCanner:DISPLAy:SORT:ORDer

(Read-Write) Set and query the current sort order up or down.

Relevant Modes Channel Scanner

Parameters

Choose from:
Up - Sort frequencies or power values by ascending order
Down - Sort frequencies or power values by descending order

Examples
```
:CHSC:DISP:SORT:ORD up
```

Query Syntax :CHSCanner:DISPlay:SORT:ORDer?

Return Type

Default Not Applicable

Last Modified:

:CHSCanner:DISPLAy:WINDow:TRACe:Y[:SCALe]:PDIVsion

(Read-Write) Set and query the Y axis scale per division

Relevant Modes Channel Scanner

Parameters

<val>Enter Y axis scale per division

Examples
```
:CHSCanner:DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVsion 5
```

Query Syntax :CHSCanner:DISPlay:WINDow:TRACe:Y[:SCALe]:PDIVsion?

Return Type

Default Not Applicable

Last Modified:

CHSCanner:DISPLAy:WINDow:TRACe:Y[:SCALe]:RLEVel

(Read-Write) Set and query the Y axis reference level

Relevant Modes Channel Scanner

Parameters

<val>Enter Y axis reference level

Examples
```
:CHSCanner:DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel -20
:CHSCanner:DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel 3
```

Query Syntax :CHSCanner:DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel?

Return Type

Default Not Applicable

Last Modified:

:CHSCanner:EDIT:LIST?

(Read) Query the center frequency, frequency, span, and integration bandwidth

Relevant Modes Channel Scanner

Parameters n/a

Examples
```
n/a
```

Query Syntax :CHSCanner:EDIT:LIST?

Return Type Comma-separated numeric

Default Not Applicable

Last Modified:

:CHSCanner:EDIT:LIST:ADD

(Write) Add a comma separated list that contains the following: center frequency (CF), frequency span (span), and integrated bandwidth (iBW)

Relevant Modes Channel Scanner

Parameters

Choose from:

- **cf -** sets the center frequency.
- **span-** sets the frequency span.

Caution: **IMPORTANT!** At this time the span argument is ignored in the FieldFox.

- **iBW-** sets the integrated bandwidth value.

Examples

```
:CHSCanner:EDIT:LIST:ADD 1e9,10e6,3e6 'set center
frequency to 1 GHz, span to 10 MHz, and
                                        the integrated
bandwidth to 3 MHz
```

Caution: IMPORTANT! At this time the span argument is ignored in the FieldFox (e.g., in the example shown above the 10e6 span value is ignored).

Query Syntax n/a

Return Type Numeric

Default Not Applicable

Last Modified:

01nov2019	Added a Caution to this command

:CHSCanner:EDIT:LIST:CLEar

(Write) Clears all items from the custom list.

Relevant Modes Channel Scanner

Parameters n/a

Examples

```
:CHSCanner:EDIT:LIST:CLEar
```

Query Syntax n/a

Return Type n/a

Default Not Applicable

Last Modified:

:CHSCanner:EDIT:RANGe:COUNt

(Read-Write) Sets the total channel items in Range mode.

Relevant Modes Channel Scanner

Parameters

<val>integer

Examples

```
:CHSCanner:EDIT:RANGe:COUNt 5
```

Query Syntax :CHSCanner:EDIT:RANGe:COUNt?

Return Type Numeric

Default Not Applicable

Last Modified:

01nov2019 Added this command

:CHSCanner:EDIT:RANGE:IBW

(Read-Write) Sets the value of the integration bandwidth.

Relevant Modes Channel Scanner

Parameters n/a

Examples

```
:CHSCanner:EDIT:RANGE:IBW 2MHZ
```

Query Syntax :CHSCanner:EDIT:RANGE:IBW?

Return Type numeric

Default n/a

Last Modified:

01nov2019 Added this command

:CHSCanner:EDIT:RANGe:STARt

(Read-Write) Sets the center frequency of the first channel in Range mode.

Relevant Modes Channel Scanner

Parameters n/a

Examples
```
:CHSCanner:EDIT:RANGe:STARt 3GHZ
```

Query Syntax :CHSCanner:EDIT:RANGe:STARt?

Return Type Numeric

Default Not Applicable

Last Modified:

01nov2019	Added this command

:CHSCanner:EDIT:RANGe:STEP

(Read-Write) Sets the frequency separation between channels in Range mode.

Relevant Modes Channel Scanner

Parameters n/a

Examples
```
:CHSCanner:EDIT:RANGe:STEP 5e6 'Sets the "CF Step Size" between channels to 5 MHz.
```

Query Syntax :CHSCanner:EDIT:RANGe:STEP?

Return Type Numeric

Default Not Applicable

Last Modified:

01nov2019	Added this command

:CHSCanner:LOG[:STATe]

(Read-Write) Sets the time interval (1 to 3,000 seconds).

Relevant Modes Channel Scanner

Parameters

Choose from:

STOP - stops the data logging.

RUN - runs the data logging.

Examples
```
:CHSCanner:LOG STOP
```

```
:CHSCanner:LOG RUN
```

Query Syntax :CHSCanner:LOG[:STATe]?

Return Type character

Default RUN

Last Modified:

:CHSChannel:SEARch:COUNt

(Read-Write) Select 1 of *n* to be the active channel.

Relevant Modes Channel Scanner

Parameters

<val>

Examples

```
:CHSChannel:SEARch:COUNt 3
```

Query Syntax :CHSChannel:SEARch:COUNt?

Return Type numeric

Default

Last Modified:

:CHSCanner:SEARch:TYPe <char>

(Read-Write) Select top or bottom of *n* total channels.

Relevant Modes Channel Scanner

Parameters

<character>Choose from:

top - sets the channels to top down.

bottom - sets the channels to bottom up.

Examples

```
:CHSCanner:SEARch:TYPe top
:CHSCanner:SEARch:TYPe BOTTom
```

Query Syntax :CHSCanner:SEARch:TYPe?

Return Type character

Default TOP

Last Modified:

08sept2022 Updated examples

:CHSCanner[:SENSe]:CHANnel:SELect

(Read-Write) Select 1 to *n* to be the active channel.

Relevant Modes Channel Scanner

Parameters

<val>

Examples

```
:CHSCanner[:SENSe]:CHANnel:SELect 3
```

Query Syntax :CHSCanner[:SENSe]:CHANnel[:SELect]?

Return Type numeric

Default

Last Modified:

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

(Read-Write) Set the RF attenuator manually to a value of attenuation (5 to 30 dB).

Relevant Modes Channel Scanner

Parameters

<val>0 to 30 dB

Examples

```
:CHSCanner[:SENSe]:POWer[:RF]:ATTenuation 15
```

Query Syntax :CHSCanner[:SENSe]:POWer[:RF]:ATTenuation?

Return Type numeric

Default 10

Last Modified:

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

(Read-Write) Set the RF attenuator manually to automatic.

Relevant Modes Channel Scanner

Parameters

<numeric>

Examples
```
:CHSCanner[:SENSe]:POWer[:RF]:ATTenuation:AUTO
```

Query Syntax :CHSCanner[:SENSe]:POWer[:RF]:ATTenuation?

Return Type numeric

Default 10

Last Modified:

07sept2017 Updated parameter description.

:CHSCanner:SWEep:AVERage[:STATe]

(Read-Write) Enables or disables the averaging count.

Relevant Modes Channel Scanner

Parameters

<bool>Choose from:

OFF or 0 - disables the averaging count

ON or 1 - enables the averaging count

Examples
```
:CHSCanner:SWEep:AVERage[:STATe] ON
:CHSCanner:SWEep:AVERage[:STATe] 0
```

Query Syntax :CHSCanner:SWEep:AVERage[:STATe]?

Return Type boolean

Default

Last Modified:

:CHSCanner:SWEep:DISPlay:TYPE

(Read-Write) Sets the display type.

Relevant Modes Channel Scanner

Parameters

<val>Choose from:

BARC - bar chart vertical

BHOR - bar chart horizontal

CPOW - channel

SCH - strip chart

OVER - strip chart overlay

SAL - scan and listen

Examples

```
:CHSCanner:SWEep:DISPlay:TYPE BARC
:CHSCanner:SWEep:DISPlay:TYPE OVER
```

Query Syntax :CHSCanner:SWEep:DISPlay:TYPE?

Return Type character

Default

Last Modified:

:CHSCanner:SWEep:MODE

(Read-Write) Sets the sweep mode.

Relevant Modes Channel Scanner

Parameters

<val>Choose from:

RANG - Range

CLIST - Custom List

Examples

```
:CHSCanner:SWEep:MODE RANG
:CHSCanner:SWEep:MODE CLIST
```

Query Syntax :CHSCr:SWE:MODE?

Return Type character

Default

Last Modified:

:CHSCanner:USER:FOLDer

(Read-Write) Enables more flexibility where the Channel Scanner files are saved.

Relevant Modes Channel Scanner

Parameters

<val>Choose from:

DEF- Default where:

List files saved-recalled to-from "CurrentDevice\ChannelScanner\ChannelLists\"

Rec-Play files saved-recalled to-from

"CurrentDevice\ChannelScanner\RecordPlayback\"
SYST - System where:
List files saved-recalled to-from "CurrentDevice\UserSelectedFolder\"
Rec-Play files saved-recalled to-from "CurrentDevice\UserSelectedFolder\"

Examples
```
:CHSC:USER:FOLD SYST
```

Query Syntax :CHSC:USER:FOLD?

Return Type character

Default

Last Modified:

:CHSCanner[:SENSe]:POWer[:RF]:EXTGain

(Read-Write) Set the external gain (G).

Relevant Modes Channel Scanner

Parameters

<val>

Examples
```
:CHSC:POW:EXTG 3 'Sets the External Gain value to 3 dB.
```

Query Syntax :CHSCanner[:SENSe]:POWer[:RF]:EXTGain?

Return Type numeric

Default

Last Modified:

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

(Read-Write) Set the external gain (G).

Relevant Modes Channel Scanner

Parameters

<bool>Choose from:
OFF or 0 - disables the external gain
ON or 1 - enables the external gain

Examples
```
:CHSCanner[:SENSe]:POWer[:RF]:GAIN[:STATe] OFF
:CHSCanner[:SENSe]:POWer[:RF]:GAIN[:STATe] 1
```

Query Syntax :CHSCanner[:SENSe]:POWer[:RF]:GAIN[:STATe]?

Return Type boolean

Default

Last Modified:

:CHSCanner:SWEep:AVERage:COUNt

(Read-Write) Set the averaging count.

Relevant Modes Channel Scanner

Parameters

<val>

Examples

```
:CHSCanner:SWEep:AVERage:COUNt 10
```

Query Syntax :CHSCanner:SWEep:AVERage:COUNt?

Return Type numeric

Default

Last Modified:

CONFigure:LTEFdd

(Write Only) Sets the measurement to the specified mode.

Relevant Modes LTE FDD

Parameters

Examples

```
CONF:LTEF */Sets the FieldFox to LTE FDD
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22Oct2017 Added to LTE FDD mode (11.5x)

CONFigure:NR5G

(Write Only) Sets the measurement to the specified mode.

Relevant Modes 5G NR

Parameters

Examples
```
CONF:NR5G */Sets the FieldFox to 5G NR
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22Oct2017 Added to 5G NR mode (11.5x)

CONFigure:NREVm

(Write Only) Sets the measurement to the specified mode.

Relevant Modes 5G EVM

Parameters

Examples
```
CONF:NR5G */Sets the FieldFox to 5G NR EVM
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22Oct2017 Added to 5G EVM mode (11.5x)

:CONFigure:<Mode/Measurement> SPECtrum

(Write Only) Sets the measurement to the specified mode.

Relevant Modes IQA

Parameters SPEC - sets the FieldFox to display a spectrum

character

Examples
```
CONF:SPEC */Sets the FieldFox to Spectrum
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22Oct2017	New IQA mode (10.1x)

:CONFigure:WAVeform

(Write Only) Sets the measurement to waveform with RF Envelope displayed.

Relevant Modes IQA

Parameters

n/a

Examples
```
CONF:WAV
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22Oct2017	New IQA mode (10.1x)

:CONFigure?

(Query only) Queries the current mode-configuration type.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA, LTE FDD

Parameters

n/a

Examples
```
:CONF?
```

Query Syntax :CONF?

Return Type n/a

Default SPECtrum

Last Modified:

10dec2019 Added other modes/features (11.5x)

22Oct2017 Added IQA mode (10.1x)

:DISPlay:ADEMod:METRics:AM:RESults:DATA?

(Query only) Queries the FM demodulation data values. Returns 8 doubles values in the following order: carrierPower, carrierFreq, modulationRate, sinad, thd, amModDepth, amModDepthPeakPlus, amModDepthPeakMinus

Relevant Modes SA

Parameters

<number>

Examples

```
:DISP:ADEM:METR:AM:RES:DATA?
```

Query Syntax :DISP:ADEM:METR:AM:RES:DATA?

Return Type Numbers

Default

Notes If query results are not ready or if the error "test tone not found" is displayed, the returned results are all zeroes ("0.00000000E+00").

Last Modified:

16-Dec-2015 Added AM/FM Metrics (8.15 & 9.15)

:DISPlay:ADEMod:METRics:FM:RESults:DATA?

(Query only) Queries the FM demodulation data values. Returns 8 doubles values in the following order: carrierPower, carrierFreq, modulationRate, sinad, thd, fmFreqDeviation, fmFreqDeviationPlus, fmFreqDeviationMinus

Relevant Modes SA

Parameters

<number>

Examples

```
:DISP:ADEM:METR:FM:RES:DATA?
```

Query Syntax :DISP:ADEM:METR:FM:RES:DATA?

Return Type Numbers

Default

Notes If query results are not ready or if the error "test tone not found" is displayed, the returned results are all zeroes ("0.00000000E+00").

Last Modified:

16-Dec-2015 Added AM/FM Metrics (8.15 & 9.15)

DISPlay:ANNotation:FREQuency <value>

(Read-Write) Set and query the method used to annotate frequency on the screen.

Relevant Modes FOPS

Parameters

<value> Choose from the following:
CSPan - Center and Span
SSTop - Start and Stop

Examples

```
DISP:ANN:FREQ CSP
```

Query Syntax DISPlay:ANNotation:FREQuency?

Return Type Character

Default CSPan

Last modified:

19-Mar-2014 New command (A.07.50)

DISPlay:BRIGhtness <num>

(Read-Write) Set and query the brightness of the FieldFox display.

Relevant Modes ALL

Parameters

<num> Display brightness. Choose a number from 0 to 100. A zero setting is dim, but

still viewable.

Examples
```
DISP:BRIG 50
```

Query Syntax DISPlay:BRIGhtness?

Return Type Numeric

Default 0

DISPlay:DATE:FMT <char>

(Read-Write) Set and query the format of the system date. Set the date using SYST:DATE.

Relevant Modes ALL

Parameters

<char> System date format. Choose from:
Argument -- Example
HIDE - Date is not shown on screen.
SHORT - 10/17/2008
LONG - Fri, 17 Oct 2008
FULL - Friday, October 17, 2008
SORTABLE - 2008-10-17
MONTHDAY - October 17

Examples
```
DISP:DATE:FMT Long
```

Query Syntax DISPlay:DATE:FMT?

Return Type Character

Default Long

DISPlay:ENABle <bool>

(Read-Write) Turns the FieldFox display ON and OFF. The OFF (0) setting causes faster SCPI operation.

Relevant Modes ALL

Parameters

<bool> Choose from:
0 or **OFF** - Display OFF. Send Preset or *RST to re-enable the display.
1 or **ON** - Display ON

Examples
```
DISP:ENAB 1
```

Query Syntax DISPlay:ENABle?

Return Type Boolean

Default ON (1)

Last Modified:

20-Oct-2010 New command (5.30)

DISPlay:GRID <bool>

(Read-Write) Set and query the visibility of the 10 x 10 grid on trace graph measurements.

Relevant Modes USB PM: Pulse Measurements, FOPS

Parameters

<bool> Choose from:
OFF or 0 - Grid OFF
ON or 1 - Grid ON

Examples

```
DISP:GRID 1
```

Query Syntax DISPlay:GRID?

Default OFF

Last modified:

19-Mar-2014 Added FOPS

31-Oct-2013 New command

DISPlay:HEAT:GRAPhics:CLEar

(Write-Only) Clears the heat graphics marker values.

See also, DISPlay:HEAT;GRAPhics:AZIMuth, DISPlay:HEAT;MARKer:ELEVation, and DISPlay:HEAT:MARKer[:STATe].

Relevant Modes PAA

Parameters

<value>

Examples

```
DISP:HEAT:GRAP:CLE */Clears the heat graphic marker values
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01dec019 New command

DISPlay:HEAT:MARKer:AZIMuth <num>

(Read-Write) Set and query the antenna's heat map marker azimuth value (-90 to 90 degrees).

See also, DISPlay:HEAT;GRAPhics:CLEar, DISPlay:HEAT;MARKer:ELEVation, and DISPlay:HEAT:MARKer[:STATe].

Relevant Modes PAA

Parameters

<numeric> Set the heat marker azimuth value:

Set between: -90 and 90 degrees

Examples

```
DISP:HEAT:MARK:AZIM -45 */Sets the marker azimuth to -45 degrees
```

Query Syntax DISP:HEAT:MARK:AZIM?

Return Type Numeric

Default 0

Last Modified:

01dec019 New command

DISPlay:HEAT:MARKer:ELEVation <num>

(Read-Write) Set and query the antenna's heat map marker elevation value (-90 to 90 degrees).

See also, DISPlay:HEAT;GRAPhics:CLEar, DISPlay:HEAT;MARKer:AZIMuth, and DISPlay:HEAT:MARKer[:STATe].

Relevant Modes PAA

Parameters

<numeric> Set the heat marker elevation value:

Set between: -90 and 90 degrees

Examples

```
DISP:HEAT:MARK:ELEV -45 */Sets the marker elevation to -45 degrees
```

Query Syntax DISP:HEAT:MARK:ELEV?

Return Type Numeric

Default 0

Last Modified:

01dec019 New command

DISPlay:HEAT:MARKer[:STATe] <char>

(Read-Write) Set and query the antenna's heat map marker's status (ON/OFF).

See also, DISPlay:HEAT;GRAPhics:CLEar, DISPlay:HEAT;MARKer:ELEVation, and DISPlay:HEAT:AZIMuth.

Relevant Modes PAA

Parameters

<character> Enable/disable the heat marker:
ON - Heat marker is enabled.
OFF - Heat marker is disabled.

Examples

```
DISP:HEAT:MARK ON */Enables the heat marker
```

Query Syntax DISP:HEAT:MARK?

Return Type character

Default OFF

Last Modified:

01dec019 New command

DISPlay:KEYWord:DEFault

(Read-Only) Reset the FieldFox keywords to their default settings (listed below).

Relevant Modes All

Parameters None

Examples DISPlay:KEYWord:DEFault

Query Syntax Not Applicable

Default "FILE","SITE","TOWER","TRACE","DATE","ANTENNA1","ANTENNA2","COMPANY1","COMPANY2","COM

DISPlay:KEYWord[:DATA] <string1,2,3,4,5,6,7,8>

(Read-Write) Set and query the FieldFox keywords that can be used to create filenames.

Relevant Modes All

Parameters

<string1,2,3,4,5,6,7,8> All 8 keywords, separated with commas, enclosed in individual quotes.

Examples Disp:KEYW "Tower A","Tower B","Tower C","Tower D","Tower E","Tower F","Tower G","Tower H","Tower I","Tower J"

Query Syntax DISPlay:KEYWord[:DATA]?

Return Type String data, separated with commas, enclosed in individual quotes.

Default See DISPlay:KEYWord:DEFault

:DISPlay:LTEFdd:BCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current bar chart measurement results.

Relevant Modes LTE FDD

Parameters

Examples `DISP:LTEF:BCH:Y:AUTO`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

06dec2018 new command

DISPlay:LTEFdd:BCHart:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the scale-per-division value of the Bar Graph.

Relevant Modes LTE FDD

Parameters

<numeric>Minimum: 0.01 dB
Maximum: 100 dB

Examples
```
DISP:LTEF:BCH:Y:PDIV 10
```

Query Syntax DISP:LTEF:BCH:Y:PDIV?

Default 10 db

Last Modified:

06dec2018	new command

DISPlay:LTEFdd:BCHart:Y[:SCALe]:RLEVel

(Read-Write) Set and query the trace reference level of the Bar Chart.

Relevant Modes LTE FDD

Parameters

<numeric>Minimum: -210 dBm
Maximum: 100 dBm

Examples
```
DISP:LTEF:BCH:Y:RLEV 20
```

Query Syntax DISP:LTEF:BCH:Y:RLEV?

Default -10 dbm

Last Modified:

06dec2018	new command

DISPlay:LTEFdd:SCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current strip chart measurement results.

Relevant Modes LTE FDD

Parameters

Examples
```
DISP:LTEF:SCH:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

06dec2018 new command

DISPlay:LTEFdd:SCHart:Y[:SCALe]:PDIVision

(Read-Write) Set and query the scale-per-division value of the Strip Graph.

Relevant Modes LTE FDD

Parameters

<numeric> Minimum: 0.01 dB
Maximum: 100 dB

Examples `DISP:LTEF:SCH:Y:PDIV 10`

Query Syntax DISP:LTEF:SCH:Y:PDIV?

Default 10 db

Last Modified:

06dec2018 new command

DISPlay:LTEFdd:SCHart:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the trace reference level of the Strip Chart.

Relevant Modes LTE FDD

Parameters

<numeric> Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:LTEF:SCH:Y:RLEV 15`

Query Syntax DISP:LTEF:BSH:Y:RLEV?

Default -10 dBm

Last Modified:

06dec2018 new command

DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current spectrum chart measurement results.

Relevant Modes LTE FDD

Parameters

Examples
```
DISP:LTEF:SPEC:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

06dec2018 new command

DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:PDIVision

(Read-Write) Set and query the scale-per-division value of the Spectrum trace.

Relevant Modes LTE FDD

Parameters

<numeric>Minimum: 0.01 dB
Maximum: 100 dB

Examples
```
DISP:LTEF:SPEC:Y:PDIV 100
```

Query Syntax DISP:LTEF:SPEC:Y:PDIV?

Default 10 db

Last Modified:

06dec2018 new command

DISPlay:LTEFdd:SPECtrum:Y[:SCALe]:RLEVel

(Read-Write) Set and query the trace reference level of the Spectrum.

Relevant Modes LTE FDD

Parameters

<numeric>Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:LTEF:SPEC:Y:RLEV 12`

Query Syntax DISP:LTEF:SPEC:Y:RLEV?

Default -10 dbm

Last Modified:

06dec2018 new command

DISPlay:V5G:SPECtrum:Y[:SCALe]:RPOSition

(Read-Write) Set and query the trace reference position of the Spectrum.

Relevant Modes 5GTF

Parameters

<integer>Maximum: 10

Examples `DISP:V5G:SPEC:Y:RPOS 5`

Query Syntax DISP:V5G:SPEC:Y:RPOS?

Default 0

Last Modified:

06dec2018 new command

:DISPlay:LTEFdd:WINDow<n>:DATA <string>

(Read-Write) Set and query the selected window trace data.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

TABLe (TAB): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), RSRP, RSRQ, RSSI, PSS, SSS, SINR, Freq Err.

Bar CHart (BCH): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

SPECtrum (SPEC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

Strip CHart (SCH): Magnitude of selectable cell scan result metric graphed over time.

Couplings: Strip Chart should be active in only one window. If the strip chart window is disabled, it can be re-enabled in another active window. When the strip chart window is re-enabled, trace data is automatically reset in the Table.

Examples

```
DISP:LTEF:WIND2:DATA BCH
DISP:LTEF:WIND4:DATA SPEC
```

Query Syntax DISP:LTEF:WIND3:DATA?

Return Type string

Default TABL

Last Modified:

16-Sep-2022 New command

:DISPlay:LTEFdd:WINDow[:SELect] <int>

(Read-Write) Set and query the selected window.

Relevant Modes LTE FDD

Parameters

<integer> Choices: 1 through 4. (Up to four windows can be selected/active at one time on the FieldFox.)

Examples

```
DISP:LTEF:WIND 2
```

Query Syntax DISP:LTEF:WIND?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022 New command

DISPlay:LTEFdd:WINDow<n>:BCHart:CCODing <char>

(Read-Write) Set and query the bar chart display color coding scheme.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the

FieldFox.)

<char> Choices:

Component Carrier (CC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

LEVel (LEV): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), RSRP, RSRQ, RSSI, PSS, SSS, SINR, Freq Err.

PCI (PCI): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

Couplings:- This setting is associated with the currently selected window.

- This setting is only relevant for the bar chart display.

- When Level is selected, you can set the red and blue limits in the Scale/Amptd menu.

Examples

```
DISP:LTEF:WIND2:BCH:CCOD CC */associates the selected component carrier with each bar
DISP:LTEF:WIND4:BCH:CCOD PCI */associates the selected PCI with each bar
DISP:LTEF:WIND4:BCH:CCOD PCI */associates the level of the value associated with each bar
```

Query Syntax DISP:LTEF:WIND3:BCH:CCOD?

Return Type character

Default LEVel

Last Modified:

16-Sep-2022 A12.00 New command

:DISPlay:LTEFdd:WINDow<n>:CCARrier <string>

(Read-Write) Set and query the displayed component carrier (CC).

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

ALL: All component carriers are displayed that meet the current setup's measurement criteria

CC0:CC4: Component carrier 0: component carrier 4

Examples

```
DISP:LTEF:WIND2:CCAR ALL
DISP:LTEF:WIND4:CCAR CC4
```

Query Syntax DISP:LTEF:WIND3:CCAR?

Return Type string

Default ALL

Last Modified:

20june2019	New command

:DISPlay:LTEFdd:WINDow<n>:DATA <string>

(Read-Write) Set and query the selected window trace data.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

TABLe (TAB): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), RSRP, RSRQ, RSSI, PSS, SSS, SINR, Freq Err.

Bar CHart (BCH): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

SPECtrum (SPEC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

Strip CHart (SCH): Magnitude of selectable cell scan result metric graphed over time.

Couplings: Strip Chart should be active in only one window. If the strip chart window is disabled, it can be re-enabled in another active window. When the strip chart window is re-enabled, trace data is automatically reset in the Table.

Examples

```
DISP:LTEF:WIND2:DATA BCH
DISP:LTEF:WIND4:DATA SPEC
```

Query Syntax DISP:LTEF:WIND3:DATA?

Return Type string

Default TABL

Last Modified:

16-Sep-2022	New command

:DISPlay:LTEFdd:WINDow<n>:PCI <num>

(Read-Write) Set and query the selected window state.

See also, DISPlay:LTEFdd:WINDow<n>:PCI:MODe.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<num> Enter a value:

0 to 503

Examples

```
DISP:LTEF:WIND2:PCI 36
DISP:LTEF:WIND4:PCI 499
```

Query Syntax DISP:LTEF:WIND3:PCI?

Return Type numeric

Default 1

Last Modified:

11dec2019	New command

:DISPlay:LTEFdd:WINDow<n>:PCI:MODe <string>

(Read-Write) Set and query the PCI mode of the results displayed in the window.

See also See also, DISPlay:LTEFdd:WINDow<n>:PCI.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

All: Scanner results for cells with all PCIs will be displayed

SINGle: Only scanner results for cells with the PCI given by the selected PCI will be displayed

Examples

```
DISP:LTEF:WIND2:PCI:MOD ALL
DISP:LTEF:WIND4:PCI:MOD SING
```

Query Syntax DISP:LTEF:WIND3:PCI:MOD?

Return Type Character

Default ALL

Last Modified:

11dec2019 New command

:DISPlay:LTEFdd:WINDow<n>:SORT:DATA <string>

(Read-Write) Set and query the sorted data type.

See also DISP:LTEF:WIND<*n*>:SORT:ORD.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

FREQuency Error Threshold (FERRor): LTE FDD Frequency Error Threshold (Hz). Any data that is does not meet the defined Frequency Error value, is not displayed.

RSRP: Reference Symbol Received Power

RSRQ: Reference Signal Received Quality

RSSI: Reference Signal Strength Indicator

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

SINR: Reference value that is used in a system simulation. Subcarriers and or resource elements are measured over the same bandwidth.

Examples

```
DISP:LTEF:WIND2:SORT:DATA SINR
DISP:LTEF:WIND4:SORT:DATA PSS
```

Query Syntax DISP:LTEF:WIND3:SORT:DATA?

Return Type string

Default RSRP

Last Modified:

01june2019 New command

:DISPlay:LTEFdd:WINDow<n>:SORT:ORDer <string>

(Read-Write) Set and query the data's sort sequence.

See also DISP:LTEF:WIND<*n*>:SORT:DATA.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

AUTO: Displayed scan results is not sorted and had no related sequence.

UP: Displayed scan results is sorted up.

DOWN: Displayed scan results is sorted down.

Examples

```
DISP:LTEF:WIND2:SORT:ORD AUTO
DISP:LTEF:WIND4:SORT:ORD UP
```

Query Syntax DISP:LTEF:WIND3:SORT:ORD?

Return Type string

Default AUTO

Last Modified:

01june2019	New command

:DISPlay:LTEFdd:TRACe:DATA <string>

(Read-Write) Set and query the trace data type (Bar Chart and Strip Chart only).

NOTE: Only one trace data type result can be displayed. Choice decides which data type is shown on GUI.

Relevant Modes LTE FDD

Parameters

<string> Choices:

RSRP: Reference Symbol Received Power

RSRQ: Reference Signal Received Quality

RSSI: Reference Signal Strength Indicator

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

SINR: Reference value that is used in a system simulation. Subcarriers and or resource elements are measured over the same bandwidth.

Examples

```
DISP:LTEF:TRACe:DATA SINR
```

```
DISP:LTEF:TRACe:DATA PSS
```

Query Syntax DISP:LTEF:TRACe:DATA?

Return Type string

Default RSRP

Last Modified:

01june2019	New command

DISPlay:LTEFdd:WINDow<n>:STATe <bool>

(Read-Write) Set and query the selected window state.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<booleon> **ON (1)**: Enable the extended frequency range.

OFF (2): Disable the extended frequency range

Examples

```
DISP:LTEF:WIND2:STAT ON
DISP:LTEF:WIND4:STAT 0
```

Query Syntax DISP:LTEF:WIND3:STAT?

Return Type numeric

Default 1

Last Modified:

01june2019	New command

:DISPlay:LTETdd:BCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current bar chart measurement results.

Relevant Modes LTE TDD

Parameters

Examples

```
DISP:LTET:BCH:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020 new command (12.2x)

DISPlay:LTETdd:BCHart:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the scale-per-division value of the Bar Graph.

Relevant Modes LTE TDD

Parameters

<numeric> Minimum: 0.01 dB
Maximum: 100 dB

Examples

```
DISP:LTET:BCH:Y:PDIV 10
```

Query Syntax DISP:LTET:BCH:Y:PDIV?

Default 10 dB

Last Modified:

01dec2020 new command (12.2x)

DISPlay:LTETdd:BCHart:Y[:SCALe]:RLEVel

(Read-Write) Set and query the trace reference level of the Bar Chart.

Relevant Modes LTE TDD

Parameters

<numeric> Minimum: -210 dBm
Maximum: 100 dBm

Examples

```
DISP:LTET:BCH:Y:RLEV 20
```

Query Syntax DISP:LTET:BCH:Y:RLEV?

Default -10 dBm

Last Modified:

01dec2020 new command (12.2x)

DISPlay:LTETdd:SCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current strip chart measurement results.

Relevant Modes LTE TDD

Parameters

Examples
```
DISP:LTET:SCH:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020	new command (12.2x)

DISPlay:LTETdd:SCHart:Y[:SCALe]:PDIVision

(Read-Write) Set and query the scale-per-division value of the Strip Graph.

Relevant Modes LTE TDD

Parameters

<numeric>Minimum: 0.01 dB
Maximum: 100 dB

Examples
```
DISP:LTET:SCH:Y:PDIV 10
```

Query Syntax DISP:LTET:SCH:Y:PDIV?

Default 10 dB

Last Modified:

01dec2020	new command (12.2x)

DISPlay:LTETdd:SCHart:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the trace reference level of the Strip Chart.

Relevant Modes LTE TDD

Parameters

<numeric>Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:LTET:SCH:Y:RLEV 15`

Query Syntax DISP:LTET:BSH:Y:RLEV?

Default -10 dBm

Last Modified:

01dec2020 new command (12.2x)

DISPlay:LTETdd:SPECtrum:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current spectrum chart measurement results.

Relevant Modes LTE TDD

Parameters

Examples `DISP:LTET:SPEC:Y:AUTO`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020 new command (12.2x)

DISPlay:LTETdd:SPECtrum:Y[:SCALe]:PDIVision

(Read-Write) Set and query the scale-per-division value of the Spectrum trace.

Relevant Modes LTE TDD

Parameters

<numeric>Minimum: 0.01 dB
Maximum: 100 dB

Examples `DISP:LTET:SPEC:Y:PDIV 100`

Query Syntax DISP:LTET:SPEC:Y:PDIV?

Default 10 dB

Last Modified:

01dec2020 new command (12.2x)

DISPlay:LTETdd:SPECtrum:Y[:SCALe]:RLEVel

(Read-Write) Set and query the trace reference level of the Spectrum.

Relevant Modes LTE TDD

Parameters

<numeric> Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:LTET:SPEC:Y:RLEV 12`

Query Syntax DISP:LTET:SPEC:Y:RLEV?

Default -10 dBm

Last Modified:

01dec2020	new command (12.2x)

DISPlay:LTETdd:SPECtrum:Y[:SCALe]:RPOSition

(Read-Write) Set and query the trace reference position of the Spectrum.

Relevant Modes LTE TDD

Parameters

<integer> Maximum: 10

Examples `DISP:LTEt:SPEC:Y:RPOS`

Query Syntax DISP:LTET:SPEC:Y:RPOS?

Default 0

Last Modified:

01dec2020	new command (12.2x)

:DISPlay:LTETdd:TRACe:DATA <string>

(Read-Write) Set and query the trace data type (Bar Chart and Strip Chart only).

NOTE: Only one trace data type result can be displayed. Choice decides which data type is shown on GUI.

Relevant Modes LTE TDD

Parameters

<string> Choices:
RSRP: Reference Symbol Received Power
RSRQ: Reference Signal Received Quality
RSSI: Reference Signal Strength Indicator

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

SINR: Reference value that is used in a system simulation. Subcarriers and or resource elements are measured over the same bandwidth.

Examples

```
DISP:LTET:TRACe:DATA SINR
DISP:LTET:TRACe:DATA PSS
```

Query Syntax DISP:LTET:TRACe:DATA?

Return Type string

Default RSRP

Last Modified:

01dec2020	New command (12.2x)

:DISPlay:LTETdd:WINDow[:SELect] <int>

(Read-Write) Set and query the selected window.

Relevant Modes LTE TDD

Parameters

<integer> Choices: 1 through 4. (Up to four windows can be selected/active at one time on the FieldFox.)

Examples

```
DISP:LTET:WIND 2
```

Query Syntax DISP:LTET:WIND?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022	New command (12.2x)

DISPlay:LTETdd:WINDow<n>:BCHart:CCODing <char>

(Read-Write) Set and query the bar chart display color coding scheme.

Relevant Modes LTE TDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<char> Choices:

Component Carrier (CC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

LEVel (LEV): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), RSRP, RSRQ, RSSI, PSS, SSS, SINR, Freq Err.

PCI (PCI): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

Couplings:- This setting is associated with the currently selected window.

- This setting is only relevant for the bar chart display.

- When Level is selected, you can set the red and blue limits in the Scale/Amptd menu.

Examples

```
DISP:LTET:WIND2:BCH:CCOD CC */associates the selected component carrier with each bar
DISP:LTET:WIND4:BCH:CCOD PCI */associates the selected PCI with each bar
DISP:LTET:WIND4:BCH:CCOD PCI */associates the level of the value associated with each bar
```

Query Syntax DISP:LTET:WIND3:BCH:CCOD?

Return Type character

Default LEVel

Last Modified:

01dec2020	New command (12.2x)

:DISPlay:LTETdd:WINDow<n>:CCARrier <string>

(Read-Write) Set and query the displayed component carrier (CC).

Relevant Modes LTE TDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

ALL: All component carriers are displayed that meet the current setup's measurement criteria

CC0:CC4: Component carrier 0: component carrier 4

Examples

```
DISP:LTET:WIND2:CCAR ALL
DISP:LTET:WIND4:CCAR CC4
```

Query Syntax DISP:LTET:WIND3:CCAR?

Return Type string

Default ALL

Last Modified:

01dec2020 New command (12.2x)

:DISPlay:LTETdd:WINDow<n>:DATA <string>

(Read-Write) Set and query the selected window trace data.

Relevant Modes LTE TDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

TABLe (TAB): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), RSRP, RSRQ, RSSI, PSS, SSS, SINR, Freq Err.

Bar CHart (BCH): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

SPECtrum (SPEC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

Strip CHart (SCH): Magnitude of selectable cell scan result metric graphed over time.

Couplings: Strip Chart should be active in only one window. If the strip chart window is disabled, it can be re-enabled in another active window. When the strip chart window is re-enabled, trace data is automatically reset in the Table.

Examples

```
DISP:LTET:WIND2:DATA BCH
DISP:LTET:WIND4:DATA SPEC
```

Query Syntax DISP:LTET:WIND3:DATA?

Return Type string

Default TABL

Last Modified:

16-Sep-2022 New command (12.2x)

:DISPlay:LTETdd:WINDow<n>:PCI <num>

(Read-Write) Set and query the selected window state.

See also, DISPlay:LTETdd:WINDow<n>:PCI:MODe.

Relevant Modes LTE TDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<num> Enter a value:

0 to 503

Examples

```
DISP:LTET:WIND2:PCI 36
DISP:LTET:WIND4:PCI 499
```

Query Syntax DISP:LTET:WIND3:PCI?

Return Type numeric

Default 1

Last Modified:

01dec2020 New command (12.2x)

:DISPlay:LTETdd:WINDow<n>:PCI:MODe <string>

(Read-Write) Set and query the PCI mode of the results displayed in the window.

See also See also, DISPlay:LTETdd:WINDow<n>:PCI.

Relevant Modes LTE TDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

All: Scanner results for cells with all PCIs will be displayed

SINGle: Only scanner results for cells with the PCI given by the selected PCI will be displayed

Examples

```
DISP:LTET:WIND2:PCI:MOD ALL
DISP:LTET:WIND4:PCI:MOD SING
```

Query Syntax DISP:LTET:WIND3:PCI:MOD?

Return Type Character

Default ALL

Last Modified:

01dec2020 New command (12.2x)

DISPlay:LTETdd:WINDow<n>:SORT:DATA <string>

(Read-Write) Set and query the sorted data type.

See also DISP:LTET:WIND<*n*>:SORT:ORD.

Relevant Modes LTE TDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

FREQuency Error Threshold (FERRor): LTE TDD Frequency Error Threshold (Hz). Any data that is does not meet the defined Frequency Error value, is not displayed.

RSRP: Reference Symbol Received Power

RSRQ: Reference Signal Received Quality

RSSI: Reference Signal Strength Indicator

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

SINR: Reference value that is used in a system simulation. Subcarriers and or resource elements are measured over the same bandwidth.

Examples

```
DISP:LTET:WIND2:SORT:DATA SINR
DISP:LTET:WIND4:SORT:DATA PSS
```

Query Syntax DISP:LTET:WIND3:SORT:DATA?

Return Type string

Default RSRP

Last Modified:

01dec2020 New command (12.2x)

:DISPlay:LTETdd:WINDow<n>:SORT:ORDer <string>

(Read-Write) Set and query the data's sort sequence.

See also DISP:LTET:WIND<*n*>:SORT:DATA.

Relevant Modes LTE TDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

AUTO: Displayed scan results is not sorted and had no related sequence.

UP: Displayed scan results is sorted up.

DOWN: Displayed scan results is sorted down.

Examples

```
DISP:LTET:WIND2:SORT:ORD AUTO
DISP:LTET:WIND4:SORT:ORD UP
```

Query Syntax DISP:LTET:WIND3:SORT:ORD?

Return Type string

Default AUTO

Last Modified:

01dec2020	New command (12.2x)

DISPlay:LTETdd:WINDow<n>:STATe <bool>

(Read-Write) Set and query the selected window state.

Relevant Modes LTE TDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<booleon> **ON (1)**: Enable the extended frequency range.

OFF (2): Disable the extended frequency range

Examples

```
DISP:LTET:WIND2:STAT ON
DISP:LTET:WIND4:STAT 0
```

Query Syntax DISP:LTET:WIND3:STAT?

Return Type numeric

Default 1

Last Modified:

01dec2020	New command (12.2x)

DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:FORMat <char>

(Read-Write) Set and query the format for the specified readout line on the large marker display state.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.
Choose from: **A** or **B**
Note: This is a SCPI node and not an argument. See example below.

<n> Readout line number. Choose from 1, 2, or 3.

<char> Large marker readout format. Choose from:
DEFault - same format as the trace on which the marker resides.
MAGPhase - magnitude and phase
IMPedance - Complex impedance format: R + jX
ZMAGnitude - Impedance; magnitude only
PHASe
REAL
IMAGinary
FREQuency - displays ONLY the frequency of the marker

Examples

```
DISP:MARK:LARG:A:DEF:LINE1:FORM phase
```

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:FORMat?

Return Type Character

Default DEFault

Last Modified:

22-Sept-2014	New command

DISPlay:MARKer:LARGe:<x>:DEFine:LINE:MARKer<n>:STATe <char>

(Read-Write) Set and query how the specified marker is displayed.

Relevant Modes NA

Parameters

<x> Display state. Choose from:
A - Display state A
B - Display state B

<n> Marker number. Choose from:
1, 2, or 3

<char> Marker display state. Choose from:
OFF - Specified marker is set OFF.
NORMal - Specified marker is a normal marker.
DELTa - Specified marker is a delta marker.

Examples `DISP:MARK:LARG:B:DEF:LINE:MARK2:STAT NORM`

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:LINE:MARKer<n>:STATe?

Return Type Character

Default NORMal

Last Modified:

8-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:MNUMber <value>

(Read-Write) Set and query the marker number to assign to the specified marker readout line.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.
Choose from: **A** or **B**
Note: This is a SCPI node and not an argument. See example below.

<n> Readout line number. Choose from 1, 2, or 3.

<value> Marker number. Choose a marker from 1 through 6.

Examples `DISP:MARK:LARG:A:DEF:LINE1:MNUM 6`

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:MNUMber?

Return Type Numeric

Default Marker 1 is assigned to all three readouts, different traces.

Last Modified:

22-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:STATe <bool>

(Read-Write) Set and query the ENABLE state for the specified readout line.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.
Choose from: **A** or **B**
Note: This is a SCPI node and not an argument. See example below.

<n> Readout line number. Choose from 1, 2, or 3.

<bool> Enable state. Choose from:
OFF or **0** - Specified readout line is OFF.
ON or **1** - Specified readout line is ON.

Examples `DISP:MARK:LARG:A:DEF:LINE1:STAT 1`

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:STATe?

Return Type Boolean

Default Readout line 1 is ON when the display state is first recalled.
Readout lines 2 and 3 are OFF when the display state is first recalled.

Last Modified:

22-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:TNUMber <value>

(Read-Write) Set and query the trace number to assign to the specified marker readout line.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.
Choose from: **A** or **B**
Note: This is a SCPI node and not an argument. See example below.

<n> Readout line number. Choose from 1, 2, or 3.

<value> Trace number. Choose a trace from 1 through 3.

Examples `DISP:MARK:LARG:A:DEF:LINE1:TNUM 3`

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:TNUMber?

Return Type Numeric

Default Traces 1, 2, and 3 are assigned to the corresponding readouts (1, 2, 3)

Last Modified:

22-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:TRACking <bool>

(Read-Write) Set and query the marker tracking state for the specified readout line.
Select the parameter to track on the standard Marker Search menu.
When set to ON, Peak tracking is set by default.
To set a different marker search function, use the standard Calc:Mark:Function commands.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.
Choose from: **A** or **B**
Note: This is a SCPI node and not an argument. See example below.

<n> Readout line number. Choose from 1, 2, or 3.

<bool> Marker tracking state. Choose from:
OFF or **0** - Tracking disabled.
ON or **1** - Tracking enabled.

Examples
```
DISP:MARK:LARG:A:DEF:LINE1:TRACking 1
```

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:LINE<n>:TRACking?

Return Type Boolean

Default OFF

Last Modified:

22-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:BWIDth:STATe <value>

(Read-Write) Set and query the marker bandwidth search state for the specified trace.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.

Choose from: **A** or **B**

Note: This is a SCPI node and not an argument. See example below.

<n> Trace number. Choose from 1, 2, or 3.

<value> Marker bandwidth search state. Choose from:

OFF or **0** - BW search is OFF.

ON or **1** - BW search is ON.

Examples `DISP:MARK:LARG:A:DEF:TRAC1:BWID:STAT ON`

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:BWIDth:STATe?

Return Type Boolean

Default OFF

Last Modified:

22-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:FORMat <value>

(Read-Write) Set and query the display format for the specified trace.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.

Choose from: **A** or **B**

Note: This is a SCPI node and not an argument. See example below.

<n> Trace number. Choose from 1, 2, or 3.

<value> Display format. Choose from:

MLOGarithmic – Log magnitude

MLINear – Linear magnitude

SWR – Standing Wave Ratio

PHASe - Phase in degrees. The trace wraps every 360 degrees, from +180 to –180

UPHase - Unwrapped phase in degrees.

SMITh – Smith chart; series resistance and reactance.

POLar - Magnitude and phase of the reflection coefficient.

GDELay – Group delay

Examples `DISP:MARK:LARG:A:DEF:TRAC1:FORM MLIN`

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:FORMat?

Return Type Character

Default MLOG

Last Modified:

22-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:MEASurement <value>

(Read-Write) Set and query the measurement to display for the specified trace.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.
Choose from: **A** or **B**
Note: This is a SCPI node and not an argument. See example below.

<n> Trace number. Choose from 1, 2, or 3.

<value> Measurement. Choose from:

- **S11** - Forward reflection measurement
- **S21** - Forward transmission measurement
- **S12** - Reverse transmission
- **S22** - Reverse reflection
- **A** - A receiver measurement
- **B** - B receiver measurement
- **R1** - Port 1 reference receiver measurement
- **R2** - Port 2 reference receiver measurement

Examples

```
DISP:MARK:LARG:A:DEF:TRAC1:MEAS S11
```

Query Syntax DISPlay:MARKer:LARGe:<x>:DEFine:TRACe<n>:MEASurement?

Return Type Character

Default Trace1=S11
Trace2=S21
Trace1=S12

Last Modified:

22-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:FONT <char>

(Read-Write) Set and query the font size for the large marker readouts.

Relevant Modes NA

Parameters

<x> Large Marker Display State to edit.
Choose from: **A** or **B**
Note: This is a SCPI node and not an argument. See example below.

<char> Font size. Choose from:
BIG - Big size.
SUP - Super big size.

Examples
```
DISP:MARK:LARG:A:FONT SUP
```

Query Syntax DISPlay:MARKer:LARGe:<x>:FONT?

Return Type Character

Default BIG

Last Modified:

22-Sept-2014 New command

DISPlay:MARKer:LARGe:<x>:TRACe:COUNt <char>

(Read-Write) Set and query the number of traces to include in the large marker display state.

Relevant Modes NA

Parameters

<x> Display state. Choose from:
A - Display state A
B - Display state B

<char> Trace configuration. Choose from:
D1 - One trace.
D2 - Two traces overlaid on one graticule.
D3 - Three traces overlaid on one graticule.

Examples
```
DISP:MARK:LARG:B:TRAC:COUN D3
```

Query Syntax DISPlay:MARKer:LARGe:<x>:TRACe:COUNt?

Return Type Character

Default D1

Last Modified:

22-Sept-2014	New command

DISPlay:MARKer:LARGe:STATe <char>

(Read-Write) Set and query the display state of large marker readouts.

Relevant Modes NA

Parameters

<char> Large marker readout state. Choose from:

OFF - No large marker readout.

A - The A display state is recalled. If none have been defined, then the default A display state is recalled.

B - The B display state is recalled. If none have been defined, then the default B display state is recalled.

Examples

```
DISP:MARK:LARG:STAT A
```

Query Syntax DISPlay:MARKer:LARGe:STATe?

Return Type Character

Default OFF

Last Modified:

22-Sept-2014	New command

DISPlay:MODel:DATA?

(Read-Only) Returns the current USB/LAN sensor's model number string and serial number string values.

See also, INP:TYP, INP:LAN:ADDR, INP:LAN:ID:SNUM, INP:LAN:ID:TYP, INP:LAN:ID:NAME, and DISP:MOD:STAT.

Learn more, the FieldFox Supplemental Help.

Relevant Modes Frequency Offset mode (Option 208), Power Sensor (USB) Mode - Option 302, Power Meter mode (Option 310), and Pulse Measurements mode (Option 330)

Parameters

Examples

```
DISP:MOD:DATA?
```

Return Type Comma-separated string

Default Not Applicable

Last modified:

01june2019 New command (11.26)

DISPlay:MODel:STATe <char>

(Read-Write) Enable/disable the model annotations.

See also, INP:TYP, INP:LAN:ADDR, INP:LAN:ID:SNUM, INP:LAN:ID:TYP, INP:LAN:ID:NAME, and DISP:MOD:DATA.

Learn more, the FieldFox Supplemental Help.

Relevant Modes Frequency Offset mode (Option 208), Power Meter mode (Option 310), and Pulse Measurements mode (Option 330)

Parameters

<char> Choose from:

ON (1)- (default) the power sensor model annotations are displayed on the FieldFox.

OFF (0)- Disables the power sensor model annotations on the FieldFox.

Examples

```
DISP:MOD:STAT OFF 'Disable the model annotations
DISP:MOD:STAT 0'Disable the model annotations
```

Query Syntax DISPlay:MODel:STATe?

Return Type num

Default 1

Last Modified:

29july2019 New command (11.26)

:DISPlay:NR5G:BCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current bar chart measurement results.

NOTE: This setting is only relevant to the bar chart, strip chart and spectrum displays and applies to all such displays (it cannot be set individually for each display).

Relevant Modes 5G NR

Parameters

Examples `DISP:NR5G:BCH:Y:AUTO`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18dec2018 new command

DISPlay:NR5G:BCHart:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the scale-per-division value of the Bar Graph.

Relevant Modes 5G NR

Parameters

<numeric> Minimum: 0.01 dB
Maximum: 100 dB

Examples `DISP:NR5G:BCH:Y:PDIV 10`

Query Syntax DISP:NR5G:BCH:Y:PDIV?

Default 10 db

Last Modified:

18dec2018 new command

DISPlay:NR5G:BCHart:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the trace reference level of the Bar Chart.

Relevant Modes 5G NR

Parameters

<numeric> Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:NR5G:BCH:Y:RLEV 20`

Query Syntax DISP:NR5G:BCH:Y:RLEV?

Default -10 dbm

Last Modified:

18dec2018 new command

DISPlay:NR5G:SCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current strip chart measurement results.

NOTE: This setting is only relevant to the bar chart, strip chart and spectrum displays and applies to all such displays (it cannot be set individually for each display).

Relevant Modes 5G NR

Parameters

Examples
```
DISP:NR5G:SCH:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18dec2018 new command

DISPlay:NR5G:SCHart:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the scale-per-division value of the Strip Graph.

Relevant Modes 5G NR

Parameters

<numeric> Minimum: 0.01 dB
Maximum: 100 dB

Examples
```
DISP:NR5G:SCH:Y:PDIV 10
```

Query Syntax DISP:NR5G:SCH:Y:PDIV?

Default 10 db

Last Modified:

18dec2018 new command

DISPlay:NR5G:SCHart:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the trace reference level of the Strip Chart.

Relevant Modes 5G NR

Parameters

<numeric> Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:NR5G:SCH:Y:RLEV 15`

Query Syntax DISP:NR5G:BSH:Y:RLEV?

Default -10 dbm

Last Modified:

18dec2018 new command

DISPlay:NREVm:SPECtrum:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current spectrum chart measurement results.

NOTE: This setting is only relevant to the bar chart, strip chart and spectrum displays and applies to all such displays (it cannot be set individually for each display).

Relevant Modes 5G NR

Parameters

Examples `DISP:NREVm:SPEC:Y:AUTO`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18dec2018 new command

DISPlay:NR5G:SPECtrum:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the scale-per-division value of the Spectrum trace.

Relevant Modes 5G NR

Parameters

<numeric> Minimum: 0.01 dB
Maximum: 100 dB

Examples `DISP:NR5G:SPEC:Y:PDIV 100`

Query Syntax DISP:NR5G:SPEC:Y:PDIV?

Default 10 db

Last Modified:

18dec2018 new command

DISPlay:NR5G:SPECtrum:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the trace reference level of the Spectrum.

Relevant Modes 5G NR

Parameters

<numeric> Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:NR5G:SPEC:Y:RLEV 12`

Query Syntax DISP:NR5G:SPEC:Y:RLEV?

Default -10 dbm

Last Modified:

06dec2018 new command

DISPlay:NR5G:SPECtrum:Y[:SCALe]:RPOSition <num>

(Read-Write) Set and query the trace reference position of the Spectrum.

Relevant Modes 5G NR

Parameters

<integer> Maximum: 10

Examples `DISP:NR5G:SPEC:Y:RPOS`

Query Syntax DISP:NR5G:SPEC:Y:RPOS?

Default 0

Last Modified:

01dec2019 new command

DISPlay:NR5G:TRACe:DATA <string>

(Read-Write) Set and query the trace data type (Bar Chart and Strip Chart only).

NOTE: Only one trace data type result can be displayed. Choice decides which data type is shown on GUI.

Relevant Modes 5G NR

Parameters

<string> Choices:
DMRS: Physical Broadcast Channel Demodulation Reference Signal
RSRP: Reference Symbol Received Power

RSRQ: Reference Signal Received Quality

RSSI: Reference Signal Strength Indicator

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

SINR: Reference value that is used in a system simulation. Subcarriers and or resource elements are measured over the same bandwidth.

Examples

```
DISP:NR5G:TRACe:DATA SINR
DISP:NR5G:TRACe:DATA PSS
```

Query Syntax DISP:NR5G:TRACe:DATA?

Return Type string

Default RSRP

Last Modified:

16-Sep-2022 New command

ffSDISPlay:NREVm:TRACe:DDATa <character>

(Read-Write) Set and query the demodulated IQ data signal displayed.

NOTE: This setting is only relevant to the constellation display and applies to all such displays (it cannot be set individually for each display).

NOTE: Only one trace data type result can be displayed. Choice decides which data type is shown on GUI.

Relevant Modes 5G NR EVM Conducted

Parameters

<char> The signal demodulated IQ data displayed. Choose from:

ALL – Display the demodulated IQ data for all signals (PSS, SSS, PBCH and PBCH DMRS)

PSS – Display the demodulated IQ data for the PSS signal.

SSS – Display the demodulated IQ data for the SSS signal.

PBCH – Display the demodulated IQ data for the PBCH signal.

PBCHDMRS – Display the demodulated IQ data for the PBCH DMRS signal

Examples

```
DISP:NREVm:TRACe:DDATa PBCH
DISP:NREVm:TRACe:DDATa PSS
```

Query Syntax DISP:NREVm:TRACe:DDATa?

Return Type character

Default ALL

Last Modified:

16-Sep-2022 New command

DISPlay:NR5G:WINDow[:SELect] <int>

(Read-Write) Set and query the selected window.

Relevant Modes 5G NR

Parameters

<integer> Choices: 1 through 4. (Up to four windows can be selected/active at one time on the FieldFox.)

Examples

```
DISP:NR5G:WIND 2
```

Query Syntax DISP:NR5G:WIND?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022 New command for 5G NR (11.5x)

DISPlay:NR5G:WINDow<n>:BCHart:CCODing <char>

(Read-Write) Set and query the bar chart display color coding scheme.

Relevant Modes 5G NR

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<char> Choices:

Component Carrier (CC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

LEVel (LEV): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), RSRP, RSRQ, RSSI, PSS, SSS, SINR, Freq Err.

PCI (PCI): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

Couplings:- This setting is associated with the currently selected window.

- This setting is only relevant for the bar chart display.

- When Level is selected, you can set the red and blue limits in the Scale/Amptd menu.

Examples

```
DISP:NR5G:WIND2:BCH:CCOD CC */associates the selected component carrier with each bar
DISP:NR5G:WIND4:BCH:CCOD PCI */associates the selected PCI with each bar
DISP:NR5G:WIND4:BCH:CCOD PCI */associates the level of the value associated with each bar
```

Query Syntax DISP:NR5G:WIND3:BCH:CCOD?

Return Type character

Default LEVel

Last Modified:

16-Sep-2022 A12.00 New command

DISPlay:NR5G:WINDow<n>:CCARrier <string>

(Read-Write) Set and query the displayed component carrier (CC).

Relevant Modes NR5G

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

ALL: All component carriers are displayed that meet the current setup's measurement criteria

CC0:CC4: Component carrier 0: component carrier 4

Examples

```
DISP:NR5G:WIND2:CCAR ALL
DISP:NR5G:WIND4:CCAR CC4
```

Query Syntax DISP:NR5G:WIND3:CCAR?

Return Type string

Default ALL

Last Modified:

11dec2019 New command

DISPlay:NR5G:WINDow<n>:DATA <string>

(Read-Write) Set and query the selected window data.

Relevant Modes NR5G

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

TABLe (TAB): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), PSS, SSS, Channel Power, Sync Correlation Threshold.

Bar CHart (BCH): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

SPECtrum (SPEC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

Strip CHart (SCH): Magnitude of selectable cell scan result metric graphed over time.

Couplings: Strip Chart should be active in only one window. If the strip chart window is disabled, it can be re-enabled in another active window. When the strip chart window is re-enabled, trace data is automatically reset to Table.

Examples

```
DISP:NR5G:WIND2:DATA BCH
DISP:NR5G:WIND4:DATA SPEC
```

Query Syntax DISP:NR5G:WIND3:DATA?

Return Type string

Default TABL

Last Modified:

16-Sep-2022 New command

DISPlay:NR5G:WINDow<n>:MBEam <bool>

(Read-Write) Set and query the multi-beam state for the window. Determines whether or not to display multiple beams (SSB results) for the displayed cell results. Enabling and disabling multi-beam display is most useful when displaying the results from multiple cells.

Relevant Modes 5G NR

Parameters

<numeric>Window number. Choose from 1 to 4.

<booleon>Set the window number. Choose from:

OFF or 0 - Do not display multiple beams (SSB results) for the displayed cell results (only display the first beam for each cell).

ON or 1 - Display all beams (SSB results) for the displayed cell results.

Couplings This setting is associated with the currently selected window.

Examples

```
DISP:NR5G:WIND3:MBEam ON */Sets the window to 3 and the
```

```
multi-beam measurement to ON
```

Query Syntax DISPlay:NR5G:WINDow2:MBEam? `*/queries window 2 multi-beam status`

Return Type Booleon

Default n = 1
multi-beam = OFF

Last Modified:

01dec2019	New command

:DISPlay:NR5G:WINDow<n>:PCI <num>

(Read-Write) Set and query the selected window state.
See also, DISPlay:NR5G:WINDow<n>:PCI:MODe.

Relevant Modes NR5G

Parameters

<*n*> Window number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<num> Enter a value:
0 to 1007

Examples

```
DISP:NR5G:WIND2:PCI 36
DISP:NR5G:WIND4:PCI 989
```

Query Syntax DISP:NR5G:WIND3:PCI?

Return Type numeric

Default 1

Last Modified:

11dec2019	New command

DISPlay:NR5G:WINDow<n>:PCI:MODe <string>

(Read-Write) Set and query the PCI mode of the results displayed in the window.
See also See also, DISPlay:NR5G:WINDow<n>:PCI.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

All: Scanner results for cells with all PCIs will be displayed

SINGle: Only scanner results for cells with the PCI given by the selected PCI will be displayed

Examples

```
DISP:NR5G:WIND2:PCI:MOD ALL
DISP:NR5G:WIND4:PCI:MOD SING
```

Query Syntax DISP:NR5G:WIND3:PCI:MOD?

Return Type Character

Default ALL

Last Modified:

11dec2019	New command

DISPlay:NR5G:WINDow<n>:SORT:DATA <string>

(Read-Write) Set and query the sorted data type.

See also DISP:NR5G:WIND<*n*>:SORT:ORD.

Relevant Modes 5G NR

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

DMRS: Physical Broadcast Channel Demodulation Reference Signal (dBm).

FREQuency Error (FERRor): Frequency error is the difference of the transmitted signal quality from the ideal (Hz).

RSRQ: Reference Signal Received Quality

RSSI: Reference Signal Strength Indicator

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

SINR: Reference value that is used in a system simulation. Subcarriers and or resource elements are measured over the same bandwidth.

SSB Index: Synchronization Signal Block Index

Examples

```
DISP:NR5G:WIND2:SORT:DATA SINR
DISP:NR5G:WIND4:SORT:DATA PSS
```

Query Syntax DISP:NR5G:WIND3:SORT:DATA?

Return Type string

Default RSRP

Last Modified:

01dec2019 New command

DISPlay:NR5G:WINDow<n>:SORT:ORDer <string>

(Read-Write) Set and query the data's sort sequence.

See also DISP:NR5G:WIND<*n*>:SORT:DATA.

Relevant Modes 5G NR

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

AUTO: Displayed scan results is not sorted and had no related sequence.

UP: Displayed scan results is sorted up.

DOWN: Displayed scan results is sorted down.

Examples

```
DISP:NR5G:WIND2:SORT:ORD AUTO
DISP:NR5G:WIND4:SORT:ORD UP
```

Query Syntax DISP:NR5G:WIND3:SORT:ORD?

Return Type string

Default AUTO

Last Modified:

01dec2019 New command

DISPlay:NR5G:WINDow<n>:SSB <num>

(Read-Write) Set and query the SSB Index mode of the results displayed in the window.

When set to all, scanner results for all SSBs will be displayed.

When the SSB Index value is set, the SSB Index mode is automatically set to Single.

See also DISP:NR5G:WIND<*n*>:SSB:MOD.

Relevant Modes 5G NR

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<num> The SSB Index filter value of the results displayed in the window.

Choose from 0 to 63.

Examples

```
DISP:NR5G:WIND2:SSB 6 */Displays all SSB Index filter value 6.
```

Query Syntax DISP:NR5G:WIND3:SSB?

Return Type Numeric

Default 0

Last Modified:

01dec2020 New command (A.12.1x)

DISPlay:NR5G:WINDow<n>:SSB:MODe <char>

(Read-Write) Set and query the SSB Index filter value of the results displayed in the window.

When the SSB Index Mode is set to Single, only scanner results for SSBs with the index given by SSB Index will be displayed.

When you set the SSB Index value, the SSB Index Mode is automatically set to single.

See also DISP:NR5G:WIND<*n*>:SSB.

Relevant Modes 5G NR

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<char> Choices:

ALL: Display results for all SSBs.

SINGle: Only display results for SSBs with the index given by SSB Index (filter the results by SSB Index) .

Examples

```
DISP:NR5G:WIND2:SORT:MOD ALL */Displays all SSBs
DISP:NR5G:WIND4:SORT:MOD SING */Displays results for SSBs with the index given by the SSB filter
```

Query Syntax DISP:NR5G:WIND3:SORT:MOD?

Return Type Character

Default ALLL

Last Modified:

01dec2020	New command

DISPlay:NR5G:WINDow<n>:STATe <bool>

(Read-Write) Set and query the selected window state.

Relevant Modes 5G NR

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<booleon> **ON (1)**: Enable the extended frequency range.

OFF (2): Disable the extended frequency range

Examples

```
DISP:NR5G:WIND2:STAT ON
DISP:NR5G:WIND4:STAT 0
```

Query Syntax DISP:NR5G:WIND3:STAT?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022	New command

:DISPlay:NREVm:BCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current bar chart measurement results.

NOTE: This setting is only relevant to the bar chart, strip chart and spectrum displays and applies to all such displays (it cannot be set individually for each display).

Relevant Modes 5G NR EVM Conducted

Parameters

Examples

```
DISP:NREVm:BCH:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18dec2018	new command

DISPlay:NREVm:BCHart:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the scale-per-division value of the Bar Graph.

Relevant Modes 5G NR EVM Conducted

Parameters

<numeric>Minimum: 0.01 dB
Maximum: 100 dB

Examples `DISP:NREVm:BCH:Y:PDIV 10`

Query Syntax DISP:NREVm:BCH:Y:PDIV?

Default 10 db

Last Modified:

18dec2018 new command

DISPlay:NREVm:BCHart:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the trace reference level of the Bar Chart.

Relevant Modes 5G NR EVM Conducted

Parameters

<numeric>Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:NREVm:BCH:Y:RLEV 20`

Query Syntax DISP:NREVm:BCH:Y:RLEV?

Default -10 dbm

Last Modified:

18dec2018 new command

DISPlay:NREVm:SCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current strip chart measurement results.

NOTE: This setting is only relevant to the bar chart, strip chart and spectrum displays and applies to all such displays (it cannot be set individually for each display).

Relevant Modes 5G NR EVM Conducted

Parameters

Examples `DISP:NREVm:SCH:Y:AUTO`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18dec2018 new command

DISPlay:NREVm:SCHart:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the scale-per-division value of the Strip Graph.

Relevant Modes 5G NR EVM Conducted

Parameters

<numeric> Minimum: 0.01 dB
Maximum: 100 dB

Examples

```
DISP:NREVm:SCH:Y:PDIV 10
```

Query Syntax DISP:NREVm:SCH:Y:PDIV?

Default 10 db

Last Modified:

18dec2018 new command

DISPlay:NREVm:SCHart:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the trace reference level of the Strip Chart.

Relevant Modes 5G NR EVM Conducted

Parameters

<numeric> Minimum: -210 dBm
Maximum: 100 dBm

Examples

```
DISP:NREVm:SCH:Y:RLEV 15
```

Query Syntax DISP:NREVm:BSH:Y:RLEV?

Default -10 dbm

Last Modified:

18dec2018 new command

DISPlay:NREVm:SPECtrum:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current spectrum chart measurement results.

NOTE: This setting is only relevant to the bar chart, strip chart and spectrum displays and applies to all such displays (it cannot be set individually for each display).

Relevant Modes 5G NR EVM Conducted

Parameters

Examples
```
DISP:NREVm:SPEC:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18dec2018 new command

DISPlay:NREVm:SPECtrum:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the scale-per-division value of the Spectrum trace.

Relevant Modes 5G NR EVM Conducted

Parameters

<numeric>Minimum: 0.01 dB
Maximum: 100 dB

Examples
```
DISP:NREVm:SPEC:Y:PDIV 100
```

Query Syntax DISP:NREVm:SPEC:Y:PDIV?

Default 10 db

Last Modified:

18dec2018 new command

DISPlay:NREVm:SPECtrum:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the trace reference level of the Spectrum.

Relevant Modes 5G NR EVM Conducted

Parameters

<numeric>Minimum: -210 dBm
Maximum: 100 dBm

Examples
```
DISP:NREVm:SPEC:Y:RLEV 12
```

Query Syntax DISP:NREVm:SPEC:Y:RLEV?

Default -10 dbm

Last Modified:

18dec2018 new command

DISPlay:NREvm:SPECtrum:Y[:SCALe]:RPOSition <num>

(Read-Write) Set and query the trace reference position of the Spectrum.

Relevant Modes NR 5G Evm

Parameters

<integer>Maximum: 10

Examples

```
DISP:NREvm:SPEC:Y:RPOS
```

Query Syntax DISP:NREvm:SPEC:Y:RPOS?

Default 0

Last Modified:

01dec2019 new command

:DISPlay:NREVm:TRACe:DATA <string>

(Read-Write) Set and query the trace data type (Bar Chart and Strip Chart only).

NOTE: Only one trace data type result can be displayed. Choice decides which data type is shown on GUI.

Relevant Modes 5G NR EVM Conducted

Parameters

<string> Choices:

DMRS: Demodulation Reference Signal

RSRP: Reference Symbol Received Power

RSRQ: Reference Signal Received Quality

RSSI: Reference Signal Strength Indicator

PBCH: Physical Broadcast Channel) EVM (%rms)

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

POWer: Channel power

Examples

```
DISP:NREVm:TRACe:DATA SINR
DISP:NREVm:TRACe:DATA PSS
```

Query Syntax DISP:NREVm:TRACe:DATA?

Return Type string

Default RSRP

Last Modified:

16-Sep-2022 New command

DISPlay:NREVm:WINDow[:SELect] <int>

(Read-Write) Set and query the selected window.

Relevant Modes NREVm

Parameters

<integer> Choices: 1 through 4. (Up to four windows can be selected/active at one time on the FieldFox.)

Examples

```
DISP:NREVm:WIND 2
```

Query Syntax DISP:NREVm:WIND?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022 New command for 5G NR (11.5x)

DISPlay:NREV:WINDow<n>:BCHart:CCODing <char>

(Read-Write) Set and query the bar chart display color coding scheme.

Relevant Modes 5G NR EVM Conducted

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<char> Choices:

Component Carrier (CC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

LEVel (LEV): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), RSRP, RSRQ, RSSI, PSS, SSS, SINR, Freq Err.

PCI (PCI): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

Couplings:- This setting is associated with the currently selected window.

- This setting is only relevant for the bar chart display.

- When Level is selected, you can set the red and blue limits in the Scale/Amptd menu.

Examples

```
DISP:NREV:WIND2:BCH:CCOD CC */associates the selected component carrier with each bar
DISP:NREV:WIND4:BCH:CCOD PCI */associates the selected PCI with each bar
DISP:NREV:WIND4:BCH:CCOD PCI */associates the level of the value associated with each bar
```

Query Syntax DISP:NREV:WIND3:BCH:CCOD?

Return Type character

Default LEVel

Last Modified:

16-Sep-2022 A12.00 New command

DISPlay:NREVm:WINDow<n>:CCARrier <string>

(Read-Write) Set and query the displayed component carrier (CC).

Relevant Modes NR5G

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

ALL: All component carriers are displayed that meet the current setup's measurement criteria

CC0:CC4: Component carrier 0: component carrier 4

Examples

```
DISP:NREVm:WIND2:CCAR ALL
DISP:NREVm:WIND4:CCAR CC4
```

Query Syntax DISP:NREVm:WIND3:CCAR?

Return Type string

Default ALL

Last Modified:

11dec2019 New command

DISPlay:NREVm:WINDow<n>:DATA <string>

(Read-Write) Set and query the selected window data.

Relevant Modes NREVm

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

TABLe (TAB): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), PSS, SSS, Channel Power, Sync Correlation Threshold.

Bar CHart (BCH): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

SPECtrum (SPEC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

Strip CHart (SCH): Magnitude of selectable cell scan result metric graphed over time.

Couplings: Strip Chart should be active in only one window. If the strip chart window is disabled, it can be re-enabled in another active window. When the strip chart window is re-enabled, trace data is automatically reset to Table.

CONStellation - Constellation diagram of the demodulated IQ data associated with the selected signal(s).

FRAMe - Table of the frame summary results for the measured signals.

Examples

```
DISP:NREVm:WIND2:DATA BCH
DISP:NREVm:WIND4:DATA SPEC
```

Query Syntax DISP:NREVm:WIND3:DATA?

Return Type string

Default TABL

Last Modified:

16-Sep-2022 New command

:DISPlay:NREVm:WINDow<n>:PCI <num>

(Read-Write) Set and query the selected window state.

See also, DISPlay:NREVm:WINDow<n>:PCI:MODe.

Relevant Modes NR5G

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the

FieldFox.)

<num> Enter a value:
0 to 1007

Examples

```
DISP:NREVm:WIND2:PCI 36
DISP:NREVm:WIND4:PCI 989
```

Query Syntax DISP:NREVm:WIND3:PCI?

Return Type numeric

Default 1

Last Modified:

11dec2019 New command

DISPlay:NREVm:WINDow<n>:PCI:MODe <string>

(Read-Write) Set and query the PCI mode of the results displayed in the window.

See also See also, DISPlay:NREVm:WINDow<n>:PCI.

Relevant Modes 5G NR EVM Conducted

Parameters

<*n*> Window number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:
All: Scanner results for cells with all PCIs will be displayed
SINGle: Only scanner results for cells with the PCI given by the selected PCI will be displayed

Examples

```
DISP:NREVm:WIND2:PCI:MOD ALL
DISP:NREVm:WIND4:PCI:MOD SING
```

Query Syntax DISP:NREVm:WIND3:PCI:MOD?

Return Type Character

Default ALL

Last Modified:

11dec2019 New command

DISPlay:NREVm:WINDow<n>:SORT:DATA <string>

(Read-Write) Set and query the sorted data type.

See also DISP:NREVm:WIND<*n*>:SORT:ORD.

Relevant Modes 5G NR EVM Conducted

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

DMRS: Physical Broadcast Channel Demodulation Reference Signal (dBm).

FREQuency Error (FERRor): Frequency error is the difference of the transmitted signal quality from the ideal (Hz).

RSRQ: Reference Signal Received Quality

RSSI: Reference Signal Strength Indicator

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

SINR: Reference value that is used in a system simulation. Subcarriers and or resource elements are measured over the same bandwidth.

SSB Index: Synchronization Signal Block Index

POWer: Channel power

SCORr: Synchronization correlation

TOFFset: Time Offset

PSS EVM (PEVM): PSS EVM

SSS EVM: SSS EVM

BEVM: PBCH EVM

DEVM: PBCH DMRS EVM

CEVM: Composite EVM

Examples

```
DISP:NREVm:WIND2:SORT:DATA SINR
DISP:NREVm:WIND4:SORT:DATA PSS
```

Query Syntax DISP:NREVm:WIND3:SORT:DATA?

Return Type string

Default RSRP

Last Modified:

01dec2019	New command

DISPlay:NREVm:WINDow<n>:SORT:ORDer <string>

(Read-Write) Set and query the data's sort sequence.

See also DISP:NREVm:WIND<*n*>:SORT:DATA.

Relevant Modes 5G NR EVM Conducted

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

AUTO: Displayed scan results is not sorted and had no related sequence.

UP: Displayed scan results is sorted up.

DOWN: Displayed scan results is sorted down.

Examples

```
DISP:NREVm:WIND2:SORT:ORD AUTO
DISP:NREVm:WIND4:SORT:ORD UP
```

Query Syntax DISP:NREVm:WIND3:SORT:ORD?

Return Type string

Default AUTO

Last Modified:

01dec2019	New command

DISPlay:NREVm:WINDow<n>:STATe <bool>

(Read-Write) Set and query the selected window state.

Relevant Modes 5G NR EVM Conducted

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<booleon> **ON (1)**: Enable the extended frequency range.

OFF (2): Disable the extended frequency range

Examples

```
DISP:NREVm:WIND2:STAT ON
DISP:NREVm:WIND4:STAT 0
```

Query Syntax DISP:NREVm:WIND3:STAT?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022	New command

DISPlay:SCReen:GEOMetry <char>

(Read-Write) Set and query the visibility of the 10 x 10 grid on trace graph measurements.

Relevant Modes USB PM: Pulse Measurements, FOPS

Parameters

Choose from:
NORM - Normal (with softkeys)
FULL - Full screen (without softkeys)

Examples
```
:DISP:SCR:GEOM NORM
```

Query Syntax DISPlay:SCR:GEOM?

Default NORM

Last modified:

26-Apr-2016 New command

DISPlay:TABLe:MARKer <bool>

(Read-Write) Set and query the display of the marker table.

Relevant Modes CAT, NA, RTSA, SA, Pulse Measurements

Parameters

<bool> Marker table display state. Choose from:
O or **OFF -** Table OFF
1 or **ON -** Table ON

Examples
```
DISP:TABL:MARK ON
```

Query Syntax DISPlay:TABLe:MARKer?

Return Type Boolean

Default OFF

Last modified:

08-Aug-2016 Added RTSA

31-Oct-2013 Added Pulse

:DISPlay:TABLe:MARKer:SPECtrum <bool>

(Read-Write) Set and query the display of the marker table.

Relevant Modes IQA (Spectrum only)

Parameters

<boolean> Marker table display state. Choose from:

O or **OFF -** Table OFF

1 or **ON -** Table ON

Couplings If marker table is enabled, the marker table is only displayed when the active window number is 1.

Examples

```
DISP:TABL:MARK:SPEC ON
```

Query Syntax DISPlay:TABLe:MARKer:SPECtrum?

Return Type Boolean

Default OFF

Last modified:

22oct2017 Added IQA mode (10.1x)

:DISPlay:TABLe:MARKer:WAVeform <bool>

(Read-Write) Set or read the marker table. Enables the marker table to display below the graph on the FieldFox.

Relevant Modes IQA (Waveform Only)

Parameters

<boolean> Band power frequency span method.

ON (or 1) - Enables the marker table below the graph that displays the status of all six of the waveform markers.

OFF (or 0) - Disables the displayed marker table.

Couplings If marker table is enabled, the marker table is only displayed when the active window number is 1.

Examples

```
DISP:TABL:MARK:WAV 1
```

Query Syntax DISP:TABL:MARK:WAV?

Return Type Boolean

Default OFF

Last Modified:

22oct2017 New IQA mode (10.1x)

DISPlay:TABLe:RESults <bool>

(Read-Write) Set and query the visibility of the of both the Marker table and the Auto Analysis table.

Relevant Modes Pulse Measurements

Parameters

<bool> Choose from:
OFF or 0 - Tables OFF
ON or 1 - Tables ON

Examples

```
DISP:TABLe:RES 1
```

Query Syntax DISPlay:TABLe:RESults?

Default OFF

Last modified:

31-Oct-2013 New command

DISPlay:TABLe:RESults:DATA?

(Read-Only) Read the 10 Auto Analysis results.

Relevant Modes Pulse Measurements

Parameters None

Examples

```
DISP:TABLe:RES:DATA?
```

Default N/A

Last modified:

31-Oct-2013 New command

DISPlay:TIME:FMT <char>

(Read-Write) Set and query the format of the system time on the screen. Set the time using SYST:TIME

Relevant Modes ALL

Parameters

<char> System time format. Choose from:
Argument - Example
HIDE - time is not shown on screen.
SHORT - 10:31 PM
LONG - 10:31:25 PM

SH24 - 22:31
LO24 - 22:31:25

Examples `DISP:TIME:FMT Long`

Query Syntax DISPlay:TIME:FMT?

Return Type Character

Default Long

DISPlay:TITLe:DATA <string>

(Read-Write) Set and query the title that appears in the upper-left corner of the FieldFox screen. The title can contain up to approximately 65 alpha-numeric characters. Display the title using DISPlay:TITLe:STATe.

Relevant Modes ALL

Parameters

<num> Title. Choose any string.

Examples DISP:TITL:DATA "My title"

Query Syntax DISPlay:TITLe:DATA?

Return Type String

Default "User Title"

DISPlay:TITLe[:STATe] <bool>

(Read-Write) Set and query display state of the title string. Change the title using DISPlay:TITLe

Relevant Modes ALL

Parameters

<bool> Choose from:
O or **OFF** - Title OFF
1 or **ON** - Title ON

Examples `DISP:TITL 1`

Query Syntax DISPlay:TITLe[:STATe]?

Return Type Boolean

Default 0 - Off

DISPlay:V5G:BCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current bar chart measurement results.

Relevant Modes 5GTF

Parameters

Examples `DISP:V5G:BCH:Y:AUTO`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

06dec2018 new command

DISPlay:V5G:BCHart:Y[:SCALe]:PDIVision

(Read-Write) Set and query the scale-per-division value of the Bar Graph.

Relevant Modes 5GTF

Parameters

<numeric>Minimum: 0.01 dB
Maximum: 100 dB

Examples `DISP:V5G:BCH:Y:PDIV 10`

Query Syntax DISP:V5G:BCH:Y:PDIV?

Default 10 db

Last Modified:

06dec2018 new command

DISPlay:V5G:BCHart:Y[:SCALe]:RLEVel

(Read-Write) Set and query the trace reference level of the Bar Chart.

Relevant Modes 5GTF

Parameters

<numeric>Minimum: -210 dBm
Maximum: 100 dBm

Examples `DISP:V5G:BCH:Y:RLEV 20`

Query Syntax DISP:V5G:BCH:Y:RLEV?

Default -10 dbm

Last Modified:

06dec2018 new command

DISPlay:V5G:SCHart:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current strip chart measurement results.

Relevant Modes 5GTF

Parameters

Examples
```
DISP:V5G:SCH:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

06dec2018 new command

DISPlay:V5G:SCHart:Y[:SCALe]:PDIVision

(Read-Write) Set and query the scale-per-division value of the Strip Graph.

Relevant Modes 5GTF

Parameters

<numeric> Minimum: 0.01 dB
Maximum: 100 dB

Examples
```
DISP:V5G:SCH:Y:PDIV 10
```

Query Syntax DISP:V5G:SCH:Y:PDIV?

Default 10 db

Last Modified:

06dec2018 new command

DISPlay:V5G:SCHart:Y[:SCALe]:RLEVel

(Read-Write) Set and query the trace reference level of the Strip Chart.

Relevant Modes 5GTF

Parameters

<numeric>Minimum: -210 dBm
Maximum: 100 dBm

Examples
```
DISP:V5G:SCH:Y:RLEV 20
```

Query Syntax DISP:V5G:SCH:Y:RLEV?

Default -10 dbm

Last Modified:

06dec2018	new command

DISPlay:V5G:SPECtrum:Y[:SCALe]:AUTO

(Write Only) Autoscale the scale per division and reference values based on the current spectrum chart measurement results.

Relevant Modes 5GTF

Parameters

Examples
```
DISP:V5G:SPEC:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

06dec2018	new command

DISPlay:V5G:SPECtrum:Y[:SCALe]:PDIVision

(Read-Write) Set and query the scale-per-division value of the Spectrum trace.

Relevant Modes 5GTF

Parameters

<numeric>Minimum: 0.01 dB

Maximum: 100 dB

Examples `DISP:V5G:SPEC:Y:PDIV 5`

Query Syntax DISP:V5G:SPEC:Y:PDIV?

Default 10 db

Last Modified:

06dec2018 new command

DISPlay:V5G:SPECtrum:Y[:SCALe]:RLEVel

(Read-Write) Set and query the per division reference level of the Spectrum.

Relevant Modes 5GTF

Parameters

<integer>Maximum: 10

Examples `DISP:V5G:SPEC:Y:RLEV 5`

Query Syntax DISP:V5G:SPEC:Y:RLEV?

Default 0

Last Modified:

06dec2018 new command

DISPlay:V5G:SPECtrum:Y[:SCALe]:RPOSition

(Read-Write) Set and query the trace reference position of the Spectrum.

Relevant Modes 5GTF

Parameters

<integer>Maximum: 10

Examples `DISP:V5G:SPEC:Y:RPOS 5`

Query Syntax DISP:V5G:SPEC:Y:RPOS?

Default 0

Last Modified:

06dec2018	new command

DISPlay:V5G:WINDow<n>:CCARrier <string>

(Read-Write) Set and query the component carrier (CC).

Relevant Modes 5GTF

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

ALL: All component carriers are displayed that meet the current setup's measurement criteria

CC0:CC7: Component carrier 0:component carrier 7

Examples

```
DISP:V5G:WIND2:CCAR ALL
DISP:V5G:WIND4:CCAR CC7
```

Query Syntax DISP:V5G:WIND3:CCAR?

Return Type string

Default ALL

Last Modified:

16-Sep-2022	New command

DISPlay:V5G:WINDow<n>:DATA <string>

(Read-Write) Set and query the selected window data.

Relevant Modes 5GTF

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

TABLe (TAB): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), PSS, SSS, Channel Power, Sync Correlation Threshold.

Bar CHart (BCH): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

SPECtrum (SPEC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

Strip CHart (SCH): Magnitude of selectable cell scan result metric graphed over time.

Couplings: Strip Chart should be active in only one window. If the strip chart window is disabled, it can be re-enabled in another active window. When the strip chart window is re-enabled, trace data is automatically reset to Table.

Examples

```
DISP:V5G:WIND2:DATA BCH
DISP:V5G:WIND4:DATA SPEC
```

Query Syntax DISP:V5G:WIND3:DATA?

Return Type string

Default TABL

Last Modified:

20june2019	New command

:DISPlay:V5G:WINDow<n>:PCI <num>

(Read-Write) Set and query the selected window state.

See also, DISPlay:V5G:WINDow<n>:PCI:MODe.

Relevant Modes V5G

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<num> Enter a value:

0 to 503

Examples

```
DISP:V5G:WIND2:PCI 36
DISP:V5G:WIND4:PCI 499
```

Query Syntax DISP:V5G:WIND3:PCI?

Return Type numeric

Default 1

Last Modified:

11dec2019	New command

DISPlay:V5G:WINDow<n>:PCI:MODe <string>

(Read-Write) Set and query the PCI mode of the results displayed in the window.

See also See also, DISPlay:V5G:WINDow<n>:PCI.

Relevant Modes LTE FDD

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<string> Choices:

All: Scanner results for cells with all PCIs will be displayed

SINGle: Only scanner results for cells with the PCI given by the selected PCI will be displayed

Examples

```
DISP:V5G:WIND2:PCI:MOD ALL
DISP:V5G:WIND4:PCI:MOD SING
```

Query Syntax DISP:V5G:WIND3:PCI:MOD?

Return Type Character

Default ALL

Last Modified:

11dec2019	New command

DISPlay:V5G:WINDow<n>:SORT:DATA <string>

(Read-Write) Set and query the sorted data type.

See also DISP:LTEF:WIND<*n*>:SORT:ORD.

Relevant Modes 5GTF

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

POW: Channel Power (dBm)

Examples

```
DISP:V5G:WIND2:SORT:DATA POW
DISP:V5G:WIND4:SORT:DATA PSS
```

Query Syntax DISP:V5G:WIND3:SORT:DATA?

Return Type string

Default PSS

Last Modified:

16-Sep-2022 New command

DISPlay:V5G:WINDow<n>:SORT:ORDer <string>

(Read-Write) Set and query the data's sort sequence.

See also DISP:V5G:WIND<*n*>:SORT:DATA.

Relevant Modes 5GTF

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<string> Choices:

AUTO: Displayed scan results is not sorted and had no related sequence.

UP: Displayed scan results is sorted up.

DOWN: Displayed scan results is sorted down.

Examples

```
DISP:V5G:WIND2:SORT:ORD AUTO
DISP:V5G:WIND4:SORT:ORD UP
```

Query Syntax DISP:V5G:WIND3:SORT:ORD?

Return Type string

Default AUTO

Last Modified:

16-Sep-2022 New command

DISPlay:V5G:WINDow<n>:STATe

(Read-Write) Set and query the selected window state.

Relevant Modes 5GTF

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active at one time on the FieldFox.)

<booleon> **ON (1)**: Enable the window.

OFF (2): Disable the window

Examples

```
DISP:V5G:WIND2:STAT ON
DISP:V5G:WIND4:STAT 0
```

Query Syntax DISP:V5G:WIND3:STAT?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022 New command

DISPlay:V5G:TRACe:DATA <string>

(Read-Write) Set and query the trace data type (Bar Chart and Strip Chart only).

NOTE: Only one trace data type result can be displayed. Choice decides which data type is shown on GUI.

Relevant Modes 5GTF

Parameters

<string> Choices:

PSS: The power level in dB for the primary synchronization signal, relative to the average subcarrier power.

SSS: The power level in dB for the secondary synchronization signal, relative to the average subcarrier power.

POW: Channel power (dBm).

Examples

```
DISP:V5G:TRACe:DATA POW
DISP:V5G:TRACe:DATA PSS
```

Query Syntax DISP:V5G:TRACe:DATA?

Return Type string

Default PSS

Last Modified:

16-Sep-2022 New command

DISPlay:V5G:WINDow[:SELect] <int>

(Read-Write) Set and query the selected window.

Relevant Modes 5GTF

Parameters

<integer> Choices: 1 through 4. (Up to four windows can be selected/active at one time on the FieldFox.)

Examples

```
DISP:V5G:WIND 2
```

Query Syntax DISP:V5G:WIND?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022 New command

DISPlay:V5G:WINDow<n>:BCHart:CCODing <char>

(Read-Write) Set and query the bar chart display color coding scheme.

Relevant Modes 5G TF

Parameters

<*n*> Window number. If unspecified, value is set to 1.

n = 1 | 2 | 3 | 4 (Up to four windows can be selected/active one time on the FieldFox.)

<char> Choices:

Component Carrier (CC): Magnitude spectrum frequency domain (fixed span). You can only view a single component carrier at a time with Spectrum (e.g., CC0 or CC2, etcetera).

LEVel (LEV): Cell scan numeric results (for up to 6 cell sites (ID's) including Physical Channel Information (PCI) – (Cell ID), RSRP, RSRQ, RSSI, PSS, SSS, SINR, Freq Err.

PCI (PCI): Vertical power bar graph of selectable cell scan result metric for up to 6 cell sites with adjustable color "heat" amplitude scale

Couplings:- This setting is associated with the currently selected window.

- This setting is only relevant for the bar chart display.

- When Level is selected, you can set the red and blue limits in the

Scale/Amptd menu.

Examples

```
DISP:V5G:WIND2:BCH:CCOD CC */associates the selected component carrier with each bar
DISP:V5G:WIND4:BCH:CCOD PCI */associates the selected PCI with each bar
DISP:V5G:WIND4:BCH:CCOD PCI */associates the level of the value associated with each bar
```

Query Syntax DISP:V5G:WIND3:BCH:CCOD?

Return Type character

Default LEVel

Last Modified:

16-Sep-2022 A12.00 New command

:DISPlay:VIEW:DENSity:STATe

(Read-Write) Enables/Disables the RTSA density Show Density graphics. (Same as pressing the **Show Density** button.)

Relevant Modes RTSA

Parameters

<bool> Show density graphics value:
0 or **1**

Examples

```
DISP:VIEW:DENS:STAT 1
DISP:VIEW:DENS:STAT 0
```

Query Syntax DISPlay:VIEW:DENS:STAT?

Return Type bool

Default 1

Last modified:

08-Aug-2016 Added for RTSA Mode (A.09.50)

DISPlay:WAVeform:VIEW[:SELect] <char>

(Read-Write) Set and query the selected displayed waveform type.

Relevant Modes IQA

Parameters

<character> Waveform type. Choose from:

RFEN - RF envelope
IQW - I/Q waveform

Examples
```
DISP:WAV:VIEW IQW
```

Query Syntax :DISP:WAV:VIEW?

Return Type Character

Default RFEN

Last Modified:

22-oct-2017 Added new IQA mode (10.1x).

:DISPlay:VIEW:DENSity:PERSistence

(Read-Write) Set and query the RTSA density persistence value.

Relevant Modes RTSA

Parameters

<num> Persistence value:
0 to 5 seconds

Examples
```
DISP:VIEW:DENS:PERS 1
DISP:VIEW:DENS:PERS .002
```

Query Syntax DISPlay:VIEW:DENS:PERS?

Return Type alpha-numeric

Default 0.000E+00

Last modified:

08-Aug-2016 Added for RTSA Mode (A.09.50)

:DISPlay:VIEW:DENSity:PERSistence:INFinite

(Read-Write) Enables/Disables the RTSA density persistence infinite value.

Relevant Modes RTSA

Parameters

<bool> Persistence Infinite value:
0 or **1**

Examples
```
DISP:VIEW:DENS:PERS:INF 1
```

```
DISP:VIEW:DENS:PERS:INF 0
```

Query Syntax DISPlay:VIEW:DENS:PERS?

Return Type bool

Default 0

Last modified:

08-Aug-2016 Added for RTSA Mode (A.09.50)

DISPlay:WINDow:ANALog:LOWer <num>

(Read-Write) Set and query the Minimum scale value of the Power Meter display.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<num> Minimum scale value. Choose a number between -100 and the upper (Max) scale value.

Examples

```
DISP:WIND:ANAL:LOW -70
```

Query Syntax DISPlay:WINDow:ANALog:LOWer?

Default -100

Last modified:

1-Apr-2014 Added CPM

31-Oct-2013 Added Pulse

DISPlay:WINDow:ANALog:UPPer <num>

(Read-Write) Set and query the Maximum scale value of the Power Meter display.

Relevant Modes Power Meter, Pulse Measurements,CPM

Parameters

<num> Maximum scale value. Choose a number between the upper (Max) scale value and 100.

Examples

```
DISP:WIND:ANAL:UPP -10
```

Query Syntax DISPlay:WINDow:ANALog:UPPer?

Default 0

Last modified:

1-Apr-2014	Added CPM
31-Oct-2013	Added Pulse

DISPlay:WINDow[:NUMeric]:RESolution <num>

(Read-Write) Set and query the number of digits of resolution to display after the decimal point.

Relevant Modes VVM, Power Meter, Pulse Measurements, CPM

Parameters

<num> Number of digits of resolution.
For PM and Pulse modes, choose from: 0, 1, 2, 3.
For VVM mode, choose from 1,2

Examples

```
DISPlay:RES 1
```

Query Syntax DISPlay:WINDow[:NUMeric]:RESolution?

Default 2 for PM and Pulse
1 for VVM

Last modified:

1-Apr-2014	Added CPM
31-Oct-2013	Added Pulse
3-Aug-2010	Added VVM mode (A.05.30)

DISPlay:WINDow[:SELect] <int>

(Read-Write) Set and query the selected trace display window. This command is used to modify existing pre-defined view, or create customized view. Window and Win State (DISP:WIND:STAT) keys are used to modify layout of view, the Data (DISP:WIND:DATA) command is used to specify the displayed data results for current window.

Relevant Modes IQA

Parameters

<integer> Choices: 1, 2, 3, or 4

Examples

```
DISP:WIND 3
```

Query Syntax DISP:WIND?

Return Type Integer

Default 1

Last Modified:

22oct2017	Added IQA mode (10.1x)

:DISPlay:WINDow:SPLit <char>

(Read-Write) Set and query the multi-trace configuration.
Select a trace using :CALCulate:PARameter:SELect
Change the measurement in each plot using:CALCulate:PARameter:DEFine
Change the format in each plot using CALCulate SELected FORMat

Relevant Modes NA and NF

Parameters

<char> Dual/Multi-trace configuration. Not case-sensitive. Choose from:
D1 - (x1)
D2 - (x2)
D12H - (x2H)
D11_23 - (x3H) - NA mode ONLY
D12_34 - (x4) - NA mode ONLY

Examples DISP:WIND:SPL D2

Query Syntax DISPlay:WINDow:SPLit?

Default D1

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)
1-Nov-2012	removed CAT for (6.06)
26-Apr-2012	Modified for CAT (6.0)

DISPlay:WINDow:TRACe <value>

(Read-Write) Set and query the trace to show on the screen after storing a memory trace.

Relevant Modes FOPS, NF,

Parameters

<value> Choose from the following:
DATA - Meas Data only
MEM - Memory only
DAM - Data and memory
DDM - Data divided by Memory (Data/Mem)

Examples `DISPlay:WINDow:TRACe dam`

Query Syntax DISPlay:WINDow:TRACe?

Return Type Character

Default DATA

Last modified:

01june2018	Added NF mode Opt. 356 (10.3)
19-Mar-2014	New command (A.07.50)

DISPlay:WINDow:TRACe<n>:MEMory[:STATe] <bool>

(Read-Write) Set and query the display state of a memory trace. A memory trace must already be stored using CALC:MATH:MEMorize.

To display both data and memory, set both to ON. DISPlay:WINDow:TRACe<n>:STATe sets the data trace ON.

Relevant Modes CAT, NA, NF

Parameters

<n>	Trace number. If unspecified, value is set to 1. For CAT and NF mode Choose from 1 to 2. For NA mode Choose from 1 to 4.
<bool>	Choose from: **O** or **OFF** - Memory trace NOT displayed **1** or **ON** - Memory trace displayed

Examples `DISPlay:WINDow:TRAC1:MEM 1`

Query Syntax DISPlay:WINDow:TRACe<n>:MEMory:STATe?

Default 0 - Not displayed

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:STATe <bool>

(Read-Write) Set and query the display state of the data trace. To display both data and memory, set both to ON. DISPlay:WINDow:TRACe<n>:MEMory[:STATe] sets the memory trace ON.

For NF mode, see also DISP:WIND:TRAC<n>:STOR.

Relevant Modes CAT, NA, NF

Parameters

<n> Trace number. If unspecified, value is set to 1.
For CAT mode Choose from 1 to 2.
For NA mode Choose from 1 to 4.

<bool> Choose from:
O or **OFF** - Data trace NOT displayed
1 or **ON** - Data trace displayed

Examples
```
DISPlay:WINDow:TRAC1:STAT 1
```

Query Syntax DISPlay:WINDow:TRACe2:STATe?

Default 1 -Displayed

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:STORe

(Write-Only) Stores the current data trace into memory.
See also, :DISP:WIND:TRAC<n>:STAT.

Relevant Modes NF

Parameters

<n> Trace number for which display state is to be set or queried. Choose from 1 through 2.

Examples
```
DISP:WIND:TRAC:STOR
DISP:WIND2:TRAC:STOR
```

Query Syntax no query

Return Type Integer

Default <n> default = 1

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

DISPlay:WINDow:ZOOM <bool>

(Read-Write) Set and query the zoom window ON / OFF state.

Relevant Modes Pulse Measurements

Parameters

<bool> Choose from:

OFF or 0 - Zoom window OFF

ON or 1 - Zoom window ON

Examples

```
DISP:WIND:ZOOM 1
```

Query Syntax DISPlay:WINDow:ZOOM?

Default OFF

Last modified:

31-Oct-2013 New command

DISPlay:WINDow:TRACe:Y:DLINe <num>

(Read-Write) Set and query the display line Y-axis amplitude level. To turn ON/OFF display line, use DISPlay:WINDow:TRACe:Y:DLINe:STATe.

Relevant Modes NF, SA, RTSA

Parameters

<numeric> Y-axis amplitude level. Units depend on the selected setting. See [:SENSe]:AMPLitude:UNIT

Examples

```
DISP:WIND:TRAC:Y:DLIN -50
```

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

Return Type Numeric

Default Depends on current units setting.

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
1-Aug-2011	New command (A.05.50)

DISPlay:WINDow:TRACe:Y:DLINe:STATe <bool>

(Read-Write) Set and query the ON/OFF state of the Display Line. Use DISPlay:WINDow:TRACe:Y:DLINe to set the display level.

Relevant Modes IQA, NF, SA, RTSA

Parameters

<boolean> Choose from:
0 or **OFF** - Display Line OFF.
1 or **ON** - Display Line ON.

Examples DISPlay:WINDow:TRAC:Y:DLIN:STAT 1

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

Return Type boolean

Default 0 - OFF

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
22oct2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)
1-Aug-2011	New command

DISPlay:WINDow:TRACe<n>:MEMory[:STATe] <bool>

(Read-Write) Set and query the display state of a memory trace. A memory trace must already be stored using CALC:MATH:MEMorize.

To display both data and memory, set both to ON. DISPlay:WINDow:TRACe<n>:STATe sets the data trace ON.

Relevant Modes CAT, NA, NF

Parameters

<n> Trace number. If unspecified, value is set to 1.
For CAT and NF mode Choose from 1 to 2.
For NA mode Choose from 1 to 4.

<bool> Choose from:
O or **OFF** - Memory trace NOT displayed
1 or **ON** - Memory trace displayed

Examples
```
DISPlay:WINDow:TRAC1:MEM 1
```

Query Syntax DISPlay:WINDow:TRACe<n>:MEMory:STATe?

Default 0 - Not displayed

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:STATe <bool>

(Read-Write) Set and query the display state of the data trace. To display both data and memory, set both to ON. DISPlay:WINDow:TRACe<n>:MEMory[:STATe] sets the memory trace ON.

For NF mode, see also DISP:WIND:TRAC<n>:STOR.

Relevant Modes CAT, NA, NF

Parameters

<n> Trace number. If unspecified, value is set to 1.
For CAT mode Choose from 1 to 2.
For NA mode Choose from 1 to 4.

<bool> Choose from:
O or **OFF** - Data trace NOT displayed
1 or **ON** - Data trace displayed

Examples
```
DISPlay:WINDow:TRAC1:STAT 1
```

Query Syntax DISPlay:WINDow:TRACe2:STATe?

Default 1 -Displayed

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:Y[:SCALe]:AUTO

(Write-Only) Autoscale the trace.

Relevant Modes CAT, NA, NF, PAA, SA, FOPS
CAT mode: this command always acts on the selected trace. Select a trace using CALCulate:PARameter:SELect
SA mode: this command autoscales all displayed traces.

Parameters

<n> For NA mode Only: Specify the displayed trace number. Choose from 1 to 4.
For NF mode Only: Specify the displayed trace number. Choose from 1 to 2.
If unspecified, value is set to 1.

Examples
```
DISPlay:WINDow:TRAC1:Y:AUTO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
19-Mar-2014	Added FOPS
23-Jan-2013	Modified again for CAT
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:Y[:SCALe]:BOTTom <num>

(Read-Write) Set and query the bottom (lower) Y-axis scale value.

Relevant Modes CAT, NA, NF, SA

CAT mode: this command always acts on the selected trace. Select a trace using CALCulate:PARameter:SELect

SA - Read ONLY

Parameters

<n> NF and NA modes Only: Specify the displayed trace number.

NA Only: Choose from 1 to 4.

NF Only: Choose from 1 to 2.

If unspecified, value is set to 1.

<num> Bottom scale value. Units depend on the selected format.

Examples DISP:WIND:TRAC1:Y:BOTT -50

Query Syntax DISPlay:WINDow:TRAC<n>:Y[:SCALe]:BOTTom?

Return Type Numeric

Default Depends on Mode

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
23-Jan-2013	Modified again for CAT
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:Y[:SCALe]:PDIVision <num>

(Read-Write) Set and query the Y-axis scale per division value. Use this command with DISPlay:WINDow:TRACe:Y[:SCALe]:RPOSition and DISPlay:WINDow:TRACe:Y[:SCALe]:RLEVel which establish the reference position and level.

Relevant Modes CAT, NF, NA, SA, RTSA, FOPS

CAT mode: This command always acts on the selected trace. Select a trace using CALCulate:PARameter:SELect

SA mode: Applicable ONLY when [:SENSe]:AMPLitude:SCALe = LOG; (Units are always "dB")

Parameters

<n> NA mode Only: Specify the displayed trace number. Choose from 1 to 4.
For NF mode Only: Specify the displayed trace number. Choose from 1 to 2.
If unspecified, value is set to 1.

<num> Scale value. Units depend on the selected format.

Examples DISP:WIND:TRAC1:Y:PDIV -.25

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

Return Type Numeric

Default Depends on Mode

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
19-Mar-2014	Added FOPS
11-Nov-2013	Modified again
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:Y[:SCALe]:RLEVel <num>

(Read-Write) Set and query the Y-axis value of the reference line. Use this command with DISPlay:WINDow:TRACe:Y[:SCALe]:RPOSition which sets the position of the reference.

Relevant Modes CAT, NA, NF, PAA, SA, RTSA, FOPS
CAT mode: This command always acts on the selected trace. Select a trace using CALCulate:PARameter:SELect
SA mode: This command acts on all displayed traces.

Parameters

<n> NA mode Only: Specify the displayed trace number. Choose from 1 to 4.
For NF mode Only: Specify the displayed trace number. Choose from 1 to 2.
If unspecified, value is set to 1.

<num> Y-axis reference level. Units depend on the selected format.

Examples
```
DISP:WIND:TRAC1:Y:RLEV -50
```

Query Syntax DISPlay:WINDow:TRACe<n>:Y[:SCALe]:RLEVel?

Return Type Numeric

Default Depends on Mode

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
20-Mar-2014	Added FOPS
23-Jan-2013	Modified again
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:Y[:SCALe]:RPOSition <num>

(Read-Write) Set and query the position of the Y-axis reference line. Use this command with RLEVel which sets the Y-axis value of the reference line.

Relevant Modes CAT, NA, NF, SA, RTSA, FOPS
CAT mode: this command always acts on the selected trace.
SA mode: this command acts on all displayed traces.

Parameters

<n> NA mode Only: Specify the displayed trace number. Choose from 1 to 4.
For NF mode Only: Specify the displayed trace number. Choose from 1 to 2.
If unspecified, value is set to 1.

<num> Reference position. Choose a value from 0 to 10.

Examples

```
DISP:WIND:TRAC1:Y:RPOS -50
```

Query Syntax DISPlay:WINDow:TRACe<n>:Y[:SCALe]:RPOSition?

Return Type Numeric

Default Depends on Mode

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
10-june-2016	Added RTSA mode (9.50)
20-Mar-2014	Added FOPS
23-Jan-2013	Modified again
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow:TRACe<n>:Y[:SCALe]:TOP <num>

(Read-Write) Set and query the top (upper) Y-axis scale value.

Relevant Modes CAT, NA, NF, SA
CAT mode: this command always acts on the selected trace.
SA mode: Read ONLY

Parameters

<n> NA and NF mode Only: Specify the displayed trace number.
NA: Choose from 1 to 4.
NF: Choose from 1 to 2.
If unspecified, value is set to 1.

<num> Top scale value. Units depend on the selected format.

Examples
```
DISP:WIND:TRAC1:Y:TOP 0
```

Query Syntax DISPlay:WINDow:TRACe<n>:Y[:SCALe]:TOP?

Return Type Numeric

Default Depends on Mode

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)
23-Jan-2013	Modified again
26-Apr-2012	Modified for CAT (5.75)

DISPlay:WINDow<n>:DATA <char>

(Read-Write) Set and query the displayed data results for the selected trace display window. The Data command is used to specify the displayed data results for current window.

See also Window (DISP:WIND) and Win State (DISP:WIND:STAT) commands.

Relevant Modes IQA

Parameters

<n> Trace number for which display state is to be set or queried. Choose from 1 through 4.

<character> Spectrum Measurement - two data type results are available:
- SPECtrum (Magnitude Spectrum)
- TIMesummary (Time Summary)

For Waveform Measurements - six data types are available:
- REAL (I vs. Time)
- IMAG (Q vs. Time)

- POLar (Q vs. I)
- WAVeform (RF Envelope)
- PHASe (Phase vs. Time)
- UPHase (Unwrapped Phase vs. Time)
- TIMesummary (Time Summary) Time Summary result includes the capture time, spectrum Analysis time, and waveform Start/Stop time.

Examples

```
DISP:WIND3:DATA UPH
DISP:WIND4:DATA SPEC
```

Query Syntax DISP:WIND<*n*>:DATA?

Return Type Character

Default Spectrum: SPEC|SPEC|SPEC|SPEC
Waveform: WAV|WAV|WAV|WAV
User Defined: SPEC|WAV|REAL|IMAG

Last Modified:

22oct2017 Added IQA mode (10.1x)

DISPlay:WINDow<n>:STATe <int>

(Read-Write) Set and query to enable or disable the selected trace display window. This command is used to modify existing pre-defined view, or create customized view. Window (DISP:WIND) and Win State commands are used to modify layout of view, the Data (DISP:WIND:DATA) command is used to specify the displayed data results for current window.

Note: Initial User Defined default displays all data results from Spectrum measurement and Waveform measurement are available (i.e., all four displays).

Relevant Modes IQA

Parameters

<n> Trace number for which display state is to be set or queried. Choose from 1 through 4.

<integer> Choices: 1, 2, 3, or 4

Examples

```
DISP:WIND3:STAT 1
DISP:WIND4:STAT 0
```

Query Syntax DISP:WIND<*n*>:STAT?

Return Type Integer

Default Spectrum | Waveform: ON|OFF|OFF|OFF
User Defined: ON|ON|ON|ON

Last Modified:

22oct2017	Added IQA mode (10.1x)

:DLOGging:FILE:ASAVe

(Read-Write) Enables or disables the log file auto-save.

See also, DLOG:FILE:FOLD, DLOG:FILE:TYPE, DLOG:REC:STAR, MMEMory:LOAD:DLOG, and MMEM:STOR:DLOG

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters

Choose from:

ON - enables the log file auto-save.

OFF - disables the log file auto-save.

Examples

```
:DLOG:FILE:ASAV ON
```

Query Syntax :DLOG:FILE:ASAV?

Return Type character

Default 0 (OFF)

Last Modified:

01dec2020	Updated command (12.1x)

:DLOGging:FILE:FOLDer <char>

(Read-Write) Sets the log file save/recall folder where the log files are save/recalled (CS | PAA | OTA).

See also, DLOG:FILE:ASAVe, DLOG:FILE:TYPE, DLOG:REC:STAR, MMEMory:LOAD:DLOG, and MMEM:STOR:DLOG

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters

<character> File storage folder. Choose from:

DEFault- The default folder for the current mode (UserData\RecordPlayback\Mode, where Mode is initialized for the current mode)

- **Channel Scanner** = "CS"
- **Phased Array Antenna** = "PAA"
- **Over-the-Air** = "OTA"

SYSTem – The current system folder (determined by the general Save/Recall settings)

Examples

```
DLOG:FILE:FOLD SYST */Sets the current system folder that has previously set in the Save/Recall settings
DLOG:FILE:FOLD DEF  */This is the preset condition that uses the current mode's folder as the folder to save/recall log files)
```

Query Syntax DLOG:FILE:FOLD?

Default DEF

Last Modified:

01dec2020 New command (12.1x)

:DLOGging:FILE:TYPE <string>

(Read-Write) Sets the log file save type.

See also, DLOG:FILE:FOLD, DLOG:FILE:ASAVe, DLOG:REC:STAR, MMEMory:LOAD:DLOG, and MMEM:STOR:DLOG

Relevant Modes CS, LTE FDD, Mapping, PAA, 5G NR, 5G NR EVM Conducted, and 5GTF

Parameters

Choose from:

Chanel Scanner (CS) - CSV | KML

Phased Array Antenna (PAA) - CSV | KML.| DREC

OTA (LTE FDD, PAA, 5G NR, 5G NR EVM Conducted, 5GTF) - CSV | KML

NOTE: Mapping's relevant parameters are mode dependent.

Examples

```
:DLOG:FILE:TYPE CSV
:DLOG:FILE:TYPE KML
:DLOG:FILE:TYPE DREC
```

Query Syntax :DLOG:FILE:TYPE?

Return Type character

Default CSV

Last Modified:

01dec2020 Updated command (12.1x)

:DLOGging:INTerval:DISTance

(Read-Write) Sets the value of the distance interval.

See also, DLOG:INT:TIME, DLOG:INT:TYPE, and DLOG:INT[:ENABled].

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters n/a

Examples

```
:DLOGging:INTerval:DISTance 5 'sets the Distance value to 5 m
:DLOGging:INTerval:DISTance 4e3 'sets the Distance value to 4 km
```

Query Syntax :DLOGging:INTerval:DISTance?

Return Type numeric

Default 10.0m

Last Modified:

01dec2020 Updated command (12.1x)

:DLOGging:INTerval:TIMe

(Read-Write) Sets the time interval (1 to 3,600 seconds).

See also, DLOG:INT:DISTance, DLOG:INT:TYPE, and DLOG:INT[:ENABled].

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters

<val>

Examples

```
:DLOGging:INTerval:TIMe 5
```

Query Syntax :DLOGging:INTerval:TIMe?

Return Type numeric

Default 10s

Last Modified:

01dec2020 Updated command (12.1x)

:DLOGging:INTerval:TYPe

(Read-Write) Sets the interval (1 to 3,600 seconds).

See also, DLOG:INT:TIME, DLOG:INT:DISTance, and DLOG:INT[:ENABled].

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD,

Mapping, and PAA

Parameters

Choose from:

time - sets the measurement interval type to time.

dist - sets the measurement interval type to distance.

Examples

```
:DLOGging:INTerval:TYPe time
:DLOGging:INTerval:TYPe Dist
```

Query Syntax :DLOGging:INTerval:TYPe?

Return Type character

Default Time

Last Modified:

01dec2020	Updated command (12.1x)

:DLOGging:INTerval[:ENABled]

(Read-Write) Enable or disables the measurement interval.

See also, DLOG:INT:TIME, DLOG:INT:DISTance, and DLOG:INT:TYPE.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters

<bool> Choose from:

Off or 0 - Disable the measurement interval

On or 1 - Enable the measurement interval (1 km to 10 km)

Examples

```
:DLOGging:INTerval Off 'Disables the measurement interval
:DLOGging:INTerval:ENABled 1 'Enables the measurement interval
```

Query Syntax :DLOGging:INTerva?

Return Type numeric

Default 0 (OFF)

Last Modified:

01dec2020	Updated command (12.1x)

:DLOGging:PLAYback:PAUSe

(Write-Only) Data log playback is temporarily halted. When the command is resent, data log playback is

resumed. A session should first be opened and playing. Otherwise, this command is ignored.

See also DLOGging:PLAYback:STARt, DLOGging:PLAYback:STOP and DLOGging:PLAYback:POSition.

Relevant Modes CS, LTE FDD, Mapping, PAA, 5G NR, 5G NR EVM Conducted, and 5GTF

Parameters None

Examples

```
DLOG:PLAY:PAUS
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020	New command (A.12.1x)

:DLOGging:RECord:STARt

(Write) Start the recording process.

See also DLOGging:RECord:PAUSE and DLOGging:RECord:STOP.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters n/a

Examples

```
:DLOGging:RECord:STARt
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01dec2020	Updated command (12.1x)

:DLOGging:PLAYback:POSition <num>

(Read-Write) Set and return a component carrier position. Use this command to specify a component carrier number when playback is paused.

See also DLOGging:PLAYback:PAUSe, DLOGging:PLAYback:STARt and DLOGging:PLAYback:STOP.

Relevant Modes CS, LTE FDD, Mapping, PAA, 5G NR, 5G NR EVM Conducted, and 5GTF

Parameters

<num> Enter a value between 1 and the total recorded result:
- 10000 maximum

Examples	`RECP:ACT:POS 2`
Query Syntax	:RECPlayback:ACTion:POSition?
Default	1

Last Modified:

12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.5x)
01june2019	New command

:DLOGging:PLAYback:STARt

(Write-Only) Plays the current Record/Playback session. (Opt 236). A session with records should first be opened and stopped. Otherwise, this command is ignored.

See also DLOGging:PLAYback:PAUSe, DLOGging:PLAYback:STOP and DLOGging:PLAYback:POSition.

Relevant Modes	CS, LTE FDD, Mapping, PAA, 5G NR, 5G NR EVM Conducted, and 5GTF
Parameters	None
Examples	`DLOG:PLAY:STAR`
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

01dec2020	New command (12.1x)

:DLOGging:PLAYback:STOP

(Write) Stops the playback process.

See also DLOGging:PLAYback:PAUSe, DLOGging:PLAYback:STARt and DLOGging:PLAYback:POSition.

Relevant Modes	CS, LTE FDD, Mapping, PAA, 5G NR, 5G NR EVM Conducted, and 5GTF
Parameters	n/a
Examples	`:DLOGging:PLAYback:STOP`
Query Syntax	n/a
Return Type	n/a
Default	n/a

Last Modified:

01dec2020 New command (12.1x)

DLOGging:RECord[:STATe] <char>

(Write-Only) Sets the current data playback state.

See also DLOGging:PLAYback:PAUSe, DLOGging:PLAYback:STOP, DLOGging:PLAYback:STARt, and DLOGging:PLAYback:POSition.

Relevant Modes Channel Scanner, PAA, OTA (LTE FDD, LTE TDD, 5G NR, 5G TF, 5G NR EVM)

Parameters **RUN** – Recording is active

STOP – Recording is not active (Default/Preset state)

PAUSE – Recording is active, but paused

Couplings None

State Saved No

Examples

```
DLOG:REC RUN 'Sets the data playback to RUN
DLOG:REC PAUSE 'Sets the data playback to PAUSE
```

Return Type Character

Default STOP

Last modified:

01apr2021 New command (A.12.3x)

:DLOGging:RECord:PAUSe

(Write-Only) Data log recording is temporarily halted. When the command is resent, data log recording is resumed. A session should first be opened and data log recording. Otherwise, this command is ignored.

See also DLOGging:RECord:STARt and DLOGging:RECord:STOP.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters None

Examples

```
DLOG:REC:PAUS
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020	New command (A.12.1x)

:DLOGging:RECord:STARt

(Write) Start the recording process.

See also DLOGging:RECord:PAUSE and DLOGging:RECord:STOP.

Relevant Modes	Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA
Parameters	n/a
Examples	`:DLOGging:RECord:STARt`
Query Syntax	n/a
Return Type	n/a
Default	n/a

Last Modified:

01dec2020	Updated command (12.1x)

:DLOGging:RECord:STOP

(Write) Stops the recording process.

See also DLOGging:RECord:STARt and DLOGging:RECord:PAUSe.

Relevant Modes	Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA
Parameters	n/a
Examples	`:DLOGging:RECord:STOP`
Query Syntax	n/a
Return Type	n/a
Default	n/a

Last Modified:

01dec2020	Updated command (12.1x)

DLOGging:RECord[:STATe]?

(Read-Only) Returns the current data recording/logging state.

See also DLOGging:PLAYback:PAUSe, DLOGging:PLAYback:STOP and DLOGging:PLAYback:STARt.

Relevant Modes Channel Scanner, PAA, OTA (LTE FDD, LTE TDD, 5G NR, 5G TF, 5G NR EVM)

Parameters

RUN – Recording is active

STOP – Recording is not active

PAUSE – Recording is active, but paused

Examples

```
DLOG:REC?
```

Return Type Character

Default STOP

Last modified:

01apr2021 New command (A.12.3x)

FORMat:BORDer <char>

(Read-Write) Set the byte order used for data transfer. This command is only implemented if FORMAT:DATA is set to :REAL. If FORMAT:DATA is set to :ASCII, the swapped command is ignored.

Relevant Modes ALL

Parameters

<char> Choose from:

NORMal - LSB first; for "x86 or "Little Endian" computers .

SWAPped - MSB first. Use when your controller is anything other than an IBM compatible computers. Use **SWAPped** if you are using VEE, LabView, or T&M Tool kit.

NOTE:

These descriptions may be reversed from other Keysight Instruments, but compliant with IEE 488.2.

SWAPed (MSB first) is very slow.

Examples

```
FORM:BORD NORM
```

See example parsing program in C#.

Query Syntax FORMat:BORDer?

Default NORMal

Last Modified:

31-Oct-2013	New command

FORMat[:DATA] <char>

(Read-Write) Set and query the format (binary or ASCii) by which FieldFox data is read.

Data is read using the following commands:

- NF, PAA, SA Mode: TRACe:DATA?
- NA and CAT modes: CALCulate:DATA:FDATa?, CALCulate:DATA:FMEM?, CALCulate:DATA:SDATa?, CALCulate:DATA:SMEM?
- Calibration data (NA, CAT, and VVM modes): [:SENSe]:CORRection:COEFficient[:DATA]
- To change the byte order, refer to :FORM:BORD.

Note: Do NOT do Binary Block transfers (REAL, 32 or REAL, 64) when using over Telnet to port 5024 on FieldFox.

Relevant Modes ALL

Parameters

<char> Choose from:

- **REAL,32** - Best for transferring large amounts of measurement data.(Binary data)
- **REAL,64** - Slower but has more significant digits than REAL,32. Use REAL,64 if you have a computer that doesn't support REAL,32. (Binary data)
- **ASCii,0** - The easiest to implement, but very slow. Use when you have small amounts of data to transfer. ASCii,0 returns a carriage return (“\n”) terminated, comma-separated list of numbers, which might be re,im pairs, or could be scalar numbers corresponding to the current instrument format (such as LogMag) for FDATA?

Notes:

- The REAL,32 and REAL,64 arguments transfer data in block format. The byte order is **little endian**. FORM:BORDer, which reverses the byte order, is NOT supported.

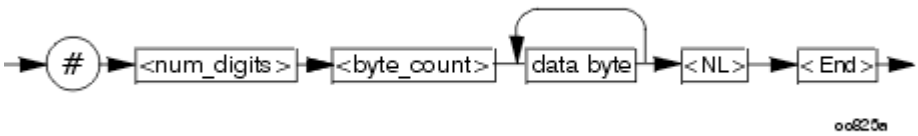
- If the I/Q data format is set to ASCii,0, the maximum I/Q data length is 50k.

Block Data

The following graphic shows the syntax for definite block data.

Only the **Data Byte** is sent in either Binary or ASCii format.

All other characters are ASCii format.



<num_digits> specifies how many digits are contained in <byte_count>

<byte_count> specifies how many data bytes will follow in <data bytes>

Example of Definite Block Data

#17ABC+XYZ<nl><end>

Where:

- **#** - always sent before definite block data (ascii format)
- **1** - specifies that the byte count is one digit (7) (ascii format)
- **7** - specifies the number of data bytes that will follow, not counting <NL><END> (ascii format)
- **ABC+XYZ** – Data (binary or ascii format)
- **<NL>** - always sent at the end of block data to indicate the last character being sent (program message terminator) - (ascii format)
- <**END>** - just for illustrative purposes and indicates the end of the data transmission.

Binary Data Notes:

The format is described by either REAL,32 (which indicates that each number takes 4 bytes) or REAL,64 (which indicates that each number takes 8 bytes). No separator is necessary between the numbers.

For a trace with 1001 complex points (real, imag) in REAL,64 format, the header would describe a 1001*2*8=16016 byte block, so it would be: #516016 followed by 16016 bytes of data.

For a trace with 5 data points in LogMag format in REAL,32 format, the header would describe a 5*1*4=20 byte block, so it would be: #220 followed by 20 bytes of data.

Examples

```
FORM REAL,32
```

See example parsing program in C#.

Query Syntax FORMat[:DATA]?

Default ASCii,0

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
28-Oct-2011	Added more
30-Nov-2010	Added explanations
22-Oct-2010	New command (5.30)

INITiate:IQCapture

(Write-Only) Causes the FieldFox to start the I/Q capture process. When in Single sweep (acquisition for I/Q) mode, the IQA performs the current defined I/Q capture before going to the hold state again.

This command is overlapped. This means that it will execute and, while the FieldFox performs a single sweep (acquisition for I/Q), it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

Note: This command can only be used in single acquisition mode. It is ignored when the I/Q capture is set to continuous acquisition. To enable/disable continuous acquisition, refer to INITiate:CONTinuous.

Relevant Modes	IQA
Examples	INIT:IQC;*OPC?
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

13nov2017	Added IQA mode (10.1x)

INITiate:CONTinuous <bool>

(Read-Write) Specify acquisition mode for the FieldFox.

The **OFF** setting for this command is overlapped. This means that it will execute and also accept new commands while switching to single sweep (acquisition for I/Q) mode.

Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

See also, INITiate:IQCapture.

Relevant Modes	ALL
Parameters	
<boolean>	Acquisition mode. Choose from: **O** or **OFF** - Single acquisition mode. Use INIT:IMM to trigger a acquisition. **1** or **ON** - Continuous acquisition mode
Examples	INIT:CONT 0;*OPC? See example in VVM mode
Query Syntax	INITiate:CONTinuous?
Return Type	Boolean
Default	ON - Continuous

Last Modified:

22oct2017	Added IQA mode (10.1x)

INITiate[:IMMediate]

(Write-Only) Causes the FieldFox to perform a single sweep, then hold. Use this sweep mode for reading trace data. First send INIT:CONT 0 to set single sweep mode.

When in Continuous sweep mode, this command is ignored.

This command is overlapped. This means that it will execute and, while the FieldFox performs a single sweep, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait

before accepting subsequent commands.

Relevant Modes ALL

Examples

```
INIT;*OPC?
```

Query Syntax Not Applicable

Default Not Applicable

INPut:LAN:ADDRess <string>

(Read-Write) Set and query the LAN sensor's IP address.

See also, INP:TYP, INP:LAN:ID:TYP, INP:LAN:ID:SNUM, DISP:MOD:STAT, INP:LAN:ID:NAME, and DISP:MOD:DATA.

Learn more, the FieldFox Supplemental Help.

Relevant Modes Frequency Offset mode (Option 208), Power Meter mode (Option 310), and Pulse Measurements mode (Option 330)

Parameters

<string> Enter an IP address for the LAN sensor.

Examples

```
INP:LAN:ADDR "111.111.111.111" 'Defines the IP address of
the current LAN sensor
```

Query Syntax INPut:LAN:ADDR?

Return Type string

Default n/a (i.e., if no LAN sensor IP address is specified, the FieldFox returns "Not Specified".

Last Modified:

29july2019 New command (11.26)

INPut:LAN:ID:NAMe <char>

(Read-Write) Set and query the LAN sensor's enumerator model and SCPI name.

See also, INP:TYP, INP:LAN:ID:TYP, INP:LAN:ID:SNUM, DISP:MOD:STAT, INP:LAN:ADDR, and DISP:MOD:DATA.

Learn more, the FieldFox Supplemental Help.

Relevant Modes Frequency Offset mode (Option 208), Power Meter mode (Option 310), and Pulse Measurements mode (Option 330)

Parameters

<char> Choose a LAN sensor model number enumerator:

Power Sensor Model:	Enumerator:
U2049XA	UA1
L2061XA	LA1
L2062XA	LA2
L2063XA	LA3
L2051XA	LA4
L2052XA	LA5
L2053XA	LA6
L2054XA	LA7
L2055XA	LA8
L2064XA	LA9
L2065XA	LA10
L2065XT	LT1

Examples

```
INP:LAN:ID:NAM UA1 'Defines a model U2049XA LAN sensor
INP:LAN:ID:NAM LA5 'Defines a model U2052XA LAN sensor
```

Query Syntax INPut:LAN:ID:NAMe?

Return Type character

Default n/a (i.e., if no LAN sensor IP address is specified, the FieldFox returns "Not Specified".

Last Modified:

01june2019 New command (11.26)

INPut:LAN:ID:SNUMber

(Read-Write) Set and query the autogenerated hostname.

See also, INP:TYP, INP:LAN:ID:TYP, INP:LAN:ID:ADDR, DISP:MOD:STAT, INP:LAN:ID:NAME, and DISP:MOD:DATA.

Learn more, the FieldFox Supplemental Help.

Relevant Modes Frequency Offset mode (Option 208), Power Meter mode (Option 310), and Pulse Measurements mode (Option 330)

Parameters

<string> Enter the last 5 digits of the LAN sensor's serial number.

Examples

```
INP:LAN:ID SNUM 12345 'Enter the last 5 digits of the
power sensor serial number
```

Query Syntax INPut:LAN:ID:SNUMber?

Return Type number

Default n/a

Last Modified:

29july2019 New command (11.26)

INPut:LAN:ID:TYPe <char>

(Read-Write) Set and query the hostname.

See also, INP:TYP, INP:LAN:ADDR, INP:LAN:ID:SNUM, DISP:MOD:STAT, INP:LAN:ID:NAME, and DISP:MOD:DATA.

Learn more, the FieldFox Supplemental Help.

Relevant Modes Frequency Offset mode (Option 208), Power Meter mode (Option 310), and Pulse Measurements mode (Option 330)

Parameters

<char> Choose from:

SNUM- (default) Uses the power sensor's serial number to automatically identify the power sensor.

IPA- Defines the sensor type as LAN.

Examples

```
INP:LAN:ID:TYP IPA 'Defines the IP address as the method to identify the hostname
```

Query Syntax INPut:LAN:ID:TYP?

Return Type char

Default SNUM

Last Modified:

29july2019 New command (11.26)

INPut:TYPe <char>

(Read-Write) Set and query the USB or LAN power sensor type.

See also, INP:LAN:ADDR, INP:LAN:ID:TYP, INP:LAN:ID:SNUM, DISP:MOD:STAT, INP:LAN:ID:NAME, and DISP:MOD:DATA.

Learn more, the FieldFox Supplemental Help.

Relevant Modes Frequency Offset mode (Option 208), Power Meter mode (Option 310), and Pulse Measurements mode (Option 330)

Parameters

<char> Choose from:

USB- Defines the sensor type as USB.

LAN- Defines the sensor type as LAN.

Examples

```
INP:TYP USB 'Defines the sensor type as USB
INP:TYP LAN 'Defines the sensor type as LAN
```

Query Syntax INPut:TYPe?

Return Type Character

Default USB

Last Modified:

29july2019 New command (11.26)

INITiate:RESTart

(Write-Only) Behavior is mode and Sweep type (Continuous/Hold/Single) dependent.

SA/RTSA/IQA:

Causes the FieldFox to restart trace averaging at count of 1. When in Single sweep (acquisition for I/Q) mode, the IQ/RTSA/SA performs a complete set of averages before going to the hold state again.

This command is overlapped. This means that it will execute and, while the FieldFox performs a single sweep (acquisition for I/Q), it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

In Single sweep (acquisition for I/Q) mode, the IQA/RTSA/SA performs a complete set of averages before going to the hold state again.

NA and CAT:

In Hold mode:

1) Causes the FieldFox to restart trace averaging at count of 1.

2) Takes a single sweep.

Note: Does not support the SA/IQA/RTSA behavior of acquiring ALL averages when average mode is set to SWEEP average mode. If in SWEEP average mode, will only completes the first of the required averages. INIT:IMM command is required to keep adding to the average trace until desired average count has been reached.

In Continuous sweep mode:

1) Resets the average counter and continue free run sweeping. Similar to Hold mode, if in sweep average mode, will start acquiring sweeps to collect the required averages and will continue sweeping. Average counter will climb to set value (This set value displays on the Fieldfox).

2) If in point average mode, will acquire all averages in a single sweep as expected, and will continue acquiring data.

Note: If you are in Continuous sweep mode, resets averaging at a count of 1.

Relevant Modes CAT, IQA,LTE FDD, PAA, 5GTF, 5G NR, 5G NR EVM Conducted, NA, SA, RTSA

Examples `INIT:REST;*OPC?`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

27nov2018	Added CAT, LTE FDD, & 5GTF modesand updated descriptions (11.0)
22oct2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)

:INPut:LAN:IDENtify:SNUMber <number>

(Read-Write) Specify the last 5 digits for a target power sensor serial number to auto-generate the hostname.

Relevant Modes Power Meter (USB Sensor), Pulse Modes: Supports Options 208 Frequency Offset Mode, 310 Power Meter Mode (USB), and 330 Pulse Measurements

Parameters

<number> **12345**

Examples `:INP:LAN:IDEN:SNUM 12345`

Query Syntax :INP:LAN:IDEN:SNUM?

Return Type

Default n/a

Last Modified:

05-May-2016	New command

:INPut:LAN:IDENTify:TYPe SNUM | IPA

(Read-Write) Specifies where to find a LAN hostname.

Relevant Modes Power Meter (USB Sensor), Pulse Modes: Supports Options 208 Frequency Offset Mode, 310 Power Meter Mode (USB), and 330 Pulse Measurements

Parameters

<char> **SNUM** - use autofind (i.e., default uses the device serial number)

IPA - user enters an IP address.

Examples `:INP:LAN:IDEN:TYP IP 168.212.226.204`

Query Syntax :INP:LAN:IDEN:TYP?

Return Type Numeric

Default SNUM

Last Modified:

05-May-2016 New command

INSTrument:CATalog?

(Read-Only) Read the modes available on the FieldFox.

Relevant Modes ALL

Examples
Inst:Cat?
Returns:
NA,SA,Power Meter,CAT

Return Type Comma-separated list of strings.

Default Not Applicable

INSTrument:GTL

(Write-Only) Returns front panel key press control. To lockout front panel operation, send INST:GTR.

Relevant Modes ALL

Examples
```
INST:GTR
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

20-Nov-2014 New command (7.75)

INSTrument:GTR

(Write-Only) Locks out the front panel key presses. **RMT** is displayed on the screen. To return to front panel operation, press **ESC** or send INST:GTL.

Relevant Modes ALL

Examples
```
INST:GTR
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

20-Nov-2014	New command (7.75)

INSTrument:RLOCkout:DISable <bool>

(Read-Write) Set and query the status of the remote SCPI lockout (ON (1) or OFF (0)).

See also, SYST:PRES.

Relevant Modes ALL

Parameters

<bool> Choose from:

O or **OFF** - Remote lockout is off. Sending another SCPI command will turn **on** the remote lockout feature and an  is displayed at the top center of instrument display.

1 or **ON** - Remote lockout is on.Sending another SCPI command will turn **off** remote lockout feature . Nothing is displayed at the top center of the FieldFox display.

Examples

```
INST:RLOC:DIS 0 'Remote lockout is disabled.
```

Query Syntax INST:RLOC:DIS?

Return Type Boolean

Default ON (1)

Last Modified:

01dec2019	New command

INSTrument[:SELect] <string>

(Read-Write) Set and query the current operating mode. Use INST:CAT? to read the available modes on the FieldFox.

This command is overlapped. This means that it will execute and, while the FieldFox changes mode, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

Relevant Modes ALL

Parameters

<string> Operating Mode. **Case-sensitive.** Choose from the modes that are installed on your FieldFox:

- **"CAT"**
- **"Channel Scanner"**
- **"CPM"**

- **"EMI"**
- **"ERTA"**
- **"IQ"**
- **"NA"**
- **"NF"**
- **"OTA"**
- **"Phased Array Antenna"**
- **"Power Meter"**
- **"Pulse Measurements"**
- **"RS"**
- **"RSTA"**
- **"SA"**
- **"VVM"**

Examples INST "NA";*OPC?

Query Syntax INSTrument[:SELect]?

Default Depends on FieldFox model

Last Modified:

05Oct2017 Added IQA mode (10.1x)

:LTEFdd:DATA:GPS?

(Read-Only) Returns LTE FDD result with GPS information.

Relevant Modes LTE FDD

Parameters

Examples `LTEF:DATA:GPS?`

Return Results Format

Single Component Carrier

Record Length	Latitude	Longitude	Elevation	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	Latitude	Longitude	Elevation	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	Latitude	Longitude	Elevation	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	Latitude	Longitude	Elevation	CC2 Frequency	CC2 Measurement Results
…	…	…	…	…	…
CCN Record Length	Latitude	Longitude	Elevation	CCN Frequency	CCN Measurement Results

Measurement Results Format:

LTE FDD

PCI										
Cell ID	Sector ID	Group ID	C-RS Port	RSRP	RSRQ	RSSI	PSS Power	SSS Power	SINR	Freq Error

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
16-Sep-2022	New command

:LTEFdd:DATA?

(Read-Only) Returns the measurement results.

Relevant Modes LTE FDD

Parameters None

Examples

```
LTEF:DATA?
```

Return Results Format

Single Component Carrier

Record Length	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	CC2 Frequency	CC2 Measurement Results
…	…	…
CC*n* Record Length	CC*n* Frequency	CC*n* Measurement Results

Measurement Results Format

LTE FDD

PCI										
Cell ID	Sector ID	Group ID	C-RS Port	RSRP	RSRQ	RSSI	PSS Power	SSS Power	SINR	Freq Error

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
06dec2018	New command

:LTETdd:DATA:GPS?

(Read-Only) Returns LTE TDD result with GPS information.

Relevant Modes LTE TDD

Parameters None

Examples

```
LTET:DATA:GPS?
```

Return Results Format

Single Component Carrier

Record Length	Latitude	Longitude	Elevation	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	Latitude	Longitude	Elevation	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	Latitude	Longitude	Elevation	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	Latitude	Longitude	Elevation	CC2 Frequency	CC2 Measurement Results
…	…	…	…	…	…
CCN Record Length	Latitude	Longitude	Elevation	CCN Frequency	CCN Measurement Results

Measurement Results Format

LTE TDD

PCI										
Cell ID	Sector ID	Group ID	C-RS Port	RSRP	RSRQ	RSSI	PSS Power	SSS Power	SINR	Freq Error

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
01dec2020	New command (12.2x)

:LTETdd:DATA?

(Read-Only) Returns the measurement results.

Relevant Modes LTE TDD

Parameters None

Examples

```
LTET:DATA?
```

Return Results Format

Single Component Carrier

Record Length	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	CC2 Frequency	CC2 Measurement Results
…	…	…
CC*n* Record Length	CC*n* Frequency	CC*n* Measurement Results

Measurement Results Format

LTE TDD

PCI										
Cell ID	Sector ID	Group ID	C-RS Port	RSRP	RSRQ	RSSI	PSS Power	SSS Power	SINR	Freq Error

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
01dec2020	New command (12.2x)

SYSTem:HEAD:CORRections[:STATe] <bool>

(Read-Write) Set and query frequency extender head corrections being shared from SA mode.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<char> Choose from:

ON (1) - share frequency head corrections ON
OFF (0) - share frequency head corrections OFF

Examples
```
SYST:HEAD:CORR 1 */Enables the sharing of SA mode frequency extender head corrections
```

Query Syntax SYSTem:HEAD:CORR?

Return Type Boolean

Default OFF (0)

Last modified:

14apr2020 Added for A.12.00 FW (Compatible with OTA, PAA, RTSA, & SA Modes)

SYSTem:HEAD:HIGHsense[:STATe] <bool>

(Read-Write) Set and query the high sensitivity state when the frequency extender is enabled.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<char> Choose from:
ON (1) - high sensitivity state ON
OFF (0) - high sensitivity state OFF

Examples
```
SYST:HEAD:HIGH 0 */Disables the high sensitivity state
```

Query Syntax SYSTem:HEAD:HIGH?

Return Type Boolean

Default OFF (0)

Last modified:

14apr2020 Added for A.12.00 FW (Compatible with OTA, PAA, RTSA, & SA Modes)

SYSTem:HEAD[:STATe] <bool>

(Read-Write) Set and query the frequency extender state.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<char> Choose from:
ON (1) - frequency extender ON

OFF (0) - frequency extender OFF

Examples

```
SYST:HEAD 0 */Disables the frequency extender
```

Query Syntax SYSTem:HEAD?

Return Type Boolean

Default OFF (0)

Last modified:

14apr2020 Added for A.12.00 FW (Compatible with OTA, PAA, RTSA, & SA Modes)

MMEMory:CATalog? [string]

(Read-Only) Returns a comma-separated string of file names.

See ALL MMEM commands.

Relevant Modes ALL

Parameters

[string] String. Optional argument. FieldFox drive/folder to catalog.

If unspecified, the active drive/folder is cataloged.

Use MMEMory:CDIRectory to change the active drive/folder and to learn how to specify a drive/folder.

Examples

```
'Read the files in the internal root folder.
MMEM:CAT? "[INTERNAL]:"
'Read the files in the internal Keywords folder
MMEM:CAT? "[INTERNAL]:\Keywords"
'Read the files in the default folder
mmemory:catalog?
```

Return Type Comma-separated list of strings.

Default Not Applicable

Last Modified:

23-Apr-2012 Major modifications

MMEMory:CDIRectory <string>

(Read-Write) Change the active drive/folder. All subsequent MMEM commands will use this drive/folder as the default.

See ALL MMEM commands.

Relevant Modes ALL

Parameters

<string> Folder name enclosed in quotes. Case-sensitive. Include brackets, and colon.

Specify the following drives:

- "[INTERNAL]:" - FieldFox internal drive.
- "[SDCARD]:" - External SD card.
- "[USBDISK]:" or "[USBDISK1]:" - The first USB flash drive to be plugged into either of the FieldFox USB slots.
- "[USBDISK2]:" - The second USB flash drive to be plugged into either of the FieldFox USB slots.

Specify a folder on the drive by appending the folder name within the quotes. See examples.

The following arguments are superseded (but still accepted):

- An SD card is specified as "\Storage Card"
- A USB flash drive is specified as "\Hard Disk"
- The internal memory is specified as "\UserData"

Examples

```
'Change active drive to internal
MMEM:CDIR "[INTERNAL]:"
'On the internal drive, specify the Keywords folder
MMEM:CDIR "[INTERNAL]:\Keywords"
'Change active drive to the USB flash disk
mmemory:cdirectory "[USBDISK]:"
```

Query Syntax MMEMory:CDIRectory?

Folders on the active drive are shown in brackets as **`[My Folder]`**

Return Type String

Default "[INTERNAL]:"

Last Modified:

23-Apr-2012	Major modifications

MMEMory:COPY <file1>,<file2>

(Write-Only) Copies file1 to file2. Extensions must be specified.

See MMEM:CDIR to learn how to set the active drive and how to specify a drive/folder.

See ALL MMEM commands.

Relevant Modes ALL

Parameters

<file1> String - Drive, folder, filename, and extension of the file to be copied. If drive and folder are unspecified, the active drive/folder is used.

<file2> String - Drive, folder, filename, and extension to be created from <file1>. If unspecified, the active drive/folder is used.

Examples

```
'Copies the existing file to the same folder with a new file name.
MMEM:COPY "MyFile.sta", "MyFile.sta"
'Copies the existing file from the active drive to the USB drive with the same file name.
MMEM:COPY "MyFile.sta","[USBDISK]:\MyFile.sta"
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

23-Apr-2012	Major modifications

MMEMory:DATA <filename>,<data>

(Read-Write) Read and store <*data*> into the file <*filename*>. Because this is block data, any file format can be read.

See MMEM:CDIR to learn how to set the active drive and how to specify a drive/folder.

See ALL MMEM commands and Memory Command Examples.

Relevant Modes ALL

Parameters

<filename> String - Drive, folder, filename, and extension into which data will be loaded. If drive and folder are unspecified, the active drive/folder is used.

<data> Data in 488.2 block format.

Examples

```
'Stores data into "MyFile"
MMEM:DATA "MyFile",<data>
'Stores data into "MyFile" on USB
MMEM:DATA "[USBDISK]:\MyFile",<data>
```

See a transfer image to PC example using this command.

Query Syntax MMEMory:DATA? <filename>

Default Not Applicable

Last Modified:

17-Dec-2013	Added link to example
23-Apr-2012	Major modifications

MMEMory:DELete <string>

(Write-Only) Deletes the specified file.

See MMEM:CDIR to learn how to set the active drive and how to specify a drive/folder.

See ALL MMEM commands.

Relevant Modes ALL

Parameters

<string> String - Drive, folder, filename, and extension to delete. If unspecified, the active drive/folder is used.

Examples

```
'Delete file from active drive/folder
MMEM:DEL "MyOldFile.sta"
'Delete file from USB
MMEM:DEL "[USBDISK]:\MyOldFile.sta"
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

23-Apr-2012	Major modifications

MMEMory:IMPort:DUT <string>,<char>

(Write-only) Load a match data (*.csv or *.snp) file from the specified device.

- Imports *.csv and *.snp files from the "NoiseFigure\DUT" folder.

Note: Before importing a file, the file must be stored in the NoiseFigure\DUT folder.

See also, MMEMory:STORe:DUT and MMEMory:LOAD:DUT.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> *.csv or *.snp

<char> Memory device where the match data file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:IMP:DUT "MySNP.s2p",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

MMEMory:IMPort:PAMPlifier <string>,<char>

(Write-only) Load a match data (*.csv or *.snp) file from the specified device.

- Imports *.csv and *.snp files from the "NoiseFigure\Preamp" folder.

Note: Before importing a file, the file must be stored in the NoiseFigure\Preamp folder.

See also, MMEMory:LOAD:PAMPlifier and MMEMory:STORe:PAMPlifier.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> *.csv or *.snp

<char> Memory device where the match data file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:IMP:PAMP "MySNP.s2p",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

MMEMory:LOAD:PAMPlifier <string>,<char>

(Write-only) Load an uncertainty preamplifier (*.amp) file from the specified device.

- Preamplifier files (*.amp) are saved and recalled from the "NoiseFigure\AMP" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

Note: Template *.amp files for several common models of preamplifiers may be found in the default AMP table directory of the FieldFox. In these files, the reflection coefficients have been set to the values specified for the respective model numbers, but the values for the preamplifier or preamplifier uncertainty will need to be entered at each frequency.

See also, MMEMory:STORe:PAMPlifier and MMEMory:IMPort:PAMPlifier.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> For *.amp files, provide filename of the *.amp file WITHOUT an extension.

<char> Memory device where the preamplifier file (*.amp) is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:PAMP "MyAMP",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

MMEMory:LOAD:ANTenna <string>,<char>

(Write-only) Load a receiver antenna file from the specified device. If using only one antenna file, use this command.

For SA (Only), to load a source antenna file, use MMEMory:LOAD:SANTenna.

- All Channel Scanner (ChScn) PAA, and SA mode Antenna files are saved and recalled as *.csv files, which allows them to also be read by spreadsheet programs.
- The FieldFox can also read *.ANT (Antenna) files that were created from older Keysight Spectrum Analyzers.
- Antenna files are saved and recalled from the "Antenna" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes ChScn, PAA, SA

Parameters

<string> For *.csv files, provide filename of the antenna file WITHOUT an extension.
For *.ant files, provide filename and .ant extension.

<char> Memory device where the Antenna file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:ANT "MyAntenna",INT
mmemory:load:antenna "demo_antenna_26m_3g.ant",internal
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2019	Added PAA (11.5)
01june2018	Added Channel Scanner (ChScn) - (10.3)
26-Jan-2015	Modified for source
16-Dec-2014	Fixed .ant recall

29-Oct-2010	New command (5.30)

MMEMory:LOAD:CABLe <string>,<char>

(Read-Write) Loads a receiver cable file from the specified device. If using only one cable file, use this command.

To load a source cable file, use MMEMory:LOAD:SCABle

- Channel Scanner (ChnScn), PAA, and SA Cable files are saved as *.csv files, which allows them to also be read by spreadsheet programs.
- DTF Cable files are saved as *.xml files.
- Cable files are saved and recalled from the "Cables" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes ChScn, CAT, PAA, SA

Parameters

<string> SA mode: Filename of the cable file withOUT an extension.
CAT mode: Filename of the cable file with an extension.

<char> Memory device where the cable file is stored. Choose from:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:CABL "MyCable",INT */ChnSCn, PAA, and SA modes
MMEM:LOAD:CABL "MyCable.xml",INT */CAT mode
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

27nov2-18	Updated filename load descriptions with mode specific content.
01june2018	Added Channel Scanner (ChScn) - (10.3)
26-Jan-2015	Modified for source
29-Oct-2010	New command (5.30)

MMEMory:LOAD:CONVerter <string>,<char>

(Write-only) Loads a frequency converter corrections file (*csv) from specified device (INT | USB | SD).

Note:

- This command is not needed, when Auto loading is set using SYST:HEAD:CORR:ASET.
- Unless otherwise specified, on the FieldFox, *.csv files are initially stored and recalled by default from the "[INTERNAL]:\Converter" folder.

To store a frequency converter corrections file, use MMEMory:STORe:CONVerter.

See ALL MMEM commands.

Relevant Modes SA

Parameters

<string> For *.csv files, provide filename of the *.csv file WITHOUT an extension.

<char> Load a frequency converter corrections file from user data. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:CONV "MyCONV_File",INT 'loads a file "MyCONV_File" from INTernal memory.
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

20apr2020	A12.00 New command

MMEMory:LOAD:DUT <string>,<char>

(Write-only) Load a uncertainty DUT (*.dut) file from the specified device.

- DUT files are saved and recalled from the "NoiseFigure\DUT" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See also, MMEMory:STORe:DUT and MMEMory:IMPort:DUT.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> For *.dut files, provide filename of the *.dut file WITHOUT an extension.

<char> Memory device where the DUT file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:DUT "MyDUT",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

:MMEMory:LOAD:DLOG <string>

(Write-only) Load a *.csv or *.kml or *.drec log file (i.e., *.drec files are only applicable for PAA mode).

See also, DLOG:FILE:ASAVe, DLOG:FILE:TYPE, DLOG:REC:STAR, MMEMory:STOR:DLOG, and DLOG:FILE:FOLDSee more MMEMory commands.

See more MMEMory commands.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters

<string> For *.csv files, provide filename and .csv extension.
For *.kml files, provide filename and .kml extension.
For *.drec files, provide filename and .drec extension

<char> Memory device where the Antenna file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:DLOG "MyAntenna",INT
mmemory:load:dlog antenna
"demo_antenna_26m_3g.kml",internal
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020	Added new topic/commands (A12.1x)
01june2019	New command

MMEMory:LOAD:ENR <string>,<char>

(Write-only) Load a noise figure ENR (*.enr) file from the specified device.

- ENR files are saved and recalled from the "NoiseFigure\ENR" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

Note: Template *.enr files for several common models of noise sources may be found in the default ENR table directory of the FieldFox. In these files, the reflection coefficients have been set to the values specified for the respective model numbers, but the values for the ENR or ENR uncertainty will need to be

entered at each frequency.

See also, MMEMory:STORe:ENR.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> For *.enr files, provide filename of the *.enr file WITHOUT an extension.

<char> Memory device where the ENR file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:ENR "MyENR",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

MMEM:LOAD:HEAD <string>

(Write Only) Recalls a frequency extender head file by name. Must include an .xml extension.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<string> Available file types:

- M10H6ADC 75-110G
- M12H6ADC 60-90G
- M15H4ADC 50-75G
- M28H2ADC 24-40G

Examples

```
MMEM:LOAD:HEAD "M12H6ADC 60-90G.xml"
MMEM:LOAD:HEAD "M28H2ADC 24-40G.xml"
```

Query Syntax n/a

Return Type n/a

Default n/a

Last modified:

14apr2020 Added for A.12.00 FW (Compatible with OTA, PAA, RTSA, & SA Modes)

:MMEMory:LOAD:LIST

(Write-only) Load a *.csv custom file.

See ALL MMEM commands.

Relevant Modes ChScn

Parameters

<string> For *.csv files, provide filename of the antenna file WITHOUT an extension.

<char> Memory device where the Antenna file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:ANT "ChanScan",INT
mmemory:load:antenna "demo_channel_3g.csv",internal
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

MMEMory:LOAD:PAMPlifier <string>,<char>

(Write-only) Load an uncertainty preamplifier (*.amp) file from the specified device.

- Preamplifier files (*.amp) are saved and recalled from the "NoiseFigure\AMP" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

Note: Template *.amp files for several common models of preamplifiers may be found in the default AMP table directory of the FieldFox. In these files, the reflection coefficients have been set to the values specified for the respective model numbers, but the values for the preamplifier or preamplifier uncertainty will need to be entered at each frequency.

See also, MMEMory:STORe:PAMPlifier and MMEMory:IMPort:PAMPlifier.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> For *.amp files, provide filename of the *.amp file WITHOUT an extension.

<char> Memory device where the preamplifier file (*.amp) is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:PAMP "MyAMP",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

MMEMory:LOAD:SANTenna <string>,<char>

(Write-only) Load a source antenna file from the specified device.

To load a receiver (or only one) antenna file, use MMEMory:LOAD:ANTenna

- All SA mode Antenna files are saved and recalled as *.csv files, which allows them to also be read by spreadsheet programs.
- The FieldFox can also read *.ANT (Antenna) files that were created from older Keysight Spectrum Analyzers.
- Antenna files are saved and recalled from the "Antenna" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes SA

Parameters

<string> For *.csv files, provide filename of the antenna file WITHOUT an extension.
For *.ant files, provide filename and .ant extension.

<char> Memory device where the Antenna file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:SANT "MyAntenna",INT
mmemory:load:santenna "demo_antenna_26m_3g.ant",internal
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

26-Jan-2015	New command (8.0)

MMEMory:LOAD:SCABle <string>,<char>

(Read-Write) Loads a source cable file from the specified device.

To load a receiver (or only one) cable file, use MMEMory:LOAD:CABLe

- SA Cable files are saved as *.csv files, which allows them to also be read by spreadsheet programs.
- DTF Cable files are saved as *.xml files.
- Cable files are saved and recalled from the "Cables" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes CAT, SA

Parameters

<string> SA mode: Filename of the cable file withOUT an extension.
CAT mode: Filename of the cable file with an extension.

<char> Memory device where the cable file is stored. Choose from:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:SCAB "MyCable",INT */SA mode
MMEM:LOAD:SCAB "MyCable.xml",INT */CAT mode
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

27nov2-18	Updated filename load descriptions with mode specific content.
26-Jan-2015	New command (8.00)

MMEMory:LOAD:STATe <string>

(Write-Only) Loads an instrument state file.

This command CAN be used with *OPC?.

Relevant Modes ALL

Parameters

<string> Filename and extension of the state file.

Examples

```
MMEMory:LOAD:STATe "AutoSave1.sta"
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

11-Nov-2013	Linked to Q
28-Mar-2013	Removed OPC? limitation
26-Jul-2012	Added note about *OPC?

MMEMory:MDIRectory <string>

(Write-Only) Makes a new folder.

See MMEM:CDIR to learn how to set the active drive/folder and how to specify a drive/folder.

See ALL MMEM commands.

Relevant Modes ALL

Parameters

<string> Drive/folder to create. If unspecified, the folder is created in the active drive/folder.

Examples

```
'Folder is created in the active drive/folder
MMEMory:MDIRectory "MyFolder"
'Folder is created on the USB drive.
MMEMory:MDIRectory "[USBDISK]:\MyFolder"
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

23-Apr-2012	Major modifications

MMEMory:MOVE <file1,<file2>

(Write-Only) Renames <file1> to <file2>. File extensions must be specified.

See MMEM:CDIR to learn how to set the active drive/folder and how to specify a drive/folder.

See ALL MMEM commands.

Relevant Modes ALL

Parameters

<file1> String - Drive, folder, filename, and extension of the file to be renamed. If unspecified, the active drive/folder is used.

<file2> String - Drive, folder, filename, and extension of the new file. If unspecified,

the active drive/folder is used.

Examples

```
'Rename file from/to active drive/folder.
MMEM:MOVE "OldFile.sta", "NewFile.sta"
'Rename file from active drive/folder to USB drive.
MMEM:MOVE "OldFile.sta", "[USBDISK]:\NewFile.sta"
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

23-Apr-2012	Major modifications

MMEMory:RDIRectory <string>[,<recursive>]

(Write-Only) Removes the specified folder if it is empty. If the folder is NOT empty, a 'Media Protected' message appears.

See MMEM:CDIR to learn how to set the active drive/folder and how to specify a drive/folder.

See ALL MMEM commands.

Relevant Modes ALL

Parameters

<string> String - Drive, folder from which folder is to be removed. If unspecified, the active drive/folder is used.

<recursive> String - Optional. Case-sensitive.

"recursive" - Removes everything in the specified folder and all sub-folders and their contents.

Examples

```
'Removes 'oldfolder' from active drive if it is empty.
MMEMory:RDIR "OldFolder"
'Removes 'oldfolder' from USB drive
MMEMory:RDIR "[USBDISK]:\OldFolder"
'Removes 'oldfolder' and all sub-folders
MMEMory:RDIR "OldFolder","recursive"
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

1-Apr-2014	Added optional argument
23-Apr-2012	Major modifications

MMEMory:STORe:ANTenna <string>,<char>

(Write-only) Saves the currently-loaded receiver antenna table to a file on the specified device.

- All Channel Scanner (ChScn), PAA, and SA modes the Antenna files are saved and recalled as *.csv files, which allows them to also be read by spreadsheet programs.
- The FieldFox can also read, but NOT save, *.ANT (Antenna) files. These files were created from older Keysight Spectrum Analyzers.
- Antenna files are saved and recalled from the "Antenna" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes ChScn, PAA,SA

Parameters

<string> Filename of the antenna file WITHOUT an extension.

<char> Memory device where the antenna file is to be stored. Choose from:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:STOR:ANT "MyAntenna_1",USB
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2019	Added PAA (11.5)
01june2018	Added Channel Scanner (ChScn) - (10.3)
16-Dec-2014	Edit to *.ant files
22-Aug-2012	Fixed example
22-Oct-2010	New command (5.30)

:MMEMory:STORe:AUDio:DEVice <char>

(Read-Write) The source/destination device for recalling/saving audio files.

See also MMEM:STOR:AUD:FNAMand MMEM:STOR:AUD:FNAM:TST.

Relevant Modes SA

Parameters

<char> Available device types:

USB First (detected) USB flash drive is used to store data.

SD SD storage card

INT INTernal FieldFox storage

Examples

```
MMEM:STOR:AUD:DEV USB
MMEM:STOR:AUD:DEV SD
MMEM:STOR:AUD:DEV INT
```

Query Syntax MMEM:STOR:AUD:DEV?

Return Type <char>

Default INTernal

Last Modified:

14june2021 New command (A.12.3x)

MMEMory:STORe:AUDio:FNAMe <"string">

(Read-Write) Set and query the audio capture file name (the file name used to save a successful audio capture).

See alos,.MMEM:STOR:AUD:FNAM:TSTand MMEM:STOR:AUD:DEV.

Relevant Modes SA

Parameters

<"string"> Audio capture filename.

Examples

```
MMEM:STOR:AUD:FNAM "CaptureName" 'Sets the audio file to "CaptureName"
```

Query Syntax MMEM:STOR:AUD:FNAM?

Return Type string

Default "AudioCapture"

Last Modified:

14june2021 Added new command (12.3x).

MMEMory:STORe:AUDio:FNAMe:TSTamp <bool>

(Write-Read) Determines whether a timestamp is appended to the audio capture file name (the timestamp reflects the curr

See also MMEM:STOR:AUD:FNAMand MMEM:STOR:AUD:DEV.

Relevant Modes SA

Parameters

<bool> Choose from:

OFF(0) - Disable

ON (1) – Enable

Couplings None

Examples

```
MMEM:STOR:AU
added to the
MMEM:STOR:AU
being added
```

Query Syntax MMEM:STOR:A

Default ON(1)

Last Modified:

15june2021 New command (A.12.3x)

MMEMory:STORe:CABLe <string>,<char>

(Read-Write) Saves the currently-loaded receiver cable table to a file at the specified location and device.

Channel Scanner (ChScn), PAA, and SA Cable files are saved as *.csv files, which allows them to also be read by spreadsheet programs.

DTF Cable files are saved as *.xml files.

Cable files are saved to the "Cables" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes CAT (DTF), ChScn, PAA, SA

Parameters

<string> ChScn and SA mode: Filename of the cable file withOUT an extension.
CAT mode: Filename of the cable file with an extension.

<char> Memory device where the file is to be stored. Choose from:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:STOR:CABL "MyCable",INT */ChScn, PAA, and SA mode
MMEM:STOR:CABL "MyCable.xml",INT */CAT (DTF) mode
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

27nov2-18	Updated filename store with mode specific content.
01june2018	Added Channel Scanner (ChScn) - (10.3)
26-Jan-2015	Modified for source
22-Aug-2012	Fixed example
22-Oct-2010	New command (5.30)

MMEMory:STORe:CONVerter <string>,<char>

(Write-Only) Store a frequency converter corrections file (*.csv) file to a specified device.

Note: Unless otherwise specified, on the FieldFox, *.csv files are initially stored and recalled by default from the "[INTERNAL]:\Converter" folder.

To load a frequency converter corrections file, use MMEMory:LOAD:CONVerter.

See ALL MMEM commands.

Relevant Modes SA

Parameters

<string> For *.csv files, provide filename of the *.csv file WITHOUT an extension.

<char> Memory device where the frequency converter corrections file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:STOR:CONV "MyDUT",INT 'Stores a corrections file
"MyDUT" to INTernal FieldFox memory.
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

20apr2020	New command A12.00

:MMEMory:STORe:DLOG

(Read-Write) Saves a CSV or KML or DCAT (DCAT is applicable to PAA mode only) file to a compatible mode's folder on customer-selected device: Int, USB, SD card.

See also, DLOG:FILE:ASAVe, DLOG:FILE:TYPE, DLOG:REC:STAR, MMEMory:LOAD:DLOG, and

DLOG:FILE:FOLD

See more MMEMory commands.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters

<filename>

Examples

```
:DLOGging:STORe:DLOG 'samplefileKML' */Stores a KML samplefile
:DLOGging:STORe:DLOG 'samplefileCSV' */Stores a CSV samplefile
:DLOGging:STORe:DLOG 'samplefileDCAT' */Stores a DCAT samplefile - (PAA mode only)
```

Query Syntax :DLOGging:FILE:MMEMory:STORe:DLOG? 'samplefile'

Return Type character

Default n/a

Last Modified:

01dec2020 Added new topic/commands (A12.1x)

MMEMory:STORe:DUT <string>,<char>

(Write-Only) Store a uncertainty DUT (*.dut) file to the specified device.

- ENR files are saved and recalled from the "NoiseFigure\DUT" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See also, MMEMory:LOAD:DUT and MMEMory:IMPort:DUT.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> For *.dut files, provide filename of the *.dut file WITHOUT an extension.

<char> Memory device where the DUT file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:STOR:DUT "MyDUT",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

MMEMory:STORe:ENR <string>,<char>

(Write-Only) Store a noise figure ENR (*.enr) file to the specified device.

- ENR files are saved and recalled from the "NoiseFigure\ENR" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

Note: Template *.enr files for several common models of noise sources may be found in the default ENR table directory of the FieldFox. In these files, the reflection coefficients have been set to the values specified for the respective model numbers, but the values for the ENR or ENR uncertainty will need to be entered at each frequency.

See also, MMEMory:LOAD:ENR.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> For *enr files, provide filename of the *enr file WITHOUT an extension.

<char> Memory device where the ENR file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:STOR:ENR "MySNR",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

MMEMory:STORe:FDATa <filename>

(Write-only) Saves the selected formatted trace to a CSV or KML file to a default folder. (i.e., this is a screen capture from the currently displayed trace.)

See also, MMEM:STOR:MAT, MMEM:STOR:SDF, and MMEM:STOR:TXT.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5GTF, CAT, IQA, LTE FDD, PAA, NA, NF, RTSA, SA, Pulse Measurements

Parameters

<filename> Filename and extension into which data will be loaded.

Examples

```
MMEM:STOR:FDAT "MyFile.csv"
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.5x)
03dec2018	Added LTE FDD & 5GTF (A.11.0)
01june2018	Added NF mode Opt. 356 (10.3)
21nov2017	Added IQA mode (A.10.15)
20-sep-2016	Added RTSA mode (A.09.50)
31-Oct-2013	Added Pulse
23-Apr-2012	Major modifications

:MMEMory:STORe:IMAGe <string>

(Write-only) Saves the current FieldFox screen to a *.png (picture) file. This file can NOT be read by the FieldFox.

Relevant Modes ALL

Parameters

<string> Filename and extension of the *.png file.

Examples

```
MMEMory:STORe:IMAGe "MyPic.png"
```

See an example using this command.

Query Syntax Not Applicable

Default Not Applicable

:MMEMory:STORe:IMAGe:NOKeys <string>

(Write-only) Command to store full-screen images (without the softkeys)

Relevant Modes ALL

Parameters

<string> Filename and extension of the *.png file.

Examples

```
MMEMory:STORe:IMAGe:NOKeys "MyPic.png"
```

See an example using this command.

Query Syntax Not Applicable

Default Not Applicable

MMEMory:STORe:IQCapture:DEVice

(Read-Write) Set and query the type of device storage type for IQA data capture (i.e., INT, USB, or SD).
Use MMEM:STOR:IQC:FTYP to set the data capture file type.
Use MMEM:STOR:IQC:FCO to manually set the IQA file capture count.

Relevant Modes IQA

Parameters

<"device"> Data capture device storage-type.
INT - internal FieldFox memory
SD - SD card
USB - USB storage device

Examples

```
MMEM:STOR:IQC:DEV SD
```

Query Syntax MMEM:STOR:IQC:DEV?

Return Type character

Default INT

Last Modified:

22-Oct-2017 Added new IQA mode content (10.1x).

MMEMory:STORe:IQCapture:FCOunt

(Read-Write) Set and query number of data capture files.
Use MMEM:STOR:IQC:FCO:MULT to enable or to disable the continuous mode file storage to an external SD card or USB storage device.

Relevant Modes IQA

Parameters

<num> Capture file count.
Preset: 1
Minimum: 1
Maximum: 1000000000 (1e9)

Examples

```
MMEM:STOR:IQC:FCO 1e9
```

Query Syntax MMEM:STOR:IQC:FCO?

Return Type Numeric

Default 1

Last Modified:

22-Oct-2017 Added new IQA mode content (10.1x).

MMEMory:STORe:IQCapture:FCOunt:MULTiple <bool>

(Read-Write) Set and query to enable or disable multiple (continuous) IQA file captures.
Use MMEMory:STORe:IQCapture:FCOunt to manually set the IQA file capture count.

Relevant Modes IQA

Parameters

<boolean> Capture file count.
ON (1): Enables multiple (continuous) IQA file captures
OFF (0): Disables multiple (continous) IQA file captures

Examples

```
MMEM:STOR:IQC:FCO:MULT ON
MMEM:STOR:IQC:FCO:MULT 0
```

Query Syntax MMEM:STOR:IQC:FCO:MULT?

Return Type boolean

Default OFF (0)

Last Modified:

22-Oct-2017 Added new IQA mode content (10.1x).

MMEMory:STORe:IQCapture:FNAMe <"string">

(Read-Write) Set and query the filename for IQA data capture.
Use MMEM:STOR:IQC:FTYP to set the data capture file type.

Relevant Modes IQA

Parameters

<"string"> Data capture filename.

Examples

```
MMEM:STOR:IQC:FNAM "filename"
```

Query Syntax MMEM:STOR:IQC:FNAM?

Return Type character

Default IQDataFile

Last Modified:

22-Oct-2017 Added new IQA mode content (10.1x).

MMEMory:STORe:IQCapture:FTYPe <char>

(Read-Write) Set and query the type of file type for IQA data capture (i.e., CSV, TXT, SDF, or MAT).

Use MMEM:STOR:IQC:FCO to manually set the IQA file capture count.

Use MMEM:STOR:IQC:DEV to set and query the type of device storage.

Relevant Modes	IQA
Parameters	
<dataType>	Data capture file-type. **CSV** - csv file **TXT -** txt file **SDF -** sdf file **MAT -** matlab file
Examples	`MMEM:STOR:IQC:FTYP MAT`
Query Syntax	MMEM:STOR:IQC:FTYP:MULT?
Return Type	character
Default	CSV

Last Modified:

22-Oct-2017	Added new IQA mode content (10.1x).

MMEMory:STORe:IQCapture:STARt

(Write Only) Starts the IQA data capture.

Use SENS:MEAS:CAPT:TIME to set the data capture time or use MEAS:CAPT:LENGth to set capture samples for the IQA data.

Relevant Modes	IQA
Parameters	
	n/a
Examples	`MMEM:STOR:IQC:STAR`
Query Syntax	n/a
Return Type	n/a
Default	n/a

Last Modified:

22-Oct-2017 Added new IQA mode content (10.1x).

MMEMory:STORe:IQCapture:STOP

(Write Only) Stops the IQA data capture.

Use SENS:MEAS:CAPT:TIME to set the data capture time or use MEAS:CAPT:LENGth to set capture samples for the IQA data.

Relevant Modes IQA

Parameters

n/a

Examples

```
MMEM:STOR:IQC:STOP
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22-Oct-2017 Added new IQA mode content (10.1x).

:MMEMory:STATe:STORe:LIST

(Write-only) Save a csv custom list file.

See ALL MMEM commands.

Relevant Modes ChScn

Parameters

<string> For *.kml files, provide filename and .kml extension.

<char> Memory device where the Antenna file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:ANT "ChanScan",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

MMEMory:STORe:ANTenna <string>,<char>

(Write-only) Saves the currently-loaded receiver antenna table to a file on the specified device.

- All Channel Scanner (ChScn), PAA, and SA modes the Antenna files are saved and recalled as *.csv files, which allows them to also be read by spreadsheet programs.
- The FieldFox can also read, but NOT save, *.ANT (Antenna) files. These files were created from older Keysight Spectrum Analyzers.
- Antenna files are saved and recalled from the "Antenna" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes ChScn, PAA,SA

Parameters

<string> Filename of the antenna file WITHOUT an extension.

<char> Memory device where the antenna file is to be stored. Choose from:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:STOR:ANT "MyAntenna_1",USB
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2019	Added PAA (11.5)
01june2018	Added Channel Scanner (ChScn) - (10.3)
16-Dec-2014	Edit to *.ant files
22-Aug-2012	Fixed example
22-Oct-2010	New command (5.30)

MMEMory:STORe:MAT <string>

(Write-only) Save I/Q and antenna data as Matlab (mat) file. Only save file in one time. I/Q and antenna screen data cannot be recalled.

See also, MMEM:STOR:FDAT, MMEM:STOR:SDF, and MMEM:STOR:TXT.

Relevant Modes IQA, PAA

Parameters

<string> Filename of the mat file.

Examples

```
MMEM:STOR:MAT "MyMatFile"
```

Query Syntax N/A

Default N/A

Last Modified:

16-Sep-2022 New command

MMEMory:STORe:PAMPlifier <string>,<char>

(Write-Only) Store an uncertainty preamplifier (*.amp) file to the specified device.

- Preamplifier files (*.amp) are saved and recalled from the "NoiseFigure\AMP" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

Note: Template *.amp files for several common models of preamplifiers may be found in the default AMP table directory of the FieldFox. In these files, the reflection coefficients have been set to the values specified for the respective model numbers, but the values for the AMP or AMP uncertainty will need to be entered at each frequency.

See also, MMEMory:LOAD:PAMPlifier and MMEMory:IMPort:PAMPlifier.

See ALL MMEM commands.

Relevant Modes NF

Parameters

<string> For *.amp files, provide filename of the *.amp file WITHOUT an extension.

<char> Memory device where the preamplifier file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:STOR:PAMP "MyAMP",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

MMEMory:STORe:SANTenna <string>,<char>

(Write-only) Load a source antenna file from the specified device.

To load a receiver (or only one) antenna file, use MMEMory:LOAD:ANTenna

- All SA mode Antenna files are saved and recalled as *.csv files, which allows them to also be read by spreadsheet programs.
- The FieldFox can also read *.ANT (Antenna) files that were created from older Keysight Spectrum Analyzers.
- Antenna files are saved and recalled from the "Antenna" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes SA

Parameters

<string> For *.csv files, provide filename of the antenna file WITHOUT an extension.
For *.ant files, provide filename and .ant extension.

<char> Memory device where the Antenna file is stored. Choose from the following:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:SANT "MyAntenna",INT
mmemory:load:santenna "demo_antenna_26m_3g.ant",internal
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

26-Jan-2015	New command (8.0)

MMEMory:STORe:SCABle <string>,<char>

(Read-Write) Saves the currently-loaded source cable table to a file at the specified location and device.

- SA Cable files are saved as *.csv files, which allows them to also be read by spreadsheet programs.
- DTF Cable files are saved as *.xml files.
- Cable files are saved and recalled from the "Cables" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes CAT (DTF), SA

Parameters

<string> Filename of the cable file WITHOUT an extension.

<char> Memory device where the file is to be stored. Choose from:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:STOR:SCAB "MyCable",INT
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

26-Jan-2015	New command (8.0)

MMEMory:LOAD:SCABle <string>,<char>

(Read-Write) Loads a source cable file from the specified device.

To load a receiver (or only one) cable file, use MMEMory:LOAD:CABLe

- SA Cable files are saved as *.csv files, which allows them to also be read by spreadsheet programs.
- DTF Cable files are saved as *.xml files.
- Cable files are saved and recalled from the "Cables" folder. If the folder does not already exist on a USB or SD card, it is created automatically before storing the file.

See ALL MMEM commands.

Relevant Modes CAT, SA

Parameters

<string> SA mode: Filename of the cable file withOUT an extension.
CAT mode: Filename of the cable file with an extension.

<char> Memory device where the cable file is stored. Choose from:

- **INTernal** - internal storage device
- **USB** - first USB device
- **SD** - SD storage card

Examples

```
MMEM:LOAD:SCAB "MyCable",INT */SA mode
MMEM:LOAD:SCAB "MyCable.xml",INT */CAT mode
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

27nov2-18	Updated filename load descriptions with mode specific content.

26-Jan-2015 New command (8.00)

MMEMory:STORe:SDF <string>

(Write-only) Save I/Q and antenna data as sdf file. Only save file in one time. I/Q and antenna screen data cannot be recalled.

See also, MMEM:STOR:FDAT, MMEM:STOR:TXT, and MMEM:STOR:MAT.

Relevant Modes IQA, PAA

Parameters

<string> Filename of the sdf file.

Examples

```
MMEM:STOR:SDF "MySdfFile"
```

Query Syntax N/A

Default N/A

Last Modified:

16-Sep-2022 New command

MMEMory:STORe:SNP[:DATA] <filename>

(Write-only) Saves the selected trace to an SNP file.

See ALL MMEM commands.

Relevant Modes CAT, NA, PAA

Parameters

<filename> Filename and extension to which data will be saved.
When saving 1-port data, use *.s1p
When saving 2-port data, use *.s2p

Examples

```
'With S11 trace active:
MMEM:STOR:SNP "MyFile.s1p"
'With S21 trace active:
MMEM:STOR:SNP "MyFile.s2p"
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

23-Apr-2012 Major modifications

MMEMory:STORe:STATe <string>

(Write-only) Saves the current settings to an instrument state file.

Relevant Modes ALL

Parameters

<string> Filename and extension of the state file.

Examples

```
MMEMory:STORe:STATe "MyStateFile.sta"
```

Query Syntax Not Applicable

Default Not Applicable

MMEMory:STORe:TXT<string>,<char>

(Write-only) Save I/Q and antenna data as text (TXT) file. Only save file in one time. I/Q and antenna screen data cannot be recalled.

See also, MMEM:STOR:FDAT, MMEM:STOR:SDF, and MMEM:STOR:MAT.

Relevant Modes IQA, PAA

Parameters

<string> Filename of the txt file.

Examples

```
MMEM:STOR:TXT "MyTxtFile"
```

Query Syntax N/A

Default N/A

Last Modified:

16-Sep-2022	Add PAA mode

NR5G:DATA:GPS?

(Read-Only) Returns 5GTF result with GPS information.

Relevant Modes 5G NR

Parameters None

Examples

```
NR5G:DATA:GPS?
```

Return Results Format

Single Component Carrier

Record Length	Latitude	Longitude	Elevation	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	Latitude	Longitude	Elevation	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	Latitude	Longitude	Elevation	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	Latitude	Longitude	Elevation	CC2 Frequency	CC2 Measurement Results
…	…	…	…	…	…
CCN Record Length	Latitude	Longitude	Elevation	CCN Frequency	CCN Measurement Results

Measurement Results Format

5G NR

Standard Measurement

PCI									
Cell ID	Sector ID	Group ID	SSB Index	SS-RSRP	SS-RSRQ	RSSI	SS-SINR	PSS Power	…
…	SSS Power		PBHC DMRS Power		Freq Error		Time offset		

SSB Offset Detection Measurement

Chan Freq	SSB Offset	SSB Freq	ARFCN	GSCN

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
01dec2019	New command

NR5G:DATA?

(Read-Only) Returns the measurement results.

Relevant Modes 5G NR

Parameters None

Examples

```
NR5G:DATA?
```

Return Results Format

Single Component Carrier

Record Length	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	CC2 Frequency	CC2 Measurement Results
…	…	…
CC*n* Record Length	CC*n* Frequency	CC*n* Measurement Results

Measurement Results Format

5G NR

Standard Measurement

PCI									
Cell ID	Sector ID	Group ID	SSB Index	SS-RSRP	SS-RSRQ	RSSI	SS-SINR	PSS Power	…
…	SSS Power	PBHC DMRS Power	Freq Error	Time offset					

SSB Offset Detection Measurement

Chan Freq	SSB Offset	SSB Freq	ARFCN	GSCN

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
01dec2019	New command

NREvm:DATA:GPS?

(Read-Only) Returns 5GTF result with GPS information.

Relevant Modes NR 5G EVm

Parameters None

Examples `NREvm:DATA:GPS?`

Return Results Format

Single Component Carrier

Record Length	Latitude	Longitude	Elevation	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	Latitude	Longitude	Elevation	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	Latitude	Longitude	Elevation	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	Latitude	Longitude	Elevation	CC2 Frequency	CC2 Measurement Results
…	…	…	…	…	…
CCN Record Length	Latitude	Longitude	Elevation	CCN Frequency	CCN Measurement Results

Measurement Results Format

5G NR EVM

PCI	SSB Numerology	ScsCommon	SSB Case	Lmax	SSB Periodicity	SSB RB Offset	…
…	SSB SC Offset	SSB Delta Center	Sync Corr	Channel Power	Freq Error	Time Offset	…
…	PSS EVM	SSS EVM	PBCH EVM	PBCH DMRS EVM	Composite EVM	SS-RSRP	SS-RSRQ	…
…	RSSI	PSS Power	SSS Power	PBCH Power	PBCH DMRS Power			

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
01dec2019	New command

NREVm:DATA?

(Read-Only) Returns the measurement results.

Relevant Modes NR 5G EVm

Parameters None

Examples `NREvm:DATA?`

Return Results Format

Single Component Carrier

Record Length	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	CC2 Frequency	CC2 Measurement Results
…	…	…

CC*n* Record Length	CC*n* Frequency	CC*n* Measurement Results

Measurement Results Format

5G NR EVM

PCI	SSB Numerology	ScsCommon	SSB Case	Lmax	SSB Periodicity	SSB RB Offset	…
…	SSB SC Offset	SSB Delta Center	Sync Corr	Channel Power	Freq Error	Time Offset	…
…	PSS EVM	SSS EVM	PBCH EVM	PBCH DMRS EVM	Composite EVM	SS-RSRP	SS-RSRQ	…
…	RSSI	PSS Power	SSS Power	PBCH Power	PBCH DMRS Power			

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
01dec2019	New command

:PAA:DATA?

(Read) Query only, to return a set of comma-separated numeric values.: id, center freq, integration BW, channel power

Relevant Modes PAA

Parameters na

Examples
```
PAA:DATA?
```

Query Syntax PAA:DATA?

Return Type Comma-separated numeric

Default Not Applicable

Last Modified:

16-Sep-2022	New command (A.12.2x)

:RECPlayback:ACTion:PAUSe

(Write-Only) Recording or playback is temporarily halted. When the command is resent, recording or playback is resumed. A session should first be opened and recording or playing. Otherwise, this command is ignored.

Relevant Modes SA, RTSA

Parameters None

Examples
```
RECP:ACT:PAUS
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020	Updated Relevant Modes (12.1x)
12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.5x)
27nov2018	Added LTE FDD and 5GTF mode (11.0)
10-june-2016	Added RTSA mode (9.50)

:RECPlayback:ACTion:PLAY

(Write-Only) Plays the current Record/Playback session. (Opt 236). A session with records should first be opened and stopped. Otherwise, this command is ignored.

Relevant Modes SA, RTSA

Parameters None

Examples

```
RECP:ACT:PLAY
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020	Updated Relevant Modes (12.1x)
12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.5x)
27nov2018	Added LTE FDD and 5GTF mode (11.0)
10-june-2016	Added RTSA mode (9.50)

:RECPlayback:ACTion:POSition:AUTO <string/num>

(Read-Write) Set and return a recorded result position. Use this command to move to a specific recorded result number when playback is paused.

Relevant Modes LTE FDD, 5G NR, 5G NR EVM Conducted, 5GTF

Parameters

<num> 0 (OFF) - disables AUTO and the component carrier is not random

1 (ON) - enables AUTO and a random component carrier number is selected when playing is paused.

Examples

```
RECP:ACT:POS:AUTO 0
RECP:ACT:POS:AUTO ON
```

Query Syntax :RECPlayback:ACTion:POSition:AUTO?

Default 1 (ON)

Last Modified:

12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.5x)
01june2019	New command

:RECPlayback:ACTion:RECord

(Write-Only) Begins or resumes recording. (Opt 236).

Relevant Modes LTE FDD, 5G NR, 5G NR EVM Conducted, 5GTF, SA, RTSA

Parameters None

Examples

```
RECP:ACT:REC
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.
27nov2018	Added LTE FDD and 5GTF mode (11.0)
10-june-2016	Added RTSA mode (9.50)

:RECPlayback:ACTion:SAVE

(Write-Only) Saves the current data as a *.kml (default) or *.csv file.

Relevant Modes LTE FDD, 5G NR, 5G NR EVM Conducted, 5GTF

Parameters None

Examples

```
RECP:ACT:SAVE
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.5x)
01june2019	New command

:RECPlayback:ACTion:SPOSition <num>

(Read-Write) Set and return a state position. Use this command to move to a specific state number when playback is paused.

Relevant Modes SA, RTSA

Parameters

<num> Enter a value between 1 and the total number of state tags.

Examples

```
RECP:ACT:SPOS 2
```

Query Syntax :RECPlayback:ACTion:SPOSition?

Default Not Applicable

Last Modified:

10-june-2016	Added RTSA mode (9.50)

:RECPlayback:ACTion:STOP

(Write-Only) Stops recording or playback or a Record/Playback session. (Opt 236). A session must first be opened and recording, playing, or paused. Otherwise, this command is ignored.

Relevant Modes SA, RTSA

Parameters None

Examples

```
RECP:ACT:STOP
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec2020	Updated Relevant Modes (12.1x)
12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.5x)
27nov2018	Added LTE FDD and 5GTF mode (11.0)
10-june-2016	Added RTSA mode (9.50)

:RECPlayback:ACTion:TPOSition <num>

(Read-Write) Set and return the current trace position. Use this command to move to a specific trace recording number when playback is paused.

Relevant Modes SA, RTSA

Parameters

<num> Enter a value between 1 and the total number of recorded traces.

Examples

```
RECP:SESS:TPOS 2
```

Query Syntax :RECPlayback:ACTion:TPOSition?

Default Not Applicable

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:CONFig:FILE:DEVice <string>

(Read-Write) Set and query the data storage device type (INTernal, USB, or SD).

Relevant Modes LTE FDD, 5G NR, 5G NR EVM Conducted, 5GTF

Parameters

<string> Available device types:

USB First (detected) USB flash drive is used to store data.

SD SD storage card

INT INTernal FieldFox storage

Examples

```
RECPlayback:CONFig:FILE:DEVice USB
RECPlayback:CONFig:FILE:DEVice SD
RECPlayback:CONFig:FILE:DEVice INT
```

Query Syntax RECPlayback:CONFig:FILE:DEVice?

Return Type <string>

Default INTernal

Last Modified:

12dec2019 Added 5G NR and 5G NR EVM Conducted (A.11.5x)

01june2019 New command for OTA modes

:RECPlayback:CONFig:FILE:OWRite <string/booleon>

(Read-Write) Set and query the status of the Record Playback file overwrite command.

Relevant Modes LTE FDD, 5GTF

Parameters

<string/booleon> Available file types:

ON (1) Enable file overwrite to overwrite the mode's default filename (e.g., for LTE FDD and 5GTF the filename is: OTARecorder).

OFF (0) Disables the Playback Recorder's file overwrite command. Storing Playback Record data, requires manual naming of the data filename.

Examples

```
RECPlayback:CONFig:FILE:OWRite 1
RECPlayback:CONFig:FILE:OWRite OFF
```

Query Syntax RECPlayback:CONFig:FILE:OWRite?

Return Type <booleon>

Default 1

Last Modified:

16-Sep-2022	New command

:RECPlayback:CONFig:FILE:TYPE <string>

(Read-Write) Set and query the data type (KML (default) or CSV).

Relevant Modes LTE FDD, 5G NR, 5G NR EVM Conducted, 5G TF

Parameters

<string> Available file types:

KML Keyhole Markup Language

CSV Comma-Separated Values

Examples

```
RECPlayback:CONFig:FILE:TYPE KML
RECPlayback:CONFig:FILE:TYPE CSV
```

Query Syntax RECPlayback:CONFig:FILE:TYPE?

Return Type <string>

Default CSV

Last Modified:

12dec2019	Added 5G NR and 5G NR EVM Conducted (A.11.5x)
01june2016	New command

:RECPlayback:CONFig:FMTRigger:DATA <data> - Superseded

Note: This command is replaced by RECPlayback:CONFig:FMTRigger:LLData which can be used with Relative masks.

(Read-Write) Set and query the data to complete the Frequency Mask Trigger (FMT) table, used for Record Playback. Measured power levels above an upper limit and below a lower limit will trigger recording.

For **ACP** measurements, use CALC:ACP:OFFS:LIST:LIMit:NEG[:UPPer]:DATA and CALC:ACP:OFFS:LIST:LIM:POS[:UPPer]:DATA.

Relevant Modes SA

Parameters

<data> Data for all FMT segments in the following format:

- **n** = number of segments, followed by segment data.
- each segment: **State, Type, BegStim, EndStim, BegResp, EndResp**
- Where:

State	0 for limit line disabled 1 for limit line enabled.
Type	Type of limit segment. Choose from: 0 - Upper limit 1 - Lower limit
BegStim	Start of X-axis value (freq, power, time)
EndStim	End of X-axis value
BegResp	Y-axis value that corresponds with Start of X-axis value
EndResp	Y-axis value that corresponds with End of X-axis value

Subsequent segments are appended to the data in the same manner.

Examples

```
' The following writes three upper limit segments.
' individual segments are colored for readability.
RECP:CONF:FMTR:DATA 3,1,0,2e7,3e7,-
30,0,1,0,3e7,5e7,0,0,1,0,5e7,6e7,0,-30
```

Query Syntax RECPlayback:CONFig:FMTRigger:DATA?

Return Type Block data

Default 0 - Limit line data off

Last Modified:

16-Aug-2012 Superseded A.06.00

:RECPlayback:CONFig:FMTRigger:ENABle <bool>

(Read-Write) Set and return the state of Frequency Mask Triggering. Use RECPlayback:CONFig:FMTRigger:DATA to construct Frequency Mask Trigger limits.

Relevant Modes SA

Parameters

<bool> Frequency Mask Trigger state. Choose from:

OFF or **0** - Frequency Mask Trigger disabled.

ON or **1** - Frequency Mask Trigger enabled.

Examples

```
RECP:CONF:FMTR:ENABle 1
```

Query Syntax :RECPlayback:CONFig:FMTRigger:ENABle?

Default OFF

:RECPlayback:CONFig:FMTRigger:LLData <data>

Note: This command replaces RECPlayback:CONFig:FMTRigger:DATA which can be used ONLY with a Fixed mask. This command can also be used with Relative masks.

(Read-Write) Set and query the data to complete the Frequency Mask Trigger (FMT) table, used for Record Playback. Measured power levels above an upper limit and below a lower limit will trigger recording.

For **ACP** measurements, use CALC:ACP:OFFS:LIST:LIMit:NEG[:UPPer]:DATA and CALC:ACP:OFFS:LIST:LIM:POS[:UPPer]:DATA.

Relevant Modes SA

Parameters

<data> Data for all FMT segments in the following format:

- **n** = number of segments, followed by segment data.
- Where:

<nL> number of FMT segments to follow

State 0 - segment disabled
1 - segment enabled.

Fixed/Rel 0 - Relative
1 - Fixed

Upper/Lower 0 - Upper segment
1 - Lower segment

<nP> Number of points to follow

Freq value X-axis value

Amp value Y-axis value

Subsequent points are appended to the data in the same manner.

Examples

```
' The following writes three upper segments.
' individual segments are colored for readability.
RECP:CONF:FMTR:LLData 1,1,0,0,4,-30e6,-20,-20e6,-10,-10e6,0,10e6,0,20e6,-10,30e6,-20
```

Query Syntax RECPlayback:CONFig:FMTRigger:LLData?

Return Type Block data

Default 0 - Limit line data off

Last Modified:

16-Aug-2012 New command

:RECPlayback:CONFig:PRFTrace <integer>

(Read-Write) Sets the first trace in the range of traces to be either played back or specified for CSV output from the currently-open Record/Playback session. (Opt 236).

Note: For related information on using FTP to transfer files from the FieldFox to a PC, refer to and the FAQ for "Using FTP with FieldFox".

See also, :RECP:CONF:PRLT and :RECP:SESS:CSST.

Relevant Modes SA, RTSA

Parameters n/a

<integer> Sets the first trace in the displayed traces to be recorded to a CSV file.

Examples

```
RECP:CONF:PRFT 10 */Sets trace 10 as the first trace to be either played back or specified for CSV output in a range of trace data
```

Query Syntax RECP:CONF:PRFT?

Default 0

Last Modified:

16-Sep-2022 New command A.11.25

:RECPlayback:CONFig:PRLTrace <integer>

(Read-Write) Sets the last trace in the range of traces to be either played back or specified for CSV output from the currently-open Record/Playback session. (Opt 236).

Note: For related information on using FTP to transfer files from the FieldFox to a PC, refer to and the FAQ for "Using FTP with FieldFox".

See also, :RECP:CONF:PRFT and :RECP:SESS:CSST.

Relevant Modes SA, RTSA

Parameters n/a

<integer> Sets the last trace in the displayed traces to be recorded to a CSV file.

Examples
```
RECP:CONF:PRLT 15 */Sets trace 15 as the last trace to be either played back or specified for CSV output in a range of trace data
```

Query Syntax RECP:CONF:PRLT?

Default 0

Last Modified:

16-Sep-2022 New command A.11.25

:RECPlayback:CONFig:PTINterval <num>

(Read-Write) Set and return the Playback Time Interval - the delay that occurs between each trace as it is played back.

Relevant Modes SA, RTSA

Parameters

<num> Playback Time Interval (in seconds). Choose a delay value between 0 (play as fast as possible) and 100.

Examples
```
RECP:CONF:PTIN 10
```

Query Syntax :RECPlayback:CONFig:PTINterval?

Default 0

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:CONFig:RSCLength <num>

(Read-Write) Set and return the Record Segment Counting Length - the number of traces to record, after which the recording will automatically pause. Use Pause/Resume or Record to capture another <num> traces, or Stop to end recording.

When set, a counter appears in the lower-left corner which counts UP to the specified number of recordings.

Relevant Modes SA, RTSA

Parameters

<num> Number of traces to record. Choose a value between 0 (no limit to the number of traces) and 100.

Examples
```
RECP:CONF:RSCL 10
```

Query Syntax :RECPlayback:CONFig:RSCLength?

Default OFF - NO limit to the number of traces to be recorded.

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:CONFig:RSOurce <char>

(Read-Write) Set and return the Record Source - the location in the FieldFox data flow from where data is recorded.

Relevant Modes SA, RTSA

Parameters

<num> Record Source. Choose from:

FATR - First Active Trace. Means the first active trace that is not set to BLANK and or not set to VIEW. (RTSA mode only)

RAWM - Records raw measurement data (SA mode only)

TRA1 - Trace 1

TRA2 - Trace 2

TRA3 - Trace 3

TRA4 - Trace 4

Examples

```
RECP:CONF:RSO RAWM
```

Query Syntax :RECPlayback:CONFig:RSOurce?

Default FATR (RTSA mode default)

RAWM (SA mode default)

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:CONFig:RTINerval <num>

(Read-Write) Set and return the Record Time Interval - the delay between each recording.

Relevant Modes SA, RTSA

Parameters

<numeric> Record Time Interval (in seconds). Choose a delay value between 0 (record as fast as possible) and 10,000.

Examples

```
RECP:CONF:RTIN 10
```

Query Syntax :RECPlayback:CONFig:RTINterval?

Default 0

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:CONFig:RTLSeconds <num>

(Read-Write) Set and return the Record Time limit seconds - the time duration for the recording, after which the recording will automatically pause. Use Pause/Resume to capture another <num> seconds, or Stop to end recording.

When set, a timer appears in the lower-left corner which counts DOWN from the specified number of seconds.

Relevant Modes SA, RTSA

Parameters

<numeric> Record Time limit (in seconds). Choose a delay value between 0 (NO limit - MAX) and 1e6 seconds.

Examples

```
RECP:CONF:PTLS 100
```

Query Syntax :RECPlayback:CONFig:RTLSeconds?

Default 0 - NO limit to the number of seconds for a recording.

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:MACHine:TPOSition?

(Read-Only) Can be issued during Playback to yield the same trace position information that is currently displayed on-screen .

Relevant Modes SA, RTSA

Parameters None

Examples

```
RECP:MACH:/TPOS?
```

Default Not Applicable

Last Modified:

16-Sep-2022 New command

:RECPlayback:MACHine:TTIMe?

(Read-Only) Can be issued during Playback to yield the same trace time information that is currently displayed on-screen .

Relevant Modes SA, RTSA

Parameters None

Examples
```
RECP:MACH:TTIM?
```

Default Not Applicable

Last Modified:

16-Sep-2022 New command

:RECPlayback:SESSion:CARecords

(Write-Only) Clears all recorded traces from the currently-open Record/Playback session. (Opt 236)

Relevant Modes SA, RTSA

Parameters None

<string> Filename and extension of the state file.

Examples
```
RECP:SESS:CAR
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:SESSion:CLOSe

(Write-Only) Closes the currently-open Record/Playback session. (Opt 236). The session can be opened again for recording or playback using :RECPlayback:SESSion:OPEN?

Relevant Modes SA, RTSA

Parameters None

Examples
```
RECP:SESS:CLOS
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:SESSion:CSSTyle <string>

(Read-Write) Sets the state of the standard CSV file **Save** operation to enable multiple traces to be moved from a Recording to a CSV file. (Opt 236 and Opt 350).

Note: For related information on using FTP to transfer files from the FieldFox to a PC, refer to and the FAQ for "Using FTP with FieldFox".

See also, :RECP:CONF:PRFT and :RECP:CONF:PLFT.

Relevant Modes SA, RTSA

Parameters SING (Default) - Save data from a single trace (the current on screen trace) to a CSV file.

RANG - Save a range of trace data (x to y) from the current open RecordPlayback session to a CSV file.

ALL - Save all of the traces from the current open RecordPlayback session to a CSV file.

<string> Range type for the data being stored to a CSV file.

Examples

```
RECP:SESS:CSST ALL */Records all of the displayed trace(s) data to a CSV file.
RECP:SESS:CSST RANG */Records the specified range of trace data
RECP:SESS:CSST SING */Records only the current displayed trace's data
```

Query Syntax RECP:SESS:CSST?

Default SING

Last Modified:

16-Sep-2022	New command

:RECPlayback:SESSion:NEW

(Write-Only) Creates and opens a new Record/Playback session with an auto-generated name "AutoSession xx". (Opt 236).

Relevant Modes SA, RTSA

Parameters None

Examples

```
RECP:SESS:NEW
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

10-june-2016	Added RTSA mode (9.50)

:RECPlayback:SESSion:OPEN? <"string">

(Read-Only) Opens an existing Record/Playback session and returns 2 numbers separated by a comma.

1. The current quantity of traces in the session.
2. The current quantity of states in the session.

- -1, -1 means nothing was opened. A session may already be open.
- 0, 0 means the session was opened but currently empty.

Relevant Modes SA, RTSA

Parameters None

<"string"> Name of the session to be opened, enclosed in quotes. Not case sensitive.

Examples

```
RECP:SESS:OPEN? "MyOldSession"
```

Default Not Applicable

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:SESSion:SDEVice <char>

(Read-Write) Storage device to be used for record playback. (Opt 236)

Relevant Modes SA, RTSA

Parameters

<character> Storage device. Choose from:
INTernal - Internal storage
SD - SD card
USB - USB device

Examples

```
RECP:SESS:SDEV USB
```

Query Syntax RECPlayback:SESSion:SDEVice?

Default INTernal

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:RECPlayback:SESSion:TRLimit <num>

(Read-Write) Trace record limit for the current record playback session (Opt 236). An upper limit is set when the session opens. You can reduce this value to save storage space, but you cannot increase it beyond the upper default limit.

Relevant Modes SA, RTSA

Parameters

<numeric> Trace record limit. Choose a value from 1 to the default upper limit. Send a query before setting this value to learn the upper limit.

Examples

```
RECP:SESS:TRL 100
```

Query Syntax RECPlayback:SESSion:TRLimit?

Default Not Applicable

Last Modified:

10-june-2016 Added RTSA mode (9.50)

[:SENSe]:ACPower:LIMit[:STATe] <bool>

(Read-Write) Set and query the limit testing On/Off state in an Adjacent Channel Power measurement. To establish limits, use:

[:SENSe]:ACPower:OFFSet:LLIMit (Lower limit)

[:SENSe]:ACPower:OFFSet:ULIMit (Upper limit)

Relevant Modes SA

Parameters

<bool> ACP limit testing ON | OFF state. Choose from:

0 or OFF - Limit testing OFF

1 or ON - Limit testing **ON**

Examples

```
ACPower:LIMit ON
```

Query Syntax [:SENSe]:ACPower:LIMit[:STATe]?

Return Type Boolean

Default OFF

[:SENSe]:ACPower:MREFerence <num>

(Read-Write) Set and query the reference value for the measured offset power in an Adjacent Channel Power measurement. See also: [:SENSe]:ACPower:MREFerence:AUTO

Relevant Modes SA

Parameters

<num> Reference value in dB or dBc.

Examples

```
ACP:MREF -1.5
```

Query Syntax [:SENSe]:ACPower:MREF?

Return Type Numeric

Default 0

Last Modified:

16-Aug-2012 New command

[:SENSe]:ACPower:MREFerence:AUTO <bool>

(Read-Write) Set and query the method of computing the measured carrier power from the measured offset power in an Adjacent Channel Power measurement.

Relevant Modes SA

Parameters

<bool> **Choose from:**

1or ON (Automatic) **-** dB or dBc value is computed by subtracting the measured carrier power from the measured offset power.

0 or OFF (Manual) - dB or dBc value is computed by subtracting the entered Ref Value from the measured offset power. Use [:SENSe]:ACPower:MREFerence to enter a value.

Examples ACP:MREF:AUTO 1

Query Syntax [:SENSe]:ACPower:MREFerence:AUTO?

Return Type Boolean

Default ON

Last Modified:

16-Aug-2012 New command

[:SENSe]:ACPower:MTYPe <char>

(Read-Write) Set and query the ACP measurement type. This setting determines how the measured carrier and offset power levels are presented.

Relevant Modes SA

Parameters

<num> Measurement type. Choose from:

TPWR - Total Power Ref

PSDR - Power Spectral Density

Examples ACP:MREF -1.5

Query Syntax [:SENSe]:ACPower:MTYPe?

Return Type Character

Default TPWR

Last Modified:

16-Aug-2012 New command

[:SENSe]:ACPower:OFFSet<n>:BWIDth <num>

(Read-Write) Set and query the integration bandwidths for the 3 offset channels in an Adjacent Channel Power measurement.

Relevant Modes SA

Parameters

<n> Offset number to be set. Choose from 1, 2, or 3.

<num> Offset Integration Bandwidth in Hz. Choose a number between the Minimum Integration Bandwidth (100 Hz) and Maximum Integration Bandwidth (100 MHz)

Examples

ACP:OFFS1:BWID 2e6

Sets integration bandwidth of offset 1 to 2 MHz

Query Syntax [:SENSe]:ACPower:OFFSet:BWIDth?

Return Type Numeric

Default 2 MHz

[:SENSe]:ACPower:OFFSet<n>:FREQuency <num>

(Read-Write) Set and query the Offset frequencies for all 3 offset channels in an Adjacent Channel Power measurement.

Relevant Modes SA

Parameters

<n> Offset number to be set. Choose from 1, 2, 3.

<num> Offset Channel Frequency in Hz. For each offset, choose a number between the Minimum Offset Frequency (0 Hz) and Maximum Offset Frequency (500 MHz).

Examples

```
ACP:OFFS1:FREQ 2e6
```

Sets offset 1 to 2 MHz

Query Syntax [:SENSe]:ACPower:OFFSet:FREQuency?

Return Type Numeric

Default 3 MHz, 0 Hz, 0 Hz

[:SENSe]:ACPower:OFFSet<n>:LLIMit <num>

(Read-Write) Set and query the limit for the 3 Lower offset channels in an ACP measurement. Power measurements that exceed this limit will FAIL. To turn limit testing ON and OFF, use [:SENSe]:ACPower:LIMit[:STATe].

Relevant Modes SA

Parameters

<n> Offset number. Choose from 1, 2, or 3

<num> Limit value for Lower offsets in dBc. For each offset, choose a value between 500 and -1000.

Examples ACP:OFFS1:LLIM -10
Sets the first lower offset limit value to -10 dBc.

Query Syntax [:SENSe]:ACPower:OFFSet<n>:LLIMit?

Return Type Numeric

Default 0 dBc for all offsets

Last Modified:

17-Aug-2012 New command- replaces CALC command

[:SENSe]:ACPower:OFFSet<n>:STATe <bool>

(Read-Write) Set and query the On/Off state for the 3 offset channels in an Adjacent Channel Power measurement.

Relevant Modes SA

Parameters

<n> Offset number. Choose from 1, 2, 3.

<bool> ACP Limit Test ON | OFF state. For each offset, choose from:
0 or **OFF** - Offset OFF
1 or **ON** - Offset ON

Examples ACP:OFFS1:STAT ON

Query Syntax [:SENSe]:ACPower:OFFSet:STATe?

Return Type Boolean

Default ON, OFF, OFF

[:SENSe]:ACPower:OFFSet<n>:ULIMit <num>

(Read-Write) Set and query the limit for the 3 Upper offset channels in an ACP measurement. Power measurements that exceed this limit will FAIL. To turn limit testing ON and OFF, use [:SENSe]:ACPower:LIMit[:STATe].

Relevant Modes SA

Parameters

<n> Offset number. Choose from 1, 2, or 3

<num> Limit value for Upper offsets in dBc. For each offset, choose a value between 500 and -1000.

Examples

```
ACP:OFFS1:ULIM -10
```

Sets the first upper offset limit value to -10 dBc.

Query Syntax [:SENSe]:ACPower:OFFSet<n>:ULIMit?

Return Type Numeric

Default 0 dBc for all offsets

Last Modified:

17-Aug-2012 New command- replaces CALC command

[SENSe]:ACQuisition:TIME

(Read-Write) Sets the acquisition time between Density and Real-Time traces. (Spectrogram is not supported.)

Relevant Modes RTSA

Parameters

<num> Range: *Span dependent*

Examples

```
ACQ:TIME.05
ACQ:TIME 5.00E-1
```

Query Syntax [:SENSe]:ACQuisition:TIME?

Return Type numeric

Default 2.00E-02

Last Modified:

19-sep-2016 Added new RTSA command (A.09.50).

[SENSe]:ACQuisition:TIME:AUTO <bool>

(Read-Write) Sets the acquisition time between Density and Real-Time traces to AUTO. (Spectrogram is not supported.)

Relevant Modes RTSA

Parameters

<Boolean> Automatically sets the range: 20 ms (2.00E-02) to 541.2 ms (5.412E-1)
ON (1) - The FieldFox automatically sets the acquisition time.
OFF (0) - Auto acquisition is disabled.

Examples

```
ACQ:TIME:AUTO
```

Query Syntax [:SENSe]:ACQuisition:TIME:AUTO?

Return Type numeric

Default 0

Last Modified:

19-sep-2016 Added new RTSA command (A.09.50).

[:SENSe]:ADEMod:METRics:AMTY <int>

(Read-Write) Set the AM window Y axis top percentage value (10-100%).

See also, ADEMod:METRics:PMTY, ADEMod:METRics:FMTY, ADEMod:METRics:SSBTY and ADEMod:METRics:DTYPe

Relevant Modes SA

Parameters

<num> AM Y axis percentage (10 to 100%)

Examples

```
ADEM:METR:AMTY 25
```

Query Syntax :ADEM:METR:AMTY?

Return Type Numeric

Default 100

Last Modified:

05-nov-2021 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ADEMod:METRics:PMTY <int>

(Read-Write) Sets the PM window Y axis top radian value (0-100).

See also, ADEMod:METRics:AMTY, ADEMod:METRics:FMTY, ADEMod:METRics:SSBTY and ADEMod:METRics:DTYPe

Relevant Modes SA

Parameters

<value> PM Y axis percentage

Note: This commands accepts MINimum and MAXimum commands.

Examples

```
ADEM:METR:PMTY 10 'Sets Y axis to 10 radians
ADEM:METR:PMTY MAX 'Sets the Y axis to 100 radians
```

Query Syntax :ADEM:METR:PMTY?

Return Type Value

Default 5

Last Modified:

16-Dec-2015 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ADEMod:METRics:DTYPe <char>

(Read-Write) Select the type of analog demod metrics AM, FW wideband, or FM narrow band.

See also, TAL:AM:SSB:GAIN and ADEMod:METRics:AMTY, ADEMod:METRics:FMTY, ADEMod:METRics:PMTY, ADEMod:METRics:SSBTY

Relevant Modes SA

Parameters

AM - Selects AM modulation metrics

AMSSB - AM single side band metrics

FM - FM modulation metrics

FMS - Selects FM Stereo /RDS Modulation Metrics

PM - Selects PM modulation metrics

<character>

Examples

```
:ADEM:METR:DTYP AMSSB *Selects AM single side band metrics
```

Query Syntax :ADEM:METR:DTYP?

Return Type character

Default FM

Last Modified:

16-Dec-2015 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ADEMod:METRics:FILTer:BPF[:TYPe] <char>

(Read-Write) Set and query the analog demod bandpass filter type.

See also ADEM:METR:FILT:HPF:CUT.

Relevant Modes SA

Parameters

<char> Choose a bandpass filter type:

NONE – No BPF.

CCITT – Apply a CCITT BPF.

AWEighted – Apply a A-Weighted BPF.

CWEighted – Apply a C-Weighted BPF.

CMESsage – Apply a C-Message BPF.

CCIR1k – Apply a CCIR-1k Weighted BPF.

CCIR2k – Apply a CCIR-2k Weighted BPF.

CCIRUNWEighted – Apply a CCIR UnWeighted BPF.

Examples

```
ADEM:METR:FILT:BPF CCITT 'Sets the band pass filter to CCITT.
ADEM:METR:FILT:BPF CCIRUNWE 'Sets the band pass filter to CCIR unweighted BPF.
```

Query Syntax ADEM:METR:FILT:BPF?

Return Type <char>

Default NONE

Last Modified:

14june2021	New command (A.12.3x)

[:SENSe]:ADEMod:METRics:FILTer:DEEMphasis:TAO <bool>

(Write-Read) Set and query the de-emphasis τ (RC time constant).

Note: The cutoff frequency is related to the RC time constant by the following equation:

$$f_c = \frac{1}{2\pi \times \tau}$$

See also ADEM:METR:FILT:DEEM.

Relevant Modes SA

Parameters

<bool> Choose from:

Min: 1 µs

Max: 1 s

Couplings None

Examples

```
ADEM:METR:FI
time constan
ADEM:METR:FI
constant (TA
```

Query Syntax ADEM:METR:FI

Default 2.500000000E-0

Last Modified:

15june2021	New command (A.12.3x)

[:SENSe]:ADEMod:METRics:FILTer:DEEMphasis[:STATe] <bool>

(Write-Read) Set and query the de-emphasis state.
See also ADEM:METR:FILT:DEEM:TAO.

Relevant Modes SA

Parameters

<bool> Choose from:
OFF(0) - Disable
ON (1) – Enable

Couplings None

Examples

```
ADEM:METR:FI
demodulated
ADEM:METR:FI
demodulated
```

Query Syntax ADEM:METR:FI

Default OFF(0)

Last Modified:

15june2021	New command (A.12.3x)

[:SENSe]:ADEMod:METRics:FILTer:HPF:CUToff <char>

(Read-Write) Set and query the custom HPF 3 dB cutoff frequency (this setting is only relevant when the Highpass Filter is set to Custom).

See also ADEM:METR:FILT:HPF.

Relevant Modes SA

Parameters

<num> The 3 dB cutoff frequency in Hz. Choose a value between 20 Hz and 5 MHz.

Min: 20 Hz

Max: 5 MHz

Examples

```
ADEM:METR:FILT:HPF:CUT 22KHZ 'Sets the 3 dB cutoff frequency to 22 kHz (Only valid, when the HPF is set CUSTom).
ADEM:METR:FILT:HPF:CUT 1 MHz 'Sets the 3 dB cutoff frequency to 1 MHz (Only valid, when the HPF is set CUSTom).
```

Query Syntax ADEM:METR:FILT:HPF:CUT?

Return Type character

Default 500 Hz

Last Modified:

14june2021 New command (A.12.3x)

[:SENSe]:ADEMod:METRics:FILTer:HPF[:TYPe] <char>

(Read-Write) Set and query the analog demod highpass filter type.

See also ADEM:METR:FILT:HPF:CUT.

Relevant Modes SA

Parameters

<char> Choose a highpass filter type:

NONE – No HPF.

COF20Hz – 2-Pole Butterworth HPF with 3 dB cutoff frequency of 20 Hz.

COF50Hz – 2-Pole Butterworth HPF with 3 dB cutoff frequency of 50 Hz.

COF300Hz – 2-Pole Butterworth HPF with 3 dB cutoff frequency of 300 Hz.

COF400Hz – 10-Pole Butterworth HPF with 3 dB cutoff frequency of 400 Hz.

CUSTom – 5-Pole Butterworth HPF with a custom 3 dB cutoff frequency (determined by the HPF 3 dB Cutoff setting).

Examples

```
ADEM:METR:FILT:HPF COF2HZ 'Sets the highpass filter to 2-Pole Butterworth HPF with 3 dB cutoff frequency of 20 Hz
ADEM:METR:FILT:HPF COF400HZ 'Sets the highpass filter to 10-Pole Butterworth HPF with 3 dB cutoff frequency of 400 Hz
ADEM:METR:FILT:HPF CUST 'Sets the high pass filter to 5-Pole Butterworth HPF with a custom 3 dB cutoff frequency
```

Query Syntax ADEM:METR:FILT:HPF?

Return Type <char>

Default NONE

Last Modified:

14june2021 New command (A.12.3x)

[:SENSe]:ADEMod:METRics:FILTer:LPF:CUToff <char>

(Read-Write) Set and query the analog demod lowpass filter type (this setting is only relevant when the Lowpass Filter is set to Custom).

See also ADEM:METR:FILT:LPF.

Relevant Modes SA

Parameters

<char> Chose a lowpass filter type Choose a value between 90 Hz and 5 MHz

Min: 90 Hz

Max: 5 MHz

Examples

```
ADEM:METR:FILT:LPF:CUT 22KHZ 'Sets the 3 dB cutoff frequency to 22 kHz (Only valid, when the LPF is set CUSTom).
ADEM:METR:FILT:LPF:CUT 1 MHz 'Sets the 3 dB cutoff frequency to 1 MHz (Only valid, when the LPF is set CUSTom).
```

Query Syntax ADEM:METR:FILT:LPF:CUT?

Return Type <char>

Default 300 Hz

Last Modified:

14june2021 New command (A.12.3x)

[:SENSe]:ADEMod:METRics:FILTer:LPF[:TYPe] <char>

(Read-Write) Set and query the analog demod lowpass filter type.

See also ADEM:METR:FILT:LPF:CUT.

Relevant Modes SA

Parameters

<char> Choose a lowpass filter type:

NONE – No LPF.

COF300Hz – 5-Pole Butterworth LPF with 3 dB cutoff frequency of 300 Hz.

COF3kHz – 5-Pole Butterworth LPF with 3 dB cutoff frequency of 3 kHz.

COF15kHz – 5-Pole Butterworth LPF with 3 dB cutoff frequency of 15 kHz.

COF30kHz – 3-Pole Butterworth LPF with 3 dB cutoff frequency of 30 kHz.

COF80kHz – 3-Pole Butterworth LPF with 3 dB cutoff frequency of 80 kHz.

COF100kHz – 3-Pole Butterworth LPF with 3 dB cutoff frequency of 100 kHz.

COF20kHz – 9-Pole Bessel LPF with 3 dB cutoff frequency of 20 kHz.

COF300kHz – 3-Pole Butterworth LPF with 3 dB cutoff frequency of 300 kHz.

CUSTom – 5-Pole Butterworth LPF with a custom 3 dB cutoff frequency (determined by the LPF 3 dB Cutoff setting).

Examples

```
ADEM:METR:FILT:LPF COF300KHZ 'Sets the low pass filter to 3-Pole Butterworth LPF with 3 dB cutoff frequency of 300 kHz
ADEM:METR:FILT:LPF COF3KHZ 'Sets the low pass filter to 5-Pole Butterworth LPF with 3 dB cutoff frequency of 3 kHz
ADEM:METR:FILT:LPF CUST 'Sets the low pass filter to 5-Pole Butterworth LPF with a custom 3 dB cutoff frequency
```

Query Syntax ADEM:METR:FILT:LPF?

Return Type <char>

Default NONE

Last Modified:

14june2021	New command (A.12.3x)

[:SENSe]:ADEMod:METRics:FMTY <int>

(Read-Write) Set the FM window Y axis frequency value (1 kHz to 1 GHz).

See also, ADEMod:METRics:AMTY, ADEMod:METRics:PMTY, ADEMod:METRics:SSBTY and ADEMod:METRics:DTYPe

Relevant Modes SA

Parameters

<num> FM Y axis frequency

Note: This commands accepts MINimum and MAXimum commands.

Examples

```
ADEM:METR:FMTY 1e9 'Sets the Y Axis to the maximum of 1 GHz
ADEM:METR:FMTY MAX 'Sets the Y Axis to the maximum of 1
```

```
GHz
ADEM:METR:FMTY MIN 'Sets the Y Axis to the minimum of 1
kHz
```

Query Syntax :ADEM:METR:FMTY?

Return Type Numeric

Default 100e3 (1 kHz)

Last Modified:

16-Dec-2015 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ADEMod:METRics:LON

(Read-Write) Enable or disable the audio while AM/FM metrics are on.

Relevant Modes SA

Parameters **ON** - Enable audio while metrics are on

OFF - Disable audio while metrics are on

<string>

Examples

```
:ADEM:METR ON
```

Query Syntax :ADEM:METR?

Return Type String

Default OFF

Last Modified:

16-Dec-2015 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ADEMod:METRics:LTIMe

(Read-Write) Sets the listen time.

Relevant Modes SA

Parameters

<num> Listen time value (100 ms to 100 seconds)

Examples

```
:ADEM:METR:LTIM 100ms
```

Query Syntax :ADEM:METR:LTIM?

Return Type Numeric

Default 100s

Last Modified:

16-Dec-2015 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ADEMod:METRics:MMENable

(Read-Write) Enable or disable Peak+ and Peak- for all of the analog demodulation types in the demodulation window.

Relevant Modes SA

Parameters **ON (1)** - Enables Peak+ and Peak-

OFF (0) - Disables Peak+ and Peak-

<string>

Examples

```
:ADEM:METR:MMEN ON
```

Query Syntax :ADEM:METR:MMEN?

Return Type String

Default OFF

Last Modified:

16-Dec-2015 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ADEMod:METRics:STIMe

(Read-Write) Sets the time span of the modulation window.

Relevant Modes SA

Parameters

<num> Modulation time value (50 us to 50 ms)

Examples

```
:ADEM:METR:STIM .025
```

Query Syntax :ADEM:METR:LTIM?

Return Type Numeric

Default 2.000 ms

Last Modified:

16-Dec-2015 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ADEMod:METRics:TFReq

(Read-Write) Sets the tune frequency (i.e., center frequency).

Relevant Modes SA

Parameters

<num> Tune (Center) frequency values vary with the FieldFox.

Examples

```
:ADEM:METR:TFR 6GHZ
```

Query Syntax :ADEM:METR:TFR?

Return Type Numeric

Default Varies with model

Last Modified:

16-Dec-2015 Added AM/FM Metrics (A.12.3x)

[:SENSe]:ALIGnment:ALL:NOW

(Write-only) An "InstAlign" alignment now is performed once just before the next sweep and applied to subsequent sweeps. If the FieldFox is not sweeping, a single sweep is triggered, and alignments are simultaneously performed on all of the individual alignments (i.e., InstAlign Amplitude Alignment, RF Burst, and Channel Equalization alignments). Refer to ALIGn:ALL.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5GTF, IQA, NF, PAA, SA, CPM, RTSA
All models with InstAlign (All EXCEPT N9912A)

Parameters None

Examples

```
ALIG:ALL:NOW
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

10dec2019	Added 5G NR and 5G NR Conducted (11.5x)
01june2019	Added PAA mode Opt. 360 (11.2x)
01june2018	Added NF mode Opt. 356 (10.3)
16-Sep-2022	New command & new IQA mode (A.10.15)

[:SENSe]:ALIGnment:ALL[:STATe] <char>

(Read-Write) Set and query the align all (InstAlign all) state. When the individual alignments are coupled (Align All state is set to Auto), the state of all of them can be changed simultaneously using the Align All (i.e., InstAlign Amplitude Alignment, RF Burst, and Channel Equalization alignments). Refer to ALIGn:ALL:NOW.

Relevant Modes ChScn, IQA, LTE FDD, 5G NR, 5G NR EVM Conducted, PAA, SA, CPM, RTSA

All models with InstAlign capability (All EXCEPT N9912A).

Parameters

<character> InstAlign state. Choose from:

AUTO - The alignment process is performed every 300 seconds or when the temperature has changed about 1 degree. It occurs only at the beginning of a sweep and takes about 0.5 seconds to complete.

HOLD - The alignment process is stopped, but the last alignment values are applied to subsequent sweeps.

OFF - The alignment process is NOT performed. Only factory correction values are used.

Examples

```
ALIG:AMPL HOLD
```

Query Syntax [:SENSe]:ALIGnment:ALL[:STATe]?

Return Type Character

Default AUTO

Last Modified:

10dec2019	Added 5G NR, 5G NR EVM Conducted, and PAA (11.5x)
20june2019	New command

[:SENSe]:ALIGnment:AMPLitude:NOW

(Write-only) An "InstAlign" alignment is performed once just before the next sweep and applied to subsequent sweeps. If the FieldFox is not sweeping, a single sweep is triggered and alignment is performed.

Relevant Modes ChScn, IQA, LTE FDD, 5G NR, 5G NR EVM Conducted, PAA, SA, CPM, RTSA

All models with InstAlign (All EXCEPT N9912A)

Parameters None

Examples

```
ALIG:AMPL:NOW
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

16-Sep-2022 New command & new IQA mode (A.10.15)

[:SENSe]:ALIGnment:AMPLitude[:STATe] <char>

(Read-Write) Set and query the amplitude alignment (InstAlign) state.

Relevant Modes ChScn, IQA, LTE FDD, 5G NR, 5G NR EVM Conducted, PAA, SA, CPM, RTSA

All models with InstAlign capability (All EXCEPT N9912A).

Parameters

<character> InstAlign state. Choose from:

AUTO - The alignment process is performed every 300 seconds or when the temperature has changed about 1 degree. It occurs only at the beginning of a sweep and takes about 0.5 seconds to complete.

HOLD - The alignment process is stopped, but the last alignment values are applied to subsequent sweeps.

OFF - The alignment process is NOT performed. Only factory correction values are used.

Examples

```
ALIG:AMPL HOLD
```

Query Syntax [:SENSe]:ALIGnment:AMPLitude[:STATe]?

Return Type Character

Default AUTO

Last Modified:

16-Sep-2022 New command & new IQA mode (A.10.15)

[:SENSe]:ALIGnment:BURSt:NOW

(Write-only) A RF Burst alignment is performed once just before the next sweep and applied to subsequent sweeps. If the FieldFox is not sweeping, a single sweep is triggered and alignment is performed.

Relevant Modes IQA, SA & RTSA Modes
All models with RF Burst triggering (All EXCEPT N9912A)

Parameters None

Examples ALIG:BURS:NOW

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

16-Sep-2022 New command and new IQA mode (A.10.15)

[:SENSe]:ALIGnment:BURSt[:STATe]

(Read-Write) Set and query the RTSA and SA modes burst alignment (InstAlign) state.

Relevant Modes CPM, IQA, RTSA, SA
All models with InstAlign capability (All EXCEPT N9912A).

Parameters

<char> InstAlign state. Choose from:

AUTO - The alignment process is performed every 300 seconds or when the temperature has changed about 1 degree. It occurs only at the beginning of a sweep and takes about 0.5 seconds to complete.

HOLD - The alignment process is stopped, but the last alignment values are applied to subsequent sweeps.

OFF - The alignment process is NOT performed. Only factory correction values are used.

Examples ALIG:BURS HOLD

Query Syntax [:SENSe]:ALIGnment:BURSt[:STATe]?

Return Type Character

Default AUTO

Last Modified:

16-Sep-2022 New command & new IQA mode (A.10.15)

[:SENSe]:ALIGnment:CHEQ:FAST <booleon> (B Series FieldFoxes with Option B04 /B10 Only)

(Read-Write) Set the channel equalization alignment to either FAST (default, when == 1). Or PRECISE when the channel equalization is set == 0.

Note: This command applies only to B Series FieldFoxes with Option B04 /B10).

Relevant Modes IQA, RTSA, SA

Parameters

<bool> Channel Scanner state. Choose from:

1 (ON) - The channel equalization alignment process occurs faster without the enhanced phase accuracy data (default).

0 (OFF) - The channel equalization alignment process time is longer due to additional channel equalization data being measured to enhance the phase accuracy.

Examples

```
ALIG:CHEQ:FAST 1 */Fast channel equalization alignment is accomplished with a single set of measurements (default).
ALIG:CHEQ:FAST 0 */Precise channel equalization is accomplished using multiple sets of measurements for enhanced phase accuracy, but slower alignment time.
```

Query Syntax [:SENSe]:ALIGnment:CHEQ:FAST?

Return Type booleon

Default 1 (ON)

Last Modified:

16-Sep-2022 New command (A.12.5x)

[:SENSe]:ALIGnment:CHEQ:NOW

(Write-only) A channel equalization is performed once just before the next sweep and applied to subsequent sweeps. If the FieldFox is not sweeping, a single sweep is triggered and alignment is performed.

Relevant Modes IQA, RTSA, SA

Parameters None

Examples ALIG:CHEQ:NOW

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

16-Sep-2022 New command & new IQA mode (A.10.15)

[:SENSe]:ALIGnment:CHEQ[:STATe]

(Read-Write) Set and query the channel equalization (InstAlign) state.

Relevant Modes IQA, RTSA, SA

Parameters

<char> InstAlign state. Choose from:

AUTO - The alignment process is performed every 300 seconds or when the temperature has changed about 1 degree. It occurs only at the beginning of a sweep and takes about 0.5 seconds to complete.

HOLD - The alignment process is stopped, but the last alignment values are applied to subsequent sweeps.

OFF - The alignment process is NOT performed. Only factory correction values are used.

Examples ALIG:CHEQ HOLD

Query Syntax [:SENSe]:ALIGnment:CHEQ[:STATe]?

Return Type Character

Default AUTO

Last Modified:

16-Sep-2022 New command & new IQA mode (A.10.15)

[:SENSe]:AMPLitude:ALIGnment:NOW (Obsolete Command)

This command has been replaced by [:SENSe]ALIGnment:AMPLitude:NOW. Learn about superseded commands.

(Write-only) An "InstAlign" alignment is performed once just before the next sweep and applied to subsequent sweeps. If the FieldFox is not sweeping, a single sweep is triggered and alignment is performed.

Relevant Modes ChScn, IQA, LTE FDD, SA, CPM, RTSA

All models with InstAlign (All EXCEPT N9912A)

Parameters None

Examples

```
AMPL:ALIG:NOW
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

22-oct-2016	Added IQA mode and superseded note (A.010.15)
20-sep-2016	Added RTSA mode (A.09.50)
1-Apr-2014	Added CPM
17-Jul-2012	New command (6.00)

[:SENSe]:AMPLitude:ALIGnment[:STATe] <char>

This command has been replaced by [:SENSe]:ALIGnment:AMPLitude[:STATe]. Learn about superseded commands.

(Read-Write) Set and query the alignment amplitude (InstAlign) state.

Relevant Modes IQA, SA, CPM, RTSA

All models with InstAlign capability (All EXCEPT N9912A).

Parameters

<character> InstAlign state. Choose from:

AUTO - The alignment process is performed every 300 seconds or when the temperature has changed about 1 degree. It occurs only at the beginning of a sweep and takes about 0.5 seconds to complete.

HOLD - The alignment process is stopped, but the last alignment values are applied to subsequent sweeps.

OFF - The alignment process is NOT performed. Only factory correction values are used.

Examples :AMPL:ALIG HOLD

Query Syntax :SENSe:AMPLitude:ALIGnment:STATe?

Return Type Character

Default AUTO

Last Modified:

22-oct-2016	Added IQA mode and superseded note (A.010.15)
20-sep-2016	Added RTSA mode (A.09.50)
1-Apr-2014	Added CPM
28-Mar-2013	Changed time from 30 to 300 secs
17-Jul-2012	New command (6.00)

[:SENSe]:AMPLitude:CORRections:ANTenna:DEFault

(Write-only) Clears the Receiver Antenna Correction table. This is the same as selecting the **New** softkey and then confirming “Yes” from the Edit/Save/Recall Antennas menu.

If using only one antenna correction, use this command.

For source antenna, use: [:SENSe]:AMPLitude:CORRections:SANTenna:DEFault

Relevant Modes ChScn, PAA, SA

Parameters None

Examples `AMPL:CORR:ANT:DEF`

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01june2018	Added Channel Scanner (ChScn) - (10.3)
26-Jan-2015	Modified for Src/Rec
17-Jul-2012	New command (6.00)

[:SENSe]:AMPLitude:CORRections:ANTenna[:STATe] <bool>

(Read-Write) Set and query the Receiver Antenna Corrections ON/OFF state.

If using only one antenna correction, use this command.

For source antenna, use: [:SENSe]:AMPLitude:CORRections:SANTenna[:STATe]

Relevant Modes ChScn, PAA, SA

Parameters

<bool> Antenna correction state. Choose from:
OFF (or 0) - Antenna correction OFF.
ON (or 1) - Antenna correction ON.

Examples AMPL:CORR:ANT 1

Query Syntax [:SENSe]:AMPLitude:CORRections:ANTenna[:STATe]?

Return Type Boolean

Default OFF

Last Modified:

01june2018	Added Channel Scanner (ChScn) - (10.3)
26-Jan-2015	Modified for Src/Rec
17-Jul-2012	New command (6.00)

[:SENSe]:AMPLitude:CORRections:CABLe:DEFault

(Write-only) Clears the Receiver Cable Correction table. This is the same as selecting the **New** softkey and then confirming "Yes" from the Edit/Save/Recall Antennas menu.

If using only one cable correction, use this command. For source cable, use [:SENSe]:AMPLitude:CORRections:SCABle:DEFault

Relevant Modes	ChScn, PAA, SA
Parameters	None
Examples	AMPL:CORR:CABL:DEF
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

01june2018	Added Channel Scanner (ChScn) - (10.3)
26-Jan-2015	Modified for Src/Rec
17-Jul-2012	New command (6.00)

[:SENSe]:AMPLitude:CORRections:CABLe[:STATe] <bool>

(Read-Write) Set and query the Receiver Cable Corrections ON/OFF state.

If using only one cable correction, use this command.

For source cable, use: [:SENSe]:AMPLitude:CORRections:SCABle[:STATe]

Relevant Modes	ChScn, PAA, SA
Parameters	
<bool>	Cable correction state. Choose from: OFF (or 0) - Cable correction OFF. ON (or 1) - Cable correction ON.
Examples	AMPL:CORR:CABL 1
Query Syntax	[:SENSe]:AMPLitude:CORRections:CABLe[:STATe]?
Return Type	Boolean
Default	OFF

Last Modified:

01june2018	Added Channel Scanner (ChScn) - (10.3)
26-Jan-2015	Modified for source.
20-Oct-2010	New command (5.30)

[:SENSe]:AMPLitude:CORRections:DISable <bool>

(Read-Write) Set and query the Channel Scanner (ChScn) and SA mode corrections Auto/Disable state. This setting is labeled "Apply Corrections" on the FieldFox softkeys.

See all corrections commands

Relevant Modes ChScn, PAA, SA

Parameters

<bool> Correction state. Choose from:
OFF (or 0) - Correction set to Auto.
ON (or 1) - Correction set to Disable.

Examples

```
AMPL:CORR:DIS 1 */Disables the applied corrections
AMPL:CORR:DIS 0 * /Enables the applied corrections
```

Query Syntax [:SENSe]:AMPLitude:CORRections[:STATe]?

Return Type Boolean

Default Auto (0)

Last Modified:

23oct2020 Set up new command (A.12.1x)

[:SENSe]:AMPLitude:CORRections:CONVerter:DEFault

(Write-only) Clears the frequency converter corrections table.
Not typically required, but see also, AMPL:CORR:CONV.

Relevant Modes SA

Parameters None

Examples

```
AMPL:CORR:CONV:DEF 'Clears the frequency converter
corrections table.
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

20apr2020 New command A12.00

[:SENSe]:AMPLitude:CORRections:CONVerter[:STATe] <bool>

(Read-Write) Set and query the frequency converter corrections ON/OFF state.
Note: Typically this command is not required. Refer to AMPL:CORR:CONV:DEF.

Relevant Modes SA

Parameters

<bool> Frequency converter correction state. Choose from:
OFF (or 0) - Converter correction OFF.
ON (or 1) - Converter correction ON.

Examples

```
AMPL:CORR:CONV 1 'Enables the default frequency converter corrections.
```

Query Syntax [:SENSe]:AMPLitude:CORRections:CONVerter[:STATe]?

Return Type Boolean

Default OFF (0)

Last Modified:

20apr2020 New command A12.00

[SENSe]:AMPLitude:CORRections:LSELect <char>

(Read-Write) Set and query the amplitude corrections (DEFault | SSODe | XYZ).

Relevant Modes SA

Couplings None

Parameters

<character> <character> Component carrier (CC) value. Choose from:
DEFault – Enable the receiver side corrections.
SSIDe – Enable the source side corrections.
XYZ – Enable XYZ axis control for a USB antenna.

Examples

```
AMPL:CORR:LSEL SSID 'Enables the source side corrections.
```

Query Syntax AMPL:CORR:LSEL?

Return Type Character

Default DEF

Last Modified:

01dec2019	New command

[:SENSe]:AMPLitude:CORRections:SANTenna:DEFault

(Write-only) Clears the Source-side Antenna Correction table. This is the same as selecting the **New** softkey and then confirming “Yes” from the Edit/Save/Recall Source Antennas menu.

For Receiver antenna, use [:SENSe]:AMPLitude:CORRections:ANTenna:DEFault

Relevant Modes	SA, ERTA
Parameters	None
Examples	AMPL:CORR:SANT:DEF
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

26-Jan-2015	New command (8.00)

[:SENSe]:AMPLitude:CORRections:SCABle:DEFault

(Write-only) Clears the Source Cable Correction table. This is the same as selecting the **New** softkey and then confirming “Yes” from the Edit/Save/Recall Antennas menu.

For receiver (or only one) cable, use [:SENSe]:AMPLitude:CORRections:CABLe:DEFault

Relevant Modes	SA
Parameters	None
Examples	AMPL:CORR:SCABL:DEF
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

26-Jan-2015	New command (8.00)

[:SENSe]:AMPLitude:CORRections:SANTenna[:STATe] <bool>

(Read-Write) Set and query the Source-side Antenna Corrections ON/OFF state.

For receiver antenna, use [:SENSe]:AMPLitude:CORRections:ANTenna[:STATe]

Relevant Modes	SA
Parameters	

<bool>	Source Antenna correction state. Choose from: OFF (or 0) - Antenna correction OFF. ON (or 1) - Antenna correction ON.
Examples	AMPL:CORR:SANT 1
Query Syntax	[:SENSe]:AMPLitude:CORRections:SANTenna[:STATe]?
Return Type	Boolean
Default	OFF

Last Modified:

26-Jan-2015	New command (8.00)

[:SENSe]:AMPLitude:CORRections:SCABle[:STATe] <bool>

(Read-Write) Set and query the Source Cable Corrections ON/OFF state.
For receiver (or ONE) cable, use: [:SENSe]:AMPLitude:CORRections:CABLe[:STATe]

Relevant Modes	SA
Parameters	
<bool>	Source Cable correction state. Choose from: OFF (or 0) - Cable correction OFF. ON (or 1) - Cable correction ON.
Examples	AMPL:CORR:SCAB 1
Query Syntax	[:SENSe]:AMPLitude:CORRections:SCABle[:STATe]?
Return Type	Boolean
Default	OFF

Last Modified:

26-Jan-2015	New command (8.00)

[:SENSe]:AMPLitude:CORRections:VIEW

(Read-Write) Enables/Disables the Channel Scanner amplitude corrections.

Relevant Modes	ChScn,SA
Parameters	
<bool>	Show density graphics value:

0 or **1**

Examples

```
AMP:CORR:VIEW 1
AMP:CORR:VIEW 0
```

Query Syntax AMPLitude:CORRections:VIEW?

Return Type bool

Default 1

Last modified:

01-June-2018 Added for Channel Scanner Mode (A.10.30)

[:SENSe]:AMPLitude:CORRections:XANTenna:DEFault

(Write-only) Set the X-axis dipole in a triaxial antenna to its default values.

See also, use [:SENSe]:AMPlitude:CORRections:YANTenna:DEFault and [:SENSe]:AMPlitude:CORRections:ZANTenna:DEFault.

Relevant Modes SA, ERTA, USB (EMF) Antenna

Parameters None

Examples AMPL:CORR:XANT:DEF

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

26-Jan-2015 New command (8.00)

[:SENSe]:AMPLitude:CORRections:XANTenna[:STATe] <bool>

(Read-Write) Set and query the X-axis antenna corrections ON/OFF state.

See also, use [:SENSe]:AMPlitude:CORRections:YANTenna[:STATe] and [:SENSe]:AMPlitude:CORRections:ZANTenna[:STATe].

Relevant Modes LTE FDD, SA, 5G NR, N5G NR EVM Conducted, 5G TF

Parameters

<bool> X-axis antenna correction state. Choose from:
OFF (or 0) - X-axis antenna correction OFF.
ON (or 1) - X-axis antenna correction ON.

Examples

```
AMPL:CORR:XANT 1
```

Query Syntax AMPLitude:CORRections:XANTenna?

Return Type Boolean

Default OFF

Last Modified:

01dec2019 New command

[:SENSe]:AMPLitude:CORRections:YANTenna:DEFault

(Write-only) Sets the Y-axis dipole in a triaxial antenna to its default values. .

See also, use [:SENSe]:AMPlitude:CORRections:XANTenna:DEFault and [:SENSe]:AMPlitude:CORRections:ZANTenna:DEFault.

Relevant Modes LTE FDD, SA, 5G NR, N5G NR EVM Conducted, 5G TF, USB (EMF) Antenna

Parameters None

Examples AMPL:CORR:YANT:DEF

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

26-Jan-2015 New command (8.00)

[:SENSe]:AMPLitude:CORRections:YANTenna[:STATe] <bool>

(Read-Write) Set and query the Y-axis antenna corrections ON/OFF state.

See also, use [:SENSe]:AMPlitude:CORRections:XANTenna[:STATe] and [:SENSe]:AMPlitude:CORRections:ZANTenna[:STATe].

Relevant Modes LTE FDD, SA, 5G NR, N5G NR EVM Conducted, 5G TF, USB (EMF) Antenna

Parameters

<bool> Y-axis antenna correction state. Choose from:
OFF (or 0) - Y-axis antenna correction OFF.
ON (or 1) - Y-axis antenna correction ON.

Examples `AMPL:CORR:YANT 1`

Query Syntax AMPLitude:CORRections:YANTenna?

Return Type Boolean

Default OFF

Last Modified:

01dec2019	New command

[:SENSe]:AMPLitude:CORRections:ZANTenna:DEFault

(Write-only) Sets the X-axis dipole in a triaxial antenna to its default values. .

See also, use [:SENSe]:AMPlitude:CORRections:XANTenna:DEFault and [:SENSe]:AMPlitude:CORRections:YANTenna:DEFault.

Relevant Modes	LTE FDD, SA, 5G NR, N5G NR EVM Conducted, 5G TF, USB (EMF) Antenna
Parameters	None
Examples	AMPL:CORR:ZANT:DEF
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

26-Jan-2015	New command (8.00)

[:SENSe]:AMPLitude:CORRections:ZANTenna[:STATe] <bool>

(Read-Write) Set and query the Z-axis antenna corrections ON/OFF state.

See also, use [:SENSe]:AMPlitude:CORRections:XANTenna[:STATe] and [:SENSe]:AMPlitude:CORRections:YANTenna[:STATe].

Relevant Modes	LTE FDD, SA, 5G NR, N5G NR EVM Conducted, 5G TF
Parameters	
<bool>	Z-axis antenna correction state. Choose from: OFF (or 0) - Z-axis antenna correction OFF. ON (or 1) - Z-axis antenna correction ON.
Examples	`AMPL:CORR:ZANT 1`
Query Syntax	AMPLitude:CORRections:ZANTenna?
Return Type	Boolean
Default	OFF

Last Modified:

01dec2019	New command

[:SENSe]:AMPLitude:CORRections[:STATe] <bool> - SUPERSEDED

(Read-Write) Set and query the Channel Scanner (ChScn) and SA mode corrections ON/OFF state. This setting is labeled "Apply Corrections" on the FieldFox softkeys.

See all corrections commands

NOTE: Please use [:SENSe]:AMPLitude:CORRections:DISable in lieu of this superseded command.

Relevant Modes ChScn, PAA, SA

Parameters

<bool> Correction state. Choose from:
OFF (or 0) - Correction OFF.
ON (or 1) - Correction ON.

Examples AMPL:CORR 1

Query Syntax [:SENSe]:AMPLitude:CORRections[:STATe]?

Return Type Boolean

Default OFF

Last Modified:

23oct2020	Set up as Superseded command
01june2018	Added Channel Scanner (ChScn) - (10.3)
20-Oct-2010	New command (5.30)

[:SENSe]:AMPLitude:SCALe <char>

(Read-Write) Set and query the scale type.

Relevant Modes SA

Parameters

<char> Scale type. Choose from:
LOG -units in dB
LIN - units in mV

Examples AMPL:SCAL LIN

Query Syntax [:SENSe]:AMPLitude:SCALe?

Return Type Character

Default LOG

[:SENSe]:AMPLitude:UNIT <char>

(Read-Write) Set and query the Display Units, regardless of the current Scale setting. The UNIT choice affects the following: Reference Level, Trigger Level, Limit Lines, Marker annotation, Channel Power, and Adjacent Channel Power.

This command affects the TRACe:DATA? return values.

Antenna correction units are available ONLY by loading an Antenna file that contains the desired units setting. Use MMEMory:LOAD:ANTenna.

Relevant Modes ChScn, PAA, SA,CPM

Parameters

<char> Display Units with Antenna correction OFF, choose from:

- W - watts
- DBM - dBm

Standard Units: The following are NF and SA ONLY - not allowed for CPM

- DBMV - dB milliVolts
- DBUV - dB microvolts
- DBMA - dB milliAmps
- DBUA - dB microAmps
- V - volts
- A - amps

Field Strength Units: The following are CS and SA ONLY - not allowed for CPM

- DBUVP - dBµV/m (the primary E-field AF conversion landing unit (dBm => dBuV, dBuV/m))
- DBUAP - dBµA/m (the primary H-field AF conversion landing unit (dBm => dBuV, dBuA/m)
- VP - V/m (volts per meter)
- DBMPMS - dBm/M^2 (dBm per meter squared)
- WPMS - W/m^2V (Watts per meter squared)
- MWPMS - mW/m^2 (Milliwatts per cm squared)
- UWPCMS - µW/cm^2 (Microwatts per cm squared)
- DBG - dBG (dB Gauss)
- DBPT - dBpT (dB pico Tesla)

Examples AMPL:UNIT W

Query Syntax [:SENSe]:AMPLitude:UNIT?

Return Type Character

Default DBM

Last Modified:

01june2018	Added Channel Scanner (ChScn) - (10.3)
24-Mar-2014	Added CPM
20-Oct-2010	New command (5.30)

[:SENSe]:ANTenna:ANGLe:AZIMuth:REFerence <num>

(Read-Write) Set and query the antenna's angle of azimuth (X) reference value (-89 to 90 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the angle azimuth reference value:
Set between: -90 and 90 degrees

Examples

```
ANT:ANG:AZIM:REF -45 */Sets the angle azimuth reference to -45 degrees
```

Query Syntax ANT:ANG:AZIM:REF?

Return Type Numeric

Default 0

Last Modified:

01dec019	New command

[:SENSe]:ANTenna:ANGLe:AZIMuth:STARt <num>

(Read-Write) Set and query the antenna's angle of azimuth (X) start value (-90 to 90 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the heat marker elevation value:
Set between: -89 and 90 degrees

Examples

```
ANT:ANG:AZIM:STAR -45 */Sets the angle azimuth start -45 degrees
```

Query Syntax ANT:ANG:AZIM:STAR?

Return Type Numeric

Default -45

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:ANGLe:AZIMuth:STEP <num>

(Read-Write) Set and query the antenna's angle of azimuth (X) step value (1 to 10 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the antenna's angle azimuth step value:
Set between: 1 to 10 degrees

Examples

```
ANT:ANG:AZIM:STEP 5 */Sets the angle azimuth step to 5 degrees
```

Query Syntax ANT:ANG:AZIM:STEP?

Return Type Numeric

Default 4

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:ANGLe:AZIMuth:STOP <num>

(Read-Write) Set and query the antenna's angle of azimuth (X) stop value (-90 to 90 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the angle azimuth stop value:
Set between: -89 and 90 degrees

Examples

```
ANT:ANG:AZIM:STOP -45 */Sets the angle azimuth stop to -45 degrees
```

Query Syntax ANT:ANG:AZIM:STOP?

Return Type Numeric

Default 90

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:ANGLe:ELEVation:REFerence <num>

(Read-Write) Set and query the elevation angle (Y) reference value (-89 to 90 degrees).

Relevant Modes PAA

Couplings Azimuth Reference and Elevation reference are dynamic based on any changes that occur to either value.

Parameters

<numeric> Set the angle elevation reference value:
Set between: -89 and 90 degrees

Examples

```
ANT:ANG:AZIM:REF -45 */Sets the angle azimuth reference to -45 degrees
```

Query Syntax ANT:ANG:AZIM:REF?

Return Type Numeric

Default 0

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:ANGLe:ELEVation:STARt <num>

(Read-Write) Set and query the antenna's angle of elevation (Y) start value (-89 to 89 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the heat marker elevation value:
Set between: -89 and 89 degrees

Examples

```
ANT:ANG:ELEV:STAR -45 */Sets the angle elevation start to -45 degrees
```

Query Syntax ANT:ANG:ELEV:STAR?

Return Type Numeric

Default -89

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:ANGLe:ELEVation:STEP <num>

(Read-Write) Set and query the antenna's angle of elevation (Y) step value (1 to 10 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the antenna's angle elevation step value:
Set between: 1 to 10 degree steps

Examples

```
ANT:ANG:ELEV:STEP 5 */Sets the antenna angle of elevation step to 5 degrees
```

Query Syntax ANT:ANG:ELEV:STEP?

Return Type Numeric

Default 1

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:ANGLe:ELEVation:STOP <num>

(Read-Write) Set and query the antenna's angle of elevation (Y) stop value (-90 to 90 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the angle elevation stop value:
Set between: -89 and 90 degrees

Examples

```
ANT:ANG:ELEV:STOP -45 */Sets the angle azimuth stop to -45 degrees
```

Query Syntax ANT:ANG:AZIM:STOP?

Return Type Numeric

Default 45

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:ANGLe:INDex:X <num>

(Read-Write) Set and query the antenna's angle of azimuth (X) reference value.

Relevant Modes PAA

Parameters

<numeric> Set the angle azimuth index value:
Set between:
Set between
Min: -1.00000000000000E+18
Max: 1.00000000000000E+32.

Examples

```
ANT:ANGL:IND:X -45 */Sets the angle azimuth index X to -4.50000000000000E+01
```

Query Syntax ANT:ANGL:IND:X?

Return Type Double

Default 0.00000000000000E+18

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:ANGLe:INDex:Y <num>

(Read-Write) Set and query the antenna's angle of elevation (Y) reference value.

Relevant Modes PAA

Parameters

<numeric> Set the angle elevation index value:
Set between
Min: -1.00000000000000E+18
Max: 1.00000000000000E+32.

Examples

```
ANT:ANGL:IND:Y -45 */Sets the angle elevation index Y to -4.50000000000000E+01
```

Query Syntax ANT:ANGL:IND:Y?

Return Type Double

Default 0.00000000000000E+18

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:COMPass:NORth <num>

(Read-Write) Set and query the north angle on the compass (0 to 360 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the antenna's north compass value:
Set between: 0 and 360 degrees

Examples

```
ANT:COMP:NOR 45 */Sets the compass north antenna value to 45 degrees
```

Query Syntax ANT:COMP:NOR?

Return Type Numeric

Default 0

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:DISPlay:POLar:ANGle <num>

(Read-Write) Set and query the Polar display rotation. 0 degrees is vertical on display 90 degrees is horizontal on right side of display (-180 to 180 degrees).

Relevant Modes PAA

Parameters

<numeric> Set the display polar angle value:
Set between: -180 and 180 degrees

Examples

```
ANT:DISP:POL:ANGL 45 */Sets the polar angle value to 45 degrees
```

Query Syntax ANT:DISP:POL:ANGL?

Return Type Numeric

Default 0

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:DISPlay:POLar:BACKground:IMAGe:STATe <bool>

(Read-Write) Set and query the status of the Polar display background image (i.e, Only works, if a background has been stored in the FieldFox (.png)).

Relevant Modes PAA

Parameters

<bool> Choose from:
O or **OFF** - Display polar background image OFF.

1 or **ON** - Display polar background image ON.

Examples `ANT:DISP:POL:BACK:IMAG:STAT 1`

Query Syntax ANT:DISPlay:POL:BACK:IMAG:STAT?

Return Type Boolean

Default OFF (0)

Last Modified:

01dec2019 New command

[:SENSe]:ANTenna:DISPlay:POLar:COMPass:IMAGe:STATe <bool>

(Read-Write) Set and query the status of the Polar display compass image on the polar display (i.e, Only works, if a background has been stored in the FieldFox (.png)).

Relevant Modes PAA

Parameters

<bool> Choose from:
O or **OFF** - Display polar compass image OFF.
1 or **ON** - Display polar compass image ON.

Examples `ANT:DISP:POL:COMP:IMAG:STAT 1`

Query Syntax ANT:DISPlay:POL:COMP:IMAG:STAT?

Return Type Boolean

Default ON (1)

Last Modified:

01dec2019 New command

[:SENSe]:ANTenna:DISPlay:POLar:TYPe <char>

(Read-Write) Sets and query the display size of the Polar graph and trace.

Relevant Modes PAA

Parameters

<character> Choose from:
MAX - Sets the polar graph and trace size to maximum.
MED - Sets the polar graph and trace size to medium.
MIN - Sets the polar graph and trace size to minium.

Examples `ANT:DISP:POL:TYP 1`

Query Syntax ANT:DISPlay:POL:TYP?

Return Type Character

Default MAX

Last Modified:

01dec2019 New command

[:SENSe]:ANTenna:FREQuency <num>

(Read-Write) Set and query the antenna center frequency. Antenna center frequency is model and option dependent.

Relevant Modes PAA

Parameters

n/an/a

Examples n/a

Query Syntax ANT:FREQ?

Return Type Numeric

Default Dynamic - model and option dependent

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:LOG[:STATe]?

(Read-Write) Sets and queries the data logging state.

Relevant Modes PAA, Indoor/Outdoor Mapping

Parameters

Choose from:
STOP - stops the data logging.
RUN - runs the data logging.

Examples

```
:ANTenna:LOG STOP
:ANTenna:LOG RUN
```

Query Syntax :ANTenna:LOG[:STATe]?

Return Type character

Default RUN

Last Modified:

31oct2019 Added PAA mode

[:SENSe]:ANTenna:RESult?

(Read-Only) Query the last measured point.

Relevant Modes PAA

Parameters

n/a n/a

Examples n/a

Query Syntax ANT:RES?

Return Type double

Default n/a

Last Modified:

01dec019 New command

[:SENSe]:ANTenna:USER:FOLDer

(Read-Write) Enables more flexibility where the Antenna files are saved.

Relevant Modes PAA

Parameters

<val>Choose from:

DEF- Default where:

List files saved-recalled to-from "CurrentDevice\Antenna\ChannelLists\"

Rec-Play files saved-recalled to-from \Antenna\RecordPlayback\"

SYST - System where:

List files saved-recalled to-from "CurrentDevice\UserSelectedFolder\"

Rec-Play files saved-recalled to-from "CurrentDevice\UserSelectedFolder\"

Examples `:ANT:USER:FOLD SYST`

Query Syntax :ANT:USER:FOLD?

Return Type character

Default

Last Modified:

31oct2019 Added PAA mode

[:SENSe]:AUDio:CAPTure:COUNt <num>

(Read-Write) Sets and queries the audio capture count value (the number of captures to save when an audio capture is executed).

Relevant Modes SA

Parameters

<num>integer Minimum = 1, Maximum = 100,000

Examples
```
:AUD:CAPT:COUN 100 'Sets the audio capture counts to be saved to 100
```

Query Syntax :AUD:CAPT:COUN?

Return Type Numeric

Default 1

Last Modified:

14june2021 Added this command (A.12.3x)

[:SENSe]:AUDio:CAPTure:PLAYback:ALOad <bool>

(Write-Read) Set and query the audio capture auto-load state (determines whether successful audio captures are automatically l

Relevant Modes SA

Parameters

<bool> Choose from:
OFF(0) - Disable
ON (1) – Enable

Couplings None

Examples `AUD:CAPT:PLA`

```
audio captur
AUD:CAPT:PLA
audio captur
```

Query Syntax AUD:CAPT:PLA

Default ON(1)

Last Modified:

15june2021 New command (A.12.3x)

[:SENSe]:AUDio:CAPTure:PLAYback:STARt

(Write only) Starts playback of the currently loaded audio file.
See also AUD:CAPT:PLAY:STOP and MMEM:LOAD:AUD.

Relevant Modes SA

Parameters

Examples

```
AUD:CAPT:PLAY:STAR 'Starts playback of the current audio
file.
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01june021 New command (A.12.3x)

[:SENSe]:AUDio:CAPTure:PLAYbackSTOP

(Write only) Stops an in progress audio capture and if possible, avoids saving the associated audio file.
See also AUD:CAPT:PLAY:STAR and MMEM:LOAD:AUD.

Relevant Modes SA

Parameters

Examples

```
AUD:CAPT:STOP */Stops an audio capture
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01june021 New command (A.12.3x)

[:SENSe]:AUDio:CAPTure:SCHannel <char>

(Write-Read) Set and query the audio capture stereo channel type value (for FM Stereo demodulation measurements, dete
See also, ADEM:METR:DTYP

Relevant Modes SA

Parameters

<char> Choose from:
Single channel:
MONO - Mono (
LEFT – Left (Sin
RIGHt – Right (S
DIFFerence – D

Two channel:
STEReo – Stere

Couplings This setting is c

Examples

```
AUD:CAPT:SCH
only
AUD:CAPT:SCH
left and rig
```

Query Syntax AUD:CAPT:SCH

Default MONO

Last Modified:

15june2021 New command (A.12.3x)

[:SENSe]:AUDio:CAPTure:STARt

(Write only) Initiates an audio capture, which is saved as an audio file when the capture is complete (the file name, file type and storage device used are determined by the Audio Capture File Settings).

This command is overlapped. This means that it will execute and, while the FieldFox performs an audio capture, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

See also, AUD:CAPT:STOP and MMEM:LOAD:AUD.

Relevant Modes SA

Parameters

Examples
```
AUD:CAPT:STAR */Initiates an audio capture
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01june021 New command (A.12.3x)

[:SENSe]:AUDio:CAPTure:STOP

(Write only) Stops an in progress audio capture and if possible, avoids saving the associated audio file. See also, AUD:CAPT:STAR and MMEM:LOAD:AUD.

Relevant Modes SA

Parameters

Examples
```
AUD:CAPT:STOP */Stops an audio capture
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01june021 New command (A.12.3x)

[:SENSe]:AUDio:CAPTure:TIME <num>

(Read-Write) Sets and queries the audio capture time (the length of the audio capture). .

Relevant Modes SA

Parameters

<num> Capture time in seconds

Min: Dynamic. Varies based on the span/sample rate.
Max: Dynamic. Varies based on the span/sample rate.

Examples
```
:AUD:CAPT:TIME .200 'Sets the audio capture time to 200 ms
```

Query Syntax :AUD:CAPT:TIME?

Return Type Numeric

Default 100 ms

Last Modified:

14june2021 Added this command (A.12.3x)

[:SENSe]:AVERage:CLEar

Write-only) Resets sweep averaging to zero so that the next sweep performed will be back to AVG 1. This command does NOT trigger the sweep.

Relevant Modes CAT, NA, VVM

Parameters None

Examples

```
AVER:CLE
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

03Oct2017 Added command for VVM mode

23-Aug-2011 New command

[:SENSe]:AVERage:COUNt <num>

(Read-Write) Set and query the number of sweep averages.

Relevant Modes ALL

Parameters

<number> Number of averages. Choose from: 1 to 10000.
Average count of 1 = No averaging.

Examples

```
AVER:COUN 45
```

Query Syntax [:SENSe]: AVERage:COUNt?

Return Type Numeric

Default SA - Depends on measurement
IQA - 10

Last Modified:

22oct2017	Added IQA mode (10.1x)
24-Mar-2014	Added

[:SENSe]:AVERage:MODE <char>

(Read-Write) Set and query the averaging mode for NA measurements.

Relevant Modes NA

Only Sweep averaging is allowed in CAT mode.

Parameters

<char> Average Mode. Choose from:

SWEep - Each data point is based on the average of the same data point being measured over <n> consecutive sweeps. The average counter shows the number of previous sweeps that have been averaged together to form the current trace. When the counter reaches the specified count, then a 'running average' of the last <n> sweeps is displayed.

POINT - Each data point is measured <n> times and averaged before going to the next data point. On subsequent sweeps, averaging restarts by measuring each data point again <n> times. The average counter is not updated because data is not displayed until all the averages have been applied.

Examples AVER:MODE POINT

Query Syntax [:SENSe]:AVERage:MODE?

Return Type Character

Default SWEEP

Last Modified:

17-Jul-2012	New command (6.00)

[SENSe]:AVERage:SDETect <bool>

(Read-Write) Set and query the step detection mode state for Power Meter measurements.

Relevant Modes Power Meter

Parameters

<bool> Step Detection state. Choose from:

ON (or 1) - Step Detection enabled.

OFF (or 0) - Step Detection disabled.

Examples AVER:SDET On

Query Syntax [:SENSe]:AVERage:SDETect?

Return Type Boolean

Default ON

[:SENSe]:AVERage[:ENABle] <value>

(Read-Write) Set and query the averaging state.

Relevant Modes CP, PAA

Parameters

<value> (Boolean) Choose from:

ON (or 1) - Averaging ON. Set the number of averages using [:SENSe]:AVERage:COUNt

OFF (or 0) - Performs NO averaging.

Examples AVER 1

Query Syntax [:SENSe]:AVERage[:ENABle]?

Return Type Boolean

Default ON

Last Modified:

01nov2019	Added for PAA Mode
24-Mar-2014	New command

[:SENSe]:AVERage[:MODE] <char>

(Read-Write) Set and query the averaging mode for Power Meter measurements.

Relevant Modes Power Meter, Pulse Measurements

Parameters

<char> Average Mode.

Choose from:

AUTO - Allows the USB Power Sensor to use its Auto Averaging settings.

MAN - Manually enter an averaging count by setting SENSe]:AVERage:COUNt

OFF - Performs NO averaging.

Examples AVER MAN

Query Syntax [:SENSe]:AVERage[:MODE]?

Return Type Character

Default AUTO

[:SENSe]:AVERage:TYPE <char>

(Read-Write) Set and query the averaging type for IQA and SA measurements.

Relevant Modes IQA, SA

Parameters

<char> Average type. Choose from:

AUTO - (SA Only) The FieldFox chooses the most appropriate type of averaging for the current settings. When Detection Method is set to Average, a Noise Marker is present, or a Channel measurement is active, then Power Average is ALWAYS selected. Otherwise, Log Average is selected.

POWer - (Linear) Averaging – Best for measuring true power levels. Used in Detection Average and Noise Marker Average. Mathematically, trace noise is 2.5 dB higher than when using Log Average. **PAvg** is shown on the left side of the FieldFox screen when selected.

LOG - Best for displaying Trace Averaging. **LgAv** is shown on the left side of the FieldFox screen when selected.

VOLT - Best for measuring true voltage levels.

Examples AVER:TYPE POW

Query Syntax [:SENSe]:AVERage:TYPE?

Return Type Character

Default AUTO

Last Modified:

22sept2017 Added IQA mode (10.1x)

[:SENSe]:BANDwidth:APD[:RESolution] <num>

(Read-Write) Set and query the EMI mode's Amplitude Probability Distribution (APD) statistics 6 dB resolution bandwidth i.e., available when MEAS is set to SAPD).

See also, MEAS, CISP:BAND, FREQ:AXIS:LOG, BAND:EMI:AUTO, BAND:EMI:RES, SWE:EMI:DWEL, BAND:APD:AUTO, SWE:EMI:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes EMI

Parameters

<num> Resolution Bandwidth in Hz. Dynamic. Varies with EMI band set. See also, CISP:BAND.

This command will accept MIN and MAX as arguments.

Examples

```
BAND:APD 10e3 'Sets APD statistics 6 dB resolution
bandwidth to 10e3
```

Query Syntax [:SENSe]:BANDwidth:APD[:RESolution]?

Return Type Numeric

Default 1.200000E+05 (at preset; else, varies by EMI band selected)

Last Modified:

16-Sep-2022 New command (A12.3xA)

[:SENSe]:BANDwidth:APD[:RESolution]:AUTO <bool>

(Read-Write) Set and query the EMI mode's Amplitude Probability Distribution (APD) statistics automatic resolution bandwidth state (i.e., available when MEAS is set to SAPD).

See also, MEAS, CISP:BAND, FREQ:AXIS:LOG, BAND:APD:RES, BAND:EMI:RES, BAND:EMI:AUTO, SWE:EMI:DWE, BAND:APD, SWE:EMI:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes EMI

Parameters

<bool> Choose from:

O or **OFF -** Set APD statistics Resolution BW manually using: BAND:APD:RES <num>.

1 or **ON -** Set APD (Automatic) statistics Resolution Bandwidth setting.

Examples

```
BAND:APD:AUTO 0
```

Query Syntax [:SENSe]:BANDwidth:APD[:RESolution]:AUTO?

Return Type Boolean

Default 1 (ON)

Last Modified:

16-Sep-2022 New command

[:SENSe]:BANDwidth:EMI[:RESolution] <num>

(Read-Write) Set and query the EMI mode's resolution bandwidth (i.e., available MEAS is set to CBSCan | CZSCan).

See also, MEAS, CISP:BAND, FREQ:AXIS:LOG, BAND:EMI:AUTO, BAND:APD:RES, SWE:EMI:DWEL, BAND:APD:AUTO, SWE:EMI:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes EMI

Parameters

<num> Resolution Bandwidth in Hz.Dynamic. Varies with EMI band set. See also, CISP:BAND.

This command will accept MIN and MAX as arguments.

Examples

```
BAND:EMI 10e3
```

Query Syntax [:SENSe]:BANDwidth:EMI[:RESolution]?

Return Type Numeric

Default 2 MHz

Last Modified:

16-Sep-2022 New command (A12.3xA)

[:SENSe]:BANDwidth:EMI[:RESolution]:AUTO <bool>

(Read-Write) Set and query the EMI mode's automatic resolution bandwidth state (i.e., available MEAS is set to CBSCan | CZSCan).

See also, MEAS, CISP:BAND, FREQ:AXIS:LOG, BAND:APD:RES, BAND:EMI:RES, SWE:EMI:DWEL, BAND:APD, SWE:EMI:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes EMI

Parameters

<bool> Choose from:

O or **OFF -** Set EMI Resolution BW manually using: BAND:EMI:RES <num>.

1 or **ON -** Set EMI (Automatic) Resolution Bandwidth setting

Examples

```
BAND:EMI:AUTO 0
```

Query Syntax [:SENSe]:BANDwidth:EMI[:RESolution]:AUTO?

Return Type Boolean

Default 1 (ON)

Last Modified:

16-Sep-2022 New command

[:SENSe]:BANDwidth:IF:OUT <char>

(Read-Write) Set and query IF Output state.

Relevant Modes SA Mode

All models with an IF Output connector.

Parameters

<char> Choose from:

OFF - The IF output signal is NOT processed.

NARRow - The IF output signal is processed and has approximately 5 MHz bandwidth.

WIDE - The IF output signal is processed and has approximately 25 MHz bandwidth.

Examples `BAND:IF:OUT NARR`

Query Syntax [:SENSe]:BANDwidth:IF:OUT?

Return Type Character

Default OFF

Last modified:

31oct2019	Added PAA mode
17-Jul-2012	New command (A.06.00)

[:SENSe]:BANDwidth[:RESolution] <num>

(Read-Write) Set and query the resolution bandwidth.

Relevant Modes PAA, SA, RTSA

Parameters

<num> Resolution Bandwidth in Hz. Choose from: 10 Hz to 2 MHz.
This command will accept MIN and MAX as arguments.

Examples `BAND 10e3`

Query Syntax [:SENSe]:BANDwidth[:RESolution]?

Return Type Numeric

Default 2 MHz

Last Modified:

31oct2019	Added PAA mode
19-sep-2016	Added RTSA to relevant modes.

[:SENSe]:BANDwidth[:RESolution]:AUTO <bool>

(Read-Write) Set and query the automatic resolution bandwidth state.

Relevant Modes PAA, SA, RTSA

Parameters

<bool> Choose from:
O or **OFF -** Set Resolution BW manually using BAND:RES <num>
1 or **ON -** Automatic Bandwidth setting

Examples `BAND:AUTO 0`

Query Syntax [:SENSe]:BANDwidth[:RESolution]:AUTO?

Return Type Boolean`

Default ON

Last Modified:

31oct2019	Added PAA mode
19-sep-2016	Added RTSA to relevant modes.

[:SENSe]:BWIDth:VIDeo <char>

(Read-Write) Set and query the video bandwidth for the measurement.

Relevant Modes Pulse Measurements

Parameters

<char> Video Bandwidth. Choose from the following:

- **OFF** - Video Bandwidth is disabled.
- **LOW** - Similar to a low pass filter, ripple in the pass band is minimized but allows higher side-lobes on the filter skirt.
- **MEDium** - Smooth pass band with reasonable transition ripple.
- **HIGH** - The pass band ripple is similar to the OFF setting, but the transition skirts are smoother.

Examples

```
BWID:VID LOW
```

Query Syntax [:SENSe]:BWIDth:VIDeo?

Return Type Character

Default OFF

Last modified:

31-Oct-2013	New command

[:SENSe]:BANDwidth:VIDeo <num>

(Read-Write) Set and query the video bandwidth. Also set BAND:VID:AUTO OFF.

Relevant Modes PAA, SA

Parameters

<num> Video bandwidth. Choose a value between 1 and 2E6.

Examples

```
BAND:VID 1e3
```

Query Syntax SENSe:BANDwidth:VIDeo?

Return Type Numeric

Default 2E6

Last Modified:

31oct2019 Added PAA mode

[:SENSe]:CHPower:TAASelect <char>

(Read-Write) Set and query the USB triaxial antenna settings.

Note: SA mode must be set to measure Channel Power to use this command.

Relevant Modes 5G EVM

Couplings None

Parameters

<character> <character> Triaxial antenna axis choice. Choose from:
OFF – No axis control selected.
SALL – Sums all axes.
AX - X axis selected.
AY - Y axis selected.
AX - Z axis selected.

Note: Only one USB triaxial antenna is compatible with the FieldFox.

Examples

```
CHP:TAAS SALL */Sums all of the axes.
CHP:TAAS AX */Selects the X axis.
```

Query Syntax CHP:TAAS?

Return Type Character

Default OFF

Last Modified:

01dec2019 New command

[:SENSe]:CISPr:BAND <char>

(Read-Write) Set and query the status of the EMI mode's active CISPR band being measured .

See also, MEAS, FREQ:AXIS:LOG, BAND:EMI, BAND:EMI:AUTO, BAND:APD:RES, SWE:EMI:DWEL, BAND:APD:AUTO, SWE:EMI:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes EMI

Parameters

<char> Choose from:
A - Sets the EMI CISPR band to A band (9k - 150 kHz).
B - Sets the EMI CISPR band to B band (150k - 30 MHz).

C (Default) - Sets the EMI CISPR band to C band (30M - 300 MHz).
D - Sets the EMI CISPR band to D band (300M - 1 GHz).
E - Sets the EMI CISPR band to E band (1G - 18 GHz).

Examples

```
CISP:BAND A 'Sets A band as the EMI CISPR active band being measured.
CISP:BAND E 'Sets E band as the EMI CISPR active band being measured..
```

Query Syntax CISP:BAND?

Return Type character

Default C

Last Modified:

16-Sep-2022 New command (A.12.3x)

[:SENSe]:BANDwidth:VIDeo:AUTO <bool>

(Read-Write) Set and query the ON | OFF state of Video Bandwidth.

Relevant Modes PAA, SA

Parameters

<bool> Choose from:
O or **OFF** Set Video BW manually using BAND:VIDeo <num>
1 or **ON** Automatic Bandwidth setting.

Examples

```
BAND:VID:AUTO 1
```

Query Syntax :SENSe:BANDwidth:VIDeo:AUTO?

Return Type Boolean

Default ON

Last Modified:

31oct2019 Added PAA mode

[:SENSe]:BURSt:ALIGnment:NOW

This command has been replaced by [:SENSe]:ALIGnment:BURSt[:STATe]. Learn about superseded commands.

(Write-only) A RF Burst alignment is performed once just before the next sweep and applied to subsequent sweeps. If the FieldFox is not sweeping, a single sweep is triggered and alignment is performed.

Relevant Modes	IQA, SA & RTSA Modes All models with RF Burst triggering (All EXCEPT N9912A)
Parameters	None
Examples	BURS:ALIG:NOW
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

22nov2017	Updated as a superseded note & added IQA for backwards compatibility.
20-sep-2016	Add RTSA mode (A.09.50)
28-Mar-2013	New command (6.25)

[:SENSe]:BWIDth <num>

(Read-Write) Set and query the IF bandwidth for the measurement.

Relevant Modes	Pulse Measurements, NA
Parameters	
<numeric>	IF Bandwidth. Choices: 10 | 30 | 100 | 300 | 1000 | 10000 | 30000 | 100000 Minimum: 10 Hz Maximum: 100 kHz
Examples	**BWID 30** **BWID 10e4**
Query Syntax	[:SENSe]:BWIDth?
Return Type	numeric
Default	10000

Last modified:

31-Oct-2013	New command

[:SENSe]:CMEasurement:AVERage:ENABle <bool>

(Read-Write) Set and query the state of averaging for an SA channel measurement.

Relevant Modes SA

Parameters

<bool> Average State. Choose from:
OFF or **0** - Averaging OFF
ON or **1** - Averaging ON

Examples CME:AVER:ENAB 1

Query Syntax [:SENSe]:CMEasurement:AVERage:ENABle?

Return Type Boolean

Default ON

[SENSe]:CMEasurement:IBW <num>

(Read-Write) Set and query the Channel Integrating Bandwidth. This value specifies the range of integration used in calculating the power in the main channel. It is applied to both ACP and Channel Power Measurements in SA mode.

Relevant Modes SA

Parameters

<num> Channel Integrating Bandwidth value in Hz. Choose a number between the Minimum Integration Bandwidth (100 Hz) and Maximum Integration Bandwidth (3 GHz).

Examples SENS:CME:IBW 3e6

Query Syntax [:SENSe]:CMEasurement:IBW?

Return Type Numeric

Default 2 MHz

[:SENSe]:CMEasurement:RRCFilter <bool>

(Read-Write) Set and query the state of RRC (Root-Raised-Cosine) filter weighting for Channel Power and ACPR measurements.

Relevant Modes SA

Parameters

<bool> RRC State. Choose from:
OFF or **0** - RRC weighting OFF
ON or **1** - RRC weighting ON

Examples CME:RRCF 1

Query Syntax [:SENSe]:CMEasurement:RRCFilter?

Return Type Boolean

Default OFF

[:SENSe]:CMEasurement:RRCFilter:ALPHa <num>

(Read-Write) Set and query the value of RRC (Root-Raised-Cosine) filter weighting for Channel Power and ACPR measurements. When RRC weighting is applied to transmitted and received power, the edges of the channel are "smoothed" to help prevent interference.

Relevant Modes SA

Parameters

<num> RRC value. Choose a value between 0 (no smoothing) and 1 (most smoothing).

Examples CME:RRCF:ALPH .50

Query Syntax [:SENSe]:CMEasurement:RRCFilter:ALPHa?

Return Type Numeric

Default .22

[:SENSe]:CORRection:APPLy:NEARest

(Write only) Disables the interpolation of the current calibration and enables selection of the nearest start and stop calibration points.

Relevant Modes NA

Parameters

Examples

```
CORR:APPL:NEAR 'Disables interpolation and enables
applying the nearest start and stop calibration points
```

Query Syntax not applicable

Return Type not applicable

Default *disabled*

Last Modified:

20-Jan-2015 New command (A.12.4x)

[SENSe]:CORRection:LOSS:AFTer:TEMPerature <double>

(Read-Write) Set and query the loss correction values after the DUT (DUT In). Returns a the temperature correction in double numerical format.

See also CORRection:LOSS:AFTer[:VALue] and CORRection:LOSS:AFTer:ENABLed.

Relevant Modes NF

Parameters

<double numbers> Enter values in Centigrade, Fahrenheit, or Kelvin. All values converted to Kelvin.

Examples

```
:CORR:LOSS:AFT:TEMP 87.43 (Converts any value entered to Kelvin units.)
```

Query Syntax :CORRection:LOSS:AFTer:TEMPerature?

Return Type double numbers

Default 296.50K

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[SENSe]:CORRection:LOSS:BEFore:TEMPerature <double>

(Read-Write) Set and query the loss correction values before the DUT (DUT In). Returns a the temperature correction in double numerical format.

See also CORRection:LOSS:BEFore[:VALue] and CORRection:LOSS:BEFore:ENABLed.

Relevant Modes NF

Parameters

<double numbers> Enter values in Centigrade, Fahrenheit, or Kelvin. All values converted to Kelvin.

Examples

```
:CORR:LOSS:BEF:TEMP 87.43 (Converts any Centigrade or Fahrenheit value entered to Kelvin units.)
```

Query Syntax :CORRection:LOSS:BEFore:TEMPerature?

Return Type double numbers

Default 296.50K

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:CALReady:TYPE <char>

(Write-Read) Specifies the type of CalReady calibrations that is performed when the FieldFox is Preset.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<char> Choose from:

TWOPort - Corrects all four S-parameters. Requires a forward and reverse sweep, which causes slower trace measurements.

ERESponse - (Enhanced response) Corrects forward (S21 and S11) and reverse (S12 and S22) measurements separately. Therefore, when measurements in only one direction are required, this choice provides faster trace measurements than a full 2-port cal.

Note: There is no programming command to choose 'reciprocal' for Enhanced Response as there is from the User Interface.

Examples

```
CORR:COLL:CALR:TYPE TWOP
```

Query Syntax [:SENSe]:CORRection:CALReady:TYPE?

Default TWOPort

Last Modified:

18-Oct-2012	New command

[:SENSe]:CORRection:COAX <char>

(Read-Write) Set and query the state of Cable Correction in DTF measurements.

Relevant Modes CAT

Parameters

<char> Choose from:

MAN - DTF cable specifications are entered manually.

AUTO - DTF cable specifications are entered from a cable file.

Examples

```
CORR:COAX MAN
```

Query Syntax [:SENSe]: CORRection:COAX?

Return Type Character

Default MAN

[:SENSe]:CORRection:COEFficient[:DATA] <char>,<resp1,stim2>,<data>

(Read-Write) Set and query the correction coefficients (error terms) for the current calibration.

Relevant Modes CAT, NA

Parameters

<char> Error term. Choose from:

ES - Source match

ER - Reflection tracking

ED - Directivity

All models EXCEPT N9912A:

EL - Load Match

ET - Transmission tracking

EX - Isolation

<resp1,stim2> Response port, Stimulus port.

For N9912A, choose **1,1**.

For all other models, choose from 1 or 2 for each port.

- For ES, ER, or ED, the response port and the stimulus port must be the same.
- For EL, ET, or EX, the response port and the stimulus port must be different.

<data> Two values per data point: (Real value, Imaginary value), separated by commas.

Examples

```
'Writes 3 data points of complex source match data
CORR:COEF ES,1,1,2.626292E-01,1.823261E-01,2.537209E-
01,1.943861E-01,2.448751E-01,2.059776E-01
```

Query Syntax [:SENSe]: CORRection:COEFficient[:DATA]? <char>, <resp1, stim2>

Return Type Numeric

Default Not Applicable

Last Modified:

18-Oct-2012 Added new models

[:SENSe]:CORRection:COLLect:CKIT:CONNector:CATalog? <ckit>

(Read-Only) Returns connectors defined in the specified calibration kit (calkit) in the FieldFox.

A mechanical calkit usually defines one or more connectors. The standard in each kit identifies one (or more) of these conn
connector.

With ECal, it might be useful to know which connector type is on which port of the ECal module. As such, this query gets a
same connectors on its two ports).

ECal reference strings for attached ECal modules are included in the list. The format of ECal reference strings can be foun

See also SENS:CORR:COLL:CONN.

Relevant Modes CAT, NA, VVM

Parameters

<ckit> (String) Cal Kit for the specified port number. Case-sensitive.

E.g., "85563A"

Examples

```
CORR:COLL:CKIT:CONN:CAT?
'Returns comma-separated strings:
'The following is NOT a complete list
"85564A","85563A","85036E","85032E","W11644A","V11644A","U11644A","R11644A","Q1
3605","1250-3607","H7007S","Maury
8650S","85521A","85520A","85519A","85518A","85515A","85514A","85054D","85054B",
60001;90033;0"
'Examples of mechanical kit query results
sens:corr:coll:ckit:conn:cat? "N7556-60001;90033;0"
"2.92 mm -F-,50","2.92 mm -M-,50"
sens:corr:coll:ckit:conn:cat? "85564A"
"2.4 mm -M-,50"
sens:corr:coll:ckit:conn:cat? "85056K"
"2.92 mm -M-,50","2.92 mm -F-,50"
See Cal examples
```

Default Not Applicable

Last Modified:

12aug2019	Added command

[:SENSe]:CORRection:COLLect[:ACQuire]:INT <num>

(Write-Only) Measures the internal (Quick Cal) standard for the specified port. Prompt to leave the port OPEN for this step.

Use [:SENSe]:CORRection:COLLect:METHod:QCALibrate:CALibrate for both 1-port and 2-port QuickCal.

Use [:SENSe]:CORRection:COLLect[:ACQuire]:LOAD for the optional LOAD measurement.

This command is overlapped. This means that it will execute and, while the FieldFox measures the cal standard, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<num> Port number to calibrate.

N9912A - Choose 1 (RF OUT)

All others - Choose 1 or 2

Examples

```
CORR:COLL:INT 1
```

See Cal Examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 Modified for new models

[:SENSe]:CORRection:COLLect[:ACQuire]:LOAD <num>

(Write-Only) Measures the LOAD calibration standard that is connected to the specified port.

This command is overlapped. This means that it will execute and, while the FieldFox measures the cal standard, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<num> Port number to which the LOAD standard is connected.

N9912A - Choose 1 (RF OUT)

All other models - Choose 1 or 2

Examples

```
CORR:COLL:LOAD 1
```

See Cal Examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 Added new models

[:SENSe]:CORRection:COLLect[:ACQuire]:OPEN <num>

(Write-Only) Measures the OPEN calibration standard that is connected to the specified port.

This command is overlapped. This means that it will execute and, while the FieldFox measures the cal standard, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<num> Port number to which the OPEN standard is connected.

N9912A - Choose 1 (RF OUT)

All other models - Choose 1 or 2

Examples

```
CORR:COLL:OPEN 1
```

See Cal Examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 Added new models

[:SENSe]:CORRection:COLLect[:ACQuire]:SHORt <num>

(Write-Only) Measures the SHORT calibration standard that is connected to the specified port.

This command is overlapped. This means that it will execute and, while the FieldFox measures the cal standard, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<num> Port number to which the SHORT standard is connected.

N9912A - Choose 1 (RF OUT)

All other models - Choose 1 or 2

Examples

```
CORR:COLL:SHOR 1
```

See Cal Examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 Added new models

[:SENSe]:CORRection:COLLect[:ACQuire]:THRU <p1>,<p2>

(Write-Only) Measures the THRU calibration standard that is connected between the specified ports.

This can be used in any of the following Cal Methods:

- THRU Response - both reference planes are connected.
- Unknown THRU - any cable or adapter is used to connect both reference planes.
- Enhanced Response - both reference planes are connected.
- Quick Cal Enhanced Response - both reference planes are connected.

This command is overlapped. This means that it will execute and, while the FieldFox measures the cal standard, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1>,<p2> Port numbers to which the THRU standard is connected.

Choose 1,2

Examples

```
CORR:COLL:THRU 1,2
See Cal Examples
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012	Reviewed for new models

[:SENSe]:CORRection:COLLect:CKIT:LABel <port>,<ckit>

(Write-Read) Set and read the Cal Kit to use for the specified port number.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<port> Port number for the Cal Kit.

N9912A, choose 1

All other models, choose 1 or 2

<ckit> (String) Cal Kit for the specified port number. Case-sensitive.

Use [:SENSe]:CORRection:COLLect:CKIT:LABel:CATalog? to read a list of valid Cal Kits.

```
CORR:COLL:CKIT:LAB 1,"85052D"
See Cal examples
```

Using ECal

ECal modules that are connected to a FieldFox USB port with connectors that match the specified <port> are appended to the end of the list of valid Cal Kits that are returned using [:SENSe]:CORRection:COLLect:CKIT:LABel:CATalog?.

NOTE: The ECal module MUST be connected.

To specify an ECal module, instead of <ckit> use the following (String) syntax:

<model>;[serial];[char index]

- <model> - ECal module model number
- [serial] - Optional argument. If unspecified, then the first module detected with a matching model and characterization index will be used.
- [char index] - Optional argument. If unspecified, then 0 (factory characterization) is used.

The following are valid ECal specifiers:

```
'Specify all three arguments including User Char 1:
CORR:COLL:CKIT:LAB 1,"N4431A;02673;1"
'The first N4431A will be used with the Factory Characterization
CORR:COLL:CKIT:LAB 1,"N4431A"
'Use the Factory Char.
CORR:COLL:CKIT:LAB 1,"N4431A;02673"
'The first N4431A will be used with User Char 1
CORR:COLL:CKIT:LAB 1,"N4431A;;1"
```

See ECal example program

Query Syntax [:SENSe]:CORRection:COLLect:CKIT:LABel? <port>

Default Not Applicable

Last Modified:

26-Jul-2013	Added ECal
18-Oct-2012	Added new models

[:SENSe]:CORRection:COLLect:CKIT:LABel:CATalog?

(Read-Only) Reads the available Cal Kits in the FieldFox.

ECal reference strings for attached ECal modules are included in the list. The format of ECal reference strings can be found at [:SENSe]:CORRection:COLLect:CKIT:LABel.

Relevant Modes CAT, NA

Parameters None

Examples

```
CORR:COLL:CKIT:LAB:CAT?
'Returns comma-separated strings:
'The following is NOT a complete list
"85054D","85052D","85039B","85038A","85036B/E",
```

```
"85033D/E","85032F","85032B/E","85031B"
See Cal examples
```

Default Not Applicable

Last Modified:

26-Jul-2013	Edited for ECal
18-Oct-2012	Reviewed for new models

[:SENSe]:CORRection:COLLect:CONNector <port>,<type -gen-,imp>

(Write-Read) Set and read the DUT connector that will be connected to the specified FieldFox port.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<port> Port number for the Cal Kit.

N9912A, choose 1

All other models, choose 1 or 2

<type -gen-,imp> (String) Type, gender, and impedance of the DUT connector.

> **Type:** choose from: **Type N** | **3.5 mm** | **7 mm** | **7/16** | **Type F** | **WR-10** | **WR-15** | **WR-19** | **WR-22** | **WR-28** | **WR-42** | **WR-62** | **WR-75** | **WR-90** | **WR-112** | **WR-137** | **WR-187** | **WR-284** | **WR-650** | **Other**

- For QuickCal above 18 GHz, select **Other**.

> **Gender:** choose from one of the following when the connector type includes gender. 7mm, 7/16, and waveguide (WR-*nn*) do NOT include gender.

- **-M-** (Male)
- **-F-** (Female)
- **Be VERY careful with the leading and trailing dashes. Some text editors change the dash style.**
- Provide a space before each.

> **Impedance:** choose from: **50** or **75.**

- Provide a leading comma as in the following examples.

A regular expression/compact sequence for the connector name could be expressed as:

```
"[^\s].*( -M|F-)?,\d+"
```

Examples

```
CORR:COLL:CONN 1,"Type N -M-,50"
Correction:Collect:Connector 2, "7 mm,50"
CORR:COLL:CONN 1, "WR-10,1"
```

```
CORR:COLL:CONN 2, "WR-650,1"
```
See Cal examples

Query Syntax [:SENSe]:CORRection:COLLect:CONNector? <port>

Default Not Applicable

Last Modified:

22-Oct-2012 Updated for new models

16-Feb-2011 Updated

[:SENSe]:CORRection:COLLect:ECAL:AORient <bool>

(Write-Read) Set and read the state of auto orientation for a calibration using an ECal module.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<bool> Auto orientation state. Choose from the following:

ON or 1 - Automatically detect the orientation of the ECal module.

OFF or 0 - Connect the ECal module to the FieldFox ports as prompted during calibration. Select when using low power to the module.

Examples

```
CORR:COLL:ECAL:AOR 1
Sense:Correction:Collect:Ecal:Aorient off
```
See Cal examples

Query Syntax [:SENSe]:CORRection:COLLect:ECAL:AORient ?

Default ON or 1

Last Modified:

26-Jul-2013 New topic

[:SENSe]:CORRection:COLLect:ECAL:SIMPle <bool>

(Write-Read) Choose to receive a single prompt to connect the ECal or one for each reference plane.

Note: This command should be sent before sending any of the SENS:CORR:COLL:METH commands. See Calibration Commands.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<bool> Simple ECal state. Choose from the following:

ON or 1 (default) - The FieldFox assumes that both ports of the ECal module can be connected at both calibration reference planes. You therefore receive a single prompt to connect the ECal module to both ports.

OFF or 0- Select when physical restrictions prohibit the ECal module from being connected to both calibration reference planes simultaneously. You will receive separate prompts to connect the ECal module to Port 1, then to connect the ECal to Port 2.

Examples

```
CORR:COLL:ECAL:SIMP 1
Sense:Correction:Collect:Ecal:Simple off
```

See Cal examples

Query Syntax [:SENSe]:CORRection:COLLect:ECAL:SIMPle ?

Default ON or 1

Last Modified:

1-Nov-2013 New command

[:SENSe]:CORRection:COLLect:GUIDed:SCOunt?

(Read-Only) Returns the number of steps required to complete the guided calibration.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters None

Examples

```
CORR:COLL:GUID:SCO?
```

See Example Program

Default Not Applicable

Last Modified:

18-Oct-2012 New command

[:SENSe]:CORRection:COLLect:GUIDed:STEP:ACQuire <num>

(Write-Only) Measures the standard for the specified step number in the guided cal. Use [:SENSe]:CORRection:COLLect:GUIDed:SCOunt to read the number of steps required for the cal.

This command is overlapped. This means that it will execute and, while the FieldFox measures the cal standard, it will also accept new commands. Follow this command with *OPC? to cause the FieldFox to wait before accepting subsequent commands.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<num> Step number of the guided calibration.

Examples

```
CORR:COLL:GUID:STEP:ACQ 1
```

See Guided Cal Example

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 New command

[:SENSe]:CORRection:COLLect:GUIDed:STEP:PROMpt? <num>

(Read-Only) Returns the cal standard prompt to be used for the specified step number in the guided cal. Use [:SENSe]:CORRection:COLLect:GUIDed:SCOunt to read the number of steps required for the cal.

Use [:SENSe]:CORRection:COLLect:GUIDed:STEP:ACQuire to perform the cal std measurement.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<num> Step number of the guided calibration.

Examples

```
CORR:COLL:GUID:STEP:PROM? 1
```

See Guided Cal Example

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 New command

[:SENSe]:CORRection:COLLect:METHod:ERES <p1>,<p2>

(Write-Only) Sets the Cal method to Enhanced Response.

This Cal Method requires mating (insertable) DUT connectors. Use [:SENSe]:CORRection:COLLect:CONNector to change connector and gender.

Prompt for, then measure standards:

- OPEN, SHORt, and LOAD on the <p1> (source) port.
- THRU connection between the ports.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA

Parameters

<p1>,<p2> Port numbers to calibrate.
For N9912A with Opt 110, choose **1,2**.
For all other models with Full S-parameter option, choose **1,2** (forward) or **2,1** (reverse).

Examples

```
CORR:COLL:METH:ERES 1,2
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012	Added new models

[:SENSe]:CORRection:COLLect:METHod:ORESponse <p1>

(Write-Only) During a Guided calibration, sets the Cal method to 1-port Response using an Open standard.

Prompt for, then measure standards:

- Open on the <p1> port.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA (NOT available on N9912A)
To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1> Port number to be calibrated.

Examples

```
CORR:COLL:METH:ORES 2
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

25-Mar-2014	New command

[:SENSe]:CORRection:COLLect:METHod:QCALibrate:CALibrate <p1>[,p2]

(Write-Only) Sets the Cal Method to 1-port or 2-port QuickCal.

Note: QuickCal commands do **not** apply to N995x/6xA or B model FieldFoxes.

For 1-port QuickCal:

- Prompt for INT Stds on <p1>, then optional LOAD on <p1>

For 2-port QuickCal with Insertable connectors, performs QSOLT.

- Prompt for INT Stds on <p1>, then optional LOAD on <p1>, then Flush THRU

For 2-port QuickCal with Non-Insertable connectors, performs SOLR.

- Prompt for INT Stds on <p1> and <p2>, then optional LOAD on <p1> and <p2>, then ANY THRU.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1> First port to calibrate.

- For N9912A, choose 1.
- For all other models, choose 1 or 2.

[p2] For all models with Full S-parameter option, second port to calibrate.

Choose 1 or 2 (alternate to <p1>).

Examples

```
CORR:COLL:METH:QCAL:CAL 1,2
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

02apr2019	Added B model content
18-Oct-2012	Added new models

[:SENSe]:CORRection:COLLect:METHod:QCALibrate:ERESponse <p1>,<p2>

(Write-Only) Sets the Cal Method to QuickCal - Enhanced Response. Calibrates either forward (S11/S21) or reverse (S22/S12) measurements.

This Cal Method requires mating (insertable) DUT connectors. Use [:SENSe]:CORRection:COLLect:CONNector to change connector and gender.

Requires QuickCal Option.

- Prompt to "Leave ports OPEN", then use [:SENSe]:CORRection:COLLect[:ACQuire]:INT to measure internal OPEN and SHORT.
- Optional - Prompt to "Connect LOAD to ports", then use [:SENSe]:CORRection:COLLect[:ACQuire]:LOAD to measure LOAD.
- For 2-port Cal - Prompt to connect THRU between ports, then use [:SENSe]:CORRection:COLLect[:ACQuire]:THRU to measure THRU

Note: QuickCal commands do **not** apply to N995x/6xA or B model FieldFoxes.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes N9912A with Opt 110: CAT, NA - ONLY <**1,2**> are supported (NOT **2,1** reverse)

All other models with Full S-parameter option, CAT, NA modes.

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1> First port.

- For N9912A, choose 1.
- For all other models, choose 1 or 2.

<p2> Second port to calibrate.

- For N9912A, choose 2.
- For all other models, choose 1 or 2 (alternate to <p1>).

Examples

```
CORR:COLL:METH:QCAL:ERES 1,2
```

See Cal example

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

02apr2019	Added B model content
18-Oct-2012	Added new models

[:SENSe]:CORRection:COLLect:METHod:QSOLt <p1,p2>

(Write-Only) Sets the Cal Method to 2-port QSOLT. Calibrate for sweeps in BOTH directions.

This Cal Method is NOT available on N9912A and all other models without full 2-port S-parameter option.

This Cal Method requires mating (insertable) DUT connectors. Use [:SENSe]:CORRection:COLLect:CONNector to change connector and gender.

Prompt for, then measure standards:

- OPEN, SHORt, and LOAD on the <p1> (source) port. (This selection is NOT available from the user interface.)
- FLUSH THRU connection between the ports.

This Cal Method requires mating (insertable) connectors. Use [:SENSe]:CORRection:COLLect:CONNector to change connector and gender.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT and NA Mode

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1,p2> Port numbers to calibrate.

Choose **1,2** or **2,1**

Examples

```
CORR:COLL:METH:QSOLt 1,2
```

See Cal example

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 Added new models

[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:OPEN <p1>

(Write-Only) Sets the Cal method to Open Response using a Mechanical Cal Kit.

Prompt for, then measure standards:

- OPEN on the <p1> port.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1> Port number to be calibrated.

For N9912A and all other models without full 2-port S-parameter option, choose 1.

For all models with full 2-port S-parameter option, choose 1 or 2.

Examples

```
CORR:COLL:METH:OPEN 2
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012	Edited for new models

[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:SHORt <p1>

(Write-Only) Sets the Cal method to Short Response using a Mechanical Cal Kit.

Prompt for, then measure standards:

- SHORt on the <p1> port.
- THRU connection between the ports.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1> Port number to be calibrated.

For N9912A and all other models without full 2-port S-parameter option, choose 1.

For all models with full 2-port S-parameter option, choose 1 or 2.

Examples

```
CORR:COLL:METH:SHOR 1
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012	Edited for new models

[:SENSe]:CORRection:COLLect:METHod[:RESPonse]:THRU <ports>

(Write-Only) Sets the Cal method to THRU Response (also known as Normalization cal).

Prompt for, then measure standard:

- THRU connection between the ports.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<ports> Port numbers to be calibrated. Choose **1,2**

Examples
```
CORR:COLL:METH:THRU 1,2
```
See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 Edited for new models

[:SENSe]:CORRection:COLLect:METHod:SOLT1 <p1>

(Write-Only) Sets the Cal Method to 1-port OSL calibration.

Prompt for, then measure standards:

- OPEN, SHORt, and LOAD on the <p1> (source) port.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1> Port number to be calibrated.

For N9912A, choose 1.

For all other models, choose 1 or 2.

Examples
```
CORR:COLL:METH:SOLT1 1
```
See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 Edited for new models

[:SENSe]:CORRection:COLLect:METHod:SOLT2 <p1,p2>

(Write-Only) Sets the Cal Method to 2-port SOLT calibration. Calibrate for sweeps in BOTH directions.

This Cal Method is NOT available on N9912A and all other models without Opt 122.

NOTE: [:SENSe]:CORRection:COLLect:METHod:SOLR is usually a more accurate 2-port calibration.
Learn more about FieldFox Cal Methods using SCPI.

Prompt for, then measure standards:

- OPEN, SHORt, and LOAD on BOTH ports.

- THRU connection between the ports. This should be a known (characterized) THRU standard.

Relevant Modes CAT and NA Mode

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1,p2> Port numbers to be calibrated. Choose 1,2.

Examples

```
CORR:COLL:METH:SOLT2 1,2
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012 Edited for new models

[:SENSe]:CORRection:COLLect:METHod:SOLR <p1>,<p2>

(Write-Only) Sets the Cal Method to Short-Open-Load-Reciprocal Thru. (Also known as 2-port Unknown Thru).

This Cal Method is NOT available on the N9912A.

Prompt for, then measure standards:

- OPEN, SHORt, and LOAD on the <p1> and <p2> source ports.
- THRU connection between the ports.

The Unknown Thru Standard:

- Can have up to about 40 dB of loss and long electrical length.
- Must be reciprocal: S21=S12.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1>,<p2> Port numbers to be calibrated. Choose 1,2

Examples

```
CORR:COLL:METH:SOLR 1,2
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012	Edited for new models

[:SENSe]:CORRection:COLLect:METHod:SRESponse <p1>

(Write-Only) During a Guided calibration, sets the Cal method to 1-port Response using a Short standard. Prompt for, then measure standards:

- SHORt on the <p1> port.

Learn more about FieldFox Cal Methods using SCPI.

Relevant Modes CAT, NA (NOT available on N9912A)

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1> Port number to be calibrated.

Examples

```
CORR:COLL:METH:SRES 2
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

25-Mar-2014	New command

[:SENSe]:CORRection:COLLect:METHod:TRL <p1,p2>

(Write-Only) Sets the Cal Method to 2-port TRL calibration. Calibrate for sweeps in BOTH directions. This Cal Method is NOT available on N9912A.

Use the Guided Calibration interface to:

1. Select the DUT connectors: [:SENSe]:CORRection:COLLect:CONNector
2. Select a TRL Cal Kit: [:SENSe]:CORRection:COLLect:CKIT:LABel
3. Query number of steps:[:SENSe]:CORRection:COLLect:GUIDed:SCOunt
4. Display prompts: [:SENSe]:CORRection:COLLect:GUIDed:STEP:PROMpt
5. Acquire standards: [:SENSe]:CORRection:COLLect:GUIDed:STEP:ACQuire

Relevant Modes CAT and NA Mode

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<p1,p2> Port numbers to be calibrated. Choose 1,2.

Examples

```
CORR:COLL:METH:TRL 1,2
```

See Cal examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

13-Nov-2013 New command

[:SENSe]:CORRection:COLLect:METHod:TYPE?

(Read-Only) Query the current calibration type.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

Examples

```
CORR:COLL:METH:TYPE?
```

See Cal examples

Default Depends on installed options.

Last Modified:

18-Oct-2012 Edited for new models

[:SENSe]:CORRection:COLLect:OISolation <bool>

(Write-Read) Set and query the state of the Omit Isolation setting.

The optional isolation step of a calibration corrects for crosstalk which is the internal signal leakage between the test ports. The additional Isolation step measures Load standards that are connected to both FieldFox test ports.

Perform an isolation calibration when you are testing a device with high insertion loss, such as the stop band of a filter or a switch in the open position. See FieldFox User's Guide for more information.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<bool> Choose from the following:

ON or 1 - Omit the Isolation step.

OFF or 0 - Perform the Isolation step

Examples

```
CORR:COLL:OIS 1
```

```
Sense:Correction:Collect:Oisolation off
```

Query Syntax [:SENSe]:CORRection:COLLect:OISolation?

Default ON or 1

Last Modified:

1-Nov-2013	New command

[:SENSe]:CORRection:COLLect:SAVE <num>

(Write-Only) Ends the calibration, computes the error terms, and turns correction ON.

Relevant Modes CAT, NA

To Cal in VVM mode, perform a Cal in CAT or NA mode, then switch to VVM mode.

Parameters

<num> Cal Set to which the Cal is saved. Choose **0**

Examples

```
CORR:COLL:SAVE 0
```

See Cal Examples

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

18-Oct-2012	Reviewed for new models

[:SENSe]:CORRection:DUT:MODe <char>

(Read-Write) Set and query the DUT uncertainty setup values being measured.

See also [:SENSe]:CORRection:DUT:INGamma, [:SENSe]:CORRection:DUT:OUTGamma, [:SENSe]:CORRection:DUT:SPEC, [:SENSe]:CORRection:DUT:DISTribution.

See also, MMEMory:LOAD:DUT and MMEMory:STORe:DUT.

Relevant Modes NF

Parameters

<character> DUT mode uncertainty settings. Choose from:

SPOT- Sets the DUT mode to Spot, where you can customize the DUT uncertainty values.

TABL - Time per point can be set, but other integration SCPIs are not settable.

Examples

```
CORR:DUT:MOD SPOT
CORR:DUT:MOD TABL
```

Query Syntax CORRection:DUT:MODe?

Return Type Character

Default SPOT

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:DUT:SPOT:DISTribution

(Read-Write) Set and query the DUT specified fixed value. This value indicates the nature of the entered value relative to the population of values it represents. (i.e., Fixed, Rayleigh, or Uniform (Uniform in Circle).

Note: Only available when CORR:DUT:MOD is set to SPOT.

See also [:SENSe]:CORRection:DUT:MODe, [:SENSe]:CORRection:DUT:SPOT:INGamma, [:SENSe]:CORRection:DUT:SPOT:OUTGamma, [:SENSe]:CORRection:DUT:SPOT:SPECify.

See also, MMEMory:LOAD:SPOT:DUT and MMEMory:STORe:SPOT:DUT.

Relevant Modes NF

Parameters

<character> DUT Spot mode's distribution value. Choose from:

RAYL - The probability density function (pdf) of the magnitude of the reflection coefficient is a Rayleigh distribution. This is normally the case for specified values when the overall mismatch is due to several interacting impedance transitions within the device.

UNIF - A distribution that was historically used in the industry, before the Rayleigh research, as documented in Keysight Application Note 1449-3, but is rarely accurate. Refer to https://literature.cdn.keysight.com/litweb/pdf/5988-9215EN.pdf.

FIX - The reflection coefficient magnitude is always at the given level. This is often the case when measured values are used.

Examples

```
CORR:DUT:SPOT:DIST FIX
CORR:DUT:SPOT:DIST RAYL
```

Query Syntax CORRection:DUT:SPOT:DIST?

Return Type Character

Default FIX

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:DUT:INGamma

(Read-Write) Set and query the DUT's input 50Ω match, Γ (0.000 to 1.000).

Note: Only available when CORR:DUT:MOD is set to SPOT.

See also [:SENSe]:CORRection:DUT:MODe, [:SENSe]:CORRection:DUT:SPOT:OUTGamma, [:SENSe]:CORRection:DUT:SPOT:SPEC, [:SENSe]:CORRection:DUT:SPOT:DISTribution.

See also, MMEMory:LOAD:SPOT:DUT and MMEMory:STORe:SPOT:DUT.

Relevant Modes NF

Parameters

<numeric> DUT spot mode's input 50Ω match, Γ value. Choose from:
Minimum of 0.000 up to
Maximum of 1

Examples

```
CORR:DUT:SPOT:ING .2
CORR:DUT:SPOT:ING 0.347
```

Query Syntax CORRection:DUT:SPOT:INGamma?

Return Type Numeric

Default 0.000E+00

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:DUT:SPOT:OUTGamma

(Read-Write) Set and query the DUT's output 50Ω match, Γ (0.000 to 1.000).

Note: Only available when CORR:DUT:MOD is set to SPOT.

See also [:SENSe]:CORRection:DUT:MODe, [:SENSe]:CORRection:DUT:SPOT:NGamma, [:SENSe]:CORRection:DUT:SPOT:SPEC, [:SENSe]:CORRection:DUT:SPOT:DISTribution.

See also, MMEMory:LOAD:SPOT:DUT and MMEMory:STORe:SPOT:DUT.

Relevant Modes NF

Parameters

<numeric> DUT spot mode's, output 50Ω match, Γ value. Choose from:
Minimum of 0.000 up to
Maximum of 1

Examples

```
CORR:DUT:SPOT:OUTG .2
CORR:DUT:SPOT:OUTG 0.347
```

Query Syntax CORRection:DUT:SPOT:OUTGamma?

Return Type Numeric

Default 0.000E+00

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:DUT:SPOT:SPECify

(Read-Write) Set and query the DUT specified fixed value. This value indicates the nature of the entered value relative to the population of values it represents.

Note: Only available when CORR:DUT:MOD is set to SPOT.

See also [:SENSe]:CORRection:DUT:MODe, [:SENSe]:CORRection:DUT:ISPOT:INGamma, [:SENSe]:CORRection:DUT:SPOT:OUTGamma, [:SENSe]:CORRection:DUT:SPOT:DISTribution.

See also, MMEMory:LOAD:DUT and MMEMory:STORe:DUT.

Relevant Modes NF

Parameters

<character> DUT Spot mode's fixed value. Choose from:

MAX - Use this if this value represents the largest possible reflection coefficient for the population of devices to which the DUT belongs. This is true for "does not exceed" specifications.

PCTL95 - Use this if 95% of the population has a lower reflection coefficient than the value entered. This is the case for "2 standard deviation" (2s) type specifications.

PCTL80 - Use this if 80% of the population has a lower reflection coefficient than the value entered.

MED or **MEAN** - Use this if this value represents the median / mean reflection coefficient for the population of devices to which the DUT belongs.

FIX - Use this if the value is a measured value for the DUT.

Examples

```
CORR:DUT:SPOT:SPEC PCTL95
CORR:DUT:SPOT:SPEC MED
```

Query Syntax CORRection:DUT:SPOT:SPEC?

Return Type Character

Default FIX

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:ENR:AUTOload <bool>

(Read-Write) When the CORR:ENR:MOD is set to Smart (Auto) and Auto Load ENR is enabled (ON == Default), upon connection of a Smart Noise Source, the ENR Data will be automatically loaded into the ENR Table. This overwrites any existing data in the ENR Table data.

If set to OFF, the ENR Table menu will not be modified and no data will be loaded into any ENR table automatically. ENR tables may still be populated from the ENR Table menu using the CORR:ENR:NOIS:AUTO SCPI.

See also, CORR:ENR:MOD, CORR:ENR:NOIS:AUTO, CORR:ENR:NOIS:CONN, CORR:TCOL, and CORR:ENR:NOIS:STAT.

Relevant Modes NF

Parameters

<boolean>

Examples

```
CORR:ENR:AUTO ON */Sets the ENR to autoload the ENR data.
CORR:ENR:AUTO 0 */Disables the ENR autoload for the ENR data.
```

Query Syntax CORR:ENR:AUTO?

Return Type **ON (1)** - ENR is Autoload enabled

OFF (0) - ENR data Autoload is disabled

Default ON (1)

Last Modified:

06sept2022	Added: NF mode updates for smart source feature (A.12.5x)

[:SENSe]:CORRection:ENR:EXTRapolated?

(Read-Only) Queries the ENR table's extrapolation status (Extrapolation Enabled (1)/ Extrapolation Disabled (0).

Note: The ENR extrapolation status is only relevant when the CORRection:ENR:MODe is set to Table.

See also, [:SENSe]:CORRection:UCALibration:CANCel, [:SENSe]:CORRection:UCALibration:RUN, and [:SENSe]:CORRection:RCALibration:RUN, [:SENSe]:CORRection:RCALibration:CANCel, [:SENSe]:CORRection:UCALibration[:STATe], [:SENSe]:CORRection:USER:INTerpolated?, and [:SENSe]:CORRection:RCALibration[:STATe]?.

Relevant Modes NF

Parameters

<not applicable>

Examples

```
n/a
```

Query Syntax CORR:USER:EXTR?

Return Type **0 (False)** - Extrapolation is disabled

1 (True) - Extrapolation is enabled

Default not applicable

Last Modified:

01-june-2018 Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:ENR:MODe <char>

(Read-Write) Set and query the ENR mode preference. If two noise sources are connected (USB Smart Noise Source and normal), this parameter will decide which one is used for measurement and calibration.

NOTE:

- Only the first noise source connected will be recognized. If a second source is connected it is ignored.
- To learn more about Smart Noise Sources, refer to https://www.keysight.com/us/en/products/noise-figure-analyzers-noise-sources/noise-sources.html.

See also [:SENSe]:CORRection:ENR:SPOT:ENR, [:SENSe]:CORRection:ENR:UNCertainty, [:SENSe]:CORRection:ENR:ONGamma, [:SENSe]:CORRection:ENR:OFFGamma, [:SENSe]:CORRection:ENR:COVerage, [:SENSe]:CORRection:ENR:SPECify, [:SENSe]:CORRection:ENR:DISTribution, CORR:ENR:NOIS:STAT, CORR:ENR:NOIS:CONN, CORR:ENR:NOIS:AUTO, CORR:ENR:AUTO, and CORR:TCOL.

Relevant Modes NF

Parameters

<character> ENR mode. Choose from:

SMARt - When set to SMARt mode, the Noise Source Control menu is enabled and accessible.

To learn more about Smart Noise Sources, refer to https://www.keysight.com/us/en/products/noise-figure-analyzers-noise-sources/noise-sources.html.

SPOT - You can enter ENR data for the noise source you are using as a single spot value.
The single spot value is used either for measurements at a single frequency, or for measurements across a range of frequencies that is narrow enough such that the ENR value does not change significantly across that range.

TABLe - You can enter ENR data for the noise source you are using as a table of values. The values held in the table can be used for measurements at a range of frequencies as well as at a fixed frequency. But, other integration values cannot be set.

Examples

```
CORR:ENR:MOD SPOT */Turns on the Smart source (default)
CORR:ENR:MOD TABL */Sets ENR data source to TABL
```

Query Syntax CORRection:ENR:MODe?

Return Type Character

Default TAB

Last Modified:

06sept2022	Added: NF mode updates for smart source feature (A.12.5x)
01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:ENR:NOISe:AUTOload

(Write-Only) Enables the reloading of ENR data, when used with the CORR:ENR:NOIS:CONN SCPI. This action overwrites any existing data in the ENR table.

See also, CORR:ENR:NOIS:CONN, CORR:ENR:NOIS:STAT, CORR:ENR:MOD, CORR:TCOL, and CORR:ENR:AUTO.

Relevant Modes NF

Parameters n/a

Examples

```
CORR:ENR:NOIS:AUTO */SCPI tells the instrument reload the
ENR data when used with the
                    CORR:ENR:NOIS:CONN SCPI.
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

06sept2022	Added: NF mode updates for smart source feature (A.12.5x)

[:SENSe]:CORRection:ENR:NOISe:CONNect

(Write-Only) Enables the User to attempt to connect to the USB Noise Source. This process is automatically controlled by the FieldFox, which takes about 10-20s. If this automatic detection fails, this softkey will enable the user to connect manually.

NOTE: When this command is used with the CORR:ENR:NOIS:CONN SCPI enables the reloading of ENR table data. This action overwrites the existing ENR table data.

See also, CORR:ENR:NOIS:AUTO, CORR:ENR:MOD, CORR:ENR:NOIS:STAT, CORR:TCOL, and CORR:ENR:AUTO.

Relevant Modes NF

Parameters n/a

Examples

```
CORR:ENR:NOISE:CONN */SCPI tells the instrument to check
for a compatible noise source
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

06sept2022 Added: NF mode updates for smart source feature (A.12.5x)

[:SENSe]:CORRection:ENR:NOISe:STATe <char>

(Read-Write) Set and query the ENR mode state preference. .

NOTE:
1) If no noise source is detected, this SCPI command is ignored.

2) If noise source preference (CORR:ENR:MOD) is set to SPOT or TABLe, this SCPI will ***not*** control the noise source drive state.

See also CORR:ENR:NOIS:AUTO, CORR:ENR:MOD, CORR:ENR:NOIS:CONN, CORR:TCOL, and CORR:ENR:AUTO.

Relevant Modes NF

Parameters

<character> ENR mode. Choose from:

NORMal - When noise source detected and CORR:ENR:MOD is set to SMARt, CORR:ENR:NOIS:STAT is set to NORMal (default setting), the application controls the noise source on/off automatically during measurement and calibration.

ON - When this function is set to ON, the application turns on the noise source and no valid results are provided .

OFF - When this function is set to OFF, the application turns off the noise source and no valid results are provided .

Examples

```
CORR:ENR:NOIS:STAT SMAR */Turns on the Smart source (default)
```

Query Syntax CORRection:ENR:MODe?

Return Type Character

Default NORM

Last Modified:

06sept2022 Added: NF mode updates for smart source feature (A.12.5x)

[:SENSe]:CORRection:ENR:SPOT:COVerage <char>

(Read-Write) Set and query the value of the ENR uncertainty coverage (1σ, 2σ, or 3σ).

Note: Only available when CORR:ENR:MOD is set to SPOT.

See also [:SENSe]:CORRection:ENR:MODe, [:SENSe]:CORRection:ENR:SPOT:ENR, [:SENSe]:CORRection:ENR:SPOT:UNCertainty, [:SENSe]:CORRection:ENR:SPOT:ONGamma, [:SENSe]:CORRection:ENR:SPOT:OFFGamma, [:SENSe]:CORRection:ENR:SPOT:SPECify, [:SENSe]:CORRection:ENR:SPOT:DISTribution, and [:SENSe]:CORRection:TCOLd.

Relevant Modes NF

Parameters

<character> ENR Spot mode's ENR uncertainty coverage value. Choose from:

SD1 - 1σ (About 68% of the values fall within 1 standard deviation of the mean.)

SD2 - 2σ (About 95% of the values fall within 2 standard deviations of the mean.)

SD3 - 3σ (About 99.7% of the values fall within 3 standard deviations of the mean.)

Examples

```
CORR:ENR:SPOT:COV SD1
CORR:ENR:SPOT:COV SD3
```

Query Syntax CORRection:ENR:SPOT:COV?

Return Type Character

Default SD2

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:ENR:DISTribution <char>

(Read-Write) Set and query the ENR specified fixed value. This value indicates the nature of the entered value relative to the population of values it represents. (i.e., Fixed, Rayleigh, or Uniform (Uniform in Circle).

Note: Only available when CORR:ENR:MOD is set to SPOT.

See also [:SENSe]:CORRection:ENR:MODe, [:SENSe]:CORRection:ENR:SPOT:ENR, [:SENSe]:CORRection:ENR:UNCertainty, [:SENSe]:CORRection:ENR:ONGamma, [:SENSe]:CORRection:ENR:OFFGamma, [:SENSe]:CORRection:ENR:COVerage, [:SENSe]:CORRection:ENR:SPECify, and [:SENSe]:CORRection:TCOLd.

Relevant Modes NF

Parameters

<character> ENR Spot mode's distribution value. Choose from:

RAYL - The probability density function (pdf) of the magnitude of the reflection coefficient is a Rayleigh distribution. This is normally the case for specified values when the overall mismatch is due to several interacting impedance transitions within the device.

UNIF - A distribution that was historically used in the industry, before the Rayleigh research, as documented in Keysight Application Note 1449-3, but is rarely accurate. Refer to https://literature.cdn.keysight.com/litweb/pdf/5988-9215EN.pdf.

FIX - The reflection coefficient magnitude is always at the given level. This is

often the case when measured values are used.

Examples

```
CORR:ENR:DIST FIX
CORR:ENR:DIST RAYL
```

Query Syntax CORRection:ENR:DIST?

Return Type Character

Default FIX

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:ENR:SPOT:ENR <num>

(Read-Write) Set and query the ENR Spot value in dB.

Note: Only available when CORR:ENR:MOD is set to SPOT.

See also [:SENSe]:CORRection:ENR:MODe, [:SENSe]:CORRection:ENR:SPOT:UNCertainty, [:SENSe]:CORRection:ENR:SPOT:ONGamma, [:SENSe]:CORRection:ENR:SPOT:OFFGamma, [:SENSe]:CORRection:ENR:SPOT:COVerage, [:SENSe]:CORRection:ENR:SPOT:SPECify, [:SENSe]:CORRection:ENR:SPOT:DISTribution, and [:SENSe]:CORRection:TCOLd.

Relevant Modes NF

Parameters

<numeric> ENR Spot mode. Choose from:
Minimum of -100 dB up to
Maximum of 100 dB

Examples

```
CORR:ENR:SPOT:ENR 20
CORR:ENR:SPOT:ENR -10.507
```

Query Syntax CORRection:ENR:SPOT:ENR?

Return Type Numeric

Default 1.5000+01

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:ENR:SPOT:OFF:Gamma <num>

(Read-Write) Set and query the Off value (cold) of the ENR spot value's 50Ω match, Γ (0.000 to 1.000).

Note: Only available when CORR:ENR:MOD is set to SPOT.

See also [:SENSe]:CORRection:ENR:MODe, [:SENSe]:CORRection:ENR:SPOT:ENR, [:SENSe]:CORRection:ENR:SPOT:UNCertainty, [:SENSe]:CORRection:ENR:SPOT:ONGamma, [:SENSe]:CORRection:ENR:SPOT:COVerage, [:SENSe]:CORRection:ENR:SPOT:SPECify, [:SENSe]:CORRection:ENR:SPOT:DISTribution, and [:SENSe]:CORRection:TCOLd.

Relevant Modes NF

Parameters

<numeric> ENR Spot mode's 50Ω match, Γ Off value (cold). Choose from:
Minimum of 0.000 up to
Maximum of 1

Examples

```
CORR:ENR:SPOT:OFFG .2
CORR:ENR:SPOT:OFFG 0.347
```

Query Syntax CORRection:ENR:SPOT:OFFGamma?

Return Type Numeric

Default 0.000E+00

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:ENR:SPOT:ONGamma <num>

(Read-Write) Set and query the On value (hot) of the ENR spot value's 50Ω match, Γ (0.000 to 1.000).

Note: Only available when CORR:ENR:MOD is set to SPOT.

See also [:SENSe]:CORRection:ENR:MODe, [:SENSe]:CORRection:ENR:SPOT:ENR, [:SENSe]:CORRection:ENR:SPOT:UNCertainty, [:SENSe]:CORRection:ENR:SPOT:OFFGamma, [:SENSe]:CORRection:ENR:SPOT:COVerage, [:SENSe]:CORRection:ENR:SPOT:SPECify, [:SENSe]:CORRection:ENR:SPOT:DISTribution, and [:SENSe]:CORRection:TCOLd.

Relevant Modes NF

Parameters

<numeric> ENR Spot mode's 50Ω match, Γ On value (hot). Choose from:
Minimum of 0.000 up to
Maximum of 1

Examples

```
CORR:ENR:SPOT:ONG .2
CORR:ENR:SPOT:ONG 0.347
```

Query Syntax CORRection:ENR:SPOT:ONGamma?

Return Type Numeric

Default 0.000E+00

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:ENR:SPOT:SPEC <char>

(Read-Write) Set and query the ENR specified fixed value. This value indicates the nature of the entered value relative to the population of values it represents.

Note: Only available when CORR:ENR:MOD is set to SPOT.

See also [:SENSe]:CORRection:ENR:MODe, [:SENSe]:CORRection:ENR:SPOT:ENR, [:SENSe]:CORRection:ENR:SPOT:UNCertainty, [:SENSe]:CORRection:ENR:SPOT:ONGamma, [:SENSe]:CORRection:ENR:SPOT:OFFGamma, [:SENSe]:CORRection:ENR:SPOT:COVerage, [:SENSe]:CORRection:ENR:SPOT:DISTribution, and [:SENSe]:CORRection:TCOLd.

Relevant Modes NF

Parameters

<character> ENR Spot mode's fixed value. Choose from:

MAX - Use this if this value represents the largest possible reflection coefficient for the population of devices to which the DUT belongs. This is true for "does not exceed" specifications.

PCTL95 - Use this if 95% of the population has a lower reflection coefficient than the value entered. This is the case for "2 standard deviation" (2s) type specifications.

PCTL80 - Use this if 80% of the population has a lower reflection coefficient than the value entered.

MED or **MEAN** - Use this if this value represents the median / mean reflection coefficient for the population of devices to which the DUT belongs.

FIX - Use this if the value is a measured value for the DUT.

Examples

```
CORR:ENR:SPOT:SPEC PCTL80
CORR:ENR:SPOT:SPEC MED
```

Query Syntax CORRection:ENR:SPOT:SPEC?

Return Type Character

Default FIX

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:ENR:SPOT:UNCertainty <num>

(Read-Write) Set and query the spot value ENR uncertainty value in dB.

Note: Only available when CORR:ENR:MOD is set to SPOT.

See also [:SENSe]:CORRection:ENR:MODe, [:SENSe]:CORRection:ENR:SPOT:ENR, [:SENSe]:CORRection:ENR:SPOT:ONGamma, [:SENSe]:CORRection:ENR:OFF:SPOT:Gamma, [:SENSe]:CORRection:ENR:SPOT:COVerage, [:SENSe]:CORRection:ENR:SPOT:SPECify, [:SENSe]:CORRection:ENR:SPOT:DISTribution, and [:SENSe]:CORRection:TCOLd.

Relevant Modes NF

Parameters

<numeric> ENR Spot mode's uncertainty value. Choose from:
Minimum of -100 dB up to
Maximum of 100 dB

Examples

```
CORR:ENR:SPOT:UNC 20
CORR:ENR:SPOT:UNC -10.507
```

Query Syntax CORRection:ENR:SPOT:UNCertainty?

Return Type Numeric

Default 0.000E+00

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:EXTension:PORT1 <num>

(Read-Write) Set and query the port extension value on port 1.

Use [:SENSe]:CORRection:EXTension[:STATe] to turn port extensions ON and OFF.

Use [:SENSe]:CORRection:RVELocity:COAX to set velocity factor.

Relevant Modes CAT, NA

Parameters

<bool> Port extension in seconds. Choose a value between -10.0 to +10.0.

Examples `CORR:EXT:PORT1 1e-10`

Query Syntax [:SENSe]:CORRection:EXTension:PORT1?

Return Type Numeric

Default 0

Last Modified:

10-Aug-2010 New command (5.30)

[:SENSe]:CORRection:EXTension:PORT2 <num>

(Read-Write) Set and query the port extension value on port 2.

Use [:SENSe]:CORRection:EXTension[:STATe] to turn port extensions ON and OFF.

Use [:SENSe]:CORRection:RVELocity:COAX to set velocity factor.

Relevant Modes CAT, NA

Parameters

<bool> Port extension in seconds. Choose a value between -10.0 to +10.0.

Examples `CORR:EXT:PORT2 1e-10`

Query Syntax [:SENSe]:CORRection:EXTension:PORT2?

Return Type Numeric

Default 0

Last Modified:

10-Aug-2010 New command (5.30)

[:SENSe]:CORRection:EXTension[:STATe] <bool>

(Read-Write) Set and query the port extension ON | OFF state.

Use [:SENSe]:CORRection:EXTension:PORT1 and [:SENSe]:CORRection:EXTension:PORT2 to set port extensions value.

Use [:SENSe]:CORRection:RVELocity:COAX to set velocity factor.

Relevant Modes CAT, NA

Parameters

<bool> Port extensions state. Choose from:

0 or **OFF** - Port extensions OFF

1 or **ON** - Port extensions ON

Examples
```
CORR:EXT 1
```

Query Syntax [:SENSe]:CORRection:EXTension[:STATe]?

Return Type Boolean

Default OFF

Last Modified:

10-Aug-2010 New command (5.30)

[:SENSe]:CORRection:GAIN2[:INPut][:MAGNitude] <num>

(Read-Write) Set and query the Power Meter Offset value.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<bool> Offset value in dB. A positive value compensates for a component with loss. A negative value compensates for a component with gain.

Examples
```
CORR:GAIN2 3
```

Query Syntax [:SENSe]:CORRection:GAIN2?

Return Type Numeric

Default 0

Last modified:

1-Apr-2014 Added CPM

31-Oct-2013 Added Pulse

[:SENSe]:CORRection:GAIN2:STATe <bool>

(Read-Write) Set and query the ON | Off state of Power Meter Offset.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<bool> Offset state. Choose from:

0 or **OFF** - Offset OFF

1 or **ON** - Offset ON

Examples
```
CORR:GAIN2:STAT 1
```

Query Syntax [:SENSe]:CORRection:GAIN2:STATe?

Return Type Boolean

Default 0

Last modified:

1-Apr-2014 Added CPM

31-Oct-2013 Added Pulse

[:SENSe]:CORRection:IMPedance[:INPut][:MAGNitude] <num>

(Read-Write) Set and query the system impedance.

Relevant Modes NA

Parameters

<num> System impedance. Choose either 50 or 75.

Examples

```
CORR:IMP 75
```

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

Return Type Numeric

Default 50

[:SENSe]:CORRection:LOSS:AFTer:ENABled <bool>

(Read-Write) Set and query the enable/disable state of the noise figure correction loss after the DUT. Use CORRection:LOSS:AFTer to set the correction loss level after the DUT (DUT Out).

Relevant Modes NF

Parameters

<bool> Enable/Disable the DUT Out state. Choose from:

ON (or 1) - The correction loss value stated using the CORRection:LOSS:AFTer command.

OFF (or 0) -The correction loss after the DUT is disabled.

Examples

```
:CORR:LOSS:AFT:ENAB 1
correction:loss:after:enabled off
```

Query Syntax :CORRection:LOSS:AFTer:ENABled?

Return Type Boolean

Default OFF

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[SENSe]:CORRection:LOSS:AFTer:TEMPerature <double>

(Read-Write) Set and query the loss correction values after the DUT (DUT In). Returns a the temperature correction in double numerical format.

See also CORRection:LOSS:AFTer[:VALue] and CORRection:LOSS:AFTer:ENABLed.

Relevant Modes NF

Parameters

<double numbers> Enter values in Centigrade, Fahrenheit, or Kelvin. All values converted to Kelvin.

Examples

```
:CORR:LOSS:AFT:TEMP 87.43 (Converts any value entered to Kelvin units.)
```

Query Syntax :CORRection:LOSS:AFTer:TEMPerature?

Return Type double numbers

Default 296.50K

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:LOSS:AFTer[:VALue] <double>

(Read-Write) Set and query the amount of noise figure correction loss after the DUT input.

Use CORRection:LOSS:AFTer:ENABled to set the correction loss level after the DUT input.

Relevant Modes NF

Parameters

<double> Set the amount of noise figure loss correction after the DUT input. Choose from:

-100 to 100 dB - The correction loss value stated using the CORRection:LOSS:AFTer:ENABled command.

0.00 dB - Default

Examples

```
:CORR:LOSS:AFT -15.55
```

Query Syntax :CORRection:LOSS:AFTer?

Return Type Double

Default OFF

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:LOSS:BEFore:ENABled <bool>

(Read-Write) Set and query the enable/disable state of the noise figure correction loss before the DUT (DUT In).

Use CORRection:LOSS:BEFore[:VALue] to set the correction loss level before the DUT (DUT In).

Relevant Modes NF

Parameters

<bool> Enable/Disable the DUT In state. Choose from:

ON (or 1) - The correction loss value stated using the CORRection:LOSS:BEFore[:VALue] command.

OFF (or 0) -The correction loss before the DUT (DUT In) is disabled.

Examples

```
:CORR:LOSS:BEF:ENABL 1
  off
```

Query Syntax :CORRection:LOSS:BEFore:ENABled?

Return Type Boolean

Default OFF

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:LOSS:BEFore[:VALue] <double>

(Read-Write) Set and query the amount of noise figure correction loss before the DUT input.

Use CORRection:LOSS:BEFore:ENABled to set the correction loss level before the DUT input.

Relevant Modes NF

Parameters

<double> Set the amount of noise figure loss correction before the DUT input. Choose from:

-100 to 100 dB - The correction loss value stated using the CORRection:LOSS:BEFore:ENABled command.

0.00 dB - Default

Examples

```
:CORR:LOSS:BEF -15.55
```

Query Syntax :CORRection:LOSS:BEFore?

Return Type Double

Default OFF

Last Modified:

01-june-2018 Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:LOSS:COAX <num>

(Read-Write) Set and query the electrical loss of transmission cable to be used with DTF measurements.

Relevant Modes CAT

Parameters

<num> Loss in dB.

Examples

```
CORR:LOSS:COAX .5
```

Query Syntax [:SENSe]:CORRection:LOSS:COAX?

Return Type Numeric

Default 0

[:SENSe]:CORRection:LOSS:WAVeguide

Type topic text here.

[:SENSe]:CORRection:MEDium <char>

(Write-Read) Set and query the calibration media type.

If the measurement requires electrical delay or port extensions, available ONLY in NA Mode, you must specify the waveguide Media Type and Cutoff Frequency. These settings are needed to help specify dispersion. They are NOT used if electrical delay and port extensions are both zero.

Relevant Modes NA, CAT

Parameters

<bool> Media type. Choose from the following:

COAX - Calibration standards are coaxial.

WAVeguide - Calibration standards are waveguide.

Examples

```
CORR:MED WAV
Sense:Correction:Medium Waveguide
See Cal examples
```

Query Syntax [:SENSe]:CORRection:MEDium?

Default COAX

Last Modified:

1-Nov-2013	New command

[:SENSe]:CORRection:PAMPLifier:MODe <char>

(Read-Write) Set and query the Preamplifier uncertainty setup values being measured.

See also [:SENSe]:CORRection:PAMPLifier:INGamma, [:SENSe]:CORRection:PAMPLifier:OUTGamma, [:SENSe]:CORRection:PAMPLifier:SPEC, [:SENSe]:CORRection:PAMPLifier:DISTribution.

See also, MMEMory:LOAD:PAMPLifier and MMEMory:STORe:PAMPLifier.

Relevant Modes NF

Parameters

<character> Preamplifier mode uncertainty settings. Choose from:

SPOT- Sets the Preamplifier mode to Spot, where you can customize the ENR values for your device.

TABL - Time per point can be set, but other integration SCPIs are not settable.

Examples

```
CORR:PAMPL:MOD SPOT
CORR:PAMPL:MOD TABL
```

Query Syntax CORRection:PAMPL:MODe?

Return Type Character

Default SPOT

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:PAMPLifier:SPOT:DISTribution <char>

(Read-Write) Set and query the preamplifier specified fixed value. This value indicates the nature of the entered value relative to the population of values it represents. (i.e., Fixed, Rayleigh, or Uniform (Uniform in Circle).

Note: Only available when CORR:PAMP:MOD is set to SPOT.

See also [:SENSe]:CORRection:PAMPLifier:SPOT:INGamma, [:SENSe]:CORRection:PAMPLifier:SPOT:OUTGamma, [:SENSe]:CORRection:PAMPLifier:MODe, [:SENSe]:CORRection:PAMPLifier:SPOT:SPEC.

See also, MMEMory:LOAD:PAMPLifier and MMEMory:STORe:PAMPLifier.

Relevant Modes NF

Parameters

<character> Preamplifier Spot mode's distribution value. Choose from:

RAYL - The probability density function (pdf) of the magnitude of the reflection coefficient is a Rayleigh distribution. This is normally the case for specified values when the overall mismatch is due to several interacting impedance transitions within the device.

UNIF - A distribution that was historically used in the industry, before the Rayleigh research, as documented in Keysight Application Note 1449-3, but is rarely accurate. Refer to https://literature.cdn.keysight.com/litweb/pdf/5988-9215EN.pdf.

FIX - The reflection coefficient magnitude is always at the given level. This is often the case when measured values are used.

Examples

```
CORR:PAMP:SPOT:DIST FIX
CORR:PAMP:SPOT:DIST RAYL
```

Query Syntax CORRection:PAMP:SPOT:DIST?

Return Type Character

Default FIX

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:PAMPLifier:SPOT:INGamma <num>

(Read-Write) Set and query the preamplifier's input 50Ω match, Γ (0.000 to 1.000).

Note: Only available when CORR:PAMP:MOD is set to SPOT.

See also [:SENSe]:CORRection:PAMPLifier:MODe, [:SENSe]:CORRection:PAMPLifier:SPOT:OUTGamma, [:SENSe]:CORRection:PAMPLifier:SPOT:SPEC, [:SENSe]:CORRection:PAMPLifier:SPOT:DISTribution.

See also, MMEMory:LOAD:PAMPLifier and MMEMory:STORe:PAMPLifier.

Relevant Modes NF

Parameters

<numeric> Preamplifier spot mode's input 50Ω match, Γ value. Choose from:

Minimum of 0.000 up to

Maximum of 1

Examples

```
CORR:PAMP:SPOT:ING .2
CORR:PAMP:SPOT:ING 0.347
```

Query Syntax CORRection:PAMP:SPOT:INGamma?

Return Type Numeric

Default 0.000E+00

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:PAMPLifier:SPOT:OUTGamma <num>

(Read-Write) Set and query the preamplifier's output 50Ω match, Γ (0.000 to 1.000).

Note: Only available when CORR:PAMP:MOD is set to SPOT.

See also [:SENSe]:CORRection:PAMPLifier:SPOT:INGamma, [:SENSe]:CORRection:PAMPLifier:MODe, [:SENSe]:CORRection:PAMPLifier:SPOT:SPEC, [:SENSe]:CORRection:PAMPLifier:SPOT:DISTribution.

See also, MMEMory:LOAD:PAMPLifier and MMEMory:STORe:PAMPLifier.

Relevant Modes NF

Parameters

<numeric> Preamplifier spot mode's, output 50Ω match, Γ value. Choose from:
Minimum of 0.000 up to
Maximum of 1

Examples

```
CORR:PAMP:SPOT:OUTG .2
CORR:PAMP:SPOT:OUTG 0.347
```

Query Syntax CORRection:PAMP:SPOT:OUTGamma?

Return Type Numeric

Default 0.000E+00

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:PAMPLifier:SPOT:SPEC <char>

(Read-Write) Set and query the preamplifier's specified fixed value. This value indicates the nature of the entered value relative to the population of values it represents.

Note: Only available when CORR:PAMP:MOD is set to SPOT.

See also [:SENSe]:CORRection:AMPLifier:SPOT:INGamma, [:SENSe]:CORRection:PAMPLifier:SPOT:OUTGamma, [:SENSe]:CORRection:PAMPLifier:MODe, [:SENSe]:CORRection:PAMPLifier:SPOT:DISTribution.

See also, MMEMory:LOAD:PAMPLifier and MMEMory:STORe:PAMPLifier.

Relevant Modes NF

Parameters

<character> Preamplifier Spot mode's fixed value. Choose from:

MAX - Use this if this value represents the largest possible reflection coefficient for the population of devices to which the preamplifier belongs. This is true for "does not exceed" specifications.

PCTL95 - Use this if 95% of the population has a lower reflection coefficient than the value entered. This is the case for "2 standard deviation" (2s) type specifications.

PCTL80 - Use this if 80% of the population has a lower reflection coefficient than the value entered.

MED or **MEAN** - Use this if this value represents the median / mean reflection coefficient for the population of devices to which the preamplifier belongs.

FIX - Use this if the value is a measured value for the preamplifier.

Examples

```
CORR:AMP:SPOT:SPEC PCTL95
CORR:AMP:SPOT:SPEC MED
```

Query Syntax CORRection:AMP:SPOT:SPEC?

Return Type Character

Default FIX

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:RCALibration:CANCel

(Write-Only) Cancels the receiver calibration.

See also, [:SENSe]:CORRection:UCALibration:CANCel, [:SENSe]:CORRection:UCALibration:RUN, [:SENSe]:CORRection:RCALibration:RUN, [:SENSe]:CORRection:UCALibration[:STATe], [:SENSe]:CORRection:UCALibration:INTerpolated?, [:SENSe]:CORRection:ENR:EXTRapolated?, and [:SENSe]:CORRection:RCALibration[:STATe]?.

Note: You can use the IEEE command *.OPC? to query the status of your calibrations.

Relevant Modes NF

Parameters

<not applicable>

Examples

```
CORR:RCAL:CANC 'Cancels the receiver calibration, when a
SCPI is used to run the Receiver calibration.
```

Query Syntax no query

Return Type not applicable

Default not applicable

Last Modified:

01-june-2018 Added Opt. 356 NF (10.3)

[:SENSe]:CORRection:RCALibration:RUN

(Write-Only) Runs the receiver calibration.

See also, [:SENSe]:CORRection:UCALibration:CANCel, [:SENSe]:CORRection:UCALibration:RUN, [:SENSe]:CORRection:RCALibration:CANCel, [:SENSe]:CORRection:UCALibration[:STATe], [:SENSe]:CORRection:ENR:EXTRapolated?, [:SENSe]:CORRection:UCALibration:INTerpolated?, and [:SENSe]:CORRection:RCAlibration[:STATe]?.

Note: You can use the IEEE command *.OPC? to query the status of your calibrations.

Relevant Modes NF

Parameters

<not applicable>

Examples

```
CORR:RCAL:RUN 'Runs the user calibration
```

Query Syntax no query

Return Type not applicable

Default not applicable

Last Modified:

01-june-2018 Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:RCALibration[:STATe]?

(Read-Only) Queries the receiver calibration's status (Enabled (1)/Disabled (0).

See also, [:SENSe]:CORRection:UCALibration:CANCel, [:SENSe]:CORRection:UCALibration:RUN, [:SENSe]:CORRection:UCALibration[:STATe], [:SENSe]:CORRection:RCALibration:RUN, [:SENSe]:CORRection:RCALibration:CANCel, [:SENSe]:CORRection:UCALibration:INTerpolated?, and [:SENSe]:CORRection:ENR:EXTRapolated?.

Relevant Modes NF

Parameters

<not applicable>

Examples

```
n/a
```

Query Syntax CORR:RCAL?

Return Type **0 (False)** - Receiver calibration is disabled
1 (True) - Receiver calibration is enabled

Default not applicable

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:RVELocity:COAX <num>

(Read-Write) Set and query the velocity factor to be used with DTF measurements (CAT mode) and with Port Extensions (NA mode).

Relevant Modes CAT, NA

Parameters

<num> Velocity factor. Choose a number between **0** and **1**
.66 = polyethylene dielectric
.7= PTFE dielectric

Examples

```
CORR:RVEL:COAX .7
```

Query Syntax [:SENSe]: CORRection:RVELocity:COAX?

Return Type Numeric

Default 1

Last Modified:

27-Apr-2012	Edited for PTFE
10-Aug-2010	New command for NA mode (5.30)

[:SENSe]:CORRection[:STATe] <bool>

(Read-Write) Set and query the correction ON | OFF state.
This will turn ALL calibration OFF, including "Cal Ready". This can NOT be done from the user-interface.
See also [:SENSe]:CORRection:USER[:STATe]

Relevant Modes CAT, NA

Parameters

<bool> Correction state. Choose from:
0 or **OFF** - Error Correction OFF
1 or **ON** - Error Correction ON

Examples	CORR 1
Query Syntax	[:SENSe]:CORRection[:STATe]?
Return Type	Boolean
Default	ON

Last Modified:

18-Oct-2012	Edited for new models

[:SENSe]:CORRection:TCOLd <num>

(Read-Write) Set and query the ENR temperature (cold). All temperature values Centigrade and Fahrenheit are converted to Kelvin.

NOTE: If you are using a U1832x or 1833x Series smart source and if [:SENSe]:CORRection:ENR:MODe is set to SMARt, you can query the T Cold temperature from the USB Noise Source.

See also [:SENSe]:CORRection:ENR:MODe, [:SENSe]:CORRection:ENR:SPOT:ENR, [:SENSe]:CORRection:ENR:UNCertainty, [:SENSe]:CORRection:ENR:ONGamma, [:SENSe]:CORRection:ENR:COVerage, [:SENSe]:CORRection:ENR:SPECify, [:SENSe]:CORRection:ENR:DISTribution, CORR:ENR:NOIS:AUTO, CORR:ENR:NOIS:CONN, CORR:ENR:NOIS:STAT, CORR:ENR:AUTO and [:SENSe]:CORRection:ENR:OFFGamma.

Relevant Modes	NF
Parameters	
<numeric>	ENR temperature (cold). Choose from: Minimum of 0.000 up to Maximum of 2.965 MK
Examples	`CORR:TCOL .2` `CORR:TCOL 0.347`
Query Syntax	CORRection:TCOLd?
Return Type	Numeric
Default	2.9650E+02

Last Modified:

07sept2022	Added smart source capability (A.12.5x)
01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:UCALibration:CANCel

(Write-Only) Cancels the user calibration.

See also, [:SENSe]:CORRection:UCALibration:RUN, [:SENSe]:CORRection:RCALibration:RUN,

[:SENSe]:CORRection:RCALibration:CANCel, [:SENSe]:CORRection:UCALibration:INTerpolated?, [:SENSe]:CORRection:ENR:EXTRapolated?, [:SENSe]:CORRection:UCALibration[:STATe], and [:SENSe]:CORRection:RCALibration[:STATe]?.

Note: You can use the IEEE command *.OPC? to query the status of your calibrations.

Relevant Modes NF

Parameters

<not applicable>

Examples

```
CORR:UCAL:CALC 'Cancels the user calibration, when a SCPI is used to run the User calibration.
```

Query Syntax no query

Return Type not applicable

Default not applicable

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:UCALibration:INTerpolated?

(Read-Only) Queries the user calibration's interpolation status (Interpolation Enabled (1)/ Interpolation Disabled (0).

Note: The User Cal interpolation is only relevant when a User Cal is applied.

See also, [:SENSe]:CORRection:UCALibration:CANCel, [:SENSe]:CORRection:UCALibration:RUN, [:SENSe]:CORRection:RCALibration:RUN, [:SENSe]:CORRection:RCALibration:CANCel, [:SENSe]:CORRection:UCALibration[:STATe], [:SENSe]:CORRection:ENR:EXTRapolated?, and [:SENSe]:CORRection:RCALibration[:STATe]?.

Relevant Modes NF

Parameters

<not applicable>

Examples

```
n/a
```

Query Syntax CORR:UCAL:INT?

Return Type **0 (False)** - Interpolation is disabled
1 (True) - Interpolation is enabled

Default not applicable

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:UCALibration:RUN

(Write-Only) Runs the user calibration.

See also, [:SENSe]:CORRection:UCALibration:CANCel, [:SENSe]:CORRection:UCALibration[:STATe], [:SENSe]:CORRection:RCALibration:RUN, [:SENSe]:CORRection:RCALibration:CANCel, [:SENSe]:CORRection:UCALibration:INTerpolated?, [:SENSe]:CORRection:ENR:EXTRapolated?, and [:SENSe]:CORRection:RCALibration[:STATe]?.

Note: You can use the IEEE command *.OPC? to query the status of your calibrations.

Relevant Modes NF

Parameters

<not applicable>

Examples

```
CORR:UCAL:RUN 'Runs the user calibration
```

Query Syntax no query

Return Type not applicable

Default not applicable

Last Modified:

01-june-2018 Added Opt. 356 NF(10.3)

[:SENSe]:CORRection:UCALibration[:STATe] <bool>

(Read-Write) Set and query the Apply User Calibration (correction) ON | OFF state.

See also, [:SENSe]:CORRection:UCALibration:CANCel, [:SENSe]:CORRection:UCALibration:RUN, and [:SENSe]:CORRection:RCALibration:RUN, [:SENSe]:CORRection:RCALibration:CANCel, [:SENSe]:CORRection:UCALibration:INTerpolated?, [:SENSe]:CORRection:ENR:EXTRapolated?, and [:SENSe]:CORRection:RCALibration[:STATe]?.

Relevant Modes NF

Parameters

<bool> User calibration state. Choose from:

0 or **OFF** - User calibration OFF (do not apply)

1 or **ON -** User calibration ON (do not apply)

Examples

```
CORR:UCAL 1
```

Query Syntax [:SENSe]:CORRection:UCALibration[:STATe]?

Return Type Boolean

Default On after calibration

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3) and new command

[:SENSe]:CORRection:UNCertainty:BARS

(Read-Write) Set and query the uncertainty bars ON | OFF state.

See also, [:SENSe]:CORRection:UNCertainty:JITTer, [:SENSe]:CORRection:UNCertainty:MISMatch, [:SENSe]:CORRection:UNCertainty:ENR, [:SENSe]:CORRection:UNCertainty:COVerage, and [:SENSe]:CORRection:UNCertainty:CALibration

For trace-related uncertainty commands, refer to CALCulate:[SELected]TRACe:UNCertainty:DATA?, CALCulate:[SELected]:TRACe:UNCertainty:UPPer:DATA?, and CALCulate:[SELected]:TRACe:UNCertainty:LOWer:DATA?.

Relevant Modes NF

Parameters

<bool> Uncertainty bars state. Choose from:

0 or **OFF** - Uncertainty bars OFF

1 or **ON -** Uncertainty bars ON

Examples

```
CORR:UNC:BARS 1
```

Query Syntax [:SENSe]:CORRection:UNCertainty:BARS?

Return Type Boolean

Default Off (0)

Last Modified:

18-Oct-2012	Edited for new models

[:SENSe]:CORRection:UNCertainty:CALibration <bool>

(Read-Write) Set and query the user calibration uncertainty ON | OFF state.

See also, [:SENSe]:CORRection:UNCertainty:JITTer, [:SENSe]:CORRection:UNCertainty:MISMatch, [:SENSe]:CORRection:UNCertainty:ENR, [:SENSe]:CORRection:UNCertainty:COVerage, and [:SENSe]:CORRection:UNCertainty:BARS

For trace-related uncertainty commands, refer to CALCulate:[SELected]TRACe:UNCertainty:DATA?, CALCulate:[SELected]:TRACe:UNCertainty:UPPer:DATA?, and CALCulate:[SELected]:TRACe:UNCertainty:LOWer:DATA?.

Relevant Modes NF

Parameters

<bool> User calibration uncertainty state. Choose from:

0 or **OFF** - User calibration uncertainty OFF

1 or **ON -** User calibration uncertainty ON

Examples

```
CORR:UNC:CALC ON 'Can only be enabled when a user calibration has been completed
```

Query Syntax [:SENSe]:CORRection:UNCertainty:CALibration?

Return Type Boolean

Default Off (0)

Last Modified:

18-Oct-2012	Edited for new models

[:SENSe]:CORRection:UNCertainty:COVerage <char>

(Read-Write) Set and query the value of the current settings uncertainty contributions coverage (1σ, 2σ, or 3σ).

See also, [:SENSe]:CORRection:UNCertainty:JITTer, [:SENSe]:CORRection:UNCertainty:MISMatch, [:SENSe]:CORRection:UNCertainty:ENR, [:SENSe]:CORRection:UNCertainty:CALibration, and [:SENSe]:CORRection:UNCertainty:BARS

For trace-related uncertainty commands, refer to CALCulate:[SELected]TRACe:UNCertainty:DATA?, CALCulate:[SELected]:TRACe:UNCertainty:UPPer:DATA?, and CALCulate:[SELected]:TRACe:UNCertainty:LOWer:DATA?.

Relevant Modes NF

Parameters

<character> Current settings uncertainty coverage value. Choose from:

SD1 - 1σ (About 68% of the values fall within 1 standard deviation of the mean.)

SD2 - 2σ (About 95% of the values fall within 2 standard deviations of the mean.)

SD3 - 3σ (About 99.7% of the values fall within 3 standard deviations of the mean.)

Examples

```
CORR:UNC:COV SD1
CORR:UNC:COV SD3
```

Query Syntax CORRection:UNC:COV?

Return Type Character

Default SD2

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:UNCertainty:ENR<bool>

(Read-Write) Set and query the ENR source uncertainty ON | OFF state.

See also, [:SENSe]:CORRection:UNCertainty:JITTer, [:SENSe]:CORRection:UNCertainty:MISMatch, [:SENSe]:CORRection:UNCertainty:CALibration, [:SENSe]:CORRection:UNCertainty:COVerage, and [:SENSe]:CORRection:UNCertainty:BARS

For trace-related uncertainty commands, refer to CALCulate:[SELected]TRACe:UNCertainty:DATA?, CALCulate:[SELected]:TRACe:UNCertainty:UPPer:DATA?, and CALCulate:[SELected]:TRACe:UNCertainty:LOWer:DATA?.

Relevant Modes NF

Parameters

<bool> ENR source uncertainty state. Choose from:

0 or **OFF** - Source uncertainty OFF

1 or **ON** - Source uncertainty ON

Examples

```
CORR:UNC:ENR 0
```

Query Syntax [:SENSe]:CORRection:UNCertainty:ENR?

Return Type Boolean

Default On (1)

Last Modified:

18-Oct-2012	Edited for new models

[:SENSe]:CORRection:UNCertainty:JITTer <bool>

(Read-Write) Set and query the jitter uncertainty ON | OFF state.

See also, [:SENSe]:CORRection:UNCertainty:ENR, [:SENSe]:CORRection:UNCertainty:MISMatch, [:SENSe]:CORRection:UNCertainty:CALibration, [:SENSe]:CORRection:UNCertainty:COVerage, and [:SENSe]:CORRection:UNCertainty:BARS

For trace-related uncertainty commands, refer to CALCulate:[SELected]TRACe:UNCertainty:DATA?, CALCulate:[SELected]:TRACe:UNCertainty:UPPer:DATA?, and CALCulate:[SELected]:TRACe:UNCertainty:LOWer:DATA?.

Relevant Modes NF

Parameters

<bool> Jitter uncertainty state. Choose from:

0 or **OFF** - Jitter OFF

1 or **ON** - Jitter uncertainty ON

Examples

```
CORR:UNC:JITT 0
```

Query Syntax [:SENSe]:CORRection:UNCertainty:JITTer?

Return Type Boolean

Default On (1)

Last Modified:

18-Oct-2012 Edited for new models

[:SENSe]:CORRection:UNCertainty:MISMatch <bool>

(Read-Write) Set and query the mismatch uncertainty ON | OFF state.

See also, [:SENSe]:CORRection:UNCertainty:JITTer, [:SENSe]:CORRection:UNCertainty:ENR, [:SENSe]:CORRection:UNCertainty:CALibration, [:SENSe]:CORRection:UNCertainty:COVerage, and [:SENSe]:CORRection:UNCertainty:BARS

For trace-related uncertainty commands, refer to CALCulate:[SELected]TRACe:UNCertainty:DATA?, CALCulate:[SELected]:TRACe:UNCertainty:UPPer:DATA?, and CALCulate:[SELected]:TRACe:UNCertainty:LOWer:DATA?.

Relevant Modes NF

Parameters

<bool> Mismatch uncertainty state. Choose from:

0 or **OFF** - Mismatch uncertainty OFF

1 or **ON** - Mismatch uncertainty ON

Examples

```
CORR:UNC:MISM 0
```

Query Syntax [:SENSe]:CORRection:UNCertainty:MISMatch?

Return Type Boolean

Default On (1)

Last Modified:

18-Oct-2012 Edited for new models

[:SENSe]:CORRection:UNCertainty:QUEStionable?

(Read-Only) Reads the status of the uncertainty questionable state (1 or 0).

Relevant Modes NF

Examples

```
CORR:UNC:QUES?
```

Return Type Numeric:

0 (False) - The sweep uncertainty values are valid (not questionable)

1 (True) - The sweep uncertainty values are questionable

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:CORRection:WAVeguide:STANdard <char>

(Read-Write) Set and query the waveguide standard to use for the measurement. See also [:SENSe]:CORRection:MEDium.

Relevant Modes CAT

Parameters

<char> Waveguide standard. Choose from:
USER - A predefined user standard.
WR137
WR90
WR42
WR112

Examples
```
CORR:WAV:STAN WR137
```

Query Syntax [:SENSe]:CORRection:WAVeguide:STANdard?

Return Type Character

Default FieldFox model dependent.

Last Modified:

25-Mar-2014	New command

[:SENSe]:CORRection:USER[:STATe] <bool>

(Read-Write) Set and query the User Calibration (correction) ON | OFF state.

N9912A - This includes Preset Cal correction.

All other models - This does NOT include "Cal Ready" correction, which can ONLY be turned OFF using [:SENSe]:CORRection[:STATe].

Relevant Modes CAT, NA

Parameters

<bool> User calibration state. Choose from:
0 or **OFF** - User calibration OFF
1 or **ON** - User calibration ON

Examples
```
CORR 1
```

Query Syntax [:SENSe]:CORRection:USER[:STATe]?

Return Type Boolean

Default On after calibration

Last Modified:

18-Oct-2012 Edited for new models

[:SENSe]:CORRection:WGCutoff <num>

(Read-Write) Set and query the waveguide cutoff frequency. This is the minimum frequency of the waveguide. See also [:SENSe]:CORRection:MEDium

Relevant Modes NA, CAT

Parameters

<num> Waveguide cutoff frequency in Hz. The value is usually on the data sheet of the Waveguide Cal Kit.

Examples

```
CORR:WGC 100e6
```

Query Syntax [:SENSe]:CORRection:WGCutoff?

Return Type Numeric

Default 18 GHz

Last Modified:

1-Nov-2013 New command

[:SENSe]:CORRection:ZERO:REFerence <char>

(Read-Write) Set and query the reference to use when zero is performed.

Relevant Modes VVM

Parameters

<char> VVM Zero reference. Choose from:
OPEN - Display Phase = 0.0 Deg when zeroed.
SHORt - Display Phase = 180.0 Deg when zeroed

Examples

```
CORR:ZERO:REF SHOR
```

Query Syntax [:SENSe]:CORRection:ZERO:REFerence?

Return Type Character

Default OPEN

Last Modified:

22-Sept-2014 New command

[:SENSe]:CORRection:ZERO:STATe <char>

(Read-Write) Set and query the Zero State of a VVM measurement.

Relevant Modes VVM

Parameters

<char> VVM Zero state. Choose from:
OFF - Set Zeroing OFF
ON - Zero the measurement

Examples
```
CORR:ZERO:STAT OFF
```

Query Syntax [:SENSe]:CORRection:ZERO:STATe?

Return Type Character

Default OFF

[:SENSe]:DIF:BANDwidth <num>

(Read-Write) Set and query the digital IF bandwidth of the instrument. This parameter is closely related to the sample rate.

Relevant Modes IQA

Parameters

<numeric> Minimum: 1
Maximum: 10000000

Examples
```
DIF:BAND 1000
DIF:BAND 5 kHz
DIF:BAND 5e3
```

Query Syntax :DIF:BAND?

Return Type numeric

Default 10000000

Last Modified:

22oct2017 New IQA command (A.10.1x)

[:SENSe]:DENSity:BPLevel

(Read-Write) Set and query the Blue Limit percent of the RTSA Mode Density trace display state.

Relevant Modes RTSA

Parameters

<num> Set the Blue limit percentage to a value between 0.05 and 100.

If you attempt to set the limit below 0.05, the instrument's blue limit will be set to 0.05 percent.

Examples

```
DENS:BPL 10  'Sets the blue limit percent to 10 percent.
DENS:BPL .05  'Sets the blue limit to its minimum (default) percent of 0.05.
```

Query Syntax DENS:BPL?

Return Type num

Default 5.0E-02

Last Modified:

19-sep-2016 Added new cmd for RTSA mode (A.09.50).

[:SENSe]:DENSity:RPLevel

(Read-Write) Set and query the red Limit percent of the RTSA Mode Density trace display state.

Relevant Modes RTSA

Parameters

<num> Set the red limit percentage to a value between 0.05 and 100.

If you attempt to set the limit below 0.05, the instrument's red limit will be set to 0.05 percent.

Examples

```
DENS:RPL 10  'Sets the red limit percent to 10 percent.
DENS:RPL .05  'Sets the red limit to its minimum (default) percent of 0.05.
```

Query Syntax DENS RPL?

Return Type num

Default 1.00E+02

Last Modified:

19-sep-2016 Added new cmd for RTSA mode (A.09.50).

[:SENSe]:DETector:FUNCtion <char>

(Read-Write) Set and query the SA detector function.

Relevant Modes SA

Parameters

<bool> Choose from:
AUTO
NORMal
POSitive
NEGative
SAMPle
AVERage

Examples
```
DET:FUNC POS
```

Query Syntax [:SENSe]:DETector:FUNCtion?

Return Type Character

Default AUTO

[:SENSe]:DETector:TRACe{1:4}:FUNCtion

(Read-Write) Set and query the RTSA detector and trace (1:4) function.

Relevant Modes RTSA

Parameters

<bool> Choose from:
AUTO
NORMal
POSitive
NEGative
SAMPle
AVERage - (RMS Average)

Examples
```
DET:TRAC2:FUNC POS
```

Query Syntax [:SENSe]:DETector:TRACe:FUNCtion?

Return Type Character

Default AUTO

Last Modified:

19-sep-2016 Added new command for RTSA (A.09.50).

[SENSe]:DUT:SIDEband <char>

(Read-Write) Set and query the sideband of the displayed trace.
See DUT setting commands for NF mode.

Relevant Modes NF

Parameters

<char> Choose from:
LSB - lower sideband
USB - upper sideband
DSB - double sideband

Examples
```
DUT:SIDE LSB
DUT:SIDE DSB
```

Query Syntax SENSe:DUT:SIDEband?

Return Type Character

Default DUT Type dependent. See :MODE:DUT.

Last Modified:

01-june-2018 Added Opt. 356 NF(10.3)

[:SENSe]:DUT[:TYPe] <char>

(Read-Write) Set and query the DUT mode (i.e., Amplifier, Downconverter, Upconverter, or Multi-Stage Converter).
See DUT setting commands for NF mode.

Relevant Modes NF

Parameters

<char> Choose from:
AMPL - Amplifier
DCON - Downconverter
UCON. - Upconverter
MCON - Multi-Stage Converter

Examples
```
DUT AMP
DUT MCON
```

Query Syntax SENSe:DUT:TYPe?

Return Type Character

Default AMPL

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:EDETector:TRACe{1:4}[:FUNCtion] <char>

(Read-Write) Set and query the display state of a EMI band detector trace.

See also, MEAS, CISP:BAND, FREQ:AXIS:LOG, BAND:APD:RES, BAND:EMI:RES, BAND:EMI:AUTO, BAND:APD:AUTO, SWE:EMI:DWEL, SWE:APD:DWEL, TRAC<v>:APD:INPUT.

Relevant Modes EMI (Opt 361)

Parameters

{1:4} == <n> Trace number. If unspecified, value is set to 1.
For EMI mode Choose from 1 to 4.

<char> These arguments (PEAK | QPD | EAV) cannot be reassigned to another trace, but the trace can be enabled or disabled.
PEAK - Peak positive detection.
QPD - Quasi-peak detection.
EAVerage - EMI average detection.
NOTE: Trace 4 can be assigned to any of the three choices above.

Examples

```
EDET:TRAC1 1
```

Query Syntax [:SENSe]:EDETector:TRACe<v>[:FUNCtion]?

Default 1 - PEAK
2 - QPD
3 - EAV
4 - PEAK

Last Modified

16-Sep-2022	New command

[:SENSe]:FREQuency <num>

(Read-Write) Set and query the frequency of the power meter measurement. This is used to set the proper correction value of the power sensor.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<num> Frequency in Hz. Choose a number between the minimum and maximum

frequency of the FieldFox.
This command will accept MIN and MAX as arguments.

Examples

```
FREQ 10E6
FREQ MAX
```

Query Syntax [:SENSe]:FREQuency?

Return Type Numeric

Default Center frequency of the FieldFox

Last Modified:

1-Apr-2014	Added CPM
29-Oct-2013	Added Pulse

[:SENSe]:FREQuency:ANNotation[:SELect] <char>

(Read-Write) Set and query the frequency (X-axis) annotation method.
See frequency setting commands for SA mode.

Relevant Modes SA, ERTA, Noise Figure,RTSA

Parameters

<char> Choose from:
AUTO - Annotated the same as the frequencies were set.
SSTop - Start and Stop
CSPan - Center and Span

Examples

```
FREQ:ANN SST
```

Query Syntax [:SENSe]:FREQuency:ANNotation[:SELect]?

Return Type Character

Default AUTO

Last Modified:

10-june-2016	Added RTSA mode(9.50)
20-Jan-2015	New command (8.00)

[:SENSe]:FREQuency:AXIS:LOG <bool>

(Read-Write) Set and query the ON | Off state of the EMI mode's Log display.
See also, MEAS, CISP:BAND, BAND:EMI, BAND:EMI:AUTO, BAND:APD:RES, SWE:EMI:DWEL,

BAND:APD:AUTO, SWE:EMI:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes EMI

Parameters

<bool> Log axis state. Choose from:

0 or **OFF** - Log display OFF - linear display on.

1 or **ON** - Log display ON - linear display off.

Examples

```
FREQ:AXIS:LOG 0 'Sets the log axis to OFF and linear is displayed.
FREQ:AXIS:LOG OFF 'Sets the log axis to OFF and linear is displayed.
```

Query Syntax FREQuency:AXIS:LOG?

Return Type Boolean

Default 1

Last Modified:

16-Sep-2022	New command (A.12.3x)

[:SENSe]:FREQuency:CENTer <num>

(Read-Write) Set and query the center frequency of the trace. This is also used for single frequency (CW) traces, such as the frequency of power meter measurements.

Relevant Modes CAT, IQA (Spectrum Only), NA, NF, SA, VVM, and RTSA

Parameters

<numeric> Center frequency in Hz. Choose a number between the minimum and maximum frequency of the FieldFox.

This command will accept MIN and MAX as arguments.

Examples

```
FREQ:CENT 10E6
FREQ:CENT MAX
```

Query Syntax [:SENSe]:FREQuency:CENTer?

Return Type Numeric

Default CAT, IQA, NA, NF, SA modes - Center frequency of the FieldFox.

VVM mode - 2 MHz

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)
22oct2017	Added IQA mode (10.1x)

10-june-2016	Added RTSA mode (9.50)

[:SENSe]:FREQuency:CENTer:STEP <num>

(Read-Write) Set and query the step size for use with the front panel up/down keys.
Use [SENSe]:FREQuency:CENTer:STEP:AUTO to set step size manually. (Not available with CPM).

Relevant Modes SA, CPM, RTSA

Parameters

<num> Step size in Hz. Choose a number between 1 and maximum frequency of the FieldFox.

Examples

```
FREQ:CENT:STEP 10E6
```

Query Syntax [:SENSe]:FREQuency:CENTer:STEP?

Return Type Numeric

Default Dependent on frequency span

Last Modified:

10-june-2016	Added RTSA mode (9.50)
1-Apr-2014	Added CPM

[:SENSe]:FREQuency:CENTer:STEP:AUTO <bool>

(Read-Write) Set and query the state of setting center frequency step size. Used with the front panel up/down keys.

Relevant Modes SA, RTSA

Parameters

<bool> Step size state. Choose from:

ON or **1** - Step size is set automatically. Each press of the ▲|▼ arrows increments or decrements the value by 1/10th (one division) of the current frequency span.

OFF or **0** - Step size is set manually with [:SENSe]:FREQuency:CENTer:STEP.

Examples

```
FREQ:CENT:STEP:AUTO 1
sense:frequency:center:step:auto off
```

Query Syntax [:SENSe]:FREQuency:CENTer:STEP:AUTO?

Return Type Boolean

Default ON or 1

Last Modified:

10-june-2016	Added RTSA mode (9.50)

[SENSe]:FREQuency:CONText

(Read-Write) Set and query the current frequency context (RF or IF).
See DUT setting commands for NF mode.

Relevant Modes NF

Parameters

<char> Choose from:
RF - Default when DUT Type = AMPL
IF - Default when DUT Type = DOWN or UPC or MOCN

Examples

```
:FREQ:CONT RF
:FREQ:CONT IF
```

Query Syntax :FREQuency:CONText?

Return Type Character

Default DUT Type dependent.
RF - Default when DUT Type = AMPL
IF - Default when DUT Type = DOWN or UPC or MOCN
See :MODE:DUT.

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:FREQuency:DATA?

(Read-Write) Returns a comma separated array of the current x-axis frequency values. The size of the array equals the number of data points.

Relevant Modes CAT, NA, and NF

Parameters None

Examples

```
FREQ:DATA?
```

Return Type Comma-separated numeric array

Default Not Applicable

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

16-Sep-2022	New command

[:SENSe]:FREQuency:IF:STARt?

(Read Only) Query the IF (DUT Out) start frequency.

Relevant Modes NF

Parameters

n/a

Examples

```
FREQ:STAR:IF:STAR?
```

Query Syntax :SENSe:FREQuency:IF:STARt?

Return Type Numeric

Default n/a

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:FREQuency:LO <num>

(Read-Write) Set and query the DUT LO frequency.

Note: The DUT LO frequency is only relevant for frequency converting DUTs (i.e., downconverter, upconverter, and multi-stage converter).

Relevant Modes NF

Parameters

<numeric>	LO frequency in Hz. Choose a number between the minimum and maximum frequency of the FieldFox. This command will accept MIN and MAX as arguments.

Examples

```
FREQ:LO 10E6
FREQ:LO MAX
```

Query Syntax [:SENSe]:FREQuency:LO?

Return Type Numeric

Default --

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)

[:SENSe]:FREQuency:RF:STARt?

(Read Only) Query the (DUT In) start frequency.

Relevant Modes NF

Parameters

n/a

Examples

```
FREQ:STAR:RF:STAR?
```

Query Syntax :SENSe:FREQuencyRF:STARt?

Return Type Numeric

Default n/a

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:FREQuency:SPAN <num>

(Read-Write) Set and query the frequency span of the trace.

Relevant Modes CAT, NA, NF, SA, CPM, RTSA

CPM Mode: Limited to between 10 Hz and 100 MHz. SPAN is equivalent to the “channel power integration bandwidth”.

Parameters

<num> Frequency span in Hz. Choose a number between the maximum MINUS the minimum frequency of the FieldFox.

This command will accept MIN and MAX as arguments.

Examples

```
FREQ:SPAN 10E6
FREQ:SPAN MIN
```

Query Syntax [:SENSe]:FREQuency:SPAN?

Return Type Numeric

Default Maximum MINUS minimum frequency range of the FieldFox.

Last Modified:

01-june-2018	Added NF mode (10.30)
10-june-2016	Added RTSA mode (9.50)
1-April-2014	Added CPM

[:SENSe]:FREQuency:SPAN:BANDwidth[:RESolution]:RATio?

(Read-Only) Query the ratio of the span to resolution bandwidth value.

Relevant Modes RTSA

Parameters

Range of returned values: 20 (-2.00E+01) to 280 (-2.800E+02)

Examples

```
FREQ:SPAN:BAND:RAT?
```

Query Syntax FREQ:SPAN:BAND:RAT?

Return Type num

Default -2.800E+02

Last Modified:

19-sep-2016 Added new RTSA SCPI A.09.50.00.

[:SENSe]:FREQuency:SPAN:DREVerse <bool>

(Write-only) Toggle the forward / reverse state of the SA frequency range (step sweep only). Requires Opt 209.

Relevant Modes SA

Parameters None

Examples

```
FREQ:SPAN:DREV
```

Default Not applicable

Last Modified:

26-Jan-2015 New command (8.0)

[:SENSe]:FREQuency:SPAN:FULL

(Write-Only) Set the frequency span to the entire span of the FieldFox.

Relevant Modes SA, RTSA

Parameters None

Examples

```
FREQ:SPAN:FULL
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

10-june-2016	Added RTSA mode (9.50)

[:SENSe]:FREQuency:SPAN:ZERO

(Write-Only) Set the frequency span to 0 Hz. The center frequency is unchanged.

Relevant Modes SA

Parameters None

Examples

```
FREQ:SPAN:ZERO
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

[:SENSe]:FREQuency:STARt <num>

(Read-Write) Set and query the start frequency of the trace.

Relevant Modes CAT, NA, NF, SA, RTSA

Parameters

<num> Start frequency in Hz. Choose a number between the minimum and maximum frequency of the FieldFox.

This command will accept MIN and MAX as arguments.

Examples

```
FREQ:STAR 10E6
FREQ:STAR MIN
```

Query Syntax [:SENSe]:FREQuency:STARt?

Return Type Numeric

Default Start frequency of the FieldFox

Last Modified:

01-june-2018	Added Opt. 356 NF(10.3)
10-june-2016	Added RTSA mode (9.50)

[:SENSe]:FREQuency:STEP <value>

(Read-Write) Set and query the frequency step size between data points. This is another method to set the number of data points for the measurement.

Relevant Modes FOPS (Opt 208)

Parameters

<value> Frequency step size in Hz.

Examples

```
FREQ:STEP 1e6
```

Query Syntax [:SENSe]:FREQuency:STEP?

Return Type Numeric

Default 50 kHz

Last modified:

19-Mar-2014 New command (A.07.50)

[:SENSe]:FREQuency:STOP <num>

(Read-Write) Set and query the stop frequency of the trace.

Relevant Modes CAT, NA, NF, RTSA, and SA

Parameters

<num> Stop frequency in Hz. Choose a number between the minimum and maximum frequency of the FieldFox.

This command will accept MIN and MAX as arguments.

Examples

```
FREQ:STOP 10E6
FREQ:STOP MAX
```

Query Syntax [:SENSe]:FREQuency: STOP?

Return Type Numeric

Default Stop frequency of the FieldFox

Last Modified:

01-june-2018 Added Opt. 356 NF(10.3)

10-june-2016 Added RTSA mode (9.50)

[:SENSe]:IFFLatness:ALIGnment[:OBSOLETE]:NOW

This command has been replaced by [:SENSe]:ALIGnment:CHEQ:NOW. Learn about superseded commands.

(Write-only) A IF Flatness alignment is performed once just before the next sweep and applied to subsequent sweeps. If the FieldFox is not sweeping, a single sweep is triggered and alignment is performed.

Relevant Modes IQA, RTSA

Parameters	None
Examples	IFFL:ALIG:NOW
Query Syntax	Not Applicable
Default	Not Applicable

Last Modified:

22nov2017	Updated as a superseded note & added IQA for backwards compatibility.
20-sep-2016	Add new RTSA command(A.09.50)

[:SENSe]:IFFLatness:ALIGnment[:STATe]

This command has been replaced by [:SENSe]:ALIGnment:CHEQ[:STATe]. Learn about superseded commands.

(Read-Write) Set and query the RTSA mode IF flatness amplitude alignment (InstAlign) state.

Relevant Modes	IQA, RTSA
Parameters	
<char>	InstAlign state. Choose from: **AUTO** - The alignment process is performed every 300 seconds or when the temperature has changed about 1 degree. It occurs only at the beginning of a sweep and takes about 0.5 seconds to complete. **HOLD** - The alignment process is stopped, but the last alignment values are applied to subsequent sweeps. **OFF** - The alignment process is NOT performed. Only factory correction values are used.
Examples	IFFL:ALIG HOLD
Query Syntax	[:SENSe]:IFFLatness:ALIGnment[:STATe]?
Return Type	Character
Default	AUTO

Last Modified:

22nov2017	Updated as a superseded note & added IQA for backwards compatibility.
20-sep-2016	Added RTSA command(A.09.50)

[:SENSe]:IFPath <string>

Note: This command is only available on B model FieldFoxes and requires Option B04 or B10.

(Read-Write) Set and query the IQA/RTSA mode narrow (10 MHz) or wideband (40 MHz or 100 MHz) IF path.

Relevant Modes IQA, RTSA

Parameters

<string> IFPath. Choose from:

AUTO (default) - The IF path selected will depend on the frequency span being measured. It will be narrow (10 MHz capable) for span ≤10 MHz and will be wide (40 MHz or 100 MHz - option dependent) for span >10 MHz.

B10M - 10 MHz narrow IF Path is selected.

B100M - 40 MHz/100 MHz wide IF Path is selected (Option B04 or B10 required).

Examples

```
IFPath B100M */Selects the wide IF path, 40 MHz (Option B04) or 100 MHz (Option B10).
IFPath AUTO  */Default
```

Query Syntax [:SENSe]:IFPath]?

Return Type Character

Default AUTO

Last Modified:

16-Sep-2022 New command

[:SENSe]:INTegration:JITTer <num>

(Read-Write) Set and query the Integration mode's maximum allowable jitter setting (Jitter Goal) setting.

See also [:SENSe]:INTegration:MODe, [:SENSe]:INTegration:MAXTime, [:SENSe]:INTegration:WARNing, and [:SENSe]:INTegration:TIMe.

Relevant Modes NF

Parameters

<numeric> Jitter goal. Choose from:

Minimum -100 dB up to

Maximum 100 dB

Examples

```
INT:JITT 0.80 dB
```

Query Syntax INTegration:JITTer?

Return Type Numeric

Default 0.50 dB

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:INTegration:MAXTime <num>

(Read-Write) Set and query the Integration mode's maximum time per point setting (Max Time/Pt) setting.

See also [:SENSe]:INTegration:MODe, [:SENSe]:INTegration:JITTER, [:SENSe]:INTegration:WARNing, and [:SENSe]:INTegration:TIMe.

Relevant Modes NF

Parameters

<numeric> Maximum time per point. Choose from:

Varies, because the setting is coupled to other settings

Examples

```
INT:MAXT 0.04
```

Query Syntax INTegration:MAXTime?

Return Type Numeric

Default 2.00 s

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:INTegration:MODe <char>

(Read-Write) Set and query the Integration mode setting.

See also [:SENSe]:INTegration:JITTer, [:SENSe]:INTegration:MAXTime, [:SENSe]:INTegration:WARNing, and [:SENSe]:INTegration:TIMe.

Relevant Modes NF

Parameters

<character> Integration mode. Choose from:

AUTO - The FieldFox Noise Figure application chooses the optimum integration time for each of the noise power measurements needed (i.e., noise source on, noise source off, and receiver reference) to compute the device's noise figure with the selected amount of measurement jitter in the shortest possible time.

FIXED - Time per point can be set, but other integration SCPIs are not settable.

Examples

```
INT:MOD FIXED
```

Query Syntax INTegration:MODe?

Return Type Character

Default AUTO

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:INTegration:TIMe <num>

(Read-Write) Set and query the Integration mode's time per point setting (Time/Pt) setting. Use this command when [:SENSe]:INTegration:MODe = **FIXED**.

See also [:SENSe]:INTegration:MODe, [:SENSe]:INTegration:JITTER, [:SENSe]:INTegration:WARNing, and [:SENSe]:INTegration:MAXTime.

Relevant Modes NF

Parameters

<numeric> Time per point. Choose from:

Varies, because the setting is coupled to other settings

Examples

```
INT:TIM 0.04
```

Query Syntax INTegration:TIMe?

Return Type Numeric

Default 5.0E-01

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

[:SENSe]:INTegration:WARNing <bool>

(Read-Write) Set and query the Integration mode's jitter warning (Jitter Warning). Enables and disables the jitter warning when [:SENSe]:INTegration:MODe = **AUTO**.

See also [:SENSe]:INTegration:MODe, [:SENSe]:INTegration:JITTER, [:SENSe]:INTegration:MAXTime, and [:SENSe]:INTegration:TIMe.

Relevant Modes NF

Parameters

<boolean> Integration warning per point. Choose from:

ON(1) - Enables the jitter warning.

OFF(0) - Disables the jitter warning.

Examples

```
INT:WARN 1
```

Query Syntax INTegration:WARNing?

Return Type Boolean

Default 1

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

[:SENSe]:IQSTream:DHOSt <string>

(Read-Write) Set and query the destination host to send UDP network packets. E.g., “192.168.1.1".

See also, IQST:DPOR, IQST:SRAT, IQST:STARt, IQST:STOP, IQST:PROT, IQST:SPP, IQST:VITA:MRES, IQST:VITA:MRIP, IQST:VITA:SID,and MEAS:IQAN.

Relevant Modes IQA (Option 351), Mixed Analyzers (Option 233)

Parameters

<string> Enter an IP address for the destination port for the IQ streaming data packets.

Examples

```
IQST:DHOS "192.168.1.1" 'Defines the destination host to send UDP network packets
```

Query Syntax IQST:DHOS?

Return Type string

Default "localhost"

Last Modified:

05apr2021 New command (A.12.3x)

[:SENSe]:IQSTream:DPORt <integer>

(Read-Write) Set and query the destination port (process) to send UDP network packets. E.g., 4991.

See also, IQST:DHOS, IQST:SRAT, IQST:STARt, IQST:STOP, IQST:PROT, IQST:SPP, IQST:VITA:MRES, IQST:VITA:MRIP, IQST:VITA:SID,and MEAS:IQAN.

NOTE: FieldFox does ***not*** support TCP networking.

Relevant Modes SA

Parameters

<integer> Enter destination networking port (process) for the IQ streaming data packets.

Examples

```
IQST:DPOR 4991 'Defines the destination port (process) to send UDP network packets
```

Query Syntax IQST:DPOR?

Return Type integer

Default 4991

Last Modified:

05apr2021 New command (A.12.3x)

[:SENSe]:IQSTream:PROTocol <enumerated>

(Read-Write) Set and query the enumerated value that FieldFox should use to encode the IQ streaming data (e.g., VITA 49A).

See also, IQST:DPOR, IQSTR:SRAT, IQST:STAR, IQST:STOP, IQST:DHOS, IQST:SPP, IQST:VITA:MRES, IQST:VITA:MRIP, IQST:VITA:SID,and MEAS:IQAN.

Note:

1) FieldFox uses 32-bit IEEE 754 float.

2) Data for both protocols is 2 floating point values per sample (I and Q).

Relevant Modes SA

Parameters

<enumerated> Enter the streaming protocol for encoding data:

VIT - sets VITa 49A as the method of encoding the IQ streaming data.

DEC - sets DECodio as the method of encoding the IQ streaming data.

Examples

```
IQST:PROT VIT 'Defines VITA 49A as the IQ streaming encoding process for the data
IQST:PROT DEC 'Defines DECODIO as the IQ streaming encoding process for the data
```

Query Syntax IQST:PROT?

Return Type enumerated

Default VIT (VITA 49A)

Last Modified:

05apr2021 New command (A.12.3x)

[:SENSe]:IQSTream:SPP <integer>

(Read-Write) Set and query the number of samples to put in each network packet. The default value of 0 means ‘auto’. If set manually (and too low for the set bandwidth), FieldFox’s network speed may not keep up with the data rate.

See also, IQST:DHOS, IQST:SRAT, IQST:STARt, IQST:STOP, IQST:PROT, IQST:DPOR, IQST:VITA:MRES, IQST:VITA:MRIP, IQST:VITA:SID,and MEAS:IQAN.

Relevant Modes SA

Parameters

<integer> Enter the number of samples to put in each network packet.

Auto (0) - In auto mode, packet size increases as bandwidth goes up to achieve more efficiency.

Manual (≥1) - Enables you to choose the number of samples to put in each network packet. When set to manual (and if settings is too low for the set bandwidth), FieldFox's network speed may not keep up with the data rate.

Examples

```
IQST:SPP 0'Defines the samples to put in each network packet as auto (the FieldFox decides based on other settings the optimum sample rate to use.
IQST:SPP
```

Query Syntax IQST:SPP?

Return Type integer

Default 0 (Auto)

Last Modified:

05apr2021 New command (A.12.3x)

[:SENSe]:IQSTream:SRATe <float>

(Read-Write) Set and query the sample rate for IQ Streaming. If not set, default is AUTO which will sample at 1.25*frequency span. An equivalent setup would be to use: FREQ:SPAN spanValue .

See also, IQST:DHOS, IQST:PROT, IQST:SPP, IQST:VITA:MRES, IQST:VITA:MRIP, IQST:VITA:SID, IQST:STOP, IQST:STAR,and MEAS:IQAN.

Relevant Modes SA

Parameters

<floating point> Enter destination port for the IQ streaming data packets.

Examples

```
IQST:SRAT 1e6 'Defines the sample rate to 1 MHz for IQ streaming
```

Query Syntax IQST:SRAT?

Return Type floating point

Default 1.25000000000000E+06

Last Modified:

05apr2021 New command (A.12.3x)

[:SENSe]:IQSTream:STARt

(Write only) Start IQ streaming.

See also, IQST:DHOS, IQST:PROT, IQST:SPP, IQST:VITA:MRES, IQST:VITA:MRIP, IQST:VITA:SID, IQST:SRAT, IQST:STOP, and MEAS:IQAN.

Relevant Modes SA

Parameters

.

Examples

```
IQST:STAR
```

Query Syntax n/a

Return Type n/a

Default --

Last Modified:

02june2021 New command (A.12.3x)

[:SENSe]:IQSTream:STOP

(Write only) Stops IQ streaming.

See also, IQST:DHOS, IQST:PROT, IQST:SPP, IQST:VITA:MRES, IQST:VITA:MRIP, IQST:VITA:SID, IQST:SRAT, IQST:STARt,and MEAS:IQAN.

Relevant Modes SA

Parameters

.

Examples

```
IQST:STOP
```

Query Syntax n/a

Return Type n/a

Default --

Last Modified:

02june2021 New command (A.12.3x)

[:SENSe]:IQSTream:VITA:MRESend

(Write Only) Command only, no argument to re-send the metadata. When in VITA streaming mode, causes FieldFox to send a metadata packet containing center frequency, bandwidth, sample rate, etc.

See also, IQST:DHOS, IQST:SRAT, IQST:STAR, IQST:STOP, IQST:PROT, IQST:SPP, IQST:VITA:DPOR, IQST:VITA:MRIP, IQST:VITA:SID,and MEAS:IQAN

Note: Streaming is used by configuring the desired setup and then starting the acquisition/data stream. In order to make measurement changes (bandwidth, center frequency, etcetera) streaming must be stopped, the new setup configured, and then streaming restarted.

Relevant Modes SA

Parameters

Examples
```
IQST:VITA:MRES 5*/Re-sends the metadata
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

05apr2021 New command (A.12.3x)

[:SENSe]:IQSTream:VITA:MRIP <integer>

(Read-Write) Set and query the for VITA protocol, the metadata resend interval in packets. A metadata packet will be sent every N data packets for the value of N set here. 0 to disable.

See also, IQST:DHOS, IQSTR:SRAT, IQSTR:STARt, IQSTR:STOP, IQST:PROT, IQST:SPP, IQST:VITA:MRES, IQST:VITA:DPOR, IQST:VITA:SID,and MEAS:IQAN.

Note: Streaming is used by configuring the desired setup and then starting the acquisition/data stream. In order to make measurement changes (bandwidth, center frequency, etcetera) streaming must be stopped, the new setup configured, and then streaming restarted.

Relevant Modes SA

Parameters

<integer> Enter a value N that sets the number of data packets for the VITA IQ streaming data.

Examples
```
IQST:VITA:MRIP 713 'Sets the value of N data packets to 713
```

Query Syntax IQST:VITA:MRIP?

Return Type integer

Default 0

Last Modified:

05apr2021 New command (A.12.3x)

[:SENSe]:IQSTream:VITA:SIDentifier <int>

(Write Only) The stream identifier to set for this data stream when using the VITA protocol.

See also, IQST:DHOS, IQST:SRAT, IQSTR:STAR, IQST:STOP, IQST:PROT, IQST:SPP, IQST:VITA:DPOR, IQST:VITA:MRIP, IQST:VITA:MRES,and MEAS:IQAN.

NOTE: Only VITA protocol 49A is compatible with this command.

Relevant Modes SA

Parameters

<int>The integer value of the VITA identifier.

Examples

```
IQST:VITA:SID 67 'Sets the stream identifier to protocol 67 (This standard defines a transport-layer protocol designed to promote interoperability between RF (radio frequency) receivers and signal processing equipment in a wide range of applications.)
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

05apr2021	New command (A.12.3x)

[:SENSe]:LTEFdd:CCARrier:LIST<n>:ADD

(Write) Add the current channel and band to a favorite list setup.

Relevant Modes LTE FDD

Parameters

<*n*> Setup number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be stored at one time.)

<numeric>

Examples

```
LTEF:CCAR:LIST3:ADD
LTEF:CCAR:LIST5:ADD
```

Query Syntax n/a

Return Type n/a

Default 1

Last Modified:

16-Sep-2022	New command

[:SENSe]:LTEFdd:CCARrier:LIST<n>:BAND?

(Read Only) Query the current band in the specified favorites setup.

Relevant Modes LTE FDD

Parameters

<*n*> Setup number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be stored at one time.)

<numeric>

Examples
```
no write command
```

Query Syntax LTEF:CCAR:LIST3:BAND?

Return Type numeric

Default 1

Last Modified:

06dec2018 New command

[:SENSe]:LTEFdd:CCARrier:LIST<n>:CHANnel?

(Read Only) Query the current channel in the specified favorites setup.

Relevant Modes LTE FDD

Parameters

<*n*> Setup number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be stored at one time.)

<numeric>

Examples
```
no write command
```

Query Syntax LTEF:CCAR:LIST3:CHAN?

Return Type numeric

Default 1

Last Modified:

16-Sep-2022 New command

[:SENSe]:LTEFdd:CCARrier:LIST<n>:REMove

(Write) Disable/clear the current channel and band favorites setup number.

Relevant Modes LTE FDD

Parameters

<*n*> Setup number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be stored at one time.)

<numeric>

Examples

```
LTEF:CCAR:LIST3:REM
LTEF:CCAR:LIST5:REM
```

Query Syntax n/a

Return Type n/a

Default 1

Last Modified:

16-Sep-2022 New command

[:SENse]:LTEFdd:CCARier<n>:BAND <num>

(Read-Write) Set and query the component carrier band (BAND). If Band is changed, Channel is updated also. The rule is defined in 3GPP TS 36.101.

If FreqMode = Channel, center frequency is updated based on band and channel in target carrier.

Relevant Modes LTE FDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).
n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<numeric> Choices:
Maximum: 255
Minimum: 1
Note: Not all values between 1 and 255 are valid choices. The rule is defined in 3GPP TS 36.101.

Examples

```
LTEF:CCAR5:BAND 53
LTEF:CCAR3:BAND 235
```

Query Syntax LTEF:CCAR:BAND?

Return Type number

Default 1

Last Modified:

15dec2019 New command

[:SENSe]:LTEFdd:CCARrier[1]|2|3|4|5:CHANnel

(Read-Write) Set and query the component carrier channel (CHAN). If the channel is changed, the band value is updated also. The rule is defined in 3GPP TS 36.101.

If FreqMode = Channel, center frequency is updated based on band and channel in target carrier.

Relevant Modes LTE FDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<numeric>

Examples

```
LTEF:CCAR5:CHAN 3800
LTEF:CCAR3:CHAN 4149
```

Query Syntax LTEF:CCAR:CHAN?

Return Type number

Default 0

Last Modified:

16-Sep-2022 New command

[:SENse]:LTEFdd:CCARrier<n>:ENABle <bool>

(Read-Write) Set and query the component carrier's enable/disable state.

Relevant Modes LTE FDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<booleon> Choices:

ON (1): Enables the current component carrier.

OFF (0): Disables the current component carrier.

Examples

```
LTEF:CCAR5:ENAB ON
LTEF:CCAR3:ENAB 0
```

Query Syntax LTEF:CCAR:ENAB?

Return Type number

Default ON for CCO.

OFF for all other CC.

Last Modified:

01june2019	New command

[:SENse]:LTEFdd:CCARier<n>:FREQuency:CENTer <num>

(Read-Write) Set and query the component carrier center frequency.

Relevant Modes LTE FDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).
n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<numeric> Choices:
Maximum (Hz): Dynamic. Varies with the FieldFox model.
Minimum: 0 Hz

Examples

```
LTEF:CCAR5:FREQ:CENT 2e9
LTEF:CCAR3:FREQ:CENT 10000
```

Query Syntax LTEF:CCAR:FREQ:CENT?

Return Type number

Default 1000000000

Last Modified:

01june2019	New command

[:SENSe]:LTEFdd:CCARrier<n>:LIST<x>:APPLy

(Write) Apply a saved favorite setup channel and band to the FieldFox.

Relevant Modes LTE FDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).
n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<*x*> Setup number. If unspecified, value is set to 1.
x = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be available.)

<numeric>

Examples

```
LTEF:CCAR2:LIST3:APP
LTEF:CCAR4:LIST5:APP
```

Query Syntax n/a

Return Type n/a

Default *n*=1, *x*=1

Last Modified:

16-Sep-2022 New command

[:SENSe]:LTEFdd:CCARrier<n>:MODE <string>

(Read-Write) Set and query the LTE FDD frequency mode (CHANnel | FREQuency).

Relevant Modes LTE FDD

Parameters

<n> Choose from 1 to 5. Default is 1.

<string> Choices:

CHANnel: Channel and Band are based on the component carrier in the FieldFox. Center frequency is coupled to the channel and band choices.

FREQuency: Center frequency is entered independently.

If FreqMode = Channel, center frequency value is based on band and channel in target carrier.

Examples

```
LTEF:CCAR2:MODE CHAN
LTEF:CCAR2:MODE FREQ
```

Query Syntax LTEF:CCAR5:MODE?

Return Type string

Default <n> = 1, <string> = FREQ

Last Modified:

16-Sep-2022 New command

[:SENSe]:LTEFdd:FERRor:THReshold <num>

(Read-Write) Set and query frequency error threshold value.

Relevant Modes LTE FDD

Parameters

<numeric> Minimum: 0 Hz

Maximum: 5 kHz

Frequency error value in Hz.

Examples `LTEF:FERR:THR 3000`

Query Syntax :LTEF:FERR:THR?

Return Type Numeric

Default 900 Hz

Last Modified:

01dec2018 New command

[:SENSe]:LTEFdd:FLRange:EXTended <bool>

(Read-Write) Set and query the extended frequency range.

Relevant Modes LTE FDD

Parameters

<booleon> ON (1): Enable the extended frequency range.
OFF (2): Disable the extended frequency range.

Examples `LTEF:FLR:EXT ON`

Query Syntax :LTEF:FLR:EXT?

Return Type numeric

Default OFF (0)

Last Modified:

16-Sep-2022 New command

[:SENSe]:LTETdd:CCARrier:LIST<n>:ADD

(Write) Add the current channel and band to a favorite list setup.

Relevant Modes LTE TDD

Parameters

<*n*> Setup number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be stored at one time.)

<numeric>

Examples `LTET:CCAR:LIST3:ADD`

```
LTET:CCAR:LIST5:ADD
```

Query Syntax n/a

Return Type n/a

Default 1

Last Modified:

01dec2020 New command (12.2x)

[:SENSe]:LTETdd:CCARrier:LIST<n>:BAND?

(Read Only) Query the current band in the specified favorites setup.

Relevant Modes LTE TDD

Parameters

<*n*> Setup number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be stored at one time.)

<numeric>

Examples

```
no write command
```

Query Syntax LTET:CCAR:LIST3:BAND?

Return Type numeric

Default 1

Last Modified:

01dec2020 New command (12.2x)

[:SENSe]:LTETdd:CCARrier:LIST<n>:CHANnel?

(Read Only) Query the current channel in the specified favorites setup.

Relevant Modes LTE TDD

Parameters

<*n*> Setup number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be stored at one time.)

<numeric>

Examples

```
no write command
```

Query Syntax LTET:CCAR:LIST3:CHAN?

Return Type numeric

Default 1

Last Modified:

01dec2020 New command (12.2x)

[:SENSe]:LTETdd:CCARrier:LIST<n>:REMove

(Write) Disable/clear the current channel and band favorites setup number.

Relevant Modes LTE TDD

Parameters

<*n*> Setup number. If unspecified, value is set to 1.
n = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be stored at one time.)

<numeric>

Examples

```
LTET:CCAR:LIST3:REM
LTET:CCAR:LIST5:REM
```

Query Syntax n/a

Return Type n/a

Default 1

Last Modified:

01dec2020 New command

[:SENse]:LTETdd:CCARier<n>:BAND <num>

(Read-Write) Set and query the component carrier band (BAND). If Band is changed, Channel is updated also. The rule is defined in 3GPP TS 36.101.

If FreqMode = Channel, center frequency is updated based on band and channel in target carrier.

Relevant Modes LTE TDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).
n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<numeric> Choices:

Maximum: 255

Minimum: 1

Note: Not all values between 1 and 255 are valid choices. The rule is defined

in 3GPP TS 36.101.

Examples

```
LTET:CCAR5:BAND 53
LTET:CCAR3:BAND 235
```

Query Syntax LTET:CCAR:BAND?

Return Type number

Default 1

Last Modified:

01dec2020	New command (12.2x)

[:SENSe]:LTETdd:CCARrier[1]|2|3|4|5:CHANnel

(Read-Write) Set and query the component carrier channel (CHAN). If the channel is changed, the band value is updated also. The rule is defined in 3GPP TS 36.101.

If FreqMode = Channel, center frequency is updated based on band and channel in target carrier.

Relevant Modes LTE TDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<numeric>

Examples

```
LTET:CCAR5:CHAN 3800
LTET:CCAR3:CHAN 4149
```

Query Syntax LTET:CCAR:CHAN?

Return Type number

Default 0

Last Modified:

01dec2020	New command (12.2x)

[:SENse]:LTETdd:CCARrier<n>:ENABle <bool>

(Read-Write) Set and query the component carrier's enable/disable state.

Relevant Modes LTE TDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<booleon> Choices:

ON (1): Enables the current component carrier.

OFF (0): Disables the current component carrier.

Examples

```
LTET:CCAR5:ENAB ON
LTET:CCAR3:ENAB 0
```

Query Syntax LTET:CCAR:ENAB?

Return Type number

Default ON for CCO.

OFF for all other CC.

Last Modified:

01dec2020 New command (12.2x)

[:SENse]:LTETdd:CCARier<n>:FREQuency:CENTer <num>

(Read-Write) Set and query the component carrier center frequency.

Relevant Modes LTE TDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<numeric> Choices:

Maximum (Hz): Dynamic. Varies with the FieldFox model.

Minimum: 0 Hz

Examples

```
LTET:CCAR5:FREQ:CENT 2e9
LTET:CCAR3:FREQ:CENT 10000
```

Query Syntax LTET:CCAR:FREQ:CENT?

Return Type number

Default 1000000000

Last Modified:

01dec2020 New command (12.2x)

[:SENSe]:LTETdd:CCARrier<n>:LIST<x>:APPLy

(Write) Apply a saved favorite setup channel and band to the FieldFox.

Relevant Modes LTE TDD

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<*x*> Setup number. If unspecified, value is set to 1.

x = 1 | 2 | 3 | 4 | 5 (Up to five favorites can be available.)

<numeric>

Examples

```
LTET:CCAR2:LIST3:APP
LTET:CCAR4:LIST5:APP
```

Query Syntax n/a

Return Type n/a

Default *n*=1, *x*=1

Last Modified:

01dec2020	New command (12.2x)

[:SENSe]:LTETdd:CCARrier<n>:MODE <string>

(Read-Write) Set and query the LTE TDD frequency mode (CHANnel | FREQuency).

Relevant Modes LTE TDD

Parameters

<n> Choose from 1 to 5. Default is 1.

<string> Choices:

CHANnel: Channel and Band are based on the component carrier in the FieldFox. Center frequency is coupled to the channel and band choices.

FREQuency: Center frequency is entered independently.

If FreqMode = Channel, center frequency value is based on band and channel in target carrier.

Examples

```
LTET:CCAR2:MODE CHAN
LTET:CCAR2:MODE FREQ
```

Query Syntax LTET:CCAR5:MODE?

Return Type string

Default <n> = 1, <string> = FREQ

Last Modified:

10dec2020 New command (12.2x)

[:SENSe]:LTETdd:FERRor:THReshold <num>

(Read-Write) Set and query frequency error threshold value.

Relevant Modes LTE TDD

Parameters

<numeric> Minimum: 0 Hz
Maximum: 5 kHz

Frequency error value in Hz.

Examples

```
LTET:FERR:THR 3000
```

Query Syntax :LTET:FERR:THR?

Return Type Numeric

Default 900 Hz

Last Modified:

01dec2020 New command (12.2x)

[:SENSe]:MEASure

(Read-Write) Selects between Density, Spectrogram, and Real-Time traces.

Relevant Modes RTSA

Parameters

<char> Select the type of Real-Time measurement to be displayed:

DENSity - Signal is displayed is a real-time spectrum with a histogram bitmap.

SPECtrogram - The signal is displayed is a real-time spectrum with a spectrogram bitmap. Spectrogram views are valuable in capturing signals that include both time and frequency variations.

NORMal - The signal is displayed as a real-time spectrum. Use real-time spectrogram to quickly display measurements.

Examples

```
MEAS DENS
```

Query Syntax [:SENSe]:MEASure?

Return Type Character

Default DENS

Last Modified:

19-sep-2016 Added new RTSA command (A.09.50).

[:SENSe]:MEASure:SPERiod <num>

(Read-Write) Set and query the sample period.

Relevant Modes IQA

Parameters

<numeric> Minimum: 80 ns
Maximum: 80 ms
Couplings: Sample Period = (1 / Sample Rate)

Examples

```
MEAS:SPER 300e-9
```

Query Syntax MEAS:SPER?

Return Type Numeric

Default 8.0000000E-08

Last Modified:

22sep2017 Added IQA mode (10.00)

[:SENSe]:MEASure:SRATe <num>

(Read-Write) Set and query the IQA sample rate. The “Digital IF Bandwidth” parameter controls the resampler section of the hardware. It is directly coupled to the sample rate.

Sample Rate = (Digital IF Bandwidth) * (Over Sample Ratio)
= (Digital IF Bandwidth) * 1.25

Relevant Modes IQA

Parameters

<numeric> Minimum: 12.5 Hz
Maximum:
A-Series FieldFox: 12.5 MHz
B-Series FieldFox: 125 MHz
Couplings: (1.25 * IF Bandwidth)

Examples

```
MEAS:SRAT 1 MHz
MEAS:SRAT 10000
```

Query Syntax MEAS:SRAT?

Return Type Numeric

Default 1.250000000E+07

Last Modified:

06sept2019	Added B-Series 125 MHz BW.
22-Oct-2017	Added IQA mode (10.1x)

[:SENSe]:MEASurement:ADEMod (*NEW* BEHAVIOR - RECOMMENDED)

(Read-Write) Set the AM/FM Metrics measurement type (Select 1 of *n* measurement choices)

IMPORTANT! This topic describes the **new** behavior, which is recommended.

See also, ADEM:METR:DTYP and TAL:DTYP.

Relevant Modes SA

Parameters **NONE** - Turns off the AM/FM functionality.

TAL- Launch Tune & Listen mode

ADEM- Launch Analog Demod Metrics mode

<string>

Examples

```
:MEAS:ADEM NONE
```

Query Syntax :MEAS:ADEM?

Return Type String

Default NONE

Last Modified:

16-Dec-2015	Added AM/FM Metrics (8.15 & 9.15)

[:SENSe]:MEASurement:ADEMod (LEGACY BEHAVIOR - NOT Recommended)

(Read-Write) Set the AM/FM Metrics measurement type (Select 1 of *n* measurement choices)

IMPORTANT! This topic describes the Legacy Behavior for this command. This behavior is **not** recommended. The ***New*** behavior, which is recommended, is shown in this topic: MEAS:ADEM

Relevant Modes SA

Parameters **NONE** - Turns off the AM/FM functionality.

LAM - Tune & Listen; set demod type to AM

LFMN - Tune & Listen; set demod type to narrow band FM

LFMW - Tune & Listen; set demod type to wide band FM

MAM - Metrics; and set to demod type to AM

MFM - Metrics; and set to demod type to FM

<string>

Examples `:MEAS:ADEM NONE`

Query Syntax :MEAS:ADEM?

Return Type String

Default MAM

Last Modified:

01july2021	Modified topic to be a Legacy command (A.12.3x).
16-Dec-2015	Added AM/FM Metrics (8.15 & 9.15)

[:SENSe]:MEASurement:AOFF

(Write-Only) Turns OFF the currently-displayed Channel or Interference Analysis measurements. Reverts to standard SA display.

Relevant Modes SA

Parameters None

Examples `MEAS:AOFF`

Query Syntax Not Applicable

Default Not Applicable

[:SENSe]:MEASure:CAPTure:LENGth

(Read-Write) Set and query the IQA data capture length via the sample number.

Note: This capture length sample value is only used with a captured IQ data file.

Use SENS:MEAS:CAPT:TIME to set the data capture time for the IQA data.

Relevant Modes IQA

Parameters

<captureLength> Data IQA capture samples.
Minimum:1
Maximum:The maximum capture length is:
- 4194304 for A models and
- 134217728 for B models
Couplings: Capture Time. Changes will effect Capture Time (`Capture Samples = Capture Time * Sample Rate + 1`).

Examples `MEAS:CAPT:LENG 1000`

Query Syntax MEAS:CAPT:TIME?

Return Type integer

Default 12501

Last Modified:

05apr2019	Edited the default value.
22-oct-2017	Added new IQA mode content (10.1x).

[:SENSe]:MEASure:CAPTure:TIME

(Read-Write) Set and query the filename for I/Q data capture time.

Note: The Maximum value of this parameter is limited by the maximum capture samples that is available for the different platforms and determined by the current sample rate.

Use SENS:MEAS:CAPT:LENGth to set the data capture time for the IQA data.

Use MMEM:STOR:IQC:FTYP to set the data capture file type.

Relevant Modes IQA

Parameters

<time> Data IQA capture time.
Minimum:1 ps
Maximum: Dynamic change. In the default setting:
- Sample Rate = 12.5 MHz (A models) the max value is 335.544 ms and
- Sample Rate = 125 MHz (B models), the max value is 1.07374s.

Examples

```
MEAS:CAPT:TIME 6e-6
```

Query Syntax MEAS:CAPT:TIME?

Return Type numeric

Default 100 us

Last Modified:

05apr2019	Corrected the min, max, and default values.
22-oct-2017	Added new IQA mode content (10.1x).

[:SENSe]:MEASurement:CHANnel <char>

(Read-Write) Set and query the current SA mode channel measurement.

Relevant Modes SA

Parameters

<char> Channel measurement. Choose from:

CHP - Channel Power

OBW - Occupied Bandwidth

ACPR - Adjacent Channel Power

SEM - Spectrum Emission Mask

NONE - No current channel measurement.

Examples

```
MEAS:CHAN ACPR
```

Query Syntax [:SENSe]:MEASurement:CHANnel?

Return Type Character

Default NONE

Last Modified:

01dec2019 Added SEM parameter

SENSe:MEASurement:ERTA:PNID

(Read-Write) Set and query the partner IP address.

Relevant Modes ERTA

Parameters

<string> Network identity of the partner (source) FieldFox, enclosed in quotes. Currently we recommend using the IP address. But in the future, we may accept a hostname string.

Examples

```
MEAS:ERTA:PNID "192.168.0.0"
```

Query Syntax [:SENSe]:MEASurement:ERTA:PNID?

Return Type String

Default Not applicable

Last Modified:

4-May-2015 New command (8.04)

[:SENSe]:MEASurement:ERTA:PSTatus

(Read-Write) Set and read Partnership status. Can only set Leader (Receiver).

Relevant Modes ERTA

Parameters

<char> Receiver status. Choose from:
OFF - No partnership exists.
LEAD - Leader status

Examples

```
MEAS:ERTA:PST OFF
```

Query Syntax [:SENSe]:MEASurement:ERTA:PSTatus?

Return Type Character

Default OFF

Last Modified:

21may2021	Updated description to read "Leader".
20-Jan-2015	New command (8.00)

[:SENSe]:MEASurement:ERTA:PVERify?

(Read-only) Returns whether or not the partner (source) FieldFox is ERTA network capable.

Relevant Modes ERTA

Parameters None

Return Type Boolean
1 - Partner is ERTA capable.
0 - Parner is NOT ERTA capable

Default Not applicable

Last Modified:

4-May-2015	New command (8.04)

[:SENSe]:MEASurement:ERTA:ROLE?

(Read-only) Read the ERTA stimulus-response role.

Relevant Modes ERTA

Parameters None

Return Type Character
NONE - No partnership exists.
SRC - FieldFox is a Source (follower).

RCVR - FieldFox is a Receiver (leader)

Default None

Last Modified:

21may2021	Updated description to read "Leader".
20-Jan-2015	New command (8.00)

[:SENSe]:MEASurement:INTerference <char>

(Read-Write) Set and query the current SA mode Interference Analysis (Opt 236) display.

Relevant Modes SA

Parameters

<char> Interference Analysis display. Choose from:

SPECtrogram

WATerfall

NONE - no Interference Analysis measurement displayed.

Examples

```
MEAS:INT SPEC
```

Query Syntax [:SENSe]:MEASurement:INTerference?

Return Type Character

Default NONE

[:SENSe]:MEASurement:IQANalysis <enumerated>

(Write only) Set and query the IQ analysis mode: NONE, GENeral, or STReaming. Set the streaming mode to perform IQ Streaming.

See also, IQST:DPOR, IQST:SRAT, IQSTR:STAR, IQSTR:STOP, IQST:DHOS, IQST:SPP, IQST:VITA:MRES, IQST:VITA:MRIP, IQST:VITA:SID,and IQST:PROT.

Relevant Modes SA

Parameters

<enumerated> Enter the IQ streaming mode:

NONE- Disables the IQ streaming mode

GEN - sets IQ streaming mode to general.

STR - sets IQ streaming mode to IQ streaming.

Examples

```
MEAS:IQAN GEN 'Sets the IQ analysis mode to General
MEAS:IQAN STR 'Sets the IQ analysis mode to Streaming
```

Query Syntax IQST:PROT?

Return Type enumerated

Default NONE

Last Modified:

05apr2021 New command (A.12.3x)

[:SENSe]:MEASurement:PRESet

(Write-Only) Resets the currently-displayed channel measurement to its default settings. The Center Frequency, Preamp ON|OFF, RF Attenuation, Markers, Limits, and Radio Standard settings are NOT reset.

Relevant Modes SA

Parameters None

Examples

```
MEAS:PRES
```

Query Syntax Not Applicable

Default Not Applicable

[:SENSe]:MEASure:TAListen[:OBSOLETE] <char>

(Read-Write) Set and query the Tune and Listen demodulation type for SA Mode.

Note: This command has been obsoleted and is **not** completely compatible with current commands and features. It is strongly recommended that you use: ADEM:METR:DTYP.

Relevant Modes SA

Parameters

<char> Tune and Listen demodulation type. Choose from:
AM - AM
FMN - FM Narrow
FMW - FM Wide
NONE - Tune and Listen OFF.

Examples

```
MEAS:TAL FMW *Sets Tune and Listen to FM Wide
```

Query Syntax [:SENSe]:MEAS:TAListen?

Return Type Character

Default NONE

Last Modified:

01july2021 Modified to be Obsolete command (A.12.3x)

16-Dec-2015 Added AM/FM Metrics (8.15 & 9.15)

[:SENSe]:MEASurement[:SELect] <char>

(Read-Write) Set and query the status of the active EMI (electromagnetic interference) band scan type.

See also, CISP:BAND, FREQ:AXIS:LOG, BAND:EMI, BAND:EMI:AUTO, BAND:APD:RES, SWE:EMI:DWEL, BAND:APD:AUTO, SWE:EMI:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes EMI

Parameters

<char> Choose from:

FPSC (Default) - Sets the EMI scan to Fast SA Scan (FPSCan).

CBSC - Sets the EMI scan to EMI Band Scan (CBSCan).

CZSC - Sets the EMI scan to EMI Zero Scan (CZSCan).

SAPD - Sets the EMI scan to Amplitude Probability Distribution (APD) statistics scan.

Examples

```
MEAS CBSC 'Sets the EMI scan to EMI band scan (i.e., standard EMI band scan).
MEAS CZSC 'Sets the EMI scan to Zero scan.
MEAS CZSC 'Sets the EMI scan to APD statistics scan.
```

Query Syntax MEASure?

Return Type character

Default FPSC

Last Modified:

16-Sep-2022 New command (A.12.3x)

[:SENSe]:NBANdwidth <num> or <char>

(Read-Write) Set and query the NF resolution bandwidth for the measurement.

Relevant Modes NF

Parameters

<num> or character Resolution bandwidth in Hz.

Choose between 300 kHz and 5 MHz

Examples

```
NBAN 1e3
NBAN MAX
NBAN MIN
```

Query Syntax SENSe:NBANdwidth?

Return Type Numeric

Default 5 MHz for NF

Last modified:

01-june-2018 Added Opt. 356 NF(10.3)

[:SENse]:NR5G:CCARrier<n>:BAND <char>

(Read-Write) Set and query the operating band for the Component Carrier (CC). When a band other than None is selected, the Channel Raster and Sync Raster values are limited by the band.

The SCS setting is coupled with the band (only certain bands are available for each SCS).

See User Equiptment (UE) radio transmission and reception; Part 1: Range 1 Standalone (3GPP TS 38.101-1 version 15.7.0 Release 15) Section 5.2 and User Equiptment (UE) radio transmission and reception; Part 2: Range 2 Standalone (3GPP TS 38.101-2 version 15.7.0 Release 15) Section 5.2.

Relevant Modes 5G NR

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 | 6 | 7| 8 (Up to eight component carriers can be measured at one time.)

<character> Choices:

NONe: no band

Nx operating band values: **N1 | N2 | N3 | N5 | N7 | N8 | N12 | N20 | N25 | N28 | N34 | N38 | N39 | N40 | N41 | N50 | N51 | N66 | N70 | N71**

Examples

```
NR5G:CCAR5:BAND N50
NR5G:CCAR3:BAND NON */none
```

Query Syntax NR5G:CCAR5:BAND?

Return Type character

Default <n> =1, <character> = NON

Last Modified:

01dec2019 New command

[:SENse]:NR5G:CCARier<n>:CARFcn <num>

(Read-Write) Set and query the Channel ARFCN for the Component Carrier (CC). The Channel ARFCN is translated to a frequency and used to set the Center Frequency setting.

See User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone (3GPP TS 38.101-1 version 15.7.0 Release 15) Section 5.4.2 and User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone (3GPP TS 38.101-2 version 15.7.0 Release 15) Section 5.4.2.

Relevant Modes 5G NR

Couplings This setting is associated with the currently selected Component Carrier (CC).

This setting is limited by the Band setting.

The Channel ARFCN is translated to a frequency and used to set the Center Frequency setting.

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 6| 7 | 8 (Up to eight component carriers can be measured at one time.)

<numeric> Choices:

Maximum (Hz): Varies based on the Band setting and licensed frequency range.

Minimum (Hz): Varies based on the Band setting and licensed frequency range.

Examples

```
NR5G:CCAR5:CARFcn 399000
NR5G:CCAR3:CARFcn 460000
```

Query Syntax NR5G:CCAR3:CARF?

Return Type numeric

Default 0

Last Modified:

01dec2019	New command

[:SENse]:NR5G:CCARrier<n>:ENABle <bool>

(Read-Write) Set and query the component carrier's enable/disable state.

Relevant Modes 5G NR

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 | 6| 7| 8 (Up to eight component carriers can be measured at one time.)

<booleon> Choices:

ON (1): Enables the current component carrier.

OFF (0): Disables the current component carrier.

Examples

```
NR5G:CCAR5:ENAB ON
NR5G:CCAR3:ENAB 0
```

Query Syntax NR5G:CCAR:ENAB?

Return Type number

Default ON for CCO.

OFF for all other CC.

Last Modified:

16-Sep-2022	New command

[:SENse]:NR5G:CCARier<n>:FREQuency:CENTer <num>

(Read-Write) Set and query the component carrier center frequency.

See also, [:SENSe]:NR5G:CCARrier<n>:FREQuency:OFFSet.

Relevant Modes 5G NR

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 6| 7 | 8 (Up to eight component carriers can be measured at one time.)

<numeric> Choices:

Maximum (Hz): Dynamic. Varies with the FieldFox model.

Minimum: 0 Hz

Examples

```
NR5G:CCAR5:FREQ:CENT 2e9
NR5G:CCAR3:FREQ:CENT 10000
```

Query Syntax NR5G:CCAR:FREQ:CENT?

Return Type numeric

Default 1000000000

Last Modified:

12dec2019	New command

[:SENse]:NR5G:CCARrier<n>:FREQuency:OFFSet <char>

(Read-Write) Set and query the frequency offset of the measurement frequency from the center frequency (Measurement Frequency = Center Frequency + Offset Frequency).

See also, [:SENSe]:NR5G:CCARrier<n>:FREQuency:CENTer.

Relevant Modes 5G NR

Parameters

<numeric>Set the component carrier's frequency offset. Choose from:

Minimum: Dynamic. Varies based on the Center Frequency setting and the licensed frequency range.

Maximum: Dynamic. Varies based on the Center Frequency setting and the licensed frequency range.

Couplings This setting is associated with the currently selected Component Carrier (CC).

The minimum and maximum values are coupled to the Center Frequency setting.

Examples

```
NR5G:CCAR6:FREQ:OFFS 1e6 */Sets the 6th component carrier (cc) frequency offset to 1e6
```

Query Syntax NR5G:CCA7:FREQ:OFFS? */Queries the frequency offset value

```
of the 7th cc
```

Return Type numeric

Default component carrier = 1
0.00000 Hz

Last Modified:

01dec2019 New command

[:SENSe]:NR5G:CCARrier<n>:MODE <string>

(Read-Write) Set and query the NR5G frequency mode for the component carrier (CHANnel | FREQuency).

Relevant Modes 5G NR

Parameters

<n> Choose from 1 to 8. Default is 1 (CC0).

<string> Choices:

CHANnel: Channel and Band are based on the component carrier in the FieldFox. Center frequency is coupled to the channel and band choices.

FREQuency: Center frequency is entered independently.

If FreqMode = Channel, center frequency value is based on band and channel in target carrier.

Examples

```
NR5G:CCAR2:MODE CHAN
NR5G:CCAR2:MODE FREQ
```

Query Syntax NR5G:CCAR5:MODE?

Couplings This setting is associated with the currently selected Component Carrier (CC).

When Freq is selected, the frequency settings are set directly and when Chan is selected, the frequency settings are set through the channel table settings.

Return Type string

Default numeric =1 (CC0), string = FREQ

Last Modified:

01dec2019 New command

[:SENSe]:NR5G:CCARrier<n>:RMODe <char>

(Read-Write) Set and query the NR5G raster mode (CHANnel or SYNChronization raster).

See User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone (3GPP TS 38.101-1 version 15.7.0 Release 15) Section 5.4.2 and 5.4.3 and User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone (3GPP TS 38.101-2 version 15.7.0 Release 15) Section 5.4.2 and 5.4.3.r.

Relevant Modes 5G NR

Parameters

<n> Choose from 1 to 8 component carriers. Default is 1.

<character> Choices:

CHANnel: Use the Channel Raster settings to set the frequency settings.

SYNChronization: Center frequency is entered independently.

NOTE: If FreqMode = Use the Synchronization Raster settings to set the frequency settings.

Examples

```
NR5G:CCAR2:RMOD CHAN
NR5G:CCAR2:RMOD FREQ
```

Query Syntax NR5G:CCAR5:RMOD?

Couplings This setting is associated with the currently selected Component Carrier (CC).

The setting is only relevant when the Freq Mode is set to Channel.

When Channel is selected, the Channel Raster settings are used to set the frequency settings and when Synchronization is selected, the Synchronization Raster settings are used to set the frequency settings.

Return Type character

Default n = 1, character = CHAN

Last Modified:

01dec2019	New command

[:SENse]:NR5G:CCARier<n>:SARFcn <num>

(Read-Write) Set and query the Synchronization ARFCN for the Component Carrier (CC). The Synchronization ARFCN is translated to a frequency and used to set the Center Frequency setting.

See User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone (3GPP TS 38.101-1 version 15.7.0 Release 15) Section 5.4.3 and User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone (3GPP TS 38.101-2 version 15.7.0 Release 15) Section 5.4.3.

See also, [:SENse]:NR5G:CCARrier<n>:SGSCn.

Relevant Modes 5G NR

Couplings This setting is associated with the currently selected Component Carrier (CC).

This setting is limited by the Band setting.

This setting is coupled with the Synchronization GSCN.

The Synchronization ARFCN is translated to a frequency and used to set the Center Frequency setting.

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 6| 7 | 8 (Up to eight component carriers can be measured at one time.)

<numeric> Choices:

MAXimum (Hz): Varies based on the Band setting and licensed frequency range.

MINimum (Hz): Varies based on the Band setting and licensed frequency range.

This command will accept DEFault, MINimum and MAXimum as arguments.

Examples

```
NR5G:CCAR5:SARFcn 386410
NR5G:CCAR3:SARFcn 302930
```

Query Syntax NR5G:CCAR3:SARF?

Return Type numeric

Default 0

Last Modified:

01dec2019	New command

[:SENse]:NR5G:CCARier<n>:SGSCn <num>

(Read-Write) Set and query the Synchronization GSCNor the Component Carrier (CC). The Synchronization GSCN is translated to a frequency and used to set the Center Frequency setting.

This setting is coupled with the Synchronization ARFCN.

See User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone (3GPP TS 38.101-1 version 15.7.0 Release 15) Section 5.4.3 and User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone (3GPP TS 38.101-2 version 15.7.0 Release 15) Section 5.4.3.

See also, [:SENse]:NR5G:CCARrier<n>:ARFCn.

Relevant Modes 5G NR

Couplings This setting is associated with the currently selected Component Carrier (CC).

This setting is limited by the Band setting.

This setting is coupled with the Synchronization ARFCN.

The Synchronization GSCN is translated to a frequency and used to set the Center Frequency setting.

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 6| 7 | 8 (Up to eight component carriers can be measured at one time.)

<numeric> Choices:

MAXimum (Hz): Varies based on the Band setting and licensed frequency range.

MINimum (Hz): Varies based on the Band setting and licensed frequency range.

This command will accept DEFault, MINimum and MAXimum as arguments.

Examples
```
NR5G:CCAR5:SGSCn 386410
NR5G:CCAR3:SGSCn 302930
```

Query Syntax NR5G:CCAR3:SGSCn?

Return Type numeric

Default 0

Last Modified:

01dec2019	New command

[:SENSe]:NR5G:CLENgth <char>

(Read-Write) Set and query the measurement capture length. A larger capture length will give a more accurate measurement, but will take longer to analyze.

Relevant Modes 5G NR

Parameters

<char>Set the measurement capture length. Choose from:

F4 - 4 frames

F8 - 8 frames

F16 - 16 frames

F24 - 24 frames

F32 - 32 frames

F40 - 40 frames

Couplings None

Examples
```
NR5G:CLEN 40 */Sets the measurement capture length to 40 frames
```

Query Syntax NR5G:CLEN?

Return Type character

Default F4

Last Modified:

01dec2019	New command

[:SENSe]:NR5G:COEXistence:CC <char>

(Read-Write) Set and query the LTE measurement coexistence component carrier (cc) results displayed in the windows

Note: The component carrier settings (e.g., whether or not the CC is enabled) for LTE and 5G NR must be configured separately.

See also, NR5G:COEX:DISP:TYPE, NR5G:COEX:LTE:DUPL, and NR5G:COEX.

Relevant Modes 5G NR

Parameters

<char> The component carrier results displayed in the windows. Choices:

CC*n*: Chose an individual component carrier from CC1 to CC7 results to be displayed (*n* = 0 to 7).

ALL: Chooses all cc's to display results.

Couplings:- This setting is associated with the currently selected window.

Examples

```
NR5G:COEX:CC CC0 */sets CC0 to be the component carrier displayed.
NR5G:COEX:CC CC5 */sets CC5 to be the component carrier displayed.
NR5G:COEX:CC ALL */sets ALL as the component carriers to be displayed.
```

Query Syntax NR5G:COEX:CC?

Return Type character

Default ALL

Last Modified:

10may2021 New command (A.12.15)

[:SENSe]:NR5G:COEXistence:DISPlay:TYPE <char>

(Read-Write) Select table or stacked bar graph LTE coexistence measurement display type.

See also, NR5G:COEX, NR5G:COEX:LTE:DUPL, and NR5G:COEX:CC.

Relevant Modes 5G NR

Parameters

<character>Choose from:

TABL - sets table as the method to display LTE & 5G NR data.

BST - sets stacked bar charts to as the method to display LTE & 5G NR scan results with adjustable color amplitude scale.

Examples

```
:NR5G:COEX:DISP:TYPE TABL 'Sets display type to be table (default)
:NR5G:COEX:DISP:TYPE BST 'Sets the display type to be stacked bar chart
```

Query Syntax :NR5G:COEX:DISP:TYPE?

Return Type character

Default TABL

Last Modified:

20may2021 New command (A.12.15)

[:SENSe]:NR5G:COEXistence:LTE:DUPLex <char>

(Read-Write) Select FDD or TDD for the NR 5G LTE coexistence duplex type.

See also, NR5G:COEX:DISP:TYPE, NR5G:COEX, and NR5G:COEX:CC.

Relevant Modes 5G NR

Parameters

<character> Choose from:
FDD - sets FDD
TDD - sets TDD

Coupling None

Examples
```
:NR5G:COEX:L
:NR5G:COEX:L
```

Query Syntax :NR5G:COEX:L

Return Type character

Default FDD

Last Modified:

20may2021 New command (A.12.15)

[:SENSe]:NR5G:COEXistence[:ENABled] <bool>

(Read-Write) Set and query the LTE coexistence the NSA /DSS feature (Default = OFF). Determines whether the measurement is a normal 5G NR measurement or an NSA / DSS measurement. When disabled, the measurement will be a normal 5G NR measurement. When enabled, the measurement will be an LTE Coexistence measurement.(i.e., activates and deactivates the LTE Coexistence measurement mode) .

See also, NR5G:COEX:DISP:TYPE, NR5G:COEX:LTE:DUPL, and NR5G:COEX:CC.

Relevant Modes 5G NR

Parameters

<booleon> Choices:
ON (1): The LTE Coexistence measurement mode is active.
OFF (0): The LTE Coexistence measurement mode is not active.

Couplings None

Examples

```
NR5G:COEX ON 'The LTE Coexistence measurement mode is active.
NR5G:COEX 0 'The LTE Coexistence measurement mode is not active.
```

Query Syntax NR5G:COEX?

Return Type number

Default OFF (0)

Last Modified:

07apr2021 Added New (A.12.15)

[:SENSe]:NR5G:DSPeed <char>

(Read-Write) Set and query the measurement drive speed (the speed at which the instrument is moving towards or away from the source of the signal being measured).

Relevant Modes 5G NR

Parameters

<char>Set the measurement drive speed. Choose from:

LOW - Relatively low speed

MEDium - Medium speed

HIGH - Relatively high speed

Couplings None

Examples

```
NR5G:DSP HIGH */Sets the measurement drive speed to HIGH
```

Query Syntax NR5G:DSP?

Return Type character

Default LOW

Last Modified:

01dec2019 New command

[:SENSe]:NR5G:FERRor:THReshold <num>

(Read-Write) Set and query frequency error threshold value.

Relevant Modes NR 5G

Parameters

<numeric> Minimum: 0 Hz
Maximum: ¼ * SCS kHz
15 kHz SCS – 3.7500 kHz
30 kHz SCS – 7.5000 kHz
120 kHz SCS – 30.000 kHz
240 kHz SCS – 60.000 kHz

Frequency error value in Hz.

Couplings The current frequency error threshold value is associated with and coupled to the current SCS.

Examples
```
NR5G:FERR:THR 3000
```

Query Syntax :NR5G:FERR:THR?

Return Type Numeric

Default 15 kHz SCS – 3.7500 kHz
30 kHz SCS – 7.5000 kHz
120 kHz SCS – 30.000 kHz
240 kHz SCS – 60.000 kHz

Last Modified:

01dec2019 New command

[:SENSe]:NR5G:LMAX <char>

(Read-Write) Set and query the signal Lmax case.

Relevant Modes 5G NR

Parameters

<char>Set the Lmax value. Choose from:

Auto - (default) Auto-determine the Lmax based on the current frequency and SCS (assumes the signal is standard compliant).

L4 - Lmax of 4

L8 - Lmax of 8

L64 - Lmax of 64

Couplings None

Examples
```
NR5G:LMAX L64 */Sets the Lmax to 64
```

Query Syntax NR5G:LMAX?

Return Type character

Default Auto

Last Modified:

01dec2019	New command

[:SENSe]:NR5G:MEASure:EMF <bool>

(Read-Write) Set and query the EMF measurement mode state (activates and deactivates the EMF measurement mode). Note that you must connect and setup a supported EMF probe/antenna (refer to the B Series User's Guide N9938-90003 on Keysight.com) before activating the EMF measurement mode.

Relevant Modes 5G NR

Parameters

<booleon>Set the EMF measurement mode. Choose from:

OFF or 0 - The EMF mode is not active.

ON or 1 - The EMF mode is active.

Couplings None

Examples

```
NR5G:MEAS:EMF ON */Sets the EMF measurement mode to ON
```

Query Syntax NR5G:MEAS:EMF?

Return Type Booleon

Default ON

Last Modified:

01dec2019	New command

[:SENSe]:NR5G:MEASure:EMF:UNIT <char>

(Read-Write) Set and query the EMF units (V/m | dBµV/m).

Relevant Modes 5G NR

Parameters

<char>Set the EMF measurement units. Choose from:

VPMeter – V/m.

DBUVPMeter – dBµV/m.

Couplings The units are coupled to the Ref Level, Blue Limit and Red Limit settings. The units only apply when the EMF measurement mode is enabled.

Examples

```
NR5G:MEAS:EMF:UNIT VPM */Sets the EMF units to V/m
```

Query Syntax NR5G:MEAS:EMF:UNIT?

Return Type character

Default DBUVPMeter

Last Modified:

01dec2019	New command

[:SENSe]:NR5G:MEASure:SS:DRMS <bool>

(Read-Write) Set and query the SS Meas DMRS state (whether or not the PBCH DMRS is included in the SS measurements (SS-RSRP, SS-RSRQ and SS-SINR)).

See also, Physical layer measurements (3GPP TS 38.215 version 15.5.0 Release 15) Section 5.1.1, 5.1.3 and 5.1.5.

Relevant Modes 5G NR

Parameters

<booleon> Set the DMRS measurement state. Choose from:

OFF or 0 - Do not include the PBCH DMRS in the SS measurements.

ON or 1 - Medium speed

Couplings None

Examples

```
NR5G:MEAS:SS:DMRS OFF */Sets the DMRS measurement state to OFF
```

Query Syntax NR5G:MEAS:SS:DMRS?

Return Type Booleon

Default ON

Last Modified:

01dec2019	New command

[:SENse]:NR5G:SSB:ODETection:BANDwidth <char>

(Read-Write) Set and query the SSB (Synchronization Single Block) Offset Detection bandwidth.

Relevant Modes 5G NR

Parameters

<character> Choices:

Bandwidth and value:

FR15M: FR1 5 MHz bandwidth

FR110M: FR1 10 MHz bandwidth

FR115M: FR1 15 MHz bandwidth

FR120M: FR1 20 MHz bandwidth

FR125M: FR1 25 MHz bandwidth

FR130M: FR1 30 MHz bandwidth

FR140M: FR1 40 MHz bandwidth
FR150M: FR1 50 MHz bandwidth
FR160M: FR1 60 MHz bandwidth
FR170M: FR1 70 MHz bandwidth
FR180M: FR1 80 MHz bandwidth
FR190M: FR1 90 MHz bandwidth
FR1100M: FR1 100 MHz bandwidth
FR250M: FR2 50 MHz bandwidth
FR2100M: FR2 100 MHz bandwidth

Couplings This setting is only relevant when SSB Offset Detect is enabled.

Examples

```
NR5G:SSB:ODET:BAND FR120M 'Sets the SSB Detection Offset bandwidth for FR1 to 20 MHz.
NR5G:SSB:ODET:BAND FR2100M 'Sets the SSB Detection Offset bandwidth for FR2 to 100 MHz.
```

Query Syntax NR5G:SSB:ODET:BAND?

Return Type character

Default FR1100M

Last Modified:

07apr2021	Removed :MEAS (A.12.3x)
15apr2020	A12.00 New command

[:SENse]:NR5G:SSB:ODETection:RESults:COPY:CCARrier <char>

(Read-Write) Set and query the copy component carrier (CC).

The SSB Offset of the selected CC is copied to the Offset Frequency of the corresponding CC with the NR5G:SSB:ODET:SOFF:COPY command.

The SSB Frequency of the selected CC is copied to the Center Frequency of the corresponding CC with the NR5G:SSB:ODET:SFR:COPY command.

Relevant Modes 5G NR

Parameters

<character> Choices:
Component carrier (CC) value:
ALL: All component carriers
CC0: Component carrier 0 (CC0)
CC1: Component carrier 1 (CC1)
CC2: Component carrier 2 (CC2)
CC3: Component carrier 3 (CC3)
CC4: Component carrier 4 (CC4)
CC5: Component carrier 5 (CC5)

CC6: Component carrier 6 (CC6)

CC7: Component carrier 7 (CC7)

Couplings The SSB Offset/Frequency is copied to the Offset Frequency/Center Frequency on “Copy SSB Offset”/“Copy SSB Freq” .

Examples

```
NR5G:SSB:ODETection:RESults:COPY:CCARrier CC1 'Sets the copy component carrier to CC1.
NR5G:SSB:ODETection:RESults:COPY:CCARrier CC7 'Sets the copy component carrier to CC7.
```

Query Syntax NR5G:SSB:ODET:RES:COPY:CCAR?

Return Type character

Default ALL

Last Modified:

07apr2021	Removed :MEAS (A.12.3x)
16-Sep-2022	A12.00 New command

[:SENse]:NR5G:SSB:ODETection:SFReq:COPY

(Write-only) Copies the SSB Frequency result of the selected Component Carrier (CC) to the corresponding CC Center Frequency.

A copy CC is selected with the NR5G:SSB:ODET:RES:COPY:CCAR command. The selected CC must contain valid results for a successful copy (i.e., when All is selected, at least one CC must contain valid results).

Relevant Modes 5G NR

Parameters

Couplings The selected copy CC determines which result is copied. The selected CC must contain valid results for a successful copy (when All is selected, at least one CC must contain valid results).

Examples

```
NR5G:SSB:ODETection:SFReq:COPY
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

07apr2021	Removed :MEAS (A.12.3x)
16-Sep-2022	A12.00 New command

[:SENse]:NR5G:SSB:ODETection:SOFFset:COPY

(Write-only) Copies the SSB Offset result of the selected Component Carrier (CC) to the corresponding CC Offset Frequency.

A copy CC is selected with the NR5G:SSB:ODET:RES:COPY:CCAR command. The selected CC must contain valid results for a successful copy (i.e., when All is selected, at least one CC must contain valid results).

Relevant Modes 5G NR

Parameters

Couplings The selected copy CC determines which result is copied. The selected CC must contain valid results for a successful copy (when All is selected, at least one CC must contain valid results).

Examples

```
NR5G:SSB:ODETection:SOFFset:COPY
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

07apr2021	Removed :MEAS (A.12.3x)
16-Sep-2022	A12.00 New command

[:SENse]:NR5G:SSB:ODETection:SRASter:SNAP <bool>

(Read-Write) Set and query the SSB offset detection which if enabled, snaps automatically to the synchronization raster. When the results are snapped to the synchronization raster, the ARFCN / GSCN is included in the results.

See also, User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone (3GPP TS 38.101-1 version 15.7.0 Release 15) Section 5.4.3 and User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone (3GPP TS 38.101-2 version 15.7.0 Release 15) Section 5.4.3.

Relevant Modes 5G NR

Parameters

<booleon> Choices:

ON (1): Enables the current component carrier.

OFF (0): Disables the current component carrier.

Examples

```
NR5G:SSB:ODET:SRAS:SNAP ON 'Disables the SSB offset
detection automatically snapping results to the
synchronization raster.
NR5G:SSB:ODET:SRAS:SNAP 0 'Enables the SSB offset
detection automatically snapping results to the
synchronization raster.
```

Query Syntax NR5G:MEAS:SSB:ODET:SRAS:SNAP?

Return Type Booleon

Default OFF(0) disable the automatic snap to synchronization raster.

Last Modified:

07apr2021	Removed :MEAS (A.12.3x)
16-Sep-2022	A12.00 New command

[:SENse]:NR5G:SSB:ODETection[:ENABle] <bool>

(Read-Write) Set and query the carrier's SSB offset measurement state. When disabled, the measurement will be a normal 5G NR measurement; When enabled, the measurement will be an SSB offset measurement.

The purpose of the SSB offset measurement is to measure the offset of the SSB from the current Center Frequency. Once the SSB offset has been measured, the results can be used to update the Offset Frequency and make a normal 5G NR measurement.

Relevant Modes 5G NR

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 | 6| 7| 8 (Up to eight component carriers can be measured at one time.)

<booleon> Choices:

ON (1): Enables the SSB offset measurement. Normal 5G NR is disabled.

OFF (0): Disables the SSB offset measurement. Normal 5G NR is enabled.

Couplings When SSB Offset Detect is enabled, only the Table and Spectrum display types are available and Data Logging is not available.

Examples

```
NR5G:SSB:ODET ON
NR5G:SSB:ODET 0
```

Query Syntax NR5G:SSB:ODET?

Return Type number

Default OFF (0)

Last Modified:

07apr2021	Removed :MEAS (A.12.3x)
16-Sep-2022	A12.00 New command

[:SENSe]:NR5G:PCOMp <bool>

(Read-Write) Set and query the Phase Compensation state (whether or not phase compensation is applied to the measurement).

See also, See Physical channels and modulation (3GPP TS 38.211 version 15.7.0 Release 15) Section 5.4.

Note: The phase compensation state is always applied at the current measurement frequency (Measurement Frequency = Center Frequency + Offset Frequency).

Relevant Modes 5G NR

Parameters

<booleon>Set the phase compensation state. Choose from:

OFF or 0 - The phase compensation state is applied to the measurement.

ON or 1 - The phase compensation state is **not** applied to the measurement.

Couplings None

Examples

```
NR5G:PCOM ON */Sets the EMF measurement mode to ON
```

Query Syntax NR5G:PCOM?

Return Type Booleon

Default ON

Last Modified:

01dec2019	New command

[:SENSe]:NR5G:SSBCase <char>

(Read-Write) Set and query the signal SSB case.

See also, physical layer procedures for control (3GPP TS 38.213 version 15.7.0 Release 15) Section 4.1.

Relevant Modes 5G NR

Parameters

<char>Set the SSB case value. Choose from:

Auto - (default) Auto-determine the SSB case based on the current SCS (assumes the signal is standard compliant). Note that the SSB case can be determined for all SCS except 30 kHz (you must manually select SSB Case B or C for an accurate measurement).

A - Case A

B - Case B

C - Case C

D - Case D

E - Case E

Couplings None

Examples

```
NR5G:SSBC B */Sets the SSSB to Case B
```

Query Syntax NR5G:SSBC?

Return Type character

Default Auto

Last Modified:

01dec2019	New command

[:SENSe]:NR5G:SCS <char>

(Read-Write) Set and query the signal SSB case (μ).

See Physical channels and modulation (3GPP TS 38.211 version 15.7.0 Release 15) Section 4.2

Relevant Modes 5G NR

Parameters

<char>Set the SCS value. Choose from:

S15K - 15 kHz (μ=0)

S30K - 30 kHz (μ=1)

S120K - 120 kHz (μ=3)

S240K - 240 kHz (μ=4)

Couplings The current SCS is associated with and coupled to the current frequency error threshold value.

The SCS is coupled to the Center Frequency setting based on the 5G NR FR1 & FR2 frequency ranges (see User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone (3GPP TS 38.101-1 version 15.7.0 Release 15) Section 5.1 and User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone (3GPP TS 38.101-2 version 15.7.0 Release 15) Section 5.1). If the Center Frequency is set below the FR1 range and the SCS is not associated with FR1, the SCS will be set to 30 kHz; If the Center Frequency is set above the FR1 range and the SCS is not associated with FR2, the SCS will be set to 120 kHz.

Refer to NR5G:FERRor:THReshold.

Examples

```
NR5G:SCS S30K */Sets the SCS to 30 kHz (μ=1)
```

Query Syntax NR5G:SCS?

Return Type character

Default S30K

Last Modified:

01dec2019	New command

[:SENSe]:NREVm:NBANdwidth <char>

(Read-Write) Set and query the frequency band and bandwidth value.

Relevant Modes 5G EVM

Parameters

<character> Frequency band and bandwidth value.

FR15M – FR1 5 MHz bandwidth.
FR110M - FR1 10 MHz bandwidth.
FR115M - FR1 15 MHz bandwidth.
FR120M - FR1 20 MHz bandwidth.
FR125M - FR1 25 MHz bandwidth.
FR130M - FR1 30 MHz bandwidth.
FR140M - FR1 40 MHz bandwidth.
FR150M - FR1 50 MHz bandwidth.
FR160M - FR1 60 MHz bandwidth.
FR170M - FR1 70 MHz bandwidth.
FR180M - FR1 80 MHz bandwidth.
FR190M - FR1 90 MHz bandwidth.
FR1100M - FR1 100 MHz bandwidth.
FR250M – FR2 50 MHz bandwidth.
FR2100M - FR2 100 MHz bandwidth.

Examples

```
NREV:BAND FR110M */sets the bandwidth to FR1 5 MHz
bandwidth
NREV:BAND FR250M */sets the bandwidth to FR2 50 MHz
bandwidth
```

Query Syntax NREVm:NBANdwidth?

Return Type Character

Default FR110M

Last modified:

01-june-2018	New command

[:SENse]:NREVm:CCARrier<n>:ENABle <bool>

(Read-Write) Set and query the component carrier's enable/disable state.

Relevant Modes 5G NR EVM Conducted

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<booleon> Choices:

ON (1): Enables the current component carrier.

OFF (0): Disables the current component carrier.

Examples

```
NREVm:CCAR5:ENAB ON
NREVm:CCAR3:ENAB 0
```

Query Syntax NREVm:CCAR:ENAB?

Return Type number

Default ON for CCO.
OFF for all other CC.

Last Modified:

12dec2019 New command

[:SENse]:NREVm:CCARier<n>:FREQuency:CENTer <num>

(Read-Write) Set and query the component carrier center frequency.

Relevant Modes 5G NR EVM Conducted

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).
n = 1 | 2 | 3 | 4 | 5 (Up to five component carriers can be measured at one time.)

<numeric> Choices:
Maximum (Hz): Dynamic. Varies with the FieldFox model.
Minimum: 0 Hz

Examples

```
NREVm:CCAR5:FREQ:CENT 2e9
NREVm:CCAR3:FREQ:CENT 10000
```

Query Syntax NREVm:CCAR:FREQ:CENT?

Return Type number

Default 1000000000

Last Modified:

12dec2019 New command

[:SENSe]:NREV:CCARrier<n>:MODE <string>

(Read-Write) Set and query the NREV frequency mode for the component carrier (CHANnel | FREQuency).

Relevant Modes 5G NR EVM Conducted

Parameters

<n> Choose from 1 to 5. Default is 1 (CC0).

<string> Choices:
CHANnel: Channel and Band are based on the component carrier in the

FieldFox. Center frequency is coupled to the channel and band choices.

FREQuency: Center frequency is entered independently.

If FreqMode = Channel, center frequency value is based on band and channel in target carrier.

Examples

```
NREV:CCAR2:MODE CHAN
NREV:CCAR2:MODE FREQ
```

Query Syntax NREV:CCAR5:MODE?

Couplings This setting is associated with the currently selected Component Carrier (CC).

When Freq is selected, the frequency settings are set directly and when Chan is selected, the frequency settings are set through the channel table settings.

Return Type string

Default numeric =1 (CC0), string = FREQ

Last Modified:

15apr2020 A12.00 New command

[:SENSe]:NREVm:CID <char> or <num>

(Read-Write) Set and query the auto Cell ID value.

Set the Cell ID using [:SENSe]:NREVm:CID:AUTO.

Relevant Modes 5G EVM

Parameters

<char/numeric> Set the Cell ID. Choose from:

<numeric> - Cell ID value. Choose a value between **0** and **1007**.

MINimum - Sets the Cell ID to the minimum value (0).

MAXimum - Sets the Cell ID to the maximum value (1007).

This command will accept DEFault, MINimum and MAXimum as arguments.

Couplings Can only be set when [:SENSe]:NREVm:CID:AUTO Cell ID is OFF.

Examples

```
NREV:CID MIN */Sets the Cell ID to the minimum cell ID
NREV:CID 505 */Sets the Cell ID to 505
```

Query Syntax NREV:CID? */queries Cell ID

Return Type Numeric

Default ON (1)

Last Modified:

01dec2019 New command

[:SENSe]:NREVm:CID:AUTO <bool>

(Read-Write) Set and query the auto Cell ID state.
Set the Cell ID using [:SENSe]:NREVm:CID.

Relevant Modes 5G EVM

Parameters

<booleon>Set the Cell ID Auto state. Choose from:

OFF or 0 - Only analyze signals with the expected Cell ID (set by [:SENSe]:NREVm:CID).

ON or 1 - Automatically detect the Cell ID of the signal.

Couplings When NREV:CID:AUTO is disabled (OFF), you are able to set the cell ID.

Examples

```
NREV:CID:AUTO ON */Sets the Auto Cell ID to ON
NREV:CID 505 */Sets the Cell ID to 505
```

Query Syntax NREV:CID:AUTO? */queries Auto Cell ID status

Return Type Booleon

Default ON (1)

Last Modified:

01dec2019	New command

[:SENSe]:NREVm:PCOMp <bool>

(Read-Write) Set and query the Phase Compensation state (whether or not phase compensation is applied to the measurement).

Note: The phase compensation is always applied at the current measurement frequency (Center Freq).

Relevant Modes 5G EVM

Parameters

<booleon>Set the phase compensation state. Choose from:

OFF or 0 - Phase compensation is **not** applied to the measurement.

ON or 1 - Phase compensation is applied to the measurement.

Couplings None

Examples

```
NREV:PCOM 0 */Sets the phase compensation to OFF.
```

Query Syntax NREV:PCOM?

Return Type Booleon

Default ON (1)

Last Modified:

01dec2019	New command

[:SENse]:NREVm:RESults:EXPort <char>

(Write-Only) Export the results of the selected Component Carrier (CC) to the setup of the corresponding CC in the 5G NR submode.

The values exported to the 5G NR submode setup are: SSB center frequency, SSB subcarrier spacing, SSB Case and SSB Lmax.

The export CC is selected with the [:SENSe]:NREVm:RESults:EXPort:CCARrier command. The selected CC must contain valid results for a successful export.

Relevant Modes 5G EVM

Couplings The selected export CC determines which results are exported. The selected CC must contain valid results for a successful export.

Parameters

<character> <character> Component carrier (CC) value. Choose from:
CC0 | CC1 | CC2 | CC3 | CC4

Examples

```
NREV:RES:RES:EXP CC4 */Exporting the current component carrier 4 data to 5G NR
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01dec2019	New command

[:SENse]:NREVm:RESults:EXPort:CCARrier <char>

(Read-Write) Set and query the export Component Carrier (CC).

The results of the selected CC are exported to the measurement setup of the corresponding CC in the 5G NR submode with the [:SENSe]:NREVm:RESults:EXPort command.

Relevant Modes 5G EVM

Couplings This setting is associated with the currently selected Component Carrier (CC).

This setting is limited by the Band setting.

The Channel ARFCN is translated to a frequency and used to set the Center Frequency setting.

Parameters

<character> <character> Component carrier (CC) value. Choose from:
CC0 – Component Carrier 0.
CC1 – Component Carrier 1.
CC2 – Component Carrier 2.

CC3 – Component Carrier 3.
CC4 – Component Carrier 4.

Examples `NREV:RES:EXP:CCAR CC4`

Query Syntax NREV:RES:EXP:CCAR?

Return Type Character

Default CC0

Last Modified:

01dec2019 New command

[:SENSe]:OBW:PPOW <num>

(Read-Write) Set and query the Power Percent for an Occupied Bandwidth measurement.

Relevant Modes SA

Parameters

<num> Power Percent. Choose a number from 10 to 99.99.

Examples `OBW:PPOW 20`

Query Syntax [:SENSe]:OBW:PPOW?

Return Type Numeric

Default 10

[:SENSe]:POINt:DWELl <value>

(Read-Write) Set and query the settling time after the internal source steps to the next frequency and before the power sensor makes a measurement.

Relevant Modes FOPS (Opt 208)

Parameters

<value> Dwell time in seconds.

Examples `POIN:DWEL .01`

Query Syntax [:SENSe]:POINt:DWELl?

Return Type Numeric

Default 0

Last modified:

19-Mar-2014 New command (A.07.50)

[:SENSe]:POINt:READ:MAX <value>

(Read-Write) Set and query the maximum number of readings the power sensor will make to achieve settling.

Each power sensor reading is "settled" when either:

- two consecutive readings are within the Tolerance value (see [:SENSe]:TOL) or
- when the Max Number of Readings has been met.

The readings that were taken are averaged together to become the "settled" reading.

Relevant Modes FOPS (Opt 208)

Parameters

<value> Max number of readings. Choose a value between 1 and 20

Examples

```
POIN:READ:MAX 5
```

Query Syntax [:SENSe]:POINt:READ:MAX?

Return Type Numeric

Default 4

Last modified:

19-Mar-2014 New command (A.07.50)

[:SENSe]:POWer[:RF]:ARANge

(Write only) Executes an auto-range, which determines the optimal RF attenuation and preamp settings for the current input signal. If more than one CC is enabled when an auto-range is executed, the range is determined for each CC separately and the final RF attenuation and preamp settings are determined using the maximum range.

Note: Executing an auto-range DOES NOT change any of the display settings (Ref Level, Scale or Ref Pos).

See also, [:SENse]:POWer[:RF]:RLEVel, [:SENSe]:POWer[:RF]:ATTenuation, [:SENSe]:POWer[:RF]:GAIN[:STATe].

Relevant Modes LTE FDD, 5G TF, 5G NR, 5G NR EVM Conducted

Parameters

n/a

Examples

```
POW:ARAN */Executes an auto-range as described above.
```

Query Syntax n/a

Return Type n/a

Default n/a

Last modified:

01june2022	New command (A.12.5x)

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

(Read-Write) Set and query RF attenuation value. Also set POW:ATT:AUTO OFF, [:SENSe]:POWer[:RF]:ARANge.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, PAA, SA, LTE FDD, CPM, RTSA, IQA

Parameters

<numeric> Attenuation value in dB. Choose a number between the minimum and maximum attenuation of the FieldFox.

This command will accept MIN and MAX as arguments.

The RF Attenuation value is never automatically lowered below 5 dB.

CPM mode only accepts two values: 10 dB or 30 dB

Examples

```
POW:ATT 30
```

Query Syntax :POWer:ATTenuation?

Return Type Numeric

Default 10

Last Modified:

31oct2019	Added PAA mode
03dec2018	Added LTE FDD & 5GTF (A.11.0)
22oct2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)
1-April-2014	Added CPM

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

(Read-Write) Set and query RF attenuation value. Also set POW:ATT:AUTO OFF, [:SENSe]:POWer[:RF]:ARANge.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, PAA, SA, LTE FDD, CPM, RTSA, IQA

Parameters

<numeric> Attenuation value in dB. Choose a number between the minimum and maximum attenuation of the FieldFox.

This command will accept MIN and MAX as arguments.

The RF Attenuation value is never automatically lowered below 5 dB.

CPM mode only accepts two values: 10 dB or 30 dB

Examples
```
POW:ATT 30
```

Query Syntax :POWer:ATTenuation?

Return Type Numeric

Default 10

Last Modified:

31oct2019	Added PAA mode
03dec2018	Added LTE FDD & 5GTF (A.11.0)
22oct2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)
1-April-2014	Added CPM

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

(Read-Write) Set and query the Auto RF Attenuation state. See also :POW:ATT.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, PAA, SA, LTE FDD, RTSA, IQA

Parameters

<boolean> Auto RF Attenuation state. Choose from:
O or **OFF** - RF Attenuation is set manually
1 or **ON** - RF Attenuation is set automatically

Examples
```
POW:ATT:AUTO 1
```

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

Return Type Boolean

Default ON

Last Modified:

31oct2019	Added PAA mode
03dec2018	Added LTE FDD & 5GTF (A.11.0)
22oct2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)

[:SENSe]:POWer:BPLevel <num>

(Read-Write) Set and query the Blue power level limit used with Bar Chart displays (Option LTE FDD, 5G TF, 5G NR, and 5G NR EVM Conducted only).

See also: [:SENSe]:POWer:RPLevel (Red power level)

Relevant Modes LTE FDD, 5G TF, 5G NR, 5G NR EVM Conducted

Parameters

<num> Select the LOWEST power levels (in dB) that you expect to measure. This power level, and those measured lower than this level, appear Blue.

Enter a value between the 0 and the current Red (Highest) limit. (Default Red is -50)

Couplings: If it's over range with max value, Blue limit = Red limit -1

Examples

```
POW:BPL -80
```

Query Syntax [:SENSe]:POWer:BPLevel?

Return Type Numeric

Default -90

Last Modified:

16-Sep-2022 Adding new command for LTE FDD & 5GTF (A.11.0)

[:SENSe]:POWer[:RF]:EXTGain <num>

(Read-Write) Set and query external gain value. Use to compensate the trace and scale when using an external amp or attenuator. May automatically increase the amount of attenuation.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, PAA, SA, LTE FDD, RTSA, IQA

Parameters

<numeric> Amount of gain (positive value) or loss (negative value) in dB.

This command will accept MIN and MAX as arguments.

Minimum: -100 dB

Maximum: 100 dB

Examples

```
POW:EXTG 10
```

Query Syntax [:SENSe]:POWer[:RF]:EXTGain?

Return Type Numeric

Default 0

Last Modified:

31oct2019 Added PAA mode

03dec2018 Added LTE FDD & 5GTF (A.11.0)

22oct2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)

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

(Read-Write) Set and query preamplifier state. Available with Option 235.

Relevant Modes IQA

Parameters

<boolean> Preamp AUTO ON | OFF state. Choose from:

O or **OFF** - AUTO Preamp OFF

1 or **ON** - AUTO Preamp ON

When Auto is enabled, the preamp setting is coupled to the RF attenuation and to the reference level. When the reference level reaches a certain value, the preamp is turned on and **PA** is shown to the left of the graticules on the display.

Examples

```
POW:GAIN:AUTO 0
POW:GAIN:AUTO OFF
```

Query Syntax :POW:GAIN:AUTO?

Return Type Boolean

Default OFF (0)

Last Modified:

22oct2017	Added IQA mode (10.1x)

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

(Read-Write) Set and query preamplifier state. Available with Option 235.

See also, [:SENSe]:POWer[:RF]:ARANge.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, PAA, PAA, SA, LTE FDD, RTSA, IQA

Parameters

<boolean> Preamp ON | OFF state. Choose from:

O or **OFF** - (*For 5GTF and LTE FDD only OFF is valid*) Preamp OFF

1 or **ON** - (*For 5GTF and LTE FDD only ON is valid*) Preamp ON

AUTO - (5GTF, LTE FDD, and *RTSA Only!*) When Auto is selected, the preamp setting is coupled to the RF attenuation and to the reference level. When the reference level reaches a certain value, the preamp is turned on and **PA** is shown to the left of the graticules on the display.

For IQA, see also POW:GAIN:AUTO.

Examples

```
POW:GAIN 0          '0 and 1 are invalid choices for 5GTF and LTE FDD
POW:GAIN AUTO       '5GTF, LTE FDD, and RTSA Only
```

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

Return Type Boolean

Default OFF

Last Modified:

31oct2019	Added PAA mode
03dec2018	Added LTE FDD & 5GTF (A.11.0)
22oct2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)

[:SENSe]:POWer[:RF]:RLEVel <num>

(Read-Write) Sets the absolute power reference level.
See also, [:SENSe]:POWer[:RF]:ARANge.

Relevant Modes LTE FDD, 5G TF, 5G NR, 5G NR EVM Conducted

Parameters

<num> Absolute power reference level in dBm
Preset: -10 dBm
Minimum: -210 dBm
Maximum: 30 dBm

CouplingsN/A

Examples

```
POW:RLEV 10
POW:RLEV -23
```

Query Syntax POWer:RLEVel?

Default -10 dBm

Last Modified:

03dec2018	Added LTE FDD & 5GTF (A.11.0)
16-Sep-2022	New command

[:SENSe]:POWer:RPLevel <num>

(Read-Write) Set and query the Red power level limit used with Bar Chart displays (Option LTE FDD, 5G TF, 5G NR, and 5G NR EVM Conducted onlyfS).

See also: [:SENSe]:SPECtrogram:BPLevel (Blue power level)

Relevant Modes LTE FDD, 5G TF, 5G NR, 5G NR EVM Conducted

Parameters

<num> Select the HIGHEST power levels (in dB) that you expect to measure. This power level, and those measured higher than this level, appear Red.

Enter a value between 0 and the current Blue (Lowest) limit. (Default Blue is -90).

Couplings: If it's over range with min value, Red limit = blue limit + 1

Examples

```
POW:RPL -10
```

Query Syntax [:SENSe]:POWer:RPLevel?

Return Type Numeric

Default -50

Last Modified:

03dec2018 Adding new command for LTE FDD & 5GTF (A.11.0)

[:SENSe]:QUANtity:TACTive?

(Read-only) Returns the number of active traces and the number of traces that are currently allowed.

Some SA measurements allow only one measurement trace, such as Channel Mode measurements. In this case, 1,1 would be returned.

Use TRACe<n>:DATA? to read SA trace data.

Use TRACe<n>:TYPE to set the trace type.

Relevant Modes SA

Parameters

Examples

```
QUAN:TACT?
'With a general SA measurement active, returns 1,4
'With a Channel power measurement active, returns 1,1
```

Return Type Numeric, Numeric

Default 1,4

Last Modified:

20-Oct-2010 New command (5.30)

[:SENSe]:RADio:CHANnel:CENTer <num>

(Read-Write) Set and query the channel number that appears in the center of the current channel measurement. First select a Radio Standard [:SENSe]:RADio:STANdard then activate the channel frequency-drive commands by changing [:SENSe]:RADio:TEUNit to **CHAN.**

Relevant Modes SA, CPM

Parameters

<num> Channel number. The range of valid channel numbers depends on the current radio standard. If a channel number outside the acceptable range is entered, the channel will be set to the closest valid channel number.

Examples RAD:CHAN:CENT 10

Query Syntax [:SENSe]:RADio:CHANnel:CENTer?

Return Type Numeric

Default Center channel of the radio standard.

Last Modified:

1-Apr-2014 Added CPM

[:SENSe]:RADio:CHANnel:DIRection <char>

(Read-Write) Set and query the frequency Uplink or Downlink direction. First select a Radio Standard [:SENSe]:RADio:STANdard then activate the channel frequency-drive commands by changing [:SENSe]:RADio:TEUNit to **CHAN.**

NOT all Radio Standards contain Uplink and Downlink frequencies.

Relevant Modes SA, CPM

Parameters

<char> Choose from:

UP - Uplink

DOWN - Downlink

Examples RAD:CHAN:DIR UP

Query Syntax [:SENSe]:RADio:CHANnel:DIRection?

Return Type Character

Default DOWN

Last Modified:

1-Apr-2014 Added CPM

[:SENSe]:RADio:CHANnel:STARt <num>

(Read-Write) Set and query the channel number that appears at the start (left edge) of the current channel measurement. First select a Radio Standard [:SENSe]:RADio:STANdard then activate the channel frequency-drive commands by changing [:SENSe]:RADio:TEUNit to **CHAN.**

Relevant Modes SA

Parameters

<num> Channel number. The range of valid channel numbers depends on the current radio standard. If a channel number outside the acceptable range is entered, the channel will be set to the closest valid channel number.

Examples RAD:CHAN:STAR 10

Query Syntax [:SENSe]:RADio:CHANnel:STARt?

Return Type Numeric

Default -1 (Start and Stop channels not activated)

[:SENSe]:RADio:CHANnel:STEP <num>

(Read-Write) Set and query the channel number step size which determines the number of channels that are incremented and decremented each time the Up/Down arrows are pressed on the FieldFox front-panel.

First select a Radio Standard [:SENSe]:RADio:STANdard then activate the channel frequency-drive commands by changing [:SENSe]:RADio:TEUNit to **CHAN.**

Relevant Modes SA, CPM

Parameters

<num> Channel number step size. Choose a value between 1 and 100.

Examples RAD:CHAN:STEP 10

Query Syntax [:SENSe]:RADio:CHANnel:STEP?

Return Type Numeric

Default 1

Last Modified:

1-Apr-2014	Added CPM

[:SENSe]:RADio:CHANnel:STOP <num>

(Read-Write) Set and query the channel number that appears at the stop (right edge) of the current channel measurement. First select a Radio Standard [:SENSe]:RADio:STANdard then activate the channel frequency-drive commands by changing [:SENSe]:RADio:TEUNit to **CHAN.**

Relevant Modes SA

Parameters

<num>	Stop channel number. The range of valid channel numbers depends on the current radio standard. If a channel number outside the acceptable range is entered, the channel will be set to the closest valid channel number.

Examples RAD:CHAN:STOP 10

Query Syntax [:SENSe]:RADio:CHANnel:STOP?

Return Type Numeric

Default -1 (Start and Stop channels not activated)

[:SENSe]:RADio[:SELect]:STANdard <char> - Obsolete

The command is replaced with [:SENSe]:RADio:STANdard[:SELect] which uses a string argument.

(Read-Write) Set and query the Radio Standard for use in channel measurements.

Relevant Modes SA

Parameters

<char> Radio Standard. Not case-sensitive. Choose from:

NONE
GSM450
GSM480
GSM850
GSM900
EGSM900
RGSM900 // more band extension beyond E-GSM 900
GSM1800
GSM1900
IDEN800
IDEN900
WCDMA850
WCDMA1900
WCDMA2100
WCDMAAWS
TDSCDMACHINA
CDMA2K850
CDMA2K1900
CDMA2KJAPAN
CDMA2KKOREA
LTE700US // E-UTRA band 13 for 700M US LTE
LTE2600 // E-UTRA band 7 for 2600M International LTE
WIMAXMOBILE
DVBTVHF
DVBTUHF

Examples radio:standard gsm1800

Query Syntax [:SENSe]:RADio[:SELect]:STANdard?

Return Type Character

Default None

[:SENSe]:RADio:STANdard[:SELect] <string>

This command replaces [:SENSe]:RADio:STANdard.

(Read-Write) Set and query the Radio Standard for use in channel measurements.

Relevant Modes SA, CPM

Parameters

<string> Radio Standard. Choose from those listed in the User Interface when the Radio Standard softkey is pressed, including custom radio standards.

Case-sensitive. Include spaces and enclose in double-quotes.

Select **"None"** to turn radio standards OFF.

Examples radio:standard "GSM 1800"

Query Syntax [:SENSe]:RADio:STANdard[:SELect]?

Return Type String

Default None

Last Modified:

1-Apr-2014 Added CPM

11-Aug-2011 New command

[:SENSe]:RADio:TEUNit <char>

(Read-Write) Set and query the whether channel measurements are tuned using frequency or channel numbers.

Relevant Modes SA, CPM

Parameters

<num> Tune entry units. Choose from:

FREQ - Channel measurement tuning is accomplished using Frequency (**Sens:Freq**:Start, Stop ,Center, Span)

CHAN - Channel measurement tuning is accomplished using Channel numbers (**Sens:Rad**:Chan:Start, Stop ,Center). Must also select a Radio Standard [:SENSe]:RADio:STANdard.

Examples RAD:TEUN CHAN

Query Syntax [:SENSe]:RADio:TEUNit?

Return Type Character

Default FREQ

Last Modified:

1-Apr-2014 Added CPM

[:SENSe]:RESolution <char>

(Read-Write) Set and query the number of data points for the Pulse measurement.

Relevant Modes Pulse Measurements

Parameters

<char> Resolution setting. Choose from the following:
LOW - 240 data points.
MED - 1000 data points.
HIGH - Calculated value - approximately 8000 data points.

Examples `RES LOW`

Query Syntax [:SENSe]:RESolution?

Return Type Character

Default LOW

Last Modified:

29-Oct-2013 New command

[:SENSe]:ROSCillator:SOURce <char>

(Read-Write) Set and query the source of the 10 MHz reference oscillator.

Relevant Modes ALL

Parameters

<num> Choose from:
INTernal - Internal FieldFox reference.
EXTernal -An external reference.
GPS - uses the Global Position System

Examples `ROSC:SOUR INT`

Query Syntax [:SENSe]:ROSCillator:SOURce?

Return Type Character

Default INTernal

[:SENSe]:ROSCillator:STATus?

(Read-Only) Returns the status of the reference loop.
-1 External Reference or GPS reference is Unlocked (whichever is selected as the reference)
0 Internal Reference
+1 External Reference or GPS reference is Locked (whichever is selected as the reference)

Relevant Modes ALL

Examples `ROSC:STAT?`

Return Type Numeric

Default Not Applicable

[:SENSe]:SAListen:DTYPE

(Read) Sets the D type.

Relevant Modes Channel Scanner

Parameters

<val> Choose from:

AM- Amplitude modulation. In Tune & Listen, the demodulation bandwidth is narrower.

FMn -Frequency Modulation narrowband. In Tune & Listen, the demodulation bandwidth is narrower.

FMw- Frequency Modulation wideband. In Tune & Listen, the demodulation bandwidth is wider.

Examples

```
[:SENSe]:SAListen:DTYPE AM
[:SENSe]:SAListen:DTYPE FMw
```

Query Syntax

Return Type character

Default

Last Modified:

[:SENSe]:SAListen:LTIMe

(Read) Sets the length of time Tune & Listen. i.e., How long to listen before jumping to the next frequency in the sequence.

Relevant Modes Channel Scanner

Parameters

<val>

Examples

```
:SAL:LTIM 5
```

Query Syntax

Return Type character

Default

Last Modified:

[:SENSe]:SAListen:PAUSe

(Read) Pauses the data recording.

Relevant Modes Channel Scanner

Parameters

<bool>

Examples

```
[:SENSe]:SAListen:PAUSe
```

Query Syntax

Return Type boolean

Default

Last Modified:

[:SENSe]:SAListen:RESume

(Read) Resumes the data recording.

Relevant Modes Channel Scanner

Parameters

<bool>

Examples

```
CHScanner:SENSe:SAListen:RESume
```

Query Syntax

Return Type boolean

Default

Last Modified:

[:SENSe]:SEMask:AVERage:COUNt <num>

(Read-Write) Set and query the SEM averaging count.
See also [:SENSe]:SEMask:AVERage:ENABle.

Relevant Modes SA

Parameters

<numeric> Choose from:
1 to 10000 number of satellites to display
This command accepts MIN and MAX to set the minimum power required.

Examples

```
SEM:AVER:COUN 27 'sets the SEM averaging at 27
```

```
SEM:AVER:COUN MAX 'sets the SEM averaging count to 10000
```

Query Syntax SYSTem:GPS:AVERage:TOPN?

Return Type numeric

Default 11

Last modified:

01nov2019 Added to SA

[:SENSe]:SEMask:AVERage:ENABle <bool>

(Read-Write) Set and query the SEM averaging state. When ON averaging cycles through reference channel and all offsets *n* times. This produces a final averaged reference channel power.

See also [:SENSe]:SEMask:AVERage:COUNt.

Relevant Modes SA

Parameters

<booleon> Choose from:
OFF (0) - Averaging is disabled.
ON (1) - Averaging is enabled.

Examples

```
SEM:AVER:ENAB 0 'disables SEM averaging
SEM:AVER:ENAB ON 'enables SEM averaging
```

Query Syntax SEM:AVER:ENAB?

Return Type numeric

Default 0

Last modified:

01dec2019 Added to SA

[:SENSe]:SEMask:CDETector[:FUNCtion] <char>

(Read-Write) Set and query: the reference channel detector settings (AUTO | NORM | POS | NEG | SAMP | AVER).

There are two Detector controls available, one for the Reference Channel (default: Auto is Averaged to facilitate the Power Integration), and another for all the Offset segments (default Auto is PEAK, to facilitate finding PEAK signal energy when comparing against Limits). There is only one Trace available, and like the other Channel Measurements, the default Trace Average behavior is gated with an ENABLE found on the overall Meas Setup menu.

The detector selection is analogous to standard detector, except the AUTO selection maps to AVERAGE for the Ref Chan Detector and PEAK for the Offset Detector.

See also SEM:OFFS<n>:ODETector and [:SENSe]:CMEasurement:AVERage:ENABle.

Relevant Modes SA

Parameters

<character> Failure mask. Choose from:

AUTO (Auto-Average) - Auto-Average (Default) to facilitate better power integration. Auto displays the most appropriate detection method based on other settings.

NORM - sets the detector normal. Normal provides a better visual display of random noise than Positive peak and avoids the missed-signal problem of the SampleMode. Should the signal both rise and fall within the bucket interval, then the algorithm classifies the signal as noise. An odd-numbered data point displays the maximum value encountered during its bucket. An even-numbered data point displays the minimum value encountered during its bucket. If the signal is NOT classified as noise (does NOT rise and fall) then Normal is equivalent to Positive Peak

POS - sets the detector to Positive peak. Displays the maximum value of all the measurements in each bucket. This setting ensures that no signal is missed. However, it is not a good representation of the random noise in each bucket.

NEG - sets the detector to Negative peak. Displays the minimum value of all the measurements in each bucket.

SAMP - sets the detector to Sample. Sample displays the center measurement of all the measurements in each bucket. This setting gives a good representation of the random noise in each bucket. However, it does not ensure that all signals are represented.

AVER - sets the detector Average. This displays the Root Mean Squared (RMS) average power of all the measurements in each bucket. This is the preferred method when making power measurements.

Examples

```
SEM:CDET NORM 'sets segment 5 to use a normal detector type
SEM:CDET NEG 'sets segment 3 to use a negative peak detector type
```

Query Syntax SEM:OFFS6:CDET? 'queries the detector type for segment 6

Return Type Character

Default POS

Last Modified:

01dec2019	New command

[:SENSe]:SEMask:MREFerence <num>

(Read-Write) Set and query a fixed SEM power reference (which also fixes the Relative Limit Line). But then you must consider the unit being used (dBm or dBm/Hz) depending on the Measure Type selected.

See also [:SENSe]:SEMask:MTYPe and [:SENSe]:SEMask:MREFerence:AUTO.

Relevant Modes SA

Parameters

<numeric> Choose from:

-1000 to 1000 (dBm or dBm/Hz)

Examples

```
SEM:MREF 100 'Sets the SEM power reference to 100 dBm or dBM/Hz.
SEM:MREF MAX 'Sets the SEM power reference to 1000 dBm or dBM/Hz.
```

Query Syntax SEM:MREF?

Return Type numeric

Default 0.00E+00 dBm

Last Modified:

01dec2019 New command

[:SENSe]:SEMask:MREFerence:AUTO <bool>

(Read-Write) Set and query the power reference Auto state. When enabled the FieldFox tracks the measurement type and the automatically change the power reference units dBm or dBm/Hz. If the power reference is disabled, you must choose the correct units for the SEM measurement type.

See also [:SENSe]:SEMask:MREFerence and [:SENSe]:SEMask:MTYPe.

Relevant Modes SA

Parameters

<booleon> Choose from:

OFF (0) - Averaging is disabled.

ON (1) - Averaging is enabled.

Examples

```
SEM:MREF:AUTO 0 'disables the SEM power reference Auto setting.
SEM:MREF:AUTO ON 'enables SEM power reference Auto setting.
```

Query Syntax SEM:MREF:AUTO?

Return Type numeric

Default 0

Last modified:

01dec2019 Added to SA

[:SENSe]:SEMask:MTYPe <char>

(Read-Write) Set and query the type of SEM measured (TPWR | PSDR | SPKR). The **Power Ref** value can be fixed (which then also fixes the Relative Limit line), but then you must consider the unit being used (dBm or dBm/Hz) depending on the Meas Type selected. If **Power Ref** is left AUTO then its value will track the Meas Type and change units automatically.

See also [:SENSe]:SEMask:MREFerence and [:SENSe]:SEMask:MREFerence:AUTO.

Relevant Modes SA

Parameters

<character> Choose from:

TPWR - Selects SEM type Total Power Reference. Where the total integrated reference channel power (dBm) is measured and used as the Auto Power Ref value. Peaks found in Offset segments remain in (dBm) units for direct comparison with (dBm) limits.

PSDR - Selects SEM type PSD Ref. Where the power spectral density (dBm/Hz) is measured and used as the Auto Power Ref value. Absolute Limits and Peaks found in Offset segments are normalized to their equivalent PSD value (dBm/Hz).

SPKR - Selects SEM type Spec Pk. Where the spectral peak value measured within the reference channel (dBm) is used as the Auto Power Ref value. Peaks found in Offset segments remain in (dBm) units for direct comparison with (dBm) limits.

Examples

```
SEM:MTYP PSDR 'Sets the Auto power reference to be the measured spectral density (dBm/Hz).
SEM:MTYP SPKR 'Sets the Auto power reference to be the spectral peak measured value.
```

Query Syntax SEM:MTYP?

Return Type Character

Default TPWR

Last Modified:

01dec2019	New command

[:SENSe]:SEMask:OASPan <bool>

(Read-Write) Set and query the Frequency control menu (Center and Span) provides an SEM Auto Span control (defaulted to ON) which automatically tracks the necessary span to cover all enabled offset segments. But you can de-couple the span simply by narrowing or widening Span it in order to zoom.

See also [:SENSe]:SEMask:REFChannel:CENTer and [:SENSe]:SEMask:REFChannel:CENTer:AUTO.

Relevant Modes SA

Parameters

<booleon> Choose from:

OFF (0) - SEM Auto span control is disabled.

ON (1) - SEM Auto span control is enabled.

Examples

```
SEM:OASP 0 'disables the SEM Auto span setting.
SEM:OASP ON 'enables SEM Auto span setting.
```

Query Syntax SEM:OASP?

Return Type numeric

Default 1

Last modified:

01dec2019 Added to SA

[:SENSe]:SEMask:OFDefine <char>

(Read-Write) Set and query the SEM carrier definition (i.e., from the Carrier Center (FCC) or from the Carrier Edge (FCE)).

See also SEM:OFFS<n>:BAND:AUTO, SEM:OFFS<n>:BAND, SEM:OFFS<n>:ENAB, SEM:OFFS<n>:FREQ:STAR, SEM:OFFS<n>:FREQ:STOP, and SEM:OFFS<n>:SIDE.

Relevant Modes SA

Parameters

<char> SEM Carrier reference. Choose from:

FCC - Carrier Center is used for the SEM

FCE - Carrier Edge is used for the SEM

Examples

```
SEM:OFD FCE 'the Carrier Edge is used as the SEM center
```

Query Syntax SEM:OFD?

Return Type Character

Default FCC

Last Modified:

01dec2019 Added SEM parameter

[:SENSe]:SEMask:OFFSet<n>:BANDwidth[:RESolution] <num>

(Read-Write) Set and query the SEM offset resolution BW for the selected channel (1 through 8).

See also SEM:OFD, SEM:OFFS<n>:BAND:AUTO, SEM:OFFS<n>:ENAB, SEM:OFFS<n>:FREQ:STAR, SEM:OFFS<n>:FREQ:STOP, and SEM:OFFS<n>:SIDE.

Relevant Modes SA

Parameters

<numeric> Choose from:

Enter a channel number from 1 through 8.

<numeric> Set the Resolution BW. Choose from:
10 | 30 | 100 | 300 | 1000 | 3000 | 10000 | 30000 | 100000 | ... | 5 MHz
Accepts MINimum and MAXimum as commands.

Examples

```
SEM:OFFS7:BAND 30000 'Sets the SEM channel 7 to a offset resolution BW of 30 kHz.
```

Query Syntax SEM:OFFS5:BAND?

Return Type numeric

Default Dynamic: model/option dependent

Last Modified:

01dec2019 New command

[:SENSe]:SEMask:OFFSet<n>:BANDwidth[:RESolution]:AUTO <bool>

(Read-Write) Set and query the SEM offset resolution BW Auto setting.

See also SEM:OFD, SEM:OFFS<n>:BAND, SEM:OFFS<n>:ENAB, SEM:OFFS<n>:FREQ:STAR, SEM:OFFS<n>:FREQ:STOP, and SEM:OFFS<n>:SIDE.

Relevant Modes SA

Parameters

<numeric> Choose from:
Enter a channel number from 1 through 8.

<booleon> Choose from:
OFF (0) - SEM offset resolution BW Auto control is disabled.
ON (1) - SEM offset resolution BW Auto control is enabled.

Examples

```
SEM:OFFS7:BAND:AUTO 0 'disables the SEM offset resolution BW Auto setting.
```

Query Syntax SEM:OFF5:AUTO?

Return Type numeric

Default <n> = 1
Offset Res BW = OFF(0)

Last modified:

01dec2019 Added to SA

[:SENSe]:SEMask:OFFSet<n>:ENABle <bool>

(Read-Write) Set and query the SEM frequency Offset state.

See also SEM:OFD, SEM:OFFS<n>:BAND:AUTO, SEM:OFFS<n>:BAND, SEM:OFFS<n>:FREQ:STAR, SEM:OFFS<n>:FREQ:STOP, and SEM:OFFS<n>:SIDE.

Relevant Modes SA

Parameters

<booleon> Choose from:

OFF (0) - Offsets are disabled.

ON (1) - Offsets are enabled.

Examples

```
SEM:OFFS7:ENAB 0 'disables SEM freqeuency offsets for channel 7
SEM:OFFS:ENAB ON 'enables SEM freqeuncy offsets for channel 1
```

Query Syntax SEM:OFFS:ENAB?

Return Type numeric

Default 1

Last modified:

01dec2019 Added to SA

[:SENSe]:SEMask:OFFSet<n>:FREQuency:STARt <num>

(Read-Write) Set and query the SEM Offset start frequency.

See also SEM:OFD, SEM:OFFS<n>:BAND:AUTO, SEM:OFFS<n>:ENAB, SEM:OFFS<n>:FREQ:BAND, SEM:OFFS<n>:FREQ:STOP, and SEM:OFFS<n>:SIDE.

Relevant Modes SA

Parameters

<numeric> Choose from:

Enter a channel number from 1 through 8.

<numeric> Choose from:

Dynamic: Changes with models and options.

Minimum = 0.00000 Hz

This command accepts MINimum and MAXimum commands.

Examples

```
SEM:OFFS7:FREQ:STAR 5 MHz 'Sets the SEM channel 7 Offset start frequency to 5 MHz.
SEM:OFFS:FREQ:STAR MIN 'Sets the SEM channel 1 Offset start frequency to a minimum value.
```

Query Syntax SEM:OFF5:FREQ:STAR?

Return Type numeric

Default Dynamic: model/option dependent

Last Modified:

01dec2019 New command

[:SENSe]:SEMask:OFFSet<n>:FREQuency:STOP <num>

(Read-Write) Set and query the SEM Offset stop frequency.

See also SEM:OFD, SEM:OFFS<n>:BAND:AUTO, SEM:OFFS<n>:ENAB, SEM:OFFS<n>:FREQ:BAND, SEM:OFFS<n>:FREQ:STARt, and SEM:OFFS<n>:SIDE.

Relevant Modes SA

Parameters

<numeric> Choose from:
Enter a channel number from 1 through 8.

<numeric> Set the SEM Offset stop frequency. Choose from:
Dynamic: Changes with models and options.
Minimum = 0.00000 Hz
This command accepts MINimum and MAXimum commands.

Examples

```
SEM:OFFS7:FREQ:STOP 5 MHz 'Sets the SEM channel 7 Offset stop frequency to 5 MHz.
SEM:OFFS:FREQ:STOP MIN 'Sets the SEM channel 1 Offset stop frequency to a minimum value.
```

Query Syntax SEM:OFF5:FREQ:STOP?

Return Type numeric

Default Dynamic: model/option dependent

Last Modified:

01dec2019 New command

[:SENSe]:SEMask:OFFSet<n>:SIDE <char>

(Read-Write) Set and query the type of SEM Offset to be activated (BOTH, just NEGative slope, or just the POSitive slope).

See also SEM:OFD, SEM:OFFS<n>:BAND:AUTO, SEM:OFFS<n>:ENAB, SEM:OFFS<n>:FREQ:BAND, SEM:OFFS<n>:FREQ:STARt, and SEM:OFFS<n>:STOP.

Relevant Modes SA

Parameters

<numeric> Choose from:

Enter a channel number from 1 through 8.

<character> Choose from:

BOTH- Selects the SEM Offset to include both the negative (lower) and positive (upper) frequencies to display.

NEG- Selects the SEM Offset to include only the negative (lower) frequencies to display.

POS - Selects SEM Offset to include only the postive (upper) frequencies to display.

Examples

```
SEM:OFFS7:SIDE POS 'Sets the channel 7 SEM Offset side to be positive (upper).
SEM:OFFS:SIDE BOTH'Sets the channel 1 SEM Offset to display both positive and negative frequencies.
```

Query Syntax SEM:OFFS5:SIDE?

Return Type Character

Default BOTH

Last Modified:

01dec2019 New command

[:SENSe]:SEMask:REFChannel:BANDwidth[:RESolution] <num>

(Read-Write) Set and query the SEM Resolution BW.

See also [:SENSe]:SEMask:REFChannel:IBW, [:SENSe]:SEMask:REFChannel:SPAN, and [:SENSe]:SEMask:REFChannel[:RESolution]:AUTO.

Relevant Modes SA

Parameters

<numeric> Choose from:

Dynamic: Changes with models and options.

This command accepts MINimum and MAXimum commands.

Examples

```
SEM:REFC:BAND 5 MHz 'Sets the SEM reference channel span to 5 MHz.
SEM:REFC:BAND MIN 'Sets the SEM reference channel span to a minimum value for the model/options.
```

Query Syntax SEM:REFC:BAND?

Return Type numeric

Default Dynamic: model/option dependent

Last Modified:

01dec2019 New command

[:SENSe]:SEMask:REFChannel:BANDwidth[:RESolution]:AUTO <bool>

(Read-Write) Set and query the SEM resolution bandwidth Auto setting.

See also [:SENSe]:SEMask:REFChannel:CENTer and [:SENSe]:SEMask:OASPan.

Relevant Modes SA

Parameters

<booleon> Choose from:

OFF (0) - SEM resolution bandwidth Auto control is disabled.

ON (1) - SEM resolution bandwidth Auto control is enabled.

Examples

```
SEM:REFC:BAND:AUTO 0 'disables the SEM resolution bandwidth Auto setting.
SEM:REFC:BAND:AUTO ON 'enables SEM resolution bandwidth Auto setting.
```

Query Syntax SEM:REFC:BAND:AUTO?

Return Type numeric

Default 1

Last modified:

01dec2019 Added to SA

[:SENSe]:SEMask:REFChannel:CENTer <num>

(Read-Write) Set and query a SEM Center Frequency control is related to the Reference Channel Carrier Frequency.

The Carrier Frequency (Ref Channel Center) by default tracks the specified Center Frequency. But, the Reference Channel Center can be forced to “Hold” at a particular location which would then enables you to pan above or below center frequency for reasons similar to zooming with span.

Note: Those two SCPIs enable flexibility in examining parts of a SEM measurement, but are typically de-activated to make a proper final measurement. A proper final SEM measurement would have the Center Frequency located exactly at Carrier Center, and the Span matching exactly what is necessary to cover all active offsets. This is achieved in one step by simply turning SEM Auto Span to ON ([:SENSe]:SEMask:OASPan).

See also [:SENSe]:SEMask:OASPan and [:SENSe]:SEMask:REFChannel:CENTer:AUTO.

Relevant Modes SA

Parameters

<numeric> Choose from:

Dynamic dependent on the instrument model and options.

This SCPI accepts MINimum and MAXimum values.

Examples

```
SEM:REFC:CENT 15 GHz 'Sets the Carrier Center to 15 GHz.
SEM:REFC:CENT MAX 'Sets the Carrier Center to the maximum value the FieldFox can be set to for the current model and options.
```

Query Syntax SEM:REFC:CENT?

Return Type numeric

Default Dynamic dependent on the instrument model and options.

Last Modified:

01dec2019 New command

[:SENSe]:SEMask:OFFSet<n>:ENABle <bool>

(Read-Write) Set and query the SEM offset state (ON(1) | OFF(0)) for a channel <n>.

See also SEM:OFD, SEM:OFFS<n>:BAND, SEM:OFFS<n>:BAND:AUTO, SEM:OFFS<n>:FREQ:STAR, SEM:OFFS<n>:FREQ:STOP, and SEM:OFFS<n>:SIDE.

Relevant Modes SA

Parameters

<numeric> Choose from:
Enter a channel number from 1 through 8.

<booleon> Choose from:
OFF (0) - SEM offset state is disabled.
ON (1) - SEM offset state is enabled.

Examples

```
SEM:OFFS7:ENAB 0 'disables the channel 7 SEM offset state.
```

Query Syntax SEM:OFF5:ENAB?

Return Type numeric

Default <n> = 1
Offset Res BW = OFF(0)

Last modified:

01dec2019 Added to SA

[:SENSe]:SEMask:REFChannel:IBW <num>

(Read-Write) Set and query a SEM frequency range integrated bandwidth value where the total power will be summed.

See also [:SENSe]:SEMask:REFChannel:SPAN, [:SENSe]:SEMask:REFChannel[:RESolution], and [:SENSe]:SEMask:REFChannel[:RESolution]:AUTO.

Relevant Modes SA

Parameters

<numeric> Choose from:

Dynamic: Changes with models and options.

This command accepts MINimum and MAXimum commands.

Examples

```
SEM:REFC:IBW 3.84 MHz 'Sets the SEM integrated bandwidth to 3.84 MHz.
SEM:REFC:IBW MIN 'Sets the SEM integrated BW to a minimum value for the model/options.
```

Query Syntax SEM:REFC:IBW?

Return Type numeric

Default Dynamic: model/option dependent

Last Modified:

01dec2019	New command

[:SENSe]:SEMask:REFChannel:SPAN <num>

(Read-Write) Set and query the SEM Reference Channel Span. Typically this value is set equal or greater than the Integrated BW, is simply a way to reserve additional frequency range to be measured for display presentation (i.e., If that range is not overlapped by the offset regions).

See also [:SENSe]:SEMask:REFChannel:IBW, [:SENSe]:SEMask:REFChannel[:RESolution], and [:SENSe]:SEMask:REFChannel[:RESolution]:AUTO.

Relevant Modes SA

Parameters

<numeric> Choose from:

Dynamic: Changes with models and options.

This command accepts MINimum and MAXimum commands.

Examples

```
SEM:REFC:SPAN 5 MHz 'Sets the SEM reference channel span to 5 MHz.
SEM:REFC:SPAN MIN 'Sets the SEM reference channel span to a minimum value for the model/options.
```

Query Syntax SEM:REFC:SPAN?

Return Type numeric

Default Dynamic: model/option dependent

Last Modified:

01dec2019	New command

[:SENSe]:SPECtrogram:BPLevel <num>

(Read-Write) Set and query the Blue power level limit used with Waterfall (SA Only) and Spectrogram displays (For SA mode, refer to Interference Analyzer 0pt 236).

See also: [:SENSe]:SPECtrogram:RPLevel (Red power level)

Relevant Modes SA, RTSA

Parameters

<num> Select the LOWEST power levels (in dB) that you expect to measure. This power level, and those measured lower than this level, appear Blue.

Enter a value between the 0 and the current Red (Highest) limit. (Default Red is -50)

Examples

```
SPEC:BPL -80
```

Query Syntax [:SENSe]:SPECtrogram:BPLevel?

Return Type Numeric

Default -90

Last Modified:

19-sep-2016 Added RTSA as a relevant mode (A.09.50).

[:SENSe]:SPECtrogram:RPLevel <num>

(Read-Write) Set and query the Red power level limit used with Waterfall (SA Only) and Spectrogram displays (For SA mode, refer to Interference Analyzer 0pt 236).

See also: [:SENSe]:SPECtrogram:BPLevel (Blue power level)

Relevant Modes SA, RTSA

Parameters

<num> Select the HIGHEST power levels (in dB) that you expect to measure. This power level, and those measured higher than this level, appear Red.

Enter a value between 0 and the current Blue (Lowest) limit. (Default Blue is -90)

Examples

```
SPEC:BPL -10
```

Query Syntax [:SENSe]:SPECtrogram:RPLevel?

Return Type Numeric

Default -50

Last Modified:

19-sep-2016 Added RTSA as a relevant mode (A.09.50).

[:SENSe]:SPECtrogram:TMARker:STATe <char>

(Read-Write) Set and query the state of the time and delta markers used with Waterfall and Spectrogram displays (Interference Analyzer 0pt 236).

A Time marker alone displays the time from the first record to the location of the time marker.

A Delta marker display the difference between the time marker and the delta marker.

Spectrogram displays the most recent record at the top of the screen. Waterfall displays the most recent record at the bottom.

Use [:SENSe]:SPECtrogram:TMARker:VALue to move the Time and Delta markers.

Relevant Modes	SA
Parameters	
<num>	Marker state. Choose from: **OFF** - Time and Delta markers OFF **DELT** - Delta markers enabled. **TIME** - Time marker enabled.
Examples	SPEC:TMAR:STAT DELT
Query Syntax	[:SENSe]:SPECtrogram:TMARker:STATe?
Return Type	Character
Default	OFF

Last Modified:

24-Jan-2012	New command

[:SENSe]:SPECtrogram:TMARker:VALue <num>

(Read-Write) Set and query the location of the Time or Delta marker, used with Waterfall and Spectrogram displays (Interference Analyzer 0pt 236).

Use [:SENSe]:SPECtrogram:TMARker:STATe to enable the Time or Delta marker.

Spectrogram displays the most recent record at the top of the screen. Waterfall displays the most recent record at the bottom.

There is currently no command to read the Time that is displayed on the screen.

Relevant Modes	SA
Parameters	
<num>	Time or Delta marker location. Enter a value between 0 (bottom of screen) and the maximum number of records visible on the screen. The max number depends on the Waterfall view and Spectrogram Angle settings.
Examples	SPEC:TMAR:VAL 10
Query Syntax	[:SENSe]:SPECtrogram:TMARker:VALue?
Return Type	Numeric
Default	0

Last Modified:

17-Aug-2012	Edited for both marker types

[:SENSe]:SPECtrogram:TPDivision

(Read-Write) Set and query the Time per division of the Spectrogram trace graph window.

Relevant Modes RTSA

Parameters

<num> Per division time in seconds (0.0005 seconds to 10 seconds. Default = 100 ms).

Examples

```
SPEC:TPD 1e-3
SPEC:TPD 5
```

Query Syntax [:SENSe]:TIME:PDIVision?

Return Type Numeric

Default 1.000E-01

Last Modified:

19-sep-2016	New RTSA mode command (A.09.50)

[:SENSe]:SPECtrogram:VIEW <char>

(Read-Write) Set and query the Spectrogram View setting, which changes how the spectrogram is displayed relative to the data trace. This setting affects the total number of trace records that can be displayed.(Interference Analyzer 0pt 236).

Relevant Modes SA, RTSA

Parameters

<num> Spectrogram view. Choose from:

OVERlay - Displays the data trace over the spectrogram with NO graticules. Total trace records: 340.

FULL - Displays the spectrogram with NO data trace. Total trace records: 340.

TOP - Displays the data trace above the spectrogram. Total trace records: 130.

BOTTom - Displays the data trace below the spectrogram. Total trace records: 130.

Examples

```
SPEC:VIEW TOP
```

Query Syntax [:SENSe]:SPECtrogram:VIEW?

Return Type Character

Default OVERlay

Last Modified:

19-sep-2016 Added RTSA as a relevant mode (A.09.50).

[:SENSe]:SPECtrogram:WANGle <char>

(Read-Write) Set and query the Waterfall Angle setting, which allows you to show more or less detail. More detail provides fewer (time) records.(Interference Analyzer 0pt 236).

Relevant Modes SA

Parameters

<char> Choose from:

MOD - (Moderate) Compromise between detail and number of records.

STEep Least detail with highest number of records.

GRAD - (Gradual) Most detail with lowest number of records.

WIDE - (Wide Angle) Moderate angle with increased space between records.

Examples SPEC:WANG WIDE

Query Syntax [:SENSe]:SPECtrogram:WANGle?

Return Type Character

Default MOD

[:SENSe]:SPECtrum:BANDwidth[:RESolution] <num>

(Read-Write) Set and query the Resolution Bandwidth setting. Changing this value changes the FFT Window size, Analysis length and the sweep time (measurement capture length).

Relevant Modes IQA

Parameters

<numeric> Minimum: 0.1 Hz

Maximum: 3 MHz

Examples

```
SPEC:BAND 100
```

Query Syntax :SPEC:BAND?

Return Type Character

Default 2.00000000E+05

Last Modified:

12oct2017 New IQA command (A.10.1x)

[:SENSe]:SPECtrum:BANDwidth[:RESolution]:AUTO <bool>

(Read-Write) Set and query the Resolution Bandwidth setting. This is the resolution bandwidth of the FFT analysis. Enables or disables the FieldFox's automatic resolution bandwidth setting.

See also, If the SPEC:BAND.

Relevant Modes IQA

Parameters

<boolean> ON (1): Enables the automatic resolution bandwidth setting.
OFF (0): Disables the automatic resolution bandwidth.

Examples

```
SPEC:BAND:AUTO 0
SPEC:BAND:AUTO ON
```

Query Syntax :SPEC:BAND:AUTO?

Return Type numeric

Default ON (1)

Last Modified:

22oct2017 New IQA command (A.10.1x)

[:SENSe]:SPECtrum:FFT:ANALysis:LENGth <num>

See also, If the SPEC:FFT:WIND and SPEC:FFT:LENG:AUTO.

(Read-Write) Set and query the FFT analysis length.

The “points” is the number of points for I/Q pairs. For example, if the Window Length is set to 10, it means the window length is for 10 I and 10 Q points. Not 5 I and 5 Q points.

See also SPEC:FFT:LENG.

Relevant Modes IQA

Parameters

<numeric> Minimum: 8
Maximum: 542288

Examples

```
SPEC:FFT:ANAL:LENG 500
```

Query Syntax :SPEC:FFT:ANAL:LENG?

Return Type numeric

Default 237

Last Modified:

22-Oct-2017 New IQA command (A.10.1x)

[:SENSe]:SPECtrum:FFT:LENGth:AUTO <bool>

(Read-Write) Set and query the FFT analysis length control. This setting is directly coupled to the resolution bandwidth as follows: Enabling Length Control (AUTO) enables the automatic resolution bandwidth setting. Disabling automatic Length Control (AUTO) to MANual, disables automatic Resolution bandwidth (i.e., Analysis length and resolution BW can be set manually).

See also, If the SPEC:FFT:WIND and SPEC:FFT:ANAL:LENG.

Relevant Modes IQA

Parameters

<boolean> ON (1): Enables the automatic length control setting. The FFT analysis length control is set by the FieldFox. Resolution bandwidth is set to AUTO (i.e., the automatic resolution bandwidth by the FieldFox is enabled).

OFF (0): Disables the automatic length and FFT length settings. Analysis Length and resolution BW values can be set manually.

Examples

```
SPEC:FFT:LENG:AUTO 0
SPEC:FFT:LENG:AUTO ON
```

Query Syntax :SPEC:FFT:LENG:AUTO?

Return Type numeric

Default ON (1)

Last Modified:

22-Oct-2017 New IQA command (A.10.1x)

[:SENSe]:SPECtrum:FFT:WINDow <char>

See also, If the SPEC:FFT:LENG:AUTO and SPEC:FFT:ANAL:LENG.

(Read-Write) Set and query the FFT filtering Window setting (spectrum analysis window).

Relevant Modes IQA

Parameters

<character> UNIForm, TRIangular,HANNing, HAMMing, BLACkman, BH4Tap, FLAT, |FLATtop, FLAT6, FLAT7, P501, P601, KB70, KB90, KB110, GAUSsian60, GAUSsian70, GAUSsian80, SINC, TUKey25, BH3Tap, GUTop, KB80, KB100, KB120

Examples

```
SPEC:FFT:WIND HANN
SPEC:FFT:WIND KB70
```

Query Syntax :SPEC:FFT:WIND?

Return Type character

Default FLATtop

Last Modified:

22-Oct-2017 New IQA command (A.10.1x)

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

(Read-Write) Set and query the frequency span in IQA (spectrum only). This is translated to the required Digital IF bandwidth for the FFT analysis. The analyzer's Digital IF bandwidth is always equal to this value. The maximum span is equal to the maximum bandwidths of the IF Paths.

Relevant Modes FOPS (Opt 208), IQA (Opt.351) - (Spectrum Only)

Parameters

<frequency> Span Frequency in Hz.
Minimum: 10 Hz
Maximum: 10 MHz

Couplings Changing the span causes the IFBW and SampleRate change automatically,
Span = IFBW, Sample Rate = 1.25 * IFBW
Res BW = Span /50, if Resolution Bandwidth = Auto.

Examples

```
SPEC:FREQ:SPAN 1e6
```

Query Syntax SPECtrum:FREQ:SPAN?

Return Type Numeric

Default 10000000

Last modified:

22oct2017 New IQA mode (A.10.1x)

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

(Read-Write) Set and query the frequency span in IQA (spectrum only). This is translated to the required Digital IF bandwidth for the FFT analysis. The analyzer's Digital IF bandwidth is always equal to this value. The maximum span is equal to the maximum bandwidths of the IF Paths.

Relevant Modes FOPS (Opt 208), IQA (Opt.351) - (Spectrum Only)

Parameters

<frequency> Span Frequency in Hz.
Minimum: 10 Hz

Maximum: 10 MHz

Couplings Changing the span causes the IFBW and SampleRate change automatically,
Span = IFBW, Sample Rate = 1.25 * IFBW
Res BW = Span /50, if Resolution Bandwidth = Auto.

Examples
```
SPEC:FREQ:SPAN 1e6
```

Query Syntax SPECtrum:FREQ:SPAN?

Return Type Numeric

Default 10000000

Last modified:

22oct2017 New IQA mode (A.10.1x)

[:SENSe]:SWEep:ACQuisition <num>

(Read-Write) Set and query the sweep acquisition parameter. This effectively sets the sweep time in SA mode. Adjust this setting in order to increase the probability of intercepting and viewing pulsed RF signals.

Also set [:SENSe]:SWEep:ACQuisition:AUTO to 0 (OFF).

Relevant Modes SA, RTSA

Parameters

<num> Choose a relative acquisition value between 1 and 5000, where:
1 = Fastest sweep possible
5,000 = Slowest sweep possible.

Examples
```
SWE:ACQ 25
```

Query Syntax [:SENSe]:SWEep:ACQuisition?

Return Type Numeric

Default 1

Last Modified:

10-june-2016 Added RTSA mode (9.50)

[:SENSe]:SWEep:ACQuisition:AUTO <bool>

(Read-Write) Set and query sweep acquisition state.

Relevant Modes SA, RTSA

Parameters

<bool>	Choose from: ON or 1 - Automatically set to the fastest sweep possible with the current settings. OFF or 0 - Manually set the acquisition parameter using [:SENSe]:SWEep:ACQuisition
Examples	`SWE:ACQ:AUTO 1`
Query Syntax	[:SENSe]:SWEep:ACQuisition:AUTO?
Return Type	Boolean
Default	ON or 1

Last Modified:

10-june-2016	Added RTSA mode (9.50)

[:SENSe]:SWEep:APD:DWELl <value>

(Read-Write) Set and query the Amplitude Probability Distribution (APD) satistics settling time after the internal source steps to the next frequency and before the power sensor makes a measurement (i.e., only available when MEAS is set to SAPD).

See also, MEAS, CISP:BAND, FREQ:AXIS:LOG, BAND:APD:RES, BAND:EMI:RES, BAND:EMI:AUTO, BAND:APD:AUTO, SWE:EMI:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes	EMI (Opt 361)
Parameters	
<value>	Dwell time in seconds. (Range: 10 ms to 120 seconds)
Examples	`SWE:APD:DWEL .010 'sets the APD statistics dwell to 10 ms.`
Query Syntax	[:SENSe]:SWE:APD:DWELl?
Return Type	Numeric
Default	1.000E-01

Last Modified:

16-Sep-2022	New command

[:SENSe]:SWEep:EMI:DWELl <value>

(Read-Write) Set and query the settling time after the internal source steps to the next frequency and before the power sensor makes a measurement (i.e., only available when MEAS is set to CBSCan | CZSCan).

See also, MEAS, CISP:BAND, FREQ:AXIS:LOG, BAND:APD:RES, BAND:EMI:RES, BAND:EMI:AUTO, BAND:APD:AUTO, SWE:APD:DWEL, EDET:TRAC, TRAC<v>:APD:INPUT.

Relevant Modes EMI (Opt 361)

Parameters

<value> Dwell time in seconds. (Range: 1 ms to 11 seconds)

Examples

```
SWE:EMI:DWEL .001 'sets the EMI band dwell to 1 ms.
```

Query Syntax [:SENSe]:SWE:EMI:DWELl?

Return Type Numeric

Default 1.000E-01

Last Modified:

16-Sep-2022 New command

[:SENSe]:SWEep:MTIMe?

(Read-only) Query the measurement sweep time. This is the time reported on screen after a measurement completes.

Use with INIT:IMM ; OPC? in order to guarantee the most recently updated sweep time result.

Relevant Modes SA, NA, CAT, RTSA

Parameters None

Examples

```
SWE:MTIM?
```

Return Type Numeric

Default Not Applicable

Last Modified:

10-june-2016 Added RTSA mode (9.50)

18-Mar-2014 New command (7.50)

[:SENSe]:SWEep:POINts <num>

(Read-Write) Set and query the number of sweep points in the trace.

Relevant Modes CAT, LTE FDD, 5GTF, NA, NF, SA, FOPS
VVM - Query only

Parameters

<num> Choose a number from 2 to 10001.

Examples

```
SWE:POIN 250
```

Query Syntax [:SENSe]:SWEep:POINts?

Return Type Numeric

Default 401 - SA mode
201 - CAT, NA, FOPS
2 - VVM mode

Last Modified:

21may2021	Removed "Number of data points."
27nov2018	Added LTE FDD and 5GTF (11.0)
01-june-2018	Added Opt. 356 NF(10.3)
10-june-2016	Added RTSA mode (9.50)
20-Mar-2014	Added FOPS

[:SENSe]:SWEep:RX <value>

(Read-Write) Set and query the direction in which the receivers are swept.

Relevant Modes FOPS

Parameters

<value> Choose from the following:

FORWard - Used for systems for which the output frequency is Offs + Src. The output frequency of the DUT and the receiver sweeps in the same direction as the source.

REVerse - Used for systems for which the output frequency is Offs - Src. The output frequency of the DUT and the receiver sweeps in reverse direction as compared to the source.

Examples

```
SWE:RX REV
```

Query Syntax [:SENSe]:SWEep:RX?

Return Type Character

Default FORWard

Last modified:

19-Mar-2014 New command (A.07.50)

[:SENSe]:SWEep:TDR:AUTO:FREQuency:STOP:MAXimum <num>

(Read-Write) Set and query maximum stop frequency when TDR sweep resolution mode = AUTO

Relevant Modes CAT

Parameters

<num> Choose a value between the FieldFox start and stop frequencies.

Examples

```
SWE:TDR:AUTO:FREQ:STOP:MAX 1e6
```

Query Syntax [:SENSe]:SWEep:TDR:AUTO:FREQuency:STOP:MAXimum?

Return Type Numeric

Default The stop frequency of the FieldFox model.

Last Modified:

20-Jan-2015 New command (8.00)

[:SENSe]:SWEep:TDR:RES <char>

(Read-Write) Set and query the resolution mode for the TDR measurement. This is the **TDR Sweep** setting in the FieldFox UI.

Relevant Modes CAT

Parameters

<num> Choose from:

AUTO - Low pass frequency settings are calculated based on the current number of points. The Stop Frequency and Resolution settings can be changed to any value.

- Use [:SENSe]:SWEep:TDR:AUTO:FREQuency:STOP:MAXimum to limit the Stop Frequency.
- Use [:SENSe]:SWEep:POINts to set Resolution.

CABLe - Provides a higher resolution measurement or when under-sampling is suspected. The Stop Frequency is limited to 500 MHz maximum. The Resolution is fixed to 1601.

Examples

```
SWE:TDR:RES AUTO
```

Query Syntax [:SENSe]:SWEep:TDR:RES?

Return Type Character

Default Auto

Last Modified:

20-Jan-2015 New command (8.00)

[:SENSe]:SWEep:TIME <num>

(Read-Write) Set and query the sweep time of the measurement. The actual sweep time that is displayed on the screen will usually be higher than this value due to the overhead sweep time.

In SA mode, use this command for Zerospan measurements.

To set and read sweep time for Non-zerospan measurements in SA mode, use [:SENSe]:SWEep:ACQuisition.

Relevant Modes CAT, NA, SA, RTSA

Parameters

<num> Sweep time in seconds.

Examples

```
SWE:TIME .250
```

Query Syntax [:SENSe]:SWEep:TIME?

Return Type Numeric

Default 0

Last Modified:

10-june-2016	Added RTSA mode
17-Aug-2012	Added SA mode

[:SENSe]:SWEep:TYPE <char>

(Read-Write) Set and query the sweep type.

Relevant Modes SA, RTSA

Parameters

<char> Choose from:

AUTO - FieldFox chooses the sweep type that yields the most accurate data most efficiently. When ResBW is set to 200 kHz and below, FFT is selected. Above 200 kHz, STEP is selected.

FFT - Use FFT sweep.

STEP - Use STEP sweep.

Examples

```
SWE:TYPE STEP
```

Query Syntax [:SENSe]:SWEep:TYPE?

Return Type Character

Default AUTO

Last Modified:

10-june-2016	Added RTSA mode (9.50)

1-Feb-2011 New command

[:SENSe]:SWEep:TYPE <value>

(Read-Write) Set and query the sweep type.

Relevant Modes FOPS (Opt 208)

Parameters

<value> Choose from the following:

CW - Used to make standard (non-offset) power meter measurements at a single frequency.

SWEPt - Used to make swept FOPS measurements.

Examples

```
SWE:TYPE SWEPt
```

Query Syntax [:SENSe]:SWEep:TYPE?

Return Type Character

Default CW

Last modified:

19-Mar-2014 New command (A.07.50)

[:SENSe]:TAListen:AM:SSB:GAIN <num>

(Read-Write) Set and query the Tune & Listen AM SSB gain value.

Unlike regular AM (AM DSB with Carrier), the optimal IF path gain cannot be automatically determined for AM SSB, so it must be configured manually. The goal is to set the gain as high as possible (to take advantage of the range of the IF and audio paths) without distorting the audio signal. It is recommended that you keep increasing the gain until you hear distortion in the audio and then back off until you no longer hear any distortion.

NOTE: The system volume setting should still be used to determine the final desired volume/level of the audio output.

See also, ADEM:METR:DYTP.

Relevant Modes SA

Couplings This value is only relevant when the Tune and Listen Demodulation Type is set to AM USB/LSB.

Parameters

<numeric> Amount of gain (positive value) or loss (negative value) in dB.

This command will accept **MIN** and **MAX** as arguments.

Minimum: -50 dB

Maximum: 50 dB

Examples

```
TAL:AM:SSB:GAIN 10 'Sets the tune and listen SSB Gain to 10 dB
TAL:AM:SSB:GAIN -5 'Sets the tune and listen SSB Gain to -5 dB
```

Query Syntax TAL:AM:SSB:GAIN?

Return Type Numeric

Default 0

Last Modified:

01july2021	New command (A.12.3x)

[:SENSe]:TAListen:AVOLume <num> - Obsolete

This command is replaced with SYSTem:AUDio:VOLume

(Read-Write) Set and query the Tune and Listen volume.

To enable TuneListen mode, use [:SENSe]:MEASurement:TAListen

Relevant Modes SA

Parameters

<char> Tune and Listen volume. Choose a value in percent between 0 and 100 (loudest).

Examples

```
TAL:AVOL 50
```

Query Syntax [:SENSe]:TAListen:AVOLume?

Return Type Numeric

Default 60

[:SENSe]:TAListen:DSTate <bool>

(Read-Write) Set and query the Tune and Listen demodulation state.

To enable TuneListen mode, use [:SENSe]:MEASurement:TAListen

Relevant Modes SA

Parameters

<bool> Tune and Listen demod state. Choose from:

OFF or **0** - Do not demodulate. Stops the audio demodulation and performs only the normal SA sweeps

ON or **1** - Demodulate

Examples
```
TAL:DST 0
```

Query Syntax [:SENSe]:TAListen:DSTate?

Return Type Boolean

Default ON

[:SENSe]:TAListen:DTYPe <char>

(Read-Write) Set and query the Tune and Listen demodulation type. This command allows you to change the demod type without enabling Tune and Listen.

To enable TuneListen mode and set the demod type, use MEAS:ADEM

Relevant Modes SA

Parameters

<char> Tune and Listen demodulation type. Choose from:

AM - Amplitude Modulation (Double-Sideband with Carrier).

AMLS - Amplitude Modulation Lower Sideband.

AMUS - Amplitude Modulation Upper Sideband.

FMN - FM Narrow

FMW - FM Wide

Examples
```
TAL:DTYP AM 'Sets the tune and listen demodulation type to
amplitude modulation (Double-Sideband with Carrier).
```

Query Syntax [:SENSe]:TAListen:DTYPe?

Return Type Character

Default AM

[:SENSe]:TAListen:LTIMe <num>

(Read-Write) Set and query the Listen time for Tune & Listen.

While Tune & Listen is actively demodulating a signal, the SA does not sweep and update the display. Listen Time sets the amount of time that the FieldFox demodulates. It then stops to perform a single sweep and update the display, then again demodulates for this amount of time.

To enable TuneListen mode, use [:SENSe]:MEASurement:TAListen

Relevant Modes SA

Parameters

<char> Listen time in seconds. Choose a value between 0.1 and 100.

Examples
```
TAL:LTIM 20
```

Query Syntax [:SENSe]:TAListen:LTIMe?

Return Type Numeric

Default 2.5

[:SENSe]:TAListen:TFReq <num>

(Read-Write) Set and query the tune frequency for Tune & Listen. First set [:SENSe]:MEASurement:TAListen.

The Tune & Listen tuner is separate from the SA display. This allows you to listen to one frequency while displaying a different range of frequencies.

See Also: CALCulate:MARKer:SET

To enable TuneListen mode, use [:SENSe]:MEASurement:TAListen

Relevant Modes SA

Parameters

<char> Tune frequency in Hz. Choose a value between the FieldFox MIN and MAX frequency.

Examples

```
TAL:TFR 101.7e6
```

Query Syntax [:SENSe]:TAListen:TFReq?

Return Type Numeric

Default 3.0 GHz

[:SENSe]:TOL <value>

(Read-Write) Set and query the power sensor measurement tolerance.

Each power sensor reading is "settled" when either:

- two consecutive readings are within this Tolerance value or
- when the Max Number of Readings ([:SENSe]:POINt:READ:MAX) has been met.

The readings that were taken are averaged together to become the "settled" reading.

Relevant Modes FOPS (Opt 208)

Parameters

<value> Tolerance in dB. Choose a value between 0.0 and 10.0

When consecutive power meter readings are within this value of each other, then the reading is considered settled.

Examples

```
TOL .05
```

Query Syntax [:SENSe]:TOL?

Return Type Numeric

Default .1

Last modified:

19-Mar-2014 New command (A.07.50)

[:SENSe]:TRACe[:DATA]?

(Read-only) Read the data from a Power Meter measurement.

For Pulse Measurements ONLY: This command returns a single 'Meter-style' value. To read data for a trace graph, use CALCulate[:SELected]:TRACe:DATA

Relevant Modes Power Meter, Pulse Measurements, CPM

Examples
```
TRAC?
```

Query Syntax [:SENSe]:TRACe[:DATA]?

Return Type Numeric

Default Not Applicable

Last Modified:

1-Apr-2014	Added CPM
29-Oct-2013	Added Pulse

[:SENSe]:TRIGger[:SEQuence]:PERiodic:OFFSet

(Read-Write) Set and query the periodic trigger offset (the time offset between the trigger event and the time capture).

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA,LTE FDD, PAA

Couplings This setting is automatically reset to 0 s when a new synchronization source is selected.

Parameters

<numeric> Periodic trigger offset in seconds.

Min: 100 ns

Max: 400 ms

Examples
```
TRIG:PER:OFFS 5e-3
```

Query Syntax TRIG:PER:OFFS?

Return Type Numeric

Default 0s

Last Modified:

10dec2019	New command (11.5x)

[:SENSe]:TRIGger[:SEQuence]:PERiodic:OFFSet:DISPlay:RESet

(Write-Only) Resets the periodic trigger offset to 0 seconds.

Note: A reset is automatically initiated when a new synchronization source is selected.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA,LTE FDD, PAA

Couplings Resets the periodic trigger offset to 0 s.

A reset is automatically initiated when a new synchronization source is selected.

Parameters

n/a

Examples

```
TRIG:PER:OFFS:DISP:RES
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

10dec2019	New command (11.5x)

[:SENSe]:TRIGger[:SEQuence]:PERiodic:PERiod

(Read-Write) Set and query the periodic trigger period (the time period between trigger events).

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA,LTE FDD, PAA

Parameters

<numeric> Time in seconds.

Min: 100 us

Max: 400 ms

Examples

```
TRIG:PER:PER 1e-3
```

Query Syntax TRIG:PER:PER?

Return Type Numeric

Default 20 ms

Last Modified:

10dec2019	New command (11.5x)

[:SENSe]:TRIGger[:SEQuence]:PERiodic:SYNC

(Read-Write) Set and query the periodic trigger synchronization source. The source used to synchronize/initialize the periodic trigger. To synchronize the periodic trigger, select the desired synchronization source, wait for the source event to occur (*the instrument does not provide any indication when the source event occurs*), then select None.

NOTE: The instrument does not provide any indication when the source event occurs.

Relevant Modes IQA, 5G NR, 5G NR EVM Conducted, 5GTF, SA, LTE FDD, PAA, RTSA

Parameters

<character> Periodic sync. Choose from:

NONE - (None) Should be selected after synchronization with another source. Can also be used for an arbitrary periodic trigger.

EXT - (External) - Synchronize to an external trigger signal.

TPROX - Synchronize with the GPS 1 PPS signal.

See Also

n/a

Examples

```
TRIG:PER:SYNC EXT */Sets the periodic trigger synchronize with an external trigger.
TRIG:PER:SYNC TPROX */Sets the periodic trigger to synchronize with the GPS 1 PPS signal.
```

Query Syntax TRIGger[:SEQuence]:SOURce?

Return Type Character

Default NONE

Last Modified:

10dec2019	New command (11.5x)

[:SENSe]:TRACe:LIMit:LOWer <num>

(Read-Write) Set and query the minimum (lower) limit value. Also set :SENSe]:TRACe:LIMit:LOWer:STATe ON.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<num> Minimum (lower) limit value.

Examples

```
TRAC:LIM:LOW -50
```

Query Syntax [:SENSe]:TRACe:LIMit:LOWer?

Return Type Numeric

Default -80

Last modified:

1-Apr-2014 Added CPM

31-Oct-2013 Added Pulse

[:SENSe]:TRACe:LIMit:LOWer:STATe <bool>

(Read-Write) Set and query the ON|OFF state for minimum (lower) limit testing.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<bool> Minimum limit state. Choose from:
0 or **OFF** - Minimum limit OFF
1 or **ON** - Minimum limit ON

Examples

```
TRAC:LIM:LOW:STATe 0
```

Query Syntax [:SENSe]:TRACe:LIMit:LOWer:STATe?

Return Type Boolean

Default 0FF

Last modified:

1-Apr-2014 Added CPM

31-Oct-2013 Added Pulse

[:SENSe]:TRACe:LIMit:UPPer <num>

(Read-Write) Set and query the maximum (upper) limit value. Also set :SENSe]:TRACe:LIMit:UPPer:STATe ON.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<num> Maximum (upper) limit value.

Examples

```
TRAC:LIM:UPP 0
```

Query Syntax [:SENSe]:TRACe:LIMit:UPPer?

Return Type Numeric

Default -20

Last modified:

1-Apr-2014	Added CPM
31-Oct-2013	Added Pulse

[:SENSe]:TRACe:LIMit:UPPer:STATe <bool>

(Read-Write) Set and query the ON|Off state for maximum (upper) limit testing.

Relevant Modes Power Meter, Pulse Measurements, CPM

Parameters

<bool> Maximum limit state. Choose from:
0 or **OFF** - Maximum limit OFF
1 or **ON** - Maximum limit ON

Examples
```
TRAC:LIM:UPP:STATe 0
```

Query Syntax [:SENSe]:TRACe:LIMit:UPPer:STATe?

Return Type Boolean

Default 0FF

Last modified:

1-Apr-2014	Added CPM
31-Oct-2013	Added Pulse

[:SENSe]:TRACe:MEASurement:REFerence <num>

(Read-Write) Set and query the Pulse Top setting which adjusts the measurement reference.

Relevant Modes Pulse Measurements

Parameters

<num> Pulse Top in percent. Choose a value between 0 and 100.

Examples
```
TRAC:MEAS:REF 90
```

Query Syntax [SENSe]:TRACe:MEASurement:REFerence?

Return Type Numeric

Default 100

Last Modified:

29-Oct-2013	New command

[:SENSe]:TRACe:MEASurement <value>

(Read-Write) Set and query the measurement to display.

Relevant Modes FOPS

Parameters

<value> Choose from the following:

SPOWer - Not available until source data is stored into memory. Displays only the source power memory trace.

OUTPower - Displays the raw output power at the USB power sensor.

GAIN - Not available until source data is stored into memory. Displays the Output power / Source power (memory trace).

Examples

```
TRAC:MEAS GAIN
```

Query Syntax [:SENSe]:TRACe:MEASurement?

Return Type Character

Default OUTPower

Last modified:

19-Mar-2014 New command (A.07.50)

[:SENSe]:V5G:CCARrier<n>:ENABle

(Read-Write) Set and query the component carrier center frequency.

Relevant Modes 5GTF

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).

n = 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 (Up to eight component carriers can be measured at one time.)

<numeric> Choices:

ON (1): Enable the target carrier.

OFF (0): Disable the target carrier.

Examples

```
V5G:CCAR3:ENAB ON
V5G:CCAR5:ENAB 0
```

Query Syntax V5G:CCAR:CENT?

Return Type number

Default ON for CCO.

OFF for all other CC.

Last Modified:

01june2019	New command

[:SENSe]:V5G:CCARrier<n>:FREQuency:CENTer

(Read-Write) Set and query the component carrier center frequency.

Relevant Modes 5GTF

Parameters

<*n*> Component carrier (CC) number. If unspecified, value is set to 1 (CC0).
n = 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 (Up to eight component carriers can be measured at one time.)

<numeric> Choices:
Maximum (Hz): Dynamic. Varies with the FieldFox model.
Minimum: 0 Hz

Examples

```
V5G:CCAR5:FREQ:CENT 28e9
V5G:CCAR3:FREQ:CENT 28200000000
```

Query Syntax V5G:CCAR:FREQ:CENT?

Return Type number

Default 1000000000

Last Modified:

16-Sep-2022	New command

[:SENSe]:V5G:SCORr:THReshold <num>

(Read-Write) Set and query the sync correlation threshold value (%).

Relevant Modes 5GTF

Parameters

<number> Value of the sy
Minimum: 0
Maximum: 100

Examples

```
V5G:SCOR:THR
```

Query Syntax V5G:SCOR:THR

Default 1%

Last Modified:

27nov2018 Added 5GTF mode (11.0)

[:SENSe]:WAVeform:STARt <num>

(Read-Write) Sets the start time of the waveform measurement.

Relevant Modes IQA

Parameters n/a

<numeric> Minimum: 0s

Maximum: Dynamic. Varies with other setting couplings.

Note: The TimeDomainDisplayLength is derived by the following formula.

TimeDomainDisplayLength [pts] = SampleRate[pts/sec] x (StopTime[sec] – StartTime[sec]) + 1

The maximum value of TimeDomainDisplayLength is set to 524288 by considering the memory constraint and cpu pressure.

When the change of Start Time makes TimeDomainDisplayLength exceed the limitation, the Stop Time Time will change to satisfy TimeDomainDisplayLength limitation.

The Maximum value is determined by current sample Rate and max capture samples.

Start time is adjusted to the nearest sample point based on sample period.

The max TimeDomainDisplayLength is 524288.

Examples

```
:WAV:STAR 3e-6
:WAV:STAR .003
```

Query Syntax :WAV:STAR?

Return Type Numeric

Default 0.00000E+00

Last Modified:

22-Oct-2017 Added IQA mode (10.1x)

[:SENSe]:WAVeform:STOP <num>

(Read-Write) Sets the stop time of the waveform measurement.

Relevant Modes IQA

Parameters n/a

<numeric> Minimum: 0s

Maximum: Dynamic. Varies with other setting couplings.

Note: The TimeDomainDisplayLength is derived by the following formula.

TimeDomainDisplayLength [pts] = SampleRate[pts/sec] x (StopTime[sec] – StartTime[sec]) + 1

The maximum value of TimeDomainDisplayLength is set to 524288 by considering the memory constraint and cpu pressure.

When the change of Stop Time makes TimeDomainDisplayLength exceed the limitation, the Start Time Time will change to satisfy TimeDomainDisplayLength limitation.

The Maximum value is determined by current sample Rate and max capture samples.

Start time is adjusted to the nearest sample point based on sample period.

The max TimeDomainDisplayLength is 524288.

Examples

```
:WAV:STOP 6e-6
:WAV:STOP .003
```

Query Syntax :WAV:STOP?

Return Type Numeric

Default 0.00000E+00

Last Modified:

22-Oct-2017 Added IQA mode (10.1x)

SOURce:ENABle <bool>

(Read-Write) Set and query the Source Enable ON|OFF setting. Set the power level using SOURce:POWer.

Relevant Modes Power Meter and SA

Parameters

<boolean> Choose from:

OFF - Source OFF

ON - Source ON

Examples

```
SOUR:ENAB ON
```

Query Syntax SOURce:ENABle?

Return Type Boolean

Default OFF

Last Modified:

1-Nov-2013	New command

SOURce:ENABle <bool>

Note: This command was previously named [:SENSe]:ISOurce:ENABle. That syntax still work, but the new syntax should be used for new development.

(Read-Write) Set and query the Independent source state.

Relevant Modes SA

Parameters

<boolean> Independent source state. Choose from:

ON (1) - Independent source ON

OFF (0) - Independent source OFF

Examples

```
SOUR:ENAB 1
```

Query Syntax SOURce:ENABle?

Return Type Boolean

Default OFF

Last Modified:

25-Mar-2014	Changed name
20-Oct-2010	New command (5.30)

SOURce:FREQuency:CENTer <value>

(Read-Write) Set and query the center frequency. Also send SOURce:FREQuency:SPAN

Relevant Modes FOPS (Opt 208)

Parameters

<value> Center Frequency in Hz. The frequency limits for the measurement are determined by the limits of both the FieldFox and the power sensor.

- The LOW frequency is limited by the higher of either the FieldFox or the power sensor minimum frequencies.
- The HIGH frequency is limited by the lower of either the FieldFox or the power sensor maximum frequencies.

Examples

```
SOUR:FREQ:CENT 1e9
```

Query Syntax SOURce:FREQuency:CENTer?

Return Type Numeric

Default 50 MHz

Last modified:

19-Mar-2014 New command (A.07.50)

SOURce:FREQuency[:CW] <num>

Note: This command was previously named [:SENSe]:ISOurce:FREQuency[:CW]. That syntax will still work, but the new syntax should be used for new development.

(Read-Write) Set and query the Independent Source CW frequency.

Use SOURce:MODE to set Independent Source to CW mode.

Use SOURce:ENABle to enable Independent Source.

Relevant Modes SA

Parameters

<num> CW frequency. Choose a value within the IQA and SA mode frequency range.

Examples

```
SOUR:FREQ 1e9
```

Query Syntax SOURce:FREQuency[:CW]?

Return Type Numeric

Default IQA, SA mode center frequency

Last Modified:

25-Mar-2014 Name change

10-Oct-2010 New command (5.30)

SOURce:FREQuency:SPAN <value>

(Read-Write) Set and query the frequency span of the measurement. Also send SOURce:FREQuency:CENTer

Relevant Modes FOPS (Opt 208)

Parameters

<value> Frequency span in Hz. The frequency limits for the measurement are determined by the limits of both the FieldFox and the power sensor.

- The LOW frequency is limited by the higher of either the FieldFox or the power sensor minimum frequencies.
- The HIGH frequency is limited by the lower of either the FieldFox or

the power sensor maximum frequencies.

Examples
```
SOUR:FREQ:SPAN .5e9
```

Query Syntax SOURce:FREQuency:SPAN?

Return Type Numeric

Default 10 MHz

Last modified:

19-Mar-2014 New command (A.07.50)

SOURce:FREQuency:STARt <value>

(Read-Write) Set and query the start frequency of the measurement. Also send SOURce:FREQuency:STOP

Relevant Modes FOPS (Opt 208)

Parameters

<value> Start frequency in Hz. The frequency limits for the measurement are determined by the limits of both the FieldFox and the power sensor.

- The LOW frequency is limited by the higher of either the FieldFox or the power sensor minimum frequencies.
- The HIGH frequency is limited by the lower of either the FieldFox or the power sensor maximum frequencies.

Examples
```
SOUR:FREQ:STAR .5e9
```

Query Syntax SOURce:FREQuency:STARt?

Return Type Numeric

Default 45 MHz

Last modified:

19-Mar-2014 New command (A.07.50)

SOURce:FREQuency:STOP <value>

(Read-Write) Set and query the stop frequency of the measurement. Also send SOURce:FREQuency:STARt

Relevant Modes FOPS (Opt 208)

Parameters

<value> Stop frequency in Hz. The frequency limits for the measurement are determined by the limits of both the FieldFox and the power sensor.

- The LOW frequency is limited by the higher of either the FieldFox or the power sensor minimum frequencies.
- The HIGH frequency is limited by the lower of either the FieldFox or the power sensor maximum frequencies.

Examples

```
SOUR:FREQ:STOP 1.5e9
```

Query Syntax SOURce:FREQuency:STOP?

Return Type Numeric

Default 55 MHz

Last modified:

19-Mar-2014 New command (A.07.50)

SOURce:MODE <char>

Note:

IMPORTANT! This command syntax still works, but it is recommended that you use: SOUR:TRAC for new development.

This command was previously named [:SENSe]:ISOurce:MODE. That syntax will still work, but this new syntax should be used for new development.

(Read-Write) Set and query the Independent Source mode setting.

Use SOURce:ENABle to enable Independent Source.

Relevant Modes SA

Parameters

<character> Independent source mode. Choose from:

CW - The internal source is set to CW. Use SOURce:FREQuency[:CW] to set the frequency.

TCW - The internal source is set to tracking CW.

SRTS - “Stimulus Response Tracking Sweep". The internal source tracks with the SA receiver. Use SOURce:NORMalize to normalize the trace.

Examples

```
SOUR:MODE CW
```

Query Syntax SOURce:MODE?

Return Type Character

Default CW

Last Modified:

25-Mar-2014 Name change

10-Oct-2010	New command (5.30)

SOURce:NORMalize <bool>

Note: This command was previously named [:SENSe]:ISOurce:NORMalize. That syntax will still work, but the new syntax should be used for new development.

(Read-Write) Set and query the state of Independent source normalization.

Independent source must be ON (SOURce:ENABle) and in tracking mode SOurce:TRACking.

Relevant Modes SA

Parameters

<bool> Normalization state. Choose from:

ON (1) - Normalization ON

OFF (0) - Normalization OFF

Examples

```
SOUR:NORM 1
```

Query Syntax SOURce:NORMalize?

Return Type Boolean

Default OFF

Last Modified:

25-Mar-2014	Name change
10-Oct-2010	New command (5.30)

SOURce:POWer <num>

(Read-Write) Set and query the source power level. This command sets SOURce:POWer:ALC[:MODE] to MANual.

- For N9912A and N9923A models: This command changes the source attenuation (dB) to effectively set the power level at the test port.
- All other models: This command directly changes the power level in dBm.

Relevant Modes CAT, NA, VVM, Power Meter

Parameters

<num> Source power/attenuator level.

- **N9912A:** 0 to -31 dB in 1 dB steps
- **N9923A:** 0 to -47 dB in .5 dB steps
- **All other models:** Set power level from +3 to -45 dBm in .1 dB steps.

This command also supports sending MIN and MAX power levels as arguments:

- For N9912A and N9923A, MAX is equivalent to the HIGH setting. See

the User's Guide for your FieldFox model.

- For all other models, MAX is equivalent to the maximum leveled setting (+3)

Examples

```
SOUR:POW -10
Source:power max
```

Query Syntax :SOURce:POWer?

Return Type Numeric

Default 0

Last modified:

1-Nov-2013	Added Power Meter
3-Apr-2013	Major edits (LH)
15-Aug-2012	Added link to ALC mode
17-Jul-2012	Added all other models (A.06.00)
1-Feb-2011	Fixed and reworded to emphasize negative power levels.

SOURce:POWer <num>

Note: This command was previously named [:SENSe]:SOurce:POWer. That syntax will still work, but the new syntax should be used for new development.

(Read-Write) Set and query the Independent Source power level. This command automatically sets SOURce:POWer:MAXimum to OFF.

Use SOURce:ENABle to enable Independent Source.

Relevant Modes RTSA, SA (All models EXCEPT N9912A - See [:SENSe]:ISOurce:POWer:ATTenuation for this model).

Parameters

<num> Power level in dBm. Choose a value between -45 and 0.

This command will accept MIN and MAX as arguments.

Examples

```
SOUR:POW -20
source:power min
```

Query Syntax SOURce:POWer?

Return Type Numeric

Default -15 dBm

Last Modified:

25-Mar-2014	Name change
10-Oct-2010	New command (6.00)

SOURce:POWer:ALC[:MODE] <char>

(Read-Write) Set and query the source power ALC (automatic leveling control) setting.

To set source power to a specific level, use SOURce:POWer. (Automatically sets SOUR:POW:ALC MAN.)

Relevant Modes CAT, NA, VVM

Parameters

<char> Source power. Choose from:

- **HIGH** - highest power level at each frequency (NOT flat)
- **LOW** - low power level (same as SOUR:POW MIN setting). For FieldFox models other than N9912A and N9923A, power is flat over the selected frequency range.
- **MAN** - Manual setting (Automatically set when SOURce:POWer is set.)

Examples

```
SOUR:POW:ALC HIGH
```

Query Syntax SOURce:POWer:ALC[:MODE]?

Return Type Character

Default HIGH

Last Modified:

3-Apr-2013	Edited leveling settings
15-Aug-2012	New command

SOURce:POWer:ATTenuation <num>

Note: This command was previously named [:SENSe]:ISOurce:POWer:ATTenuation. That syntax will still work, but the new syntax should be used for new development.

(Read-Write) Set and query the Independent Source attenuation level.

Use SOURce:ENABle to enable Independent Source.

Relevant Modes SA (N9912A ONLY - See SOURce:POWer:MAXimum and SOURce:POWer for all other models).

Parameters

<num> Independent source attenuation in dB. Choose a value between 31 and 0.

This command will accept MIN and MAX as arguments.

Examples

```
SOUR:POW:ATT 20
source:power:att min
```

Query Syntax SOURce:POWer:ATTenuation?

Return Type Numeric

Default 10

Last Modified:

7-Apr-2014	Name change
10-Oct-2010	New command (5.30)

SOURce:POWer:MAXimum <bool>

Note: This command was previously named [:SENSe]:ISOurce:POWer:MAXimum. That syntax will still work, but the new syntax should be used for new development.

(Read-Write) Set and query the state of maximum Independent Source Power.

Use SOURce:ENABle to enable Independent Source.

Relevant Modes SA (All models EXCEPT N9912A - See SOURce:POWer:ATTenuation for this model).

Parameters

<bool> Max Independent Source Power state. Choose from:

ON (or 1) - Independent Source Power level is set to the maximum achievable power at all frequencies.

OFF (or 0) - Independent Source Power level is set using SOURce:POWer.

Examples

```
SOUR:POW:MAX 1
source:power:maximum off
```

Query Syntax SOURce:POWer:MAXimum?

Return Type Boolean

Default OFF

Last Modified:

25-Mar-2014	Name change
10-Oct-2010	New command (6.00)

SOURce:POWer:MEMorize

(Write-Only) Stores the current data trace into memory.

Relevant Modes FOPS

Examples

```
SOUR:POW:MEM
```

Query Syntax Not Applicable

Default Not Applicable

Last modified:

19-Mar-2014 New command

SOURce:RECeiver:OFFSet <value>

(Read-Write) Set and query the receiver offset frequency of the measurement. Also send SOURce:FREQuency:STARt

Relevant Modes FOPS (Opt 208)

Parameters

<value> Offset frequency in Hz. (The frequency that the receiver is offset from the source.) This is typically the frequency of the LO that is used with the frequency converter. The frequency offset may be positive, negative, or zero.

Examples

```
SOUR:REC:OFFS .5e9
```

Query Syntax SOURce:RECeiver:OFFSet?

Return Type Numeric

Default 0 Hz

Last modified:

19-Mar-2014 New command (A.07.50)

fSOURce:TOFFset:ENABle <bool>

(Read-Write) Set and query source tracking offset ON / OFF state.

Relevant Modes ERTA

Parameters

<bool> Choose from:

ON or 1 - Tracking offset enabled.

OFF or 0 - Tracking offset NOT enabled.

Examples

```
SOUR:TOFF:ENAB 1
```

Query Syntax SOURce:TOFFset:ENABle?

Return Type Boolean

Default OFF

Last Modified:

20-Jan-2015 New command (8.00)

SOURce:TOFFset:FREQuency <num>

(Read-Write) Set and query source tracking offset frequency.

Relevant Modes ERTA

Parameters

<num> Offset frequency in Hz.
Choose a value between 1 Hz and the maximum frequency of the FieldFox.

Examples

```
SOUR:TOFF:FREQ 1e3
```

Query Syntax SOURce:TOFFset:FREQuency?

Return Type Numeric

Default 0 Hz.

Last Modified:

20-Jan-2015 New command (8.00)

SOURce:TOFFset:REVerse <bool>

(Read-Write) Set and query source tracking offset reversal ON / OFF state.

Relevant Modes ERTA

Parameters

<bool> Choose from:
ON or 1 - Tracking offset reversal enabled.
OFF or 0 - Tracking offset reversal NOT enabled.

Examples

```
SOUR:TOFF:REV 1
```

Query Syntax SOURce:TOFFset:REVerse?

Return Type Boolean

Default OFF

Last Modified:

20-Jan-2015 New command (8.00)

:SOURce:TRACking <char>

Note: This command was previously named SOurce:MODE. That syntax will still work, but this new syntax should be used for new development.

(Read-Write) Set and query the source tracking.

Relevant Modes SA

Parameters

<char> Source tracking type. Choose from:

OFF - Disables tracking.

TCF - Sets the internal source tracking to the center frequency.

TSWP - (SA Only) Sets the internal source to track with the SA receiver. Use SOURce:NORMalize to normalize the trace.

Examples

```
SOUR:TRAC TCF
```

Query Syntax SOUR:TRAC?

Return Type Character

Default OFF

Last Modified:

SOURce:PORT[:STATe] <char>

(Read-Write) Set and query the status of the active source port control.

Relevant Modes NA

Parameters

<char> Choose from:

AUTO (Default) - FieldFox automatically sets the port.

PORT1 - Source port is set to port 1.

PORT2 - Source port is set to port 2.

Examples

```
SOUR:PORT PORT1 'Sets the source port to 1.
SOUR:PORT PORT1 'Sets the source port to Automatic.
```

Query Syntax SOURce:PORT?

Return Type character

Default AUTO

Last Modified:

16-Sep-2022 New command

:STATus:OPERation:SAMode:CONDition?

(Read-Only) Reads the status of a RecordPlayback session.

Relevant Modes SA, RTSA

Examples
```
STAT:OPER:SAM:COND?
```

Return Type Numeric:

0 - Record Playback session is NOT OPEN

64 - Record Playback session is OPEN

Default Not Applicable

Last Modified:

10-june-2016 Added RTSA mode (9.50)

:STATus:QUEStionable:FREQuency:CONDition?

(Read-Only) Reads the status of External Reference unlock errors.

Relevant Modes ALL

Examples
```
STAT:QUES:FREQ:COND?
```

Return Type Numeric:

0 - External reference NOT unlocked.

2 - External reference unlocked.

Default Not Applicable

:STATus:QUEStionable:INTegrity:CONDition?

(Read-Only) Reads the status of ADC Overrange errors.

Relevant Modes ALL - All SA Receiver based applications report ADC overrange (e.g., SA/ERTA/RTSA/EMI/IQA/etcetera).

Examples
```
STAT:QUES:INT:COND?
```

Return Type Numeric:

0 - ADC is NOT Overrange

16 - ADC Overrange occurs.

Default Not Applicable

:STATus:QUEStionable:LIMit:CONDition?

(Read-Only) Reads the status of limit line failures.

Relevant Modes ALL - Limit lines are allowed in CAT, NA, NF, SA

Examples

```
STAT:QUES:LIM:COND?
The following C# excerpt assumes 4 traces, and uses a
"bitwise and" of the return value:
   for (int i = 1; i < 5; ++i)
   {
     if ((returnValueFromScpiCommandAsInt &
((int)(Math.Pow(2, i)))) > 0)
     {
        tracePassFail[i] = "Fail";
     }
     else
     {
        tracePassFail[i] = "Pass";
     }
   }
```

Return Type Numeric:

0 - All limit lines pass

2 - Any limit on trace#1 failed

4 - Any limit on trace #2 failed

8 - Any limit on trace #3 failed

16 - Any limit on trace #4 failed

The returned values are added together. For example, 6 would mean traces #1 and #2 failed, 12 would mean #2 and #3 failed, 30 would mean all 4 traces failed and so forth.

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)
17-Jul-2012	Updated for A.06.00)

SYSTem:ANTenna:USB:AXIS <char>

(Read-Write) Set and query the USB triaxial antenna axis.

Relevant Modes 5G EVM, USB (EMF) Antenna

Couplings None

Parameters

<character> <character> Component carrier (CC) value. Choose from:
AUTO – Manual axis control is disabled (off). All axes are selected and controlled by the instrument.

NOTE: Manual axis control was disabled by "**N**". This parameter is no longer valid.

X – X axis is selected for manual control.
Y – Y axis is selected for manual control.
Z – Z axis is selected for manual control.

Examples
```
SYST:ANT:USB:AXIS X */Selects the X axis for manual control.
```

Query Syntax SYST:ANT:USB:AXIS?

Return Type Character

Default N (Manual axis control is off)

Last Modified:

01dec2019	New command

SYSTem:ANTenna:USB:IMPort

(Read-Write) Import antenna correction factors from USB antenna.

Relevant Modes 5G EVM, USB (EMF) Antenna

Parameters

n/an/a

Couplings None

Examples
```
SYST:ANT:USB:IMP */Imports the current available compatible antenna commands.
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01dec2019	New command

SYSTem:ANTenna:USB:TYPe <char>

(Read-Write) Set and query the USB triaxial antenna type.

Relevant Modes 5G EVM, USB (EMF) Antenna

Couplings None

Parameters

<character> <character> Component carrier (CC) value. Choose from:
TRI – Sets the USB antenna-type to be triaxial.

Note: Only one USB triaxial antenna is compatible with the FieldFox.

Examples

```
SYST:ANT:USB:TYP TRI */Selects the USB antenna-type to triaxial.
```

Query Syntax SYST:ANT:USB:TRI?

Return Type Character

Default TRI

Last Modified:

01dec2019	New command

SYSTem:AUDio:MUTe <bool>

(Read-Write) Set and query the system volume MUTE state.

See also, SYST:AUD:VOL.

Relevant Modes ALL Modes.

Parameters

<char> Choose from:

ON (or 1) - Volume muted.

OFF (or 0) - Volume NOT muted.

Examples

```
SYST:AUD:MUTE 0
```

Query Syntax SYSTem:AUDio:MUTe?

Return Type Boolean

Default OFF (or 0)

Last Modified:

4-Aug-2011	New command

SYSTem:AUDio:VOLume <num>

(Read-Write) Set and query the system volume level.

See also, SYST:AUD:MUTE.

Relevant Modes ALL Modes.

Parameters

<num> Volume level. Choose a value between 0 (lowest volume) and 100 (highest volume).

Examples

```
SYST:AUD:VOL 93
```

Query Syntax SYSTem:AUDio:VOLume?

Return Type Numeric

Default 75

Last Modified:

4-Aug-2011 New command

SYSTem:BATTery?

(Read-Only) Reads whether or not a battery is present in the FieldFox.

Relevant Modes ALL

Examples

```
SYST:BATT?
```

Return Type Boolean

1- Battery is present

0 - Battery is not present

Default Not Applicable

Last Modified:

18-Oct-2012 New command

SYSTem:BATTery:ABSCharge?

(Read-Only) Reads the absolute charge on the battery in percent.

Relevant Modes ALL

Examples

```
SYST:BATT:ABSC?
```

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:ACURrent?

(Read-Only) Reads the average current flowing from the battery in amperes.

Relevant Modes ALL

Examples

```
SYST:BATT:ACUR?
```

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:ARTTe?

(Read-Only) Returns the minutes of run time remaining based on running average of current being used.

Relevant Modes ALL

Examples `SYST:BATT:ARTT?`

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:CHEMistry?

(Read-Only) Reads the chemistry type of the battery.

Relevant Modes ALL

Examples `SYST:BATT:CHEM?`

Return Type String

Default LION (Lithium Ion)

SYSTem:BATTery:CURRent?

(Read-Only) Reads amount of current being consumed when operating from internal battery. If battery is charging, indicates amount of charging current.

Relevant Modes ALL

Examples `SYST:BATT:CURR?`

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:CYCLes?

(Read-Only) Reads the number of charge cycles battery has experienced. Charge cycle defined as ≥80% change in relative state of charge.

Relevant Modes ALL

Examples `SYST:BATT:CYCLes?`

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:DATE?

(Read-Only) Reads the date of manufacture of the battery.

Relevant Modes ALL

Examples `SYST:BATT:DATE?`

Return Type String

Default Not Applicable

SYSTem:BATTery:FCAPacity?

(Read-Only) Reads the capacity of a full battery in milli-amp Hours.Theoretically, how long a full battery of this type should continue to provide energy.

Relevant Modes ALL

Examples `SYST:BATT:FCAP?`

Return Type String

Default Not Applicable

SYSTem:BATTery:MAXError?

(Read-Only) Reads Reads the present accuracy of the battery gauge in percent. If the error exceeds 10%, you should recondition the battery.

Relevant Modes ALL

Examples `SYST:BATT:MAXE?`

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:MFGname?

(Read-Only) Reads the name of the manufacturer of the battery.

Relevant Modes ALL

Examples `SYST:BATT:MFGname?`

Return Type String

Default Keysight

SYSTem:BATTery:RCAPacity?

(Read-Only) Reads the remaining battery capacity in hours..

Relevant Modes ALL

Examples `SYST:BATT:RCAP?`

Return Type String

Default Not Applicable

SYSTem:BATTery:RELCharge?

(Read-Only) Reads the current charge compared to actual full capacity in percent. This number lowers with age and number of battery cycles.

Relevant Modes ALL

Examples
```
SYST:BATT:RELC?
```

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:RTTE?

(Read-Only) Reads the minutes of run time remaining based on amount of current being used now.

Relevant Modes ALL

Examples
```
SYST:BATT:RTTE?
```

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:SAVer <string>

(Read-Write) Set and query the battery saver state.

Relevant Modes ALL

Parameters

<string> Choose from:
OFF - Battery saver OFF. This leaves the source ON between sweeps.
ON - Battery saver ON

Examples
```
SYST:BATT:SAV OFF
```

Query Syntax SYSTem:BATTery:SAVer?

Return Type String

Default ON

SYSTem:BATTery:SN?

(Read-Only) Reads the serial number of the battery.

Relevant Modes ALL

Examples
```
SYST:BATT:SN?
```

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:STATus?

(Read-Only) Reads the use status of the FieldFox battery.

Relevant Modes ALL

Examples
```
SYST:BATT:STAT?
```

Return Type Character
FULL - Battery is fully charged
CHAR - Battery is charging
NOB - No battery present
DISC - Battery is discharging; no AC Adaptor is present.

Default Not Applicable

Last Modified:

18-Oct-2012	New command

SYSTem:BATTery:TEMPerature?

(Read-Only) Reads the current battery temperature in degrees Celsius.

Relevant Modes ALL

Examples
```
SYST:BATT:TEMP?
```

Return Type Numeric

Default Not Applicable

SYSTem:BATTery:VENDor?

(Read-Only) Reads the vendor / distributor of the battery.

Relevant Modes ALL

Examples
```
SYST:BATT:VEND?
```

Return Type String

Default Not Applicable

SYSTem:BATTery:VOLTage?

(Read-Only) Reads the current battery voltage in volts.

Relevant Modes ALL

Examples
```
SYST:BATT:VOLT?
```

Return Type Numeric

Default Not Applicable

SYSTem:DATE <year,mo,dy>

(Read-Write) Set and query the system date.

Relevant Modes ALL

Parameters

<yr,mo,dy> Year, month, and day.

Examples

```
SYST:DATE 2008,10,16
```

Query Syntax SYSTem:DATE?

Return Type Comma-separated numeric

Default Not Applicable

SYSTem:DCSupply?

(Read-Only) Reads whether the DC Supply is connected to the FieldFox.

Relevant Modes ALL

Examples

```
SYST:DCS?
```

Return Type Boolean
1 - DC Supply is connected
0 - DC Supply is NOT connected

Default Not Applicable

Last modified:

17-Jul-2012 New command (A.06.00)

SYSTem:ERRor:LOG?

(Query Only) Returns the GUI error list (GUI session error queue) from RAM to the persistent error log file, then returns the contents of the persistent error log as a SCPI BINBLOCK (like MMEM:DATA?). This is a list of all of the errors up to the present time.

See also SYST:ERR:LOG:ERAS.

Note: This SCPI only applies to CPU2 FieldFox models.

Relevant Modes ALL

Parameters

n/a

Examples

```
SYST:ERR:LOG?
```

Query Syntax SYST:ERR:LOG?

Default n/a

Last modified:

07-sept-2017 Added new command for A.09.54.

SYSTem:ERASe <value>

(Write-Read) Immediately erases all user data from the FieldFox.

Warning: there is no confirmation message.

Relevant Modes ALL

Parameters None

<value> (String) Choose “USERDATA” (case sensitive)

Examples

```
SYST:ERAS "USERDATA"
```

Query Syntax SYSTem:ERASe? "USERDATA"

Returns the date of the last time that user data was erased.

Default Not Applicable

Last modified:

28-Mar-2013 Added read

SYSTem:ERRor:LOG:ERASe

(Write Only) Immediately erase error log data from the FieldFox.

Caution: there is no confirmation message.

Note: This SCPI only applies to CPU2 FieldFox models.

Relevant Modes ALL

Parameters

<value> **RAM** - Erases current displayed UI entries.

ALL - Clears the UI information and the persistent log file (i.e., erases the error log created by using the :SYST:ERAS "USERDATA" command).

Examples

```
SYST:ERR:LOG:ERAS RAM
```

Query Syntax n/a

Default n/a

Last modified:

07-sept-2017 Added new command.

SYSTem:ERRor[:NEXT]?

(Read-Only) Read the next error in the error queue.

Learn How to Query the Error Queue.

Relevant Modes ALL

Examples

```
SYST:ERR?
```

Return Type Numeric, String

Default Not Applicable

SYSTem:GPS:AVERage:MINP <num>

(Read-Write) Set and query the minimum saturated power allowed, before a satellite's power is used in the average power computation.

Relevant Modes All modes

Parameters

<numeric> Choose from:

0 to 100 minimum C/no

This command accepts MIN and MAX to set the minimum power required.

Examples

```
SYST:GPS:AVER:MINP 27 'sets the minimum satellite power required, before average power computation to 27 dB
SYST:GPS:AVER:MINP MAX 'sets the satellite power required to maximum, before average power computation
```

Query Syntax SYSTem:GPS:AVERage:MINP?

Return Type numeric

Default 1

Last modified:

01nov2019 Added for PAA Mode

20-Jul-2010 New command (A.05.33)

SYSTem:GPS[:STATe] <char>

(Read-Write) Set and query the GPS state.

Relevant Modes ALL Modes.

Parameters

<char> Choose from:

OFF - GPS OFF

EXTernal - External GPS ON

INTernal - Internal GPS ON. Requires Option 307 (Built-in GPS)

Examples

```
SYST:GPS EXT
```

Query Syntax SYSTem:GPS[:STATe]?

Return Type Character

Default OFF

Last modified:

01nov2019	Added for PAA Mode
17-Jul-2012	Updated for Internal (A.06.00)
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:CNOise?

This query returns a string containing Carrier to Noise (C/No dBHz) data for each satellite currently in view of the FieldFox GPS.

Note: The C/No values returned are not calibrated at the factory or warranted for accuracy. The numbers retrieved are passed unprocessed directly from the GPS receiver in use.

Relevant Modes All modes

Examples SYSTem:GPS:CNOise

Query Syntax SYSTem:GPS:CNOise?

Return Type Comma separated string in the form "sat#,cno,sat#,cno,...". If GPS mode is not enabled or there are no satellites in view, the query returns "0,0". If there are 10 satellites in view, this query generates 20 numbers in the SCPI return string.

Default Not applicable

Last modified:

01oct2019	Added for PAA Mode

SYSTem:GPS:DATA?

(Read-only) Returns current GPS data in the following form:
<latitude>,<longitude>,<elevation (m)>,<timestamp (UTC)>

Relevant Modes ALL Modes

Parameters None

Examples

```
SYST:GPS:DATA?
'Returns
"38 28.88657 N,122 42.66682 W,152,2010-06-28 23:35:38Z"
```

Return Type Comma-separated numeric

Default Not Applicable

Last modified:

01oct2019	Added for PAA Mode
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:DATA:LAST?

(Read-only) Returns the data for the last successfully-locked GPS read in the form:
<latitude>,<longitude>,<elevation (m)>,<timestamp (UTC)>,<seconds since last read>

Relevant Modes ALL Modes.

Parameters None

Examples

```
SYST:GPS:DATA:LAST?
'Returns
"38 28.88657 N,122 42.66682 W,152,2010-06-28 23:35:38Z,4"
```

Return Type Comma-separated numeric

Default Not Applicable

Last modified:

01nov2019	Added for PAA Mode
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:DISPlay:COORdinate:FORMat <char>

(Read-Write) Set and query the format of the Latitude / Longitude coordinates.

Relevant Modes ALL Modes.

Parameters

<char> Choose from:

DMS - degrees, minutes, seconds
DMM - degrees, decimal minutes

Examples
```
SYST:GPS:DISP:COOR:FORM DMM
```

Query Syntax SYSTem:GPS:DISPlay:COORdinate:FORMat?

Return Type Character

Default DMS

Last modified:

01nov2019	Added for PAA Mode
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:DISPlay:DISTance:UNIT <char>

(Read-Write) Set and query the units of elevation.

Relevant Modes ALL Modes

Parameters

<char> Choose from:
FEET
METers

Examples
```
SYST:GPS:DISP:DIST:UNIT MET
```

Query Syntax SYSTem:GPS:DISPlay:DISTance:UNIT?

Return Type Character

Default METers

Last modified:

01nov2019	Added for PAA Mode
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:DISPlay:STATe <bool>

(Read-Write) Set and query the GPS status line display state.

Relevant Modes All modes

Parameters

<char> Choose from:
ON (1) - Status line ON

OFF (0) - Status line OFF

Examples
```
SYST:GPS:DISP:STAT 0
```

Query Syntax SYSTem:GPS:DISPlay:STATe?

Return Type Boolean

Default ON (1)

Last modified:

01nov2019	Added for PAA Mode
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:GNSS <char>

(Read-Write) Set and query the type of satellite being measured (GPS, GLNASS, BDS, GALILEO).

Relevant Modes ALL

Parameters

<character> Choose from:

GPS - Selects type GPS satellites to display.

GLONASS or **GLO** - Selects type GLONASS as the satellites to display.

BDS - Selects type BDS as the satellites to display.

GALILEO or **GAL** - Selects type GALILEO as the satellites to display.

Examples
```
SYST:GPS:GNSS GLONASS 'Sets GLONASS as the only satellites to be displayed.
SYST:GPS:GNSS GLO 'Sets GLONASS as the only satellites to be displayed.
SYST:GPS:GNSS BDS 'Sets BDS as the only satellites to be displayed.
```

Query Syntax SYST:GPS:GNSS?

Return Type Character

Default GPS

Last Modified:

01dec2019	New command

SYSTem:GPS:LSTate?

(Read-only) Returns the GPS lock state.

Relevant Modes ALL Modes

Parameters

Examples
```
SYST:GPS:LST?
```

Return Type Numeric

0 - OFF

1 - Locked

2 - ON but unlocked

3 - ON but no GPS device present

Default 0 - OFF

Last modified:

01nov2019	Added for PAA Mode
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:SYNChronize <bool>

(Read-Write) Set and query the GPS clock sync state.

Relevant Modes ALL Modes

Parameters

<char> Choose from:

ON (1) - FieldFox clock synchronized with GPS clock.

OFF (0) - FieldFox clock NOT synchronized with GPS clock.

Examples
```
SYST:GPS:SYNC 0
```

Query Syntax SYSTem:GPS:SYNChronize?

Return Type Boolean

Default OFF (0)

Last modified:

01nov2019	Added for PAA Mode
20-Jul-2010	New command (A.05.33)

SYSTem:GPS[:STATe] <char>

(Read-Write) Set and query the GPS state.

Relevant Modes ALL Modes.

Parameters

<char> Choose from:

OFF - GPS OFF
EXTernal - External GPS ON
INTernal - Internal GPS ON. Requires Option 307 (Built-in GPS)

Examples
```
SYST:GPS EXT
```

Query Syntax SYSTem:GPS[:STATe]?

Return Type Character

Default OFF

Last modified:

01nov2019	Added for PAA Mode
17-Jul-2012	Updated for Internal (A.06.00)
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:AVERage:TOPN <num>

(Read-Write) Set and query the top (most power) number of satellites to be displayed in the C/No view.

Relevant Modes All modes

Parameters

<numeric> Choose from:
0 to 40 number of satellites to display
This command accepts MIN and MAX to set the minimum power required.

Examples
```
SYST:GPS:AVER:TOPN 27 'sets the top number of satellites to be displayed at 27
SYST:GPS:AVER:TOPN MAX 'sets the top number of satellites to be dislayed to be the maximum detected
```

Query Syntax SYSTem:GPS:AVERage:TOPN?

Return Type numeric

Default 0

Last modified:

01nov2019	Added to PAA
20-Jul-2010	New command (A.05.33)

SYSTem:GPS:AVERage[:STATe] <bool>

(Read-Write) Set and query the status of the GPS averaging statistics displayed at the top of the C/No graph.

Note: When enabled, this calculates the average power given the TOPN or MINP constraints.

See also, SYST:GPS:AVER:MINP and SYST:GPS:AVER:TOPN.

Relevant Modes All modes

Parameters

<char> Choose from:

ON (1) - GPS Averaging statistics ON.

OFF (0) - GPS Averaging statistics OFF

Examples

```
SYST:GPS:AVER 0 'Disables the displaying of the GPS averaging statistics
```

Query Syntax SYSTem:GPS:AVER?

Return Type Boolean

Default OFF (0)

Last modified:

01nov2019 Added for PAA Mode

20-Jul-2010 New command (A.05.33)

SYSTem:HEAD:CORRections:ASETup <bool>

(Read-Write) Set and query the frequency converter corrections setup state (Auto Setup = ON (1) / Edit SA = OFF(0)).

See also, SYST:HEAD:CORR.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<bool> Frequency converter correction state. Choose from:

OFF (or 0) - Edit SA is enabled. In SA mode a converter correction file can be edited/created.

ON (or 1) - Converter correction ON. A default (rough) frequency converter correction file is automatically recalled.

Note: Unless otherwise specified, on the FieldFox, *.csv files are initially stored and recalled by default from the "[INTERNAL]:\Converter" folder.

Examples

```
SYST:HEAD:CORR:ASET 1 'Enables the default frequency converter corrections.
```

Query Syntax SYSTem:HEAD:CORRections:ASETup?

Return Type Boolean

Default ON(1)

Last Modified:

20apr2020 New command A.12.00

SYSTem:HEAD:CORRections[:STATe] <bool>

(Read-Write) Set and query frequency extender head corrections being shared from SA mode.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<char> Choose from:
ON (1) - share frequency head corrections ON
OFF (0) - share frequency head corrections OFF

Examples
```
SYST:HEAD:CORR 1 */Enables the sharing of SA mode
frequency extender head corrections
```

Query Syntax SYSTem:HEAD:CORR?

Return Type Boolean

Default OFF (0)

Last modified:

14apr2020 Added for A.12.00 FW (Compatible with OTA, PAA, RTSA, & SA Modes)

SYSTem:HEAD:HIGHsense[:STATe] <bool>

(Read-Write) Set and query the high sensitivity state when the frequency extender is enabled.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<char> Choose from:
ON (1) - high sensitivity state ON
OFF (0) - high sensitivity state OFF

Examples
```
SYST:HEAD:HIGH 0 */Disables the high sensitivity state
```

Query Syntax SYSTem:HEAD:HIGH?

Return Type Boolean

Default OFF (0)

Last modified:

14apr2020 Added for A.12.00 FW (Compatible with OTA, PAA, RTSA, & SA Modes)

SYSTem:HEAD:POWer <num>

(Read-Write) Set and query the OML head frequency extender low power level. Once set, this low power level is used each time any OML head is connected to the FieldFox.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<num> Power level in dBm. Choose a value between -18 dBm and 0.
This command will accept MIN and MAX as arguments.

Examples

```
SYST:HEAD:POW -9 'Sets the LO power to -9 dBm.
SYST:HEAD:POW min 'Sets the LO power to minimum (-18 dBm).
```

Query Syntax SYSTem:HEAD:POWer?

Return Type Numeric

Default -1.00E+01

Last Modified:

01nov2021	New command (A.12.35)

SYSTem:HEAD[:STATe] <bool>

(Read-Write) Set and query the frequency extender state.

Relevant Modes 5G NR, 5G NR EVM Conducted, 5G TF, IQA, LTE FDD, PAA, RTSA, SA

Parameters

<char> Choose from:
ON (1) - frequency extender ON
OFF (0) - frequency extender OFF

Examples

```
SYST:HEAD 0 */Disables the frequency extender
```

Query Syntax SYSTem:HEAD?

Return Type Boolean

Default OFF (0)

Last modified:

14apr2020 Added for A.12.00 FW (Compatible with OTA, PAA, RTSA, & SA Modes)

SYSTem:MAP:DISPlay:DEVice:SOURce <string>

(Read-Write) Set and query the type of device storage type where the *.zip file is stored (i.e., INT, USB, or SD).

See also, SYST:MAP:DISP:DEV[:DEST].

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, and PAA

Parameters

<"device"> Data capture device storage-type.

INT - internal FieldFox memory

SD - SD card

USB - USB storage device

Examples

```
SYST:MAP:DISP:SOUR SD
```

Query Syntax SYST:MAP:DISP:SOUR?

Return Type character

Default INT

Last Modified:

09dec2019 Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay:DEVice[:DESTination] <string>

(Read-Write) Set and query the type of device storage type for the destination location for storing indoor/outdoor maps (i.e., INT, USB, or SD).

See also, SYST:MAP:DISP:DEV:SOUR.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, and PAA

Parameters

<"device"> Data capture device storage-type.

INT - internal FieldFox memory

SD - SD card

USB - USB storage device

Examples

```
SYST:MAP:DISP:DEV SD
```

Query Syntax SYST:MAP:DISP:DEV?

Return Type character

Default INT

Last Modified:

09dec2019	Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay:GOTO:GPS

(Write Only) Set the currently displayed map to the value of the current latitude and longitude displayed on the FieldFox.

See also, SYST:MAP:DISP:LONG and SYST:MAP:DISP:LAT.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, and PAA

Parameters

n/a

Examples

```
SYST:MAP:DISP:GOTO:GPS */Sets the current displayed map on the FieldFox to the currently displayed latitude and longitude values.
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

26oct2020	Updated command (A.12.1x)
09dec2019	Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay:ICONs <string>

(Read-Write) Set and query the type of mapping icon being displayed.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, and PAA

Parameters

<"icon">	Data mapping icon displayed.

FLAG - diplays a red flag icon (not available when LINE is set)
POInt - displays a point as the icon
LINE - displays a line connecting each point icon on the map

Examples
```
SYST:MAP:DISP:ICON FLAG */Sets the icon to a flag.
```

Query Syntax SYST:MAP:DISP:ICON?

Return Type character

Default FLAG

Last Modified:

09dec2019	Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay:IMPort <string>

(Read-Write) Set and query the *.zip to be be unzipped in the destination folder.
See also, SYST:MAP:DISP:DEV[:DEST] and SYST:MAP:DISP:SOUR.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, and PAA

Parameters

<"FileToUnzip"> Enter a zip filename to be unzipped. Use the following commands to set up the destination and source locations for your zip file:
SYST:MAP:DISP:DEV[:DEST] and
SYST:MAP:DISP:SOUR

Examples
```
SYST:MAP:DISP:IMP "ExampleFileToUnzip.zip"
```

Query Syntax SYST:MAP:DISP:IMP?

Return Type string

Default n/a

Last Modified:

01dec2020	Updated command (12.1x)
09dec2019	Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay:LABels <booleon>

(Read-Write) Set and query the status of the map labels (0 (Off) or 1 (On)).

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, and PAA

Parameters

<booleon> Enable/disable map labels.

0 - disable the map labels

1 - enable the map labels

Examples

```
SYST:MAP:DISP:LAB 0 */Disables the map labels.
```

Query Syntax SYST:MAP:DISP:LAB?

Return Type INT

Default 1

Last Modified:

09dec2019 Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay:LATitude <double>

(Read-Write) Set and query the value of the latitude of a mapping point.

See also, SYST:MAP:DISP:LONG.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA

Parameters

<double numbers> Set and query a latitude value on a map.

Examples

```
SYST:MAP:DISP:LAT 38.90630 */sets a latitude value.
```

Query Syntax SYST:MAP:DISP:LAT?

Return Type double numbers

Default n/a

Last Modified:

09dec2019 Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay:LONGitude <double>

(Read-Write) Set and query the value of the longitude of a mapping point.
See also, SYST:MAP:DISP:LAT.

Relevant Modes	Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, Mapping, and PAA
Parameters	
<double numbers>	Set and query a longitude value on a map.
Examples	`SYST:MAP:DISP:LONG -94.53948 */sets a longitude value.`
Query Syntax	SYST:MAP:DISP:LONG?
Return Type	double numbers
Default	n/a

Last Modified:

09dec2019	Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay:ZOOM <integer>

(Read-Write) Set and query the zoom level of the current map view.

Relevant Modes	Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, and PAA
Parameters	
<integer>	Enter a zoom level. **Enter a number between 6 and 17.**
Examples	`SYST:MAP:DISP:ZOOM 11 */Sets the current map zoom level to 11.`
Query Syntax	SYST:MAP:DISP:ZOOM?
Return Type	integer
Default	12

Last Modified:

09dec2019	Added new Mapping content (11.5x).

SYSTem:MAP:DISPlay[:STATe]

(Read-Write) Enables or disables the map displayed on the FieldFox.

Relevant Modes Channel Scanner, 5G NR, 5G TF, 5G NR EVM Conducted, LTE FDD, and PAA

Parameters

<booleon> Enable/disable map labels.

0 - disable the map labels

1 - enable the map labels

Examples

```
SYST:MAP:DISP 1 */Sets the FieldFox to display the current map of latitude and longitude coordinates.
```

Query Syntax SYST:MAP:DISP?

Return Type INT

Default 0 (disabled)

Last Modified:

09dec2019 Added new Mapping content (11.5x).

SYSTem:PREFerences:DFLT

(Write-Only) Sets the system (language and display) preferences to their default settings.

Relevant Modes ALL

Parameters None

Examples

```
SYST:PREF:DFLT
```

Query Syntax Not Applicable

Default Not Applicable

SYSTem:PREFerences:SA:EAOR <char>

(Read-Write) Set and query the ADC Over Range Warning Emphasis.

NOTE: EAOR = **E**mphasis of **A**DC **O**ver **R**ange

Relevant Modes SA

Parameters

<character> The Emphasis option. Choose from:

NONE - No emphasis, default warning text.

ALL - Big Font and Beep sound to alert user.

BEEP - Default warning text and Beep sound to alert user.

BIGF - Big Font warning text.

Examples
```
SYST:PREF:SA:EAOR BEEP */Sets the ADC over range warning
to default warning text and Beep sound to alert user.
```

Query Syntax SYST:PREF:SA:EAOR?

Return Type Character

Default None

Last Modified:

01june2022 New SCPI (12.4x)

SYSTem:PREFerences:SAADC <bool> (Superseded)

(Read-Write) Set and query the ADC Over Range Warning Emphasis.

NOTE: This command is still is supported, but has been replaced by the following command: SYST:PREF:SA:EAOR

Relevant Modes SA

Parameters

<boolean> The Emphasis option. Choose from:

Off/False(0) - No emphasis, default warning text.

On/True(1) - Big Font and warning text and Beep sound to alert user.

Examples
```
SYST:PREF:SAADC 1 */Sets the ADC over range to Big Font
and warning text and Beep sound to alert user.
```

Query Syntax SYST:PREF:SAADC?

Return Type boolean

Default 0

Last Modified:

01june2022 New SCPI (12.4x)

SYSTem:PREFerences:SAVE

(Read-Write) Saves the current language and display settings as your system preferences.

Relevant Modes ALL

Parameters None

Examples SYST:PREF:SAVE

Query Syntax Not Applicable

Default Not Applicable

:SYSTem:PRESet

(Write-Only) Perform a full preset on the FieldFox.

Relevant Modes ALL

Examples

```
SYST:PRES
```

Query Syntax Not Applicable

Default Not Applicable

SYSTem:PRESet:ANTenna

(Write-Only) Presets the phased array antenna.

NOTE: Only the Ball antenna is currently supported.

Relevant Modes PAA

Parameters

n/a n/a

Examples

```
SYST:PRES:ANT */Presets the phased array antenna
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

01dec019 New command

:SYSTem:PRESet:MODE

(Write-Only) Perform a Mode preset on the FieldFox. Only the current mode is preset to default settings.

Relevant Modes ALL

Examples

```
SYST:PRES:MODE
```

Query Syntax Not Applicable

Default Not Applicable

SYSTem:PWR:AUTO <value>

(Write-only) Determines how the FieldFox is turned ON after DC power has been removed from the FieldFox. This setting will remain until it is changed either using the command or the User Interface.

Relevant Modes ALL

Parameters

<value> **0** - Power comes ON only when the power button is pressed.
1 - Power comes ON automatically when the DC adapter is inserted.

Examples

```
SYST:PWR:AUTO 1
```

Query Syntax Not Applicable

Default Not Applicable

Last Modified:

01dec20221	Updated description (A.12.36)
7-May-2013	User Interface added (6.25)
1-Nov-2012	New command (A.06.06)

SYSTem:PWR:SHUTdown <value>

(Write-only) Turns the FieldFox OFF. You can use with SYSTem:PWR:SHUTdown:DLY and SYSTem:PWR:SHUTdown:DURation.

Relevant Modes ALL

Parameters

<value> **0** - Shuts down the FieldFox and does NOT reboot.
1 - Reboots the FieldFox

Examples

```
SYST:PWR:SHUT:DLY 5
SYST:PWR:SHUT:DUR 3
SYST:PWR:SHUT 0 //Shutdown after 5 seconds, no reboot
SYST:PWR:SHUT 1 //Reboot
```

Query Syntax Not Applicable

Default Not Applicable

SYSTem:PWR:SHUTdown:DLY <value>

(Read-Write) Sets the time to delay before turning the FieldFox OFF.

Use SYSTem:PWR:SHUTdown to turn the FieldFox OFF.

Use SYSTem:PWR:SHUTdown:DURation to specify period of time before rebooting.

Relevant Modes ALL

Parameters

<value> Time (in seconds) to delay shutdown.

Examples

```
Reboot after 5 seconds, for a duration of 3 seconds:
SYST:PWR:SHUT:DLY 5
SYST:PWR:SHUT:DUR 3
SYST:PWR:SHUT 1
```

Query Syntax SYSTem:PWR:SHUTdown:DLY?

Default 0 - Do NOT delay

SYSTem:PWR:SHUTdown:DURation <value>

(Read-Write) Sets the time to wait before rebooting the FieldFox.
Use SYSTem:PWR:SHUTdown to turn the FieldFox OFF.

Relevant Modes ALL

Parameters

<value> Time (in seconds) to wait before rebooting the FieldFox.

Examples

```
Reboot after 5 seconds, for a duration of 3 seconds:
SYST:PWR:SHUT:DLY 5
SYST:PWR:SHUT:DUR 3
SYST:PWR:SHUT 1
```

Query Syntax SYSTem:PWR:SHUTdown:DURation?

Default -1 - Do NOT reboot after shutdown

SYSTem:PWR:SUSP <bool>

(Write-only) Puts the FieldFox into Standby mode. You can use with SYSTem:PWR:SUSP:DLY and SYSTem:PWR:SUSP:DURation.

Relevant Modes ALL

Parameters

<bool> Choose **1** to put the FieldFox into Standby.
IMPORTANT: There is no SCPI command to recover from standby mode.

Examples

```
SYST:PWR:SUSP 1
```

Query Syntax Not Applicable

Default Not Applicable

SYSTem:PWR:SUSP:DLY <value>

(Read-Write) Sets the time to delay before putting the FieldFox in Standby.
Use SYSTem:PWR:SUSP to put the FieldFox in Standby.
Use SYSTem:PWR:SUSP:DURation to cause the FieldFox to awaken after a specified period of time.

Relevant Modes ALL

Parameters

<value> Time (in seconds) to delay Standby.

Examples

```
SYST:PWR:SUSP:DLY 10
```

Query Syntax SYSTem:PWR:SUSP:DLY?

Default 0 - Do NOT delay

SYSTem:PWR:SUSP:DURation <value>

(Read-Write) Sets the time to wait before awakening the FieldFox from Standby.
Use SYSTem:PWR:SUSP to put the FieldFox into Standby.

Relevant Modes ALL

Parameters

<value> Time (in seconds) to wait before awakening the FieldFox.

Examples

```
SYST:PWR:SUSP:DUR 10
```

Query Syntax SYSTem:PWR:SUSP:DURation?

Default **-1** Do NOT awaken after putting into standby.

SYSTem:UPReset:FPANel[:STATe] <bool>

(Read-Write) Set and query User Preset ON | OFF state.

Relevant Modes ALL Modes.

Parameters

<bool> Choose from:
OFF - User Preset OFF.
ON - User Preset ON.

Examples

```
SYST:UPR:FPAN 0
```

Query Syntax SYSTem:UPReset:FPANel[:STATe]?

Return Type Boolean

Default OFF

Last modified:

1-Nov-2013 New command

SYSTem:UPReset:MODE

(Write-Only) Perform a User MODE Preset on the FieldFox. The settings for only the current mode are recalled from UserPreset.sta.

Relevant Modes ALL

Examples
```
SYST:UPR:MODE
```

Query Syntax Not Applicable

Default Not Applicable

SYSTem:UPReset:SAVE

(Write-Only) Your FieldFox settings are saved to a standard State file (UserPreset.sta). However, unlike State files, calibration data is NOT saved.

Relevant Modes ALL

Examples
```
SYST:UPR:SAVE
```

Query Syntax Not Applicable

Default Not Applicable

SYSTem:UPReset

(Write-Only) Perform a User Preset on the FieldFox. The entire UserPreset.sta file is recalled. ALL modes assume the settings that were in place when the User Preset was saved. The active mode is the mode that was visible when the file was saved.

Relevant Modes ALL

Examples
```
SYST:UPR
```

Query Syntax Not Applicable

Default Not Applicable

SYSTem:TIME <hr,min,sec>

(Read-Write) Set and query the current system time.

Relevant Modes ALL

Parameters

<num> Current time in hours (24 hr clock), minutes, seconds.

Examples
```
SYST:TIME 22,15,2
```

Query Syntax SYSTem:TIME?

Return Type Comma-separated numeric

Default Not Applicable

SYSTem:TZONe <string>

(Read-Write) Set and query the current time zone setting.

Relevant Modes ALL Modes.

Parameters

<string> Use SYSTem:TZONe:CATalog? to read the valid time zone settings.

Examples

```
SYST:TZON "(GMT+10:00) Brisbane"
```

Query Syntax SYSTem:TZONe?

Return Type String

Default "(GMT-08:00) Pacific Time (US & Canada)"

Last modified:

20-Jul-2010 New command (A.05.30)

SYSTem:TZONe:CATalog?

(Read-only) Query the list of valid time zone settings. Use SYSTem:TZONe to set and read the current time zone setting.

Relevant Modes ALL Modes.

Parameters None

Examples

```
SYST:TZON:CAT?
```

Return Type Comma-separated strings

Default Not Applicable

Last modified:

20-Jul-2010 New command (A.05.30)

SYSTem:VERSion?

(Read-Write) Set and query the current version of the SCPI standard. For more information see: http://www.ivifoundation.org/docs/scpi-99.pdf

Relevant Modes ALL

Parameters None

Examples `SYST:VERS?`

Return Type String

Default Not Applicable

Last Modified:

16-Feb-2011 New command

SYSTem:VVS:CURRent?

(Read-only) Query the amount of current draw in amperes.

Relevant Modes ALL Modes.
ALL models with Option 309 (Voltage Source)

Parameters None

Examples `SYST:VVS:CURR?`

Return Type Numeric

Default Not Applicable

Last Modified:

17-Jul-2012 New command

SYSTem:VVS:ENABle <bool>

(Write Only) Set and query the voltage source state.
To clear a 'Tripped' condition, send SYSTem:VVS:ENABle OFF, then SYSTem:VVS:ENABle ON.
To query the present state of the voltage source using SYSTem:VVS[:STATe]?.
See example program.

Relevant Modes ALL Modes.
ALL models with Option 309 (Voltage Source)

Parameters

<bool> Voltage source state. Choose from:

- ON (or 1) - Voltage source enabled.
- OFF (or 0) - Voltage source disabled.

Examples `SYST:VVS:ENAB 1`

Query Syntax n/a

Return Type Boolean

Default OFF

Last Modified:

20june2018	Updated to be Write Only
23-Jul-2013	Added trip condition
17-Jul-2012	New command

SYSTem:VVS:HIMD <bool>

(Write Only) Set the high impedance load state.

Relevant Modes ALL Modes.
ALL models with Option 309 (Voltage Source)

Parameters

<bool> Voltage source state. Choose from:

- ON (or 1) - High impedance load enabled.
- OFF (or 0) - High impedance load disabled.

Examples

```
SYST:VVS:HMID 1
```

Query Syntax n/a

Return Type Boolean

Default OFF

Last Modified:

20june2018	New command

SYSTem:VVS:MAXCurrent?

(Read-only) Query the maximum amount of current that can be drawn at the present voltage setting.

Relevant Modes ALL Modes.
ALL models with Option 309 (Voltage Source)

Parameters None

Examples

```
SYST:VVS:MAXC?
```

Return Type Numeric

Default Not Applicable

Last Modified:

17-Jul-2012 New command

SYSTem:VVS:MVOLtage?

(Read-only) Query the present measured voltage.

Relevant Modes ALL Modes.
ALL models with Option 309 (Voltage Source)

Parameters None

Examples
```
SYST:VVS:MVOLtage?
```

Return Type Numeric

Default Not Applicable

Last Modified:

17-Jul-2012 New command

SYSTem:VVS:RVOLtage <num>

(Read Only) Query the present requested voltage.

Relevant Modes ALL Modes.
ALL models with Option 309 (Voltage Source)

Parameters

n/a

Examples
```
SYST:VVS:RVOL?
```

Query Syntax SYSTem:VVS:RVOLtage?

Return Type Numeric

Default Varies by mode

Last Modified:

20june2018 New VVS command.

SYSTem:VVS[:STATe]?

(Read-only) Query the present Voltage Source state.

Relevant Modes ALL Modes.
ALL models with Option 309 (Voltage Source)

Parameters None

Examples

```
SYST:VVS?
```

Return Type Character - Returns one of the following:

- **ON** - Voltage source enabled.
- **OFF** - Voltage source disabled.
- **TRIPPED** - The voltage source has drawn more current than the present capability. To clear a 'Tripped' condition, send SYSTem:VVS:ENABle OFF, then SYSTem:VVS:ENABle ON

Default Not Applicable

Last Modified:

23-Jul-2013	Added tripped note
17-Jul-2012	New command

SYSTem:VVS:VOLTage <num>

(Read-Write) Set and query the output voltage.

To query the present requested voltage using SYSTem:VVS:RVOLtage?.

Relevant Modes ALL Modes.
ALL models with Option 309 (Voltage Source)

Parameters

<num>Output voltage. Choose from 1.00 to 32.00 with .01 V resolution.

Examples

```
SYST:VVS:VOLT 5.05
```

Query Syntax SYSTem:VVS:VOLTage?

Return Type Numeric

Default 1.00

Last Modified:

17-Jul-2012	New command

TRACe<n>:DATA? <char>

(Read-Only) Returns the current data trace values. If correction is ON, then the returned data is corrected.

- Set Units with [:SENSe]:AMPLitude:UNIT.
- Set data format with FORMat[:DATA]

Relevant Modes PAA, NF, SA, RTSA, VVM
For CAT mode and NA mode, use **CALCulate:DATA:<type>** commands.

Parameters

<n> Trace number of data to be returned.
SA Only. Choose from 1 through 4.
NF Only. Chose from 1 through 2.
If unspecified, <n> is set to 1.

<char> **Note:** These parameters are NOT allowed for NF, RTSA and SA mode.
Type of data to return. Choose from:
FDATA - (*VVM Only*) Data in the current display format.
SDATA - (*VVM Only*) Raw (non-formatted) complex data.
VVM Mode always returns two data points: Mag and Phase.

Examples

```
TRACE:DATA? FDATA  'VVM mode. Assumes n = 1
TRAC2:DATA?  'NF, SA, & RTSA mode
```

Return Type Comma-separated numeric

Default Not Applicable

Last modified:

01june2018	Added NF mode Opt. 356 (10.3)
19-sep-2016	Added RTSA to relevant modes (A.09.50).
28-Oct-2011	Added link to format:data

TRACe:ERTA:RINPut <char>

(Read-Write) Set and query receiver trace measurement.

Relevant Modes ERTA

Parameters

<string> Choose from:
B - B receiver measurement.
R - R receiver measurement.
BoR - B over R (ratio) measurement.

Examples

```
TRAC:ERTA:RINP BOR
```

Query Syntax TRACe:ERTA:RINPut?

Return Type Character

Default BOR

Last Modified:

20-Jan-2015 New command (8.00)

TRACe:IMAGinary:DATA?

(Read Only) Returns the type the imaginary trace data (quadrature component vs. time) for the current trace.

Set data format with FORMat[:DATA].

Note: Only trace data is stored, **not** the screen's GUI data.

Relevant Modes IQA

Parameters

<char> n/a

Examples

```
TRAC:IMAG:DATA?
```

Query Syntax TRAC:IMAG:DATA?

Return Type real

Default n/a

Last Modified:

22-oct-2017 Added new IQA mode (10.1x).

:TRACe:IMAGinary:Y:AUTO

(Write Only) Enables the imaginary auto-scaling setting. The Auto Scaling function automatically determines the scale per division and reference values based on the measurement results.

See also TRAC:WAV:Y:AUTO, TRAC:REAL:Y:AUTO, TRAC:PHAS:Y:AUTO, TRAC:POL:Y:AUTO, and TRAC:UPH:Y:AUTO.

Relevant Modes IQA

Parameters n/a

Examples

```
:TRAC:IMAG:Y:AUTO
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

:TRACe:IMAGinary:Y:DLINe <volt>

(Read-Write) Set and query the waveform imaginary line values.

See also TRAC:WAV:Y:DLIN, TRAC:REAL:Y:DLIN, TRAC:PHAS:Y:DLIN, and TRAC:UPH:Y:DLIN.

Note: Polar trace is not supported.

Relevant Modes	IQA
Parameters	
<voltage>	Y-axis waveform imaginary level. Units depend on the selected setting. See :TRAC:WAV:AMPL:UNIT Minimum: -9.9e37V Maximum: 9.9e37V
Examples	`TRAC:IMAG:Y:DLIN 1`
Query Syntax	TRAC:IMAG:Y:DLINe?
Return Type	Numeric
Default	0V

Last Modified:

22oct2017 Added IQA mode (10.1x)

:TRACe:IMAGinary:Y:PDIVision <volt>

(Read-Write) Set and query the IQA waveform imaginary Y-axis scale values per division.

Relevant Modes	IQA
Parameters	
<voltage>	Minimum: 1.00 nV Maximum: 20.0V
Examples	`TRAC:IMAGinary:Y:PDIV 1.0e-9` `TRAC:IMAGinary:Y:PDIV 1`
Query Syntax	TRAC:IMAG:Y:PDIV?
Return Type	numeric
Default	100 mV

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

:TRACe:IMAGinary:Y:RLEVel <volt>

(Read-Write) Set and query the imaginary reference level value.

See also TRAC:WAV:Y:RLEV, TRAC:REAL:Y:RLEV, TRAC:PHAS:Y:RLEV, TRAC:POL:Y:RLEV, and TRAC:UPH:Y:RLEV.

Relevant Modes IQA

Parameters

<voltage> Y-axis waveform imaginary level.
Minimum: -5V
Maximum: 5V

Examples

```
TRAC:IMAG:Y:RLEV 1
```

Query Syntax TRAC:IMAG:Y:RLEV?

Return Type Numeric

Default 0V

Last Modified:

22oct2017 Added IQA mode (10.1xx)

:TRACe:IMAGinary:Y:RPOSition <int>

(Read-Write) Set and query the imaginary reference position.

See also TRAC:WAV:Y:RPOS, TRAC:REAL:Y:ROS, TRAC:PHAS:Y:RPOS, and TRAC:UPH:Y:RPOS.

Relevant Modes IQA

Parameters

<integer> Y-axis waveform imaginary reference position.
Minimum: 0
Maximum: 10

Examples

```
TRAC:IMAG:Y:RPOS 2
```

Query Syntax TRAC:IMAG:Y:RPOS?

Return Type Integer

Default 5

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe:IQCapture:DATA? <num>, <num> or <string>

(Read Only) Returns the type the I/Q capture data (quadrature component vs. time).

Note:

- This command can only be used in Single acquisition mode and after executing the INITiate:IQCapture command. Else, the data integrity cannot be guaranteed.
- The maximum number of IQ samples that can be returned with a single query is 124999999 samples (~119 MSamples). If you need to query an IQ capture that is greater than 124999999 samples, then you need to execute multiple queries and use the offset and length parameters.

Relevant Modes IQA

Parameters

<num> or <string>

<num>

Offset into the IQ capture you are querying (the IQ data starting at the specified offset will be returned). This parameter is optional.

Length of the IQ data you want returned. This parameter is optional (if you want to specify a length, you have to specify an offset).

<string>

MINimum/MAXimum This query accepts MIN and MAX as arguments.

n/a

Examples

```
TRAC:IQC:DATA?           */Return all available IQ data samples
TRAC:IQC:DATA? 1024      */Starting at sample 1024 (offset), return all available IQ samples
TRAC:IQC:DATA? 1024,2048 */Starting at sample 1024 (offset), return the next 2048 samples (length)
```

Query Syntax TRAC:IQC:DATA?

Return Type numeric

Default n/a

Last Modified:

16-Sep-2022 Added new IQA mode (10.1x).

TRACe<n>:JITTer:WARNing:DATA?

(Read Only) Reads the jitter goal exceeded trace data.

Relevant Modes NF

Parameters

<n> Trace number.
Choose from 1 to 2.

Examples

```
TRAC:JITT:WARN:DATA?  'Assumes n = 1
```

Query Syntax TRACe2:JITTer:WARNing:DATA?

Return Type Block data

Default 1,1,1,1,1,1,1,1,1,1

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

TRACe<n>:MEMory:DATA?

(Read Only) Reads the normalized magnitude memory data for each of the trace points.

Relevant Modes NF

Parameters

<n> Trace number.
Choose from 1 to 2.

Examples

```
TRAC:MEM:DATA?  'Assumes n = 1
```

Query Syntax TRACe2:MEMory:DATA?

Default 0.0000000E+00,0.0000000E+00

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

TRACe<n>:MEMory:JITTer:WARNing:DATA?

(Read Only) Reads the the jitter goal exceeded warning memory trace value.

Relevant Modes NF

Parameters

<n> Trace number.
Choose from 1 to 2.

Examples
```
TRAC:MEM:JITT:WARN:DATA?  'Assumes n = 1
```

Query Syntax TRACe2:MEMory:JITTer:WARNing:DATA?

Default 0,0

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

TRACe<n>:MEMory:UNCertainty:DATA?

(Read-only) Read the uncertainty memory trace data (two values per data point -- upper uncertainty and lower uncertainty).

See also, TRAC<n>:MEM:UNC:LOW:DATA? and TRAC<n>:MEM:UNC:UPP:DATA?.

Relevant Modes NF

Parameters

<n> Trace number.
Choose from 1 to 2.

Examples
```
TRAC:MEM:UNC:DATA?  'Assumes n = 1
```

Query Syntax TRACe2:MEMory:UNCertainty:DATA?

Return Type Comma-separated numeric

Default Not Applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

TRACe<n>:MEMory:UNCertainty:LOWer:DATA?

(Read-only) Read the lower uncertainty memory trace data (one value per data point -- lower uncertainty).

See also, TRAC<n>:MEM:UNC:DATA? and TRAC<n>:MEM:UNC:UPP:DATA?.

Relevant Modes NF

Parameters

<n> Trace number.
Choose from 1 to 2.

Examples
```
TRAC:MEM:UNC:LOW:DATA? 'Assumes n = 1
TRACe2:MEMory:UNCertainty:LOWer:DATA?
```

Query Syntax See Examples

Return Type Comma-separated numeric

Default Not Applicable

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

TRACe<n>:MEMory:UNCertainty:UPPer:DATA?

(Read-only) Read the lower uncertainty memory trace data (one value per data point -- upper uncertainty).

See also, TRAC<n>:MEM:UNC:DATA? and TRAC<n>:MEM:UNC:LOW:DATA?.

Relevant Modes NF

Parameters

<n> Trace number.
Choose from 1 to 2.

Examples

```
TRAC:MEM:UNC:UPP:DATA?    'Assumes n = 1
```

Query Syntax TRACe2:MEMory:UNCertainty:UPPer:DATA?

Return Type Comma-separated numeric

Default Not Applicable

Last Modified:

01june2018 Added NF mode Opt. 356 (10.3)

TRACe<n>:XVALues?

(Read-Only) Returns the current data X trace values.

Note: In SA mode you can freeze a trace into VIEW, and then change SPAN or CF (visual effect pan/zoom). Therefore, you can get different XVAlues depending on which trace is queried (i.e., the X-value data corresponds with the trace, but not necessarily the most recent SA settings).

Relevant Modes ERTA, SA, RTSA

Parameters

<n> Trace number of data to be returned.
Choose from 1 through 4.
If unspecified, <n> is set to 1.

Examples

```
TRACE:XVAL? 'Assumes n = 1
```

	`TRAC2:DATA?`
Return Type	Comma-separated numeric
Default	Not Applicable

Last modified:

01june2019	New command (11.26)

TRACe:PHASe:DATA?

(Read Only) Returns the wrapped trace data (-180 degrees to 180 degrees).
Set data format with FORMat[:DATA].

Relevant Modes	IQA
Parameters	
	n/a
Examples	`:TRAC:PHAS:DATA?`
Query Syntax	:TRAC:PHAS:DATA?
Return Type	real
Default	n/a

Last Modified:

22-oct-2017	Added new IQA mode (10.1x).

:TRACe:PHASe:Y:AUTO

(Read Only) Enables the phase auto-scaling setting. The Auto Scaling function automatically determines the scale per division and reference values based on the measurement results.
See also TRAC:WAV:Y:AUTO, TRAC:REAL:Y:AUTO, TRAC:PHAS:Y:AUTO, TRAC:POL:Y:AUTO, and TRAC:UPH:Y:AUTO.

Relevant Modes	IQA
Parameters	n/a
Examples	`:TRAC:PHAS:Y:AUTO`
Query Syntax	n/a
Return Type	n/a

Default n/a

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

:TRACe:PHASe:Y:DLINe <deg>

(Read-Write) Set and query the waveform phase view line values.

See also TRAC:WAV:Y:DLIN, TRAC:REAL:Y:DLIN, TRAC:IMAG:Y:DLIN, and TRAC:UPH:Y:DLIN.

Note: Polar trace is not supported.

Relevant Modes IQA

Parameters

<degree> Y-axis waveform phase level. Units depend on the selected setting. See :TRAC:WAV:AMPL:UNIT

Minimum: -360 degrees

Maximum: 360 degrees

Examples

```
TRAC:PHAS:Y:DLIN -180
```

Query Syntax TRAC:PHAS:Y:DLINe?

Return Type degrees

Default 0 degrees

Last Modified:

22oct2017 Added IQA mode (10.1x)

:TRACe:PHASe:Y:PDIVision <deg>

(Read-Write) Set and query the IQA waveform phase Y-axis scale values per division.

Relevant Modes IQA

Parameters

<degree> Minimum: 1 degree

Maximum: 360 degree

Examples

```
TRAC:PHAS:Y:PDIV 18
```

Query Syntax TRAC:PHAS:Y:PDIV?

Return Type numeric

Default 36

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

:TRACe:PHASe:Y:RLEVel <deg>

(Read-Write) Set and query the phase reference level value.

See also TRAC:WAV:Y:RLEV, TRAC:REAL:Y:RLEV, TRAC:IMAG:Y:RLEV, TRAC:POL:Y:RLEV, and TRAC:UPH:Y:RLEV.

Relevant Modes IQA

Parameters

<degree> Y-axis waveform phase reference level.
Minimum: -360 degrees
Maximum: 360 degrees

Examples

```
TRAC:PHAS:Y:RLEV -180
```

Query Syntax TRAC:PHAS:Y:RLEV?

Return Type degrees

Default 0 degrees

Last Modified:

22oct2017 Added IQA mode (10.1x)

:TRACe:PHASe:Y:RPOSition <int>

(Read-Write) Set and query the phase reference position.

See also TRAC:WAV:Y:RPOS, TRAC:REAL:Y:ROS, TRAC:IMAG:Y:RPOS, and TRAC:UPH:Y:RPOS.

Relevant Modes IQA

Parameters

<integer> Y-axis waveform phase reference position.
Minimum: 0
Maximum: 5

Examples

```
TRAC:PHAS:Y:RPOS 2
```

Query Syntax TRAC:PHAS:Y:RPOS?

Return Type Integer

Default 5

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe:POLar:DATA?

(Read Only) Returns the polar trace data.

Set data format with FORMat[:DATA].

Relevant Modes IQA

Parameters

n/a

Examples

```
:TRAC:POL:DATA?
```

Query Syntax :TRAC:POL:DATA?

Return Type real

Default n/a

Last Modified:

22-oct-2017 Added new IQA mode (10.1x).

:TRACe:POLar:Y:AUTO

(Write Only) Enables the polar auto-scaling setting. The Auto Scaling function automatically determines the scale per division and reference values based on the measurement results.

See also TRAC:WAV:Y:AUTO, TRAC:REAL:Y:AUTO, TRAC:PHAS:Y:AUTO, TRAC:UPH:Y:AUTO, and TRAC:IMAG:Y:AUTO.

Relevant Modes IQA

Parameters n/a

Examples

```
:TRAC:POL:Y:AUTO
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

:TRACe:POLar:Y:RLEVel <volt>

(Read-Write) Set and query the polar (imaginary vs. real) view reference level value.

See also TRAC:WAV:Y:RLEV, TRAC:REAL:Y:RLEV, TRAC:IMAG:Y:RLEV, TRAC:PHAS:Y:RLEV, and TRAC:UPH:Y:RLEV.

Relevant Modes IQA

Parameters

<voltage> Y-axis waveform polar reference level.
Minimum: -5V
Maximum: 5V

Examples

```
TRAC:POL:Y:RLEV 0.02
```

Query Syntax TRAC:POL:Y:RLEV?

Return Type voltage

Default 500 mV

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe:REAL:DATA?

(Read Only) Returns the real trace data (in phase component vs. time).

Set data format with FORMat[:DATA].

Relevant Modes IQA

Parameters

n/a

Examples

```
TRAC:REAL:DATA?
```

Query Syntax TRAC:REAL:DATA?

Return Type real

Default n/a

Last Modified:

22-oct-2017 Added new IQA mode (10.1x).

TRACe:REAL:Y:AUTO

(Write Only) Enables the real auto-scaling setting. The Auto Scaling function automatically determines the scale per division and reference values based on the measurement results.

See also TRAC:WAV:Y:AUTO, TRAC:IMAG:Y:AUTO, TRAC:PHAS:Y:AUTO, TRAC:POL:Y:AUTO, and TRAC:UPH:Y:AUTO.

Relevant Modes IQA

Parameters n/a

Examples

```
:TRAC:REAL:Y:AUTO
```

Query Syntax n/a

Return Type n/a

Default n/a

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

TRACe:REAL:Y:DLINe <volt>

(Read-Write) Set and query the waveform real line values.

See also TRAC:WAV:Y:DLINe, TRAC:IMAG:Y:DLIN, TRAC:PHAS:Y:DLIN, and TRAC:UPH:Y:DLIN.

Note: Polar trace is not supported.

Relevant Modes IQA

Parameters

<voltage> Y-axis waveform real level. Units depend on the selected setting. See :TRAC:WAV:AMPL:UNIT

Minimum: -9.9e37V

Maximum: 9.9e37V

Examples

```
TRAC:REAL:Y:DLIN 1
```

Query Syntax TRAC:REAL:Y:DLINe?

Return Type Numeric

Default 0V

Last Modified:

22oct2017 Added IQA mode (10.1x)

:TRACe:REAL:Y:PDIVision <volt>

(Read-Write) Set and query the IQA waveform real Y-axis scale values per division.

Relevant Modes IQA

Parameters

<voltage> Minimum: 1.00 nV
Maximum: 20.0V

Examples

```
TRAC:REAL:Y:PDIV 1.0e-9
TRAC:REAL:Y:PDIV 1
```

Query Syntax TRAC:REAL:Y:PDIV?

Return Type numeric

Default 100 mV

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

TRACe:REAL:Y:RLEVel <volt>

(Read-Write) Set and query the waveform real reference level value.

See also TRAC:WAV:Y:RLEV, TRAC:IMAG:Y:RLEV, TRAC:PHAS:Y:RLEV, TRAC:POL:Y:RLEV, and TRAC:UPH:Y:RLEV.

Relevant Modes IQA

Parameters

<voltage> Y-axis waveform real level.
Minimum: -5V
Maximum: 5V

Examples

```
TRAC:REAL:Y:RLEV 1
```

Query Syntax TRAC:REAL:Y:RLEV?

Return Type Numeric

Default 0V

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe:REAL:Y:RPOSition <int>

(Read-Write) Set and query the real reference position.
See also TRAC:WAV:Y:RPOS, TRAC:IMAG:Y:RPOS, TRAC:PHAS:Y:RPOS, and TRAC:UPH:Y:RPOS.

Relevant Modes IQA

Parameters

<integer> Y-axis waveform real reference position.
Minimum: 0
Maximum: 10

Examples

```
TRAC:REAL:Y:RPOS 1
```

Query Syntax TRAC:REAL:Y:RPOS?

Return Type Integer

Default 5

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe:SPECtrum:AMPLitude:SCALe <char>

(Read-Write) Set and query the IQA spectrum Y-axis scale to either logarithmic or linear.

Relevant Modes IQA

Parameters

<character> Scale type. Choose from:
LOG -units in dBm
LIN - units in dBm

Examples

```
TRAC:SPEC AMP:SCAL LIN
```

Query Syntax TRAC:SPEC:AMPL:SCAL?

Return Type Character

Default LOG

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

TRACe:SPECtrum:AMPLitude:UNIT <char>

(Read-Write) Set and query the IQA spectrum viewed line units, regardless of the current Scale setting. The UNIT choice affects the following: Reference Level, Trigger Level, Limit Lines, and Marker annotation. This measurement is FFT (Fast Fourier Transform) based.

Relevant Modes IQA

Parameters

<character> The following are IQA (spectrum) only:

- DBM - dB milliWatts
- DBMV - dB milliVolts
- DBUV - dB microVolts
- DBMA - dB milliAmps
- DBUA - dB microAmps
- V - volts
- A - amps
- W - watts

Examples

```
TRAC:SPEC:AMPL:UNIT W
TRAC:SPEC:AMPL:UNIT DBM
```

Query Syntax TRAC:SPEC:AMPL:UNIT?

Return Type Character

Default DBM

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe:SPECtrum:RAWiq?

(Read only) Returns the spectrum raw I/Q data.

Set data format with FORMat[:DATA].

Relevant Modes	IQA
Parameters	
	n/a
Examples	`:TRAC:SPEC:RAW?`
Query Syntax	:TRAC:SPEC:RAW?
Return Type	real
Default	n/a

Last Modified:

22-oct-2017	Added new IQA mode (10.1x).

:TRACe:SPECtrum:Y:AUTO

(Write-Only) Autoscale spectrum scale per division and the reference position values based on the measurement results.

Relevant Modes	IQA
Parameters	n/a
Examples	:TRAC:SPEC:Y:AUTO
Query Syntax	N/A
Default	N/A

Last Modified:

22oct2017	New IQA mode (10.1x)

:TRACe:SPECtrum:Y:DLINe <ampl>

(Read-Write) Set and query the spectrum display line Y-axis amplitude level..

Relevant Modes	IQA
Parameters	
<amplitude>	Minimum: -9.9e37 dBm Maximum: 9.9e37 dBm
Examples	`TRAC:SPEC:Y:DLIN 0`
Query Syntax	TRAC:SPEC:Y:DLIN?
Return Type	numeric

Default -2.000E+01

Last modified:

22oct2017 New IQA mode (A.10.1x)

:TRACe:SPECtrum:Y:PDIVision <num>

(Read-Write) Set and query the IQA spectrum Y-axis scale values per division.

Relevant Modes IQA

Parameters

<numeric> Minimum: 1.0e-9 dB
Maximum: 20 dB

Examples
```
TRAC:SPEC:Y:PDIV 1.0e-9
```

Query Syntax TRAC:SPEC:Y:PDIV?

Return Type numeric

Default 1.000000000E+01

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

:TRACe:SPECtrum:Y:RLEVel <ampl>

(Read-Write) Set and query IQA spectrum Y axis absolute power reference value.

Relevant Modes IQA

Parameters

<numeric>Enter IQA spectrum Y axis absolute power reference value.
Minimum: -210 dBm
Maximum: 30 dBm

Examples
```
:TRAC:SPEC:Y:RLEV 5
```

Query Syntax :TRAC:SPEC:Y:RLEV?

Return Type numeric

Default 0.000000000E+00

Last Modified:

22oct2017	New IQA mode (10.1x)

:TRACe:SPECtrum:Y:RPOSition <int>

(Read-Write) Set and query the position of the IQA spectrum Y-axis reference line. Use this command with TRAC:SPEC:Y:RLEVel which sets the Y-axis value of the absolute power reference value.

Relevant Modes	IQA
Parameters	
<integer>	Reference position. Choose a value from 0 to 10.
Examples	`:TRAC:SPEC:Y:RPOS 5`
Query Syntax	:TRAC:SPEC:Y:RPOS?
Return Type	integer
Default	0

Last Modified:

22-oct-2017	Added IQA mode (10.1x)

TRACe:SPECtrum<n>:DATA?

(Query only) Returns spectrum trace data for the trace selected (1:4).

Set data format with FORMat[:DATA].

Relevant Modes	IQA
Parameters	
<*n*>	Trace number for which display state is to be set or queried. Choose from 1 through 4.
<character>	Trace choice. Choose from: **1, 2, 3, or 4**
Examples	`TRAC:SPEC2:DATA?`
Query Syntax	TRAC:SPEC<n>:DATA?
Return Type	real
Default	1

Last Modified:

22-oct-2017	Added new IQA mode (10.1x).

:TRACe:SPECtrum<n>:TYPE <char>

(Read-Write) Set and query the spectrum trace state.
See also :TRAC:WAV<*n*>:TYPE.

Relevant Modes IQA

Parameters

<n> Trace number for which display state is to be set or queried. Choose from 1 through 4.

<char> Trace type. Choose from:
CLRW - Clear/Write
BLANk - Blank
MAXH - Max Hold
MINH - Min Hold
AVG - Average (this parameter only applies to trace averaging.)
VIEW - View

Examples
```
TRAC:SPEC2:TYPE VIEW
```

Query Syntax :TRACe:SPEC<n>:TYPE?

Return Type Character

Default CLWR - trace 1
BLAN - traces 2:4

Last Modified:

22oct2017 Added new IQA mode (10.1x).

TRACe:UPHase:DATA?

(Read Only) Returns the unwrapped trace data.
Set data format with FORMat[:DATA].

Relevant Modes IQA

Parameters

n/a

Examples
```
TRAC:UPH:DATA?
```

Query Syntax TRAC:UPH:DATA?

Return Type real

Default n/a

Last Modified:

22-oct-2017	Added new IQA mode (10.1x).

:TRACe:UPHase:Y:AUTO

(Read Only) Enables the unwrapped phase auto-scaling setting. The Auto Scaling function automatically determines the scale per division and reference values based on the measurement results.

See also TRAC:WAV:Y:AUTO, TRAC:REAL:Y:AUTO, TRAC:PHAS:Y:AUTO, TRAC:POL:Y:AUTO, and TRAC:IMAG:Y:AUTO.

Relevant Modes	IQA
Parameters	n/a
Examples	`:TRAC:UPH:Y:AUTO`
Query Syntax	n/a
Return Type	n/a
Default	n/a

Last Modified:

22-oct-2017	Added IQA mode (10.1x)

:TRACe:UPHase:Y:DLINe

(Read-Write) Set and query the waveform unwrapped phase line values.

See also TRAC:WAV:Y:DLIN, TRAC:REAL:Y:DLIN, TRAC:IMAG:Y:DLIN, and TRAC:PHAS:Y:DLIN.

Note: Polar trace is not supported.

Relevant Modes	IQA
Parameters	
<degree>	Y-axis waveform unwrapped phase level. Units depend on the selected setting. See :TRAC:WAV:AMPL:UNIT Minimum: -360 degrees Maximum: 360 degrees
Examples	`TRAC:UPH:Y:DLIN -180`
Query Syntax	TRAC:UPH:Y:DLINe?
Return Type	degrees
Default	0 degrees

Last Modified:

22oct2017 Added IQA mode (10.1x)

:TRACe:UPHase:Y:PDIVision <deg>

(Read-Write) Set and query the IQA waveform unwrapped phase Y-axis scale values per division.

Relevant Modes IQA

Parameters

<degree> Minimum: 1 degree
Maximum: 360 degree

Examples

```
TRAC:UPH:Y:PDIV 18
```

Query Syntax TRAC:UPH:Y:PDIV?

Return Type numeric

Default 36

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

:TRACe:UPHase:Y:RLEVel <deg>

(Read-Write) Set and query the unwrapped phase reference level value.

See also TRAC:WAV:Y:RLEV, TRAC:REAL:Y:RLEV, TRAC:IMAG:Y:RLEV, TRAC:POL:Y:RLEV, and TRAC:PHAS:Y:RLEV.

Relevant Modes IQA

Parameters

<degree> Y-axis waveform unwrapped phase reference level.
Minimum: -360 degrees
Maximum: 360 degrees

Examples

```
TRAC:UPH:Y:RLEV -180
```

Query Syntax TRAC:UPH:Y:RLEV?

Return Type degrees

Default 0 degrees

Last Modified:

22oct2017 Added IQA mode (10.1x)

:TRACe:UPHase:Y:RPOSition <int>

(Read-Write) Set and query the unwrapped phase reference position.

See also TRAC:WAV:Y:RPOS, TRAC:REAL:Y:ROS, TRAC:IMAG:Y:RPOS, and TRAC:PHAS:Y:RPOS.

Relevant Modes	IQA
Parameters	
<integer>	Y-axis waveform phase reference position. Minimum: 0 Maximum: 5
Examples	`TRAC:UPH:Y:RPOS 2`
Query Syntax	TRAC:UPH:Y:RPOS?
Return Type	Integer
Default	5

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe<n>:UNCertainty:DATA?

(Read-Only) Query the uncertainty trace data.

Note: Noise Figure has asymmetric uncertainty. Noise Factor and Noise Temperature, have symmetric uncertainty.

This query operates on the selected trace. First select a trace using CALC:PAR<n>:SELect.

See also, TRACe<n>:UNCertainty:DATA:UPPer? and TRACe<n>:UNCertainty:DATA:LOWer?.

Relevant Modes	NF
Parameters	
	Not applicable - query only
Examples	`No write available`
Query Syntax	CALCulate:TRACe2:UNCertainty:DATA?
Return Type	Block data
Default	not applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

TRACe<n>:UNCertainty:LOWer:DATA?

(Read-Only) Query the uncertainty lower trace data.

Note: Noise Figure has asymmetric uncertainty. Noise Factor and Noise Temperature, have symmetric uncertainty.

This command operates on the selected trace. First select a trace using CALC:PAR<n>:SELect.

See also, TRACe<n>:UNCertainty:DATA? and TRACe<n>:UNCertainty:DATA:UPPer?.

Relevant Modes NF

Parameters

Not applicable - query only

Examples

```
No write available
```

Query Syntax TRACe<n>:UNCertainty:DATA:LOWer?

Return Type Block data

Default not applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

TRACe<n>:UNCertainty:LOWer:DATA?

(Read-Only) Query the uncertainty lower trace data.

Note: Noise Figure has asymmetric uncertainty. Noise Factor and Noise Temperature, have symmetric uncertainty.

This command operates on the selected trace. First select a trace using CALC:PAR<n>:SELect.

See also, TRACe<n>:UNCertainty:DATA? and TRACe<n>:UNCertainty:DATA:UPPer?.

Relevant Modes NF

Parameters

Not applicable - query only

Examples

```
No write available
```

Query Syntax TRACe<n>:UNCertainty:DATA:LOWer?

Return Type Block data

Default not applicable

Last Modified:

01june2018	Added NF mode Opt. 356 (10.3)

:TRACe<n>:TYPE <char>

(Read-Write) Set and query the type of SA Mode trace display state.

Use [:SENSe]:QUANtity:TACTive? to read the number of active traces.

Relevant Modes SA, RTSA

Parameters

<n> Trace number for which display state is to be set or queried. Choose from 1 through 4.

<char> Trace type. Choose from:

CLRW - Clear/Write

BLANk - Blank

MAXH - Max Hold

MINH - Min Hold

AVG - Average (this parameter only applies to trace averaging.)

VIEW - View

Examples

```
TRAC1:TYPE VIEW
```

Query Syntax :TRACe<n>:TYPE?

Return Type Character

Default CLRW

Last Modified:

19-sep-2016	Added RTSA to relevant modes (A.09.50).

TRACe:WAVeform:AMPLitude:SCALe <char>

(Read-Write) Set and query the waveform RF envelope scale type.

Relevant Modes IQA

Parameters

<character> Scale type. Choose from:

LOG -units in dBm

LIN - units in mV

Examples

```
TRAC:WAV:AMPL:SCAL LIN
```

Query Syntax TRAC:WAV:AMPL:SCAL?

Return Type Character

Default LOG

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe:WAVeform:AMPLitude:UNIT <char>

(Read-Write) Sets and returns the output amplitude unit for trace of RF envelope vs. Time.

Relevant Modes IQA (RF envelope Only)

Parameters

<character> The following are IQA (spectrum) only:

- DBM - dB milliWatts
- DBMV - dB milliVolts
- DBUV - dB microVolts
- DBMA - dB milliAmps
- DBUA - dB microAmps
- V - volts
- A - amps
- W - watts

Examples

```
TRAC:WAV:AMPL:UNIT W
TRAC:WAV:AMPL:UNIT DBM
```

Query Syntax TRAC:WAV:AMPL:UNIT?

Return Type Character

Default DBM

Last Modified:

22oct2017 Added IQA mode (10.1x)

TRACe:WAVeform:RAWiq?

(Read Only) Returns the waveform raw I/Q trace data.
Set data format with FORMat[:DATA].

Relevant Modes IQA

Parameters

	n/a
Examples	`:TRAC:WAV:RAW?`
Query Syntax	:TRAC:WAV:RAW?
Return Type	real
Default	n/a

Last Modified:

05apr2021	Updated for A.12.3x
22-oct-2017	Added new IQA mode (10.1x).

:TRACe:WAVeform:Y:AUTO

(Read Only) Enables the waveform RF envelope view auto-scaling setting. The Auto Scaling function automatically determines the scale per division and reference values based on the measurement results.

See also TRAC:REAL:Y:AUTO, TRAC:IMAG:Y:AUTO, TRAC:PHAS:Y:AUTO, TRAC:POL:Y:AUTO, and TRAC:UPH:Y:AUTO.

Relevant Modes	IQA
Parameters	n/a
Examples	`:TRAC:WAV:Y:AUTO`
Query Syntax	n/a
Return Type	n/a
Default	n/a

Last Modified:

22-oct-2017	Added IQA mode (10.1x)

:TRACe:WAVeform:Y:DLINe <ampl>

(Read-Write) Set and query the waveform RF envelope view line values.

See also TRAC:REAL:Y:DLINe, TRAC:IMAG:Y:DLIN, TRAC:PHAS:Y:DLIN, and TRAC:UPH:Y:DLIN.

Note: Polar trace is not supported.

Relevant Modes	IQA

Parameters

<amplitude> Y-axis waveform amplitude level. Units depend on the selected setting. See :TRAC:WAV:AMPL:UNIT

Minimum: -9.9e37 dBm

Maximum: 9.9e37 dBm

Examples

```
TRAC:WAV:Y:DLIN 30
```

Query Syntax :TRAC:WAV:Y:DLIN?

Return Type Numeric

Default -20 dBm

Last Modified:

22oct2017 Added IQA mode (10.1x)

:TRACe:WAVeform:Y:PDIVision <rel_amp>

(Read-Write) Set and query the IQA RF envelope Y-axis scale values per division.

Relevant Modes IQA

Parameters

<relative_amplitude> Minimum: 1.0e-9 dB

Maximum: 20 dB

Examples

```
TRAC:WAV:Y:PDIV 1.0e-9
TRAC:WAV:Y:PDIV 5
```

Query Syntax TRAC:SPEC:Y:PDIV?

Return Type numeric

Default 1.000000000E+01

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

:TRACe:WAVeform:Y:RLEVel <amptd>

(Read-Write) Set and query IQA waveform RF envelope Y-axis absolute power reference level value.

See also TRAC:REAL:Y:RLEV, TRAC:IMAG:Y:RLEV, TRAC:PHAS:Y:RLEV, TRAC:POL:Y:RLEV, and TRAC:UPH:Y:RLEV.

Relevant Modes IQA

Parameters

<amplitude>Enter IQA waveform Y-axis absolute power reference value.
Minimum: -210 dBm
Maximum: 90 dBm

Examples `:TRAC:WAV:Y:RLEV 30`

Query Syntax :TRAC:WAV:Y:RLEV?

Return Type numeric

Default 0.000000000E+00

Last Modified:

22oct2017 New IQA mode (10.1x)

:TRACe:WAVeform:Y:RPOSition <int>

(Read-Write) Set and query the position of the IQA waveform RF envelope Y-axis.
See also TRAC:REAL:Y:RPOS, TRAC:IMAG:Y:RPOS, TRAC:PHAS:Y:RPOS, and TRAC:UPH:Y:RPOS.

Relevant Modes IQA

Parameters

<integer> Waveform reference position. Choose a value from 0 to 10.

Examples `:TRAC:WAV:Y:RPOS 2`

Query Syntax :TRAC:WAV:Y:RPOS?

Return Type Integer

Default 0

Last Modified:

22-oct-2017 Added IQA mode (10.1x)

TRACe:WAVeform<n>:DATA?

(Read Only) Returns the RF envelope trace data (magnitude vs. power).
Set data format with FORMat[:DATA].

Relevant Modes IQA

Parameters

<*n*>	Trace number for which display state is to be set or queried. Choose from 1 through 4.
Examples	`:TRAC:WAV2:DATA?`
Query Syntax	:TRAC:WAV<n>:DATA?
Return Type	real
Default	1

Last Modified:

22-oct-2017	Added new IQA mode (10.1x).

:TRACe:WAVeform<n>:TYPE <char>

(Read-Write) Set and query the waveform RF envelope trace state.

See also :TRAC:SPEC<*n*>:TYPE.

Relevant Modes	IQA
Parameters	
<n>	Trace number for which display state is to be set or queried. Choose from 1 through 4.
<character>	Trace type. Choose from: **CLRW** - Clear/Write **BLANk** - Blank **MAXH** - Max Hold **MINH** - Min Hold **AVG** - Average (this parameter only applies to trace averaging.) **VIEW** - View
Examples	`TRAC:WAV2:TYPE MINH` `TRAC:WAV1:TYPE BLAN`
Query Syntax	:TRACe:WAV<*n*>:TYPE?
Return Type	Character
Default	CLWR - trace 1 BLAN - traces 2:4

Last Modified:

22oct2017	Added new IQA mode (10.1x).

TRACe<n>:APD:INPUT <char>

(Read-Write) Sets the Amplitude Probability Distribution (APD) statistics trace inputs (HISTogram | CCDF).

- Set Units with [:SENSe]:AMPLitude:UNIT.
- Set data format with FORMat[:DATA]

See also, MEAS, CISP:BAND, FREQ:AXIS:LOG, BAND:APD:RES, BAND:EMI:RES, BAND:EMI:AUTO, BAND:APD:AUTO, SWE:EMI:DWEL, SWE:APD:DWEL, EDET:TRAC .

Relevant Modes EMI (Opt 361)

Parameters

<n> Trace number of data to be returned.

Choose from 1 through 4. But, traces 3 and 4 default to the same data settings as Traces 1 (CCDF) and 2 (Histogram).

If unspecified, <n> is set to 1.

<char> Type of data to return. Choose from:

HISTogram- Displays data as a histogram.

CCDF - Displays the CCDF generated from the histogram data.

Examples

```
TRACE1:APD:INPUT HIST 'Sets trace 1 to HISTogram.
TRAC2:APD:INPUT CCDF 'Sets trace 2 to CCDF.
TRAC:APD:INPUT CCDF 'Assumes trace is set to 1 and changes trace 1 to CCDF (default).
```

Return Type character

Default 1 - CCDF

Last modifiedLast Modified:

16-Sep-2022 New command

TRIGger:DELay <num>

(Write-Read) Set and query the trigger delay time.

Relevant Modes Pulse Measurements

Parameters

<num> Trigger delay time in seconds. Choose a value between -10 to +10.

Examples

```
TRIG:DEL 5e-6
```

Query Syntax TRIGger:DELay?

Default 0

Last Modified:

29-Oct-2013	New command

TRIGger:LEVel:AUTO <bool>

(Write-Read) Set and query whether the trigger level is set manually or is set to the default level in the USB Power Sensor.

Relevant Modes Pulse Measurements

Parameters

<bool> Choose from:
ON or 1 - Trigger level is determined by the USB Power Sensor firmware.
OFF or 0 - Trigger level is set manually using TRIGger:LEVel.

Examples

```
TRIG:LEV 5e-6
```

Query Syntax TRIGger:LEVel?

Default -15

Last Modified:

29-Oct-2013	New command

TRIGger:LEVel <num>

(Write-Read) Set and query the power level at which the USB power sensor is triggered when TRIGger:LEVel:AUTO = OFF.

Relevant Modes Pulse Measurements

Parameters

<num> Trigger level in dBm.

Examples

```
TRIG:LEV 5e-6
```

Query Syntax TRIGger:LEVel?

Default -15

Last Modified:

29-Oct-2013	New command

TRACe:PRESet:ALL

(Write-Only) Sets all of the RTSA traces back to their values.

Relevant Modes RTSA

Parameters

<char>

Examples

```
TRACe:PRESet:ALL 'Both these examples reset all of the traces.
TRAC2:PRES:ALL
```

Return Type n/a

Default Not Applicable

Last modified:

19-sep-2016 Added new RTSA command (A.09.50).

:TRIGger[:SEQuence]:ATRigger <num>

(Read-Write) Set and query the auto-trigger time. If a trigger signal is not received before the specified auto trigger time, a sweep will occur automatically.

Enable or disable automatic trigger time using :TRIG:ATR:STAT.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA,LTE FDD, PAA

Parameters

<numeric> Auto trigger time in seconds.

SA: Choose a value between 0 and 65 seconds.

IQA and RTSA: Choose a value between 1 ms and 100 seconds.

Enter 0 (SA only) to set Auto Trigger OFF. When Auto Trigger is OFF, the FieldFox does NOT sweep unless a valid trigger signal is received.

Examples

```
TRIG:ATR 2
TRIGger:ATRigger .003
TRIG:ATR 1e2
```

Query Syntax TRIG:ATR?

Return Type Numeric

Default 1.000E+00 (SA)

1.00E-01 (RTSA)

1.000000E-01 (IQA)

Last Modified:

10dec2019	Added 5G NR, 5G NR EVM Conducted, & PAA (11.5x)
28nov2018	Added LTE FDD & 5GTF (11.0)
22-Oct-2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)
6-Mar-2013	Modified for 6.25

:TRIGger[:SEQuence]:ATRigger:STATe <bool>

(Read-Write) Set and query the auto-triggering state.

Set automatic trigger time using :TRIG:ATR.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA,LTE FDD, PAA

Parameters

<boolean> Auto trigger state. Choose from:

OFF or **0** - Auto Trigger OFF. The FieldFox does NOT sweep unless a valid trigger signal is received.

ON or **1** - Auto Trigger ON. If a trigger signal is not received before the specified Auto Trig Time (TRIGger[:SEQuence]:EXTernal:ATRigger), a sweep will occur automatically.

Examples

```
TRIG:ATR:STAT 1
```

Query Syntax TRIGger[:SEQuence]:ATRigger:STATe?

Return Type Boolean

Default OFF (0)

Last Modified:

10dec2019	Added 5G NR, 5G NR EVM Conducted, & PAA (11.5x)
28nov2018	Added LTE FDD & 5GTF (11.0)
22-Oct-2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)
6-Mar-2013	Modified for 6.25

:TRIGger[:SEQuence]:EXTernal:SLOPe <char>

(Read-Write) Set and query the trigger slope. Trigger Slope determines which edge of a trigger signal initiates a sweep.

Note: Only valid for VIDeo, EXTernal, and RFBurst triggers.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA, LTE FDD, PAA

Parameters

<character>	Trigger slope. Choose from: **POS** - Sweep is triggered by the rising (positive) edge of signal. **NEG** - Sweep is triggered by the falling (negative) edge of signal.
Examples	`TRIG:EXT:SLOP NEG`
Query Syntax	TRIGger[:SEQuence]:EXTernal:SLOPe?
Return Type	Character
Default	POS

Last Modified:

10dec2019	Added 5G NR, 5G NR EVM Conducted, & PAA (11.5x)
28nov2018	Added LTE FDD & 5GTF (11.0)
22-Oct-2017	Added new command for IQA mode (10.1x)

TRIGger[:SEQuence]:DELay <num>

(Read-Write) Set and query the trigger delay time. After a valid trigger signal is received, the sweep begins after the specified Trigger Delay time. Enable Trigger delay using :TRIGger[:SEQuence]:EXTernal:DELay:STATe

Relevant Modes	SA, RTSA
Parameters	
<num>	Trigger delay time in seconds. Choose a value between 0 and 65 seconds.
Examples	`TRIG:DEL 2`
Query Syntax	TRIGger[:SEQuence]:DELay?
Return Type	Numeric
Default	0

Last Modified:

10-june-2016	Added RTSA mode (9.50)
6-Mar-2013	Modified for 6.25

TRIGger[:SEQuence]:DELay:STATe

(Read-Write) Set and query the trigger delay state. Set delay time using :TRIGger[:SEQuence]:DELay

Relevant Modes	SA, RTSA

Parameters

<bool> Trigger delay state. Choose from:
OFF or **0** - Trigger delay OFF.
ON or **1** - Auto Trigger ON.

Examples
```
TRIG:DEL:STAT 1
```

Query Syntax TRIGger[:SEQuence]:DELay:STATe?

Return Type Boolean

Default OFF (0)

Last Modified:

10-june-2016	Added RTSA mode (9.50)
6-Mar-2013	Modified for 6.25

:TRIGger[:SEQuence]:EXTernal:DELay <num>

(Read-Write) Set and query the trigger delay time. After a valid trigger signal is received, the sweep begins after the specified Trigger Delay time. Enable Trigger delay using :TRIGger[:SEQuence]:EXTernal:DELay:STATe

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA,LTE FDD, PAA

Parameters

<num> Trigger delay time in seconds. Choose a value between 0 and 65 seconds.
IQA mode:
Minimum: -150 ms
Maximum: 500 ms

Examples
```
TRIG:EXT:DEL 2
```

Query Syntax TRIGger[:SEQuence]:EXTernal:DELay?

Return Type Numeric

Default 0

Last Modified:

10dec2019	Added 5G NR, 5G NR EVM Conducted, & PAA (11.5x)
28nov2018	Added LTE FDD & 5GTF (11.0)
22-Oct-2017	Added new IQA mode command (10.1x).

:TRIGger[:SEQuence]:EXTernal:DELay:STATe <bool>

(Read-Write) Set and query the trigger delay state. Set delay time using :TRIGger[:SEQuence]:EXTernal:DELay

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA,LTE FDD, PAA

Parameters

<bool> Trigger delay state. Choose from:
OFF or **0** - Trigger delay OFF.
ON or **1** - Auto Trigger ON.

Examples
```
TRIG:EXT:DEL:STAT 1
```

Query Syntax TRIGger[:SEQuence]:EXTErnal:DELay:STATe?

Return Type Boolean

Default OFF (0)

Last Modified:

10dec2019	Added 5G NR, 5G NR EVM Conducted, & PAA (11.5x)
28nov2018	Added LTE FDD & 5GTF (11.0)
22-Oct-2017	Added new IQA mode command (10.1x).

:TRIGger[:SEQuence]:EXTernal:SLOPe <char>

(Read-Write) Set and query the trigger slope. Trigger Slope determines which edge of a trigger signal initiates a sweep.

Note: Only valid for VIDeo, EXTernal, and RFBurst triggers.

Relevant Modes 5GTF, 5G NR, 5G NR EVM Conducted, IQA, LTE FDD, PAA

Parameters

<character> Trigger slope. Choose from:
POS - Sweep is triggered by the rising (positive) edge of signal.
NEG - Sweep is triggered by the falling (negative) edge of signal.

Examples
```
TRIG:EXT:SLOP NEG
```

Query Syntax TRIGger[:SEQuence]:EXTernal:SLOPe?

Return Type Character

Default POS

Last Modified:

10dec2019	Added 5G NR, 5G NR EVM Conducted, & PAA (11.5x)
28nov2018	Added LTE FDD & 5GTF (11.0)
22-Oct-2017	Added new command for IQA mode (10.1x)

TRIGger[:SEQuence]:FGATe:DELay <num>

(Read-Write) Set and query the trigger delay time. This effectively moves the gating area left (negative delay) or right (positive delay) within the gating window.

See all FFT Gating commands.

Relevant Modes SA

Parameters

<num> Trigger delay time in seconds.

Examples

```
TRIG:DEL 2
```

Query Syntax TRIGger[:SEQuence]:DELay?

Return Type Numeric

Default 0

Last Modified:

28-Mar-2013 New command (6.25)

TRIGger[:SEQuence]:FGATe[:STATe]

(Read-Write) Set and query the FFT Gating On/Off state.

See all FFT Gating commands.

Relevant Modes SA

Parameters

<bool> FFT Gating state. Choose from:
OFF or **0** - FFT Gating OFF.
ON or **1** - FFT Gating ON.

Examples

```
TRIG:FGAT 1
```

Query Syntax TRIGger[:SEQuence]:FGATe[:STATe]?

Return Type Boolean

Default OFF (0)

Last Modified:

6-Mar-2013 Modified for 6.25

TRIGger[:SEQuence]:FGATe:VIEW[:STATe] <bool>

Not finished

(Read-Write) Set and query the display of the FT Gating window. When ON, a time domain window is displayed below the frequency domain window.

See all FFT Gating commands.

Relevant Modes SA

Parameters

<num> Choose from:
ON (or 1) - Gate window ON
OFF (or 0) - Gate window OFF

Examples
```
TRIG:FGAT:VIEW 1
```

Query Syntax TRIGger[:SEQuence]:FGATe:VIEW[:STATe]?

Return Type Boolean

Default OFF (or 0)

Last Modified:

28-Mar-2013 New command (6.25)

TRIGger[:SEQuence]:FGATe:VIEW:TIME <num>

Not finished

(Read-Write) Set and query the X-axis time span for the time domain window.

See all FFT Gating commands.

Relevant Modes SA

Parameters

<num> FFT gating view time in seconds. Choose a value between seconds.

Examples
```
TRIG:FGAT:VIEW:TIME 2
```

Query Syntax TRIGger[:SEQuence]:FGATe:VIEW:TIME?

Return Type Numeric

Default 1.5e-3

Last Modified:

28-Mar-2013 New command (6.25)

TRIGger[:SEQuence]:FGATe:WIDTh <num>

Not finished

(Read-Write) Set and query the width of the gating area within the time domain window. The gating area

is indicated by two vertical green lines.

See all FFT Gating commands.

Relevant Modes	SA
Parameters	
<num>	Choose a value between 0 and 65 seconds.
Examples	`TRIG:FGAT:WIDT 2`
Query Syntax	TRIGger[:SEQuence]:FGATe:WIDTh?
Return Type	Numeric
Default	1e-3

Last Modified:

28-Mar-2013	New command (6.25)

TRIGger[:SEQuence]:FRAMe:OFFSet

(Read-Write) Set the trigger frame offset. This command lets you advance the phase of the frame trigger by the amount you specify. It does not change the period of the trigger waveform. If the command is sent multiple times, it advances the phase of the frame trigger an additional amount each time it is sent. See also period frame offset reset.

Relevant Modes	RTSA
Parameters	
<num>	Range: 0 to 100 ms
Examples	`TRIG:FRAM:OFFS 1.6 ms`
Query Syntax	[:SENSe]:FRAM:OFFS?
Return Type	numeric
Default	0.00000000

Last Modified:

19-sep-2016	Added new RTSA command (A.09.50).

TRIGger[:SEQuence]:FRAMe:OFFSet:DISPlay:RESet

(Write-Only) Resets the trigger frame offset to 0. Resets the value of the periodic trigger frame offset display setting to 0.0 seconds. The current displayed trigger location may include an offset value defined with the Offset key. Pressing this key redefines the currently displayed trigger location as the new trigger point that is 0.0 s offset. The Frame Offset SCPI can then be used to add offset relative to this new timing.

Relevant Modes RTSA

Parameters

<Bool>

Examples

```
TRIG:FRAM:OFFS:DISP:RES
```

Query Syntax n/a

Return Type n/a

Default 0.00000000

Last Modified:

19-sep-2016 Added new RTSA command (A.09.50).

TRIGger[:SEQuence]:FRAMe:PERiod

(Read-Write) Sets the period of the internal periodic timer clock. For digital communications signals, this is usually set to the frame period of your current input signal.

Relevant Modes RTSA

Parameters

<num> Range: 100 ns (1.000E-07) to 400 ms (4.000000000E-1)

Examples

```
TRIG:FRAM:PER 1.6 ms
```

Query Syntax TRIG:FRAM:OFFS?

Return Type numeric

Default 2.00000000E-02

Last Modified:

19-sep-2016 Added new RTSA command (A.09.50).

TRIGger[:SEQuence]:HOLDoff

(Read-Write) Sets the holdoff time between triggers. When the trigger condition is satisfied, the trigger occurs, the delay begins, and the holdoff time begins. New trigger conditions will be ignored until the holdoff time expires.

Relevant Modes RTSA

Parameters

<numl> Range: 0 seconds (0.000000E+00) to 10 seconds (1.0000000E+01)

Examples

```
TRIG:HOLD 1.6 ms
```

Query Syntax TRIG:HOLD?

Return Type numeric

Default 0.000000E+00

Last Modified:

20-sep-2016 Added new RTSA command (A.09.50).

:TRIGger[:SEQuence]:LEVel

(Read-Write) Set and query the level at which a video or RF Burst trigger will occur. An incoming signal with this amplitude will initiate a sweep.

Relevant Modes RTSA

Parameters

<num> Trigger level. (Range: -210 dBm to 30 dBm)

Examples

```
TRIG:LEV -30
```

Query Syntax TRIGger[:SEQuence]:LEVel?

Return Type Numeric

Default - 25 dBm

Last Modified:

20-sep-2016 Added for RTSA mode A.09.50

TRIGger[:SEQuence]:POSition <num>

(Read-Write) Set and query the trigger position. Available ONLY in Zerospan measurements.

This is an easy way to automatically set the Trigger Delay by positioning the trigger event (also known as T zero) at any graticule along the X-axis.

Also set TRIGger[:SEQuence]:POSition:STATe

Relevant Modes SA

Parameters

<num> Trigger position. Choose a value from 0 to 10:

0 - T zero occurs at the left graticule.

5 - T zero occurs at the center of the screen.

10 - T zero occurs at the far right graticule.

Examples

```
TRIG:POS 5
```

Query Syntax TRIGger[:SEQuence]:POSition?

Return Type Numeric

Default 0

Last Modified:

28-Mar-2013 New command (6.25)

:TRIGger[:SEQuence]:POSition:STATe <bool>

(Read-Write) Set and query the trigger position state. Set trigger position using TRIGger[:SEQuence]:POSition.

Relevant Modes SA

Parameters

<bool> Trigger position state. Choose from:

OFF or **0** - Trigger position OFF.

ON or **1** - Trigger position ON. TRIGger[:SEQuence]:DELay is set automatically and can NOT be overwritten.

Examples

```
TRIG:POS:STAT 1
```

Query Syntax TRIGger[:SEQuence]:POSition:STATe?

Return Type Boolean

Default OFF (0)

Last Modified:

16-Sep-2022 New command

:TRIGger[:SEQuence]:RFBurst:DELay <num>

(Read-Write) Set and query the IQA delay for RF Burst triggers. An incoming signal with this amplitude will initiate an acquisition.

See also TRIG:RFB:DEL:STAT.

Relevant Modes IQA

Parameters

<numeric> Minimum: -150 ms

Maximum: 500 ms

Examples

```
TRIG:RFB:DEL 500e-3
```

Query Syntax TRIG:RFB:DEL?

Return Type Numeric

Default 0.0000000E+00 s

Last Modified:

22-Oct-2017 Added new IQA mode command (10.1x).

:TRIGger[:SEQuence]:RFBurst:DELay:STATe <bool>

(Read-Write) Set and query the IQA trigger delay states for RFBurst. Set delay time using :TRIG:RFB:DEL.

Relevant Modes IQA

Parameters

<boolean> Trigger delay state. Choose from:
OFF or **0** - Trigger delay OFF.
ON or **1** - Auto Trigger ON.

Examples

```
TRIG:RFB:DEL:STAT 0
```

Query Syntax TRIG:RFB:DEL:STAT?

Return Type Boolean

Default OFF (0)

Last Modified:

22-Oct-2017 Added new IQA mode command (10.1x).

:TRIGger[:SEQuence]:RFBurst:GLIMask <real>

(Read-Write) Set and query the IQA RF Burst glitch mask trigger to stabilize trigger signals and minimize spurs.

Relevant Modes IQA

Parameters

<real> Minimum: 0 s
Maximum: 5 ms

Examples

```
TRIG:RFB:GLIM 3e-3
TRIG:RFB:GLIM .002
```

Query Syntax TRIG:RFB:GLIM?

Return Type Numeric

Default 5.0000E-03

Last Modified:

22-Oct-2017 Added new IQA mode command (10.1x).

:TRIGger[:SEQuence]:RFBurst:LEVel

(Read-Write) Set and query the IQA trigger level for RFBurst. Similar to a Video trigger where an acquisition is triggered from a signal at the SA RF Input connector. But, an RF Burst trigger is detected in the third IF stage. An acquisition is triggered when the amplitude of the incoming signal exceeds the settable Trigger Level.

Note: Only valid for RFBurst triggers.

Relevant Modes IQA

Parameters

<numeric> RF Burst trigger level (dBm).
Minimum: -210 dBm
Maximum: 30 dBm

Examples

```
TRIG:RFB:LEV -10
```

Query Syntax :TRIG:VID:LEV?
:TRIG:RFB:LEV?

Return Type numeric

Default -25 dBm

Last Modified:

22-Oct-2017 New IQA command (A.10.1x)

:TRIGger[:SEQuence]:RFBurst:SLOPe

(Read-Write) Set and query the IQA trigger slope. Trigger Slope determines which edge of a trigger signal initiates an acquisition.

Note: Only valid for VIDeo, EXTernal, and RFBurst triggers.

Relevant Modes IQA

Parameters

<character>	Trigger slope. Choose from: **POS** - Sweep is triggered by the rising (positive) edge of signal. **NEG** - Sweep is triggered by the falling (negative) edge of signal.
Examples	`TRIG:RFB:SLOP NEG`
Query Syntax	TRIGger:RFBurst:SLOPe?
Return Type	Character
Default	POS

Last Modified:

22-Oct-2017	Added new command for IQA mode (10.1x)

TRIGger[:SEQuence]:SLOPe

(Read-Write) Set and query the trigger slope. Trigger Slope determines which edge of a trigger signal initiates a sweep.

Relevant Modes	SA, RTSA
Parameters	
<character>	Trigger slope. Choose from: **POS** - Sweep is triggered by the rising (positive) edge of signal. **NEG** - Sweep is triggered by the falling (negative) edge of signal.
Examples	`TRIG:SLOP NEG`
Query Syntax	TRIGger[:SEQuence]:SLOPe?
Return Type	Character
Default	POS

Last Modified:

10-june-2016	Added RTSA mode (9.50)
28-Mar-2013	Modified for 6.25

TRIGger:SOUrce <char>

(Read-Write) Set and query the source of trigger signals which initiate a measurement.
See Trigger:Source command for NA Mode.

Relevant Modes Pulse Measurements

Parameters

<char> Choose from:

FREerun - The USB Power Sensor acquires data without waiting for a trigger. This mode is NOT supported for Trace Graph measurements.

INTernal - The USB Power Sensor acquires data when a valid pulse signal is detected at the RF input. The following Trigger settings determine the validity of the trigger signal.

EXTernal - The USB Power Sensor acquires data when a valid TTL signal is detected at the USB Power Sensor external trigger input.

Examples

```
TRIG:SOU EXT
```

Query Syntax TRIGger:SOUrce?

Return Type Character

Default INTernal

Last Modified:

30-May-2014 New command

TRIGger[:SEQuence]:SOURce <char>

(Read-Write) Set and query the source of FieldFox trigger signals.

Relevant Modes IQA, 5G NR, 5G NR EVM Conducted, 5GTF, SA, LTE FDD, PAA, RTSA

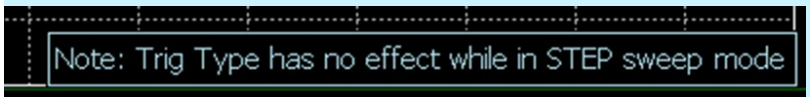
Parameters

<character> Trigger source. Choose from:

Note: For PAA mode, the only applicable parameters are EXTernal and FREErun.

Note: Trigger Source selection does NOT have an impact on SA STEP sweeps. Trigger source is only implemented for Zerospan, IQ Captures, and FFT type sweeps.

If a Trigger souce is selected when in STEP sweep the instrument displays the following popup message:



FREE - (Free run) Triggering is provided by the FieldFox internal circuitry. A new sweep begins when the previous sweep ends.

EXT - (External) A sweep is triggered on an external TTL signal at the External Trigger connector.

VID - (Video) - (*Not applicable for OTA (e.g., LTE FDD, LTE TDD, and 5GTF). Only available for SA, RTSA, and IQA.*) - A sweep is triggered on a signal at the SA RF Input connector when the amplitude of the incoming signal exceeds

the settable Trigger Level.

RFB - (RF Burst) - (*Not applicable for OTA (e.g., LTE FDD, LTE TDD, and 5GTF). Only available for SA, RTSA, and IQA.)* - Similar to Video triggering, a sweep is triggered from a signal at the SA RF Input connector. However, an RF Burst trigger is detected in the third IF stage. A sweep is triggered when the amplitude of the incoming signal exceeds the settable Trigger Level.

Note: Learn more about RF Burst in the N9927-90020 User's Guide and N9938-90006 User's Guide.

FRAMe (Periodic) - Trigger repeats at the period rate entered. Periodic trigger's phase can be altered by the Offset value.

See Also

TRIGger[:SEQuence]:VIDeo:LEVel (SA Only)

TRIGger[:SEQuence]:VIDeo|RFBurst:LEVel (IQA Only)

Examples
```
TRIG:SOUR EXT
```

Query Syntax TRIGger[:SEQuence]:SOURce?

Return Type Character

Default FREE

Last Modified:

25apr2022	Updated descriptions (12.4x)
10dec2019	Added 5G NR, PAA, and 5G NR EVM Conducted (11.5x)
28nov2018	Added LTE FDD & 5GTF (11.0)
22-Oct-2017	Added IQA mode (10.1x)
10-june-2016	Added RTSA mode (9.50)
28-Mar-2013	Added RF Burst (6.25)

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

(Read-Write) Set and query the IQA delay for video, external, or RF Burst triggers. An incoming signal with this amplitude will initiate an acquisition.

See also TRIG:VID:DEL:STAT.

Relevant Modes IQA

Parameters

<numeric> Minimum: -150 ms
Maximum: 500 ms

Examples
```
TRIG:VID:DEL 200e-3
```

Query Syntax TRIG:VID:DEL?

Return Type Numeric

Default 0.0000000E+00 s

Last Modified:

22-Oct-2017 Added new IQA mode command (10.1x).

:TRIGger[:SEQuence]:VIDeo:DELay:STATe <bool>

(Read-Write) Set and query the IQA trigger delay states for VIDeo. Set delay time using :TRIG:VID:DEL.

Relevant Modes IQA

Parameters

<boolean> Trigger delay state. Choose from:
OFF or **0** - Trigger delay OFF.
ON or **1** - Auto Trigger ON.

Examples

```
TRIG:VID:DEL:STAT 1
TRIG:VID:DEL:STAT ON
TRIG:VID:DEL:STAT 0
```

Query Syntax TRIG:VID:DEL:STAT?

Return Type Boolean

Default OFF (0)

Last Modified:

22-Oct-2017 Added new IQA mode command (10.1x).

:TRIGger[:SEQuence]:VIDeo:LEVel <num>

(Read-Write) Set and query the IQA trigger level for VIDeo. An acquisition is triggered on a signal at the SA RF Input connector when the amplitude of the incoming signal exceeds the settable Trigger Level.

Note: Only valid for VIDeo triggers.

Relevant Modes IQA

Parameters

<numeric> Video trigger level (dBm).
Minimum: -210 dBm
Maximum: 30 dBm

Examples
```
TRIG:VID:LEV 3
TRIG:RFB:LEV -10
```

Query Syntax :TRIG:VID:LEV?

Return Type numeric

Default -25 dBm

Last Modified:

22-Oct-2017 New IQA command (A.10.1x)

:TRIGger[:SEQuence]:VIDeo:LEVel <num>

(Read-Write) Set and query the level at which a video or RF Burst trigger will occur. An incoming signal with this amplitude will initiate a sweep.

Relevant Modes SA

Parameters

<num> Trigger level. The Units depend on the Scale Type setting: (dB for Log and mV for Linear). Set with [:SENSe]:AMPLitude:SCALe.

Examples
```
TRIG:VID:LEV -30
```

Query Syntax TRIGger[:SEQuence]:VIDeo:LEVel?

Return Type Numeric

Default - 20 dBm (Log)
22.361 mv (Lin)

Last Modified:

28-Mar-2013 Modified for 6.25

:TRIGger[:SEQuence]:VIDeo:SLOPe <char>

(Read-Write) Set and query the IQA trigger slope. Trigger Slope for video determines which edge of a trigger signal initiates a acquisition.

Note: Only valid for VIDeo, EXTernal, and RFBurst triggers.

Relevant Modes IQA

Parameters

<character> Trigger slope. Choose from:

POS - Sweep is triggered by the rising (positive) edge of signal.
NEG - Sweep is triggered by the falling (negative) edge of signal.

Examples
```
TRIG:VID:SLOP NEG
```

Query Syntax TRIGger:VIDeo:SLOPe?

Return Type Character

Default POS

Last Modified:

22-Oct-2017	Added new command for IQA mode (10.1x)

TRIGger:SLOPe <char>

(Read-Write) Set and query the polarity of a valid external trigger signal.

Relevant Modes NA, Pulse Measurements

Parameters

<char> Choose from:

POSitive - Sweep is triggered by the rising (positive) edge of signal at about 1.7 V.

NEGative - Sweep is triggered by the falling (negative) edge of signal at about 1.0 V.

Examples
```
TRIG:SLOP POS
```

Query Syntax TRIGger:SLOPe?

Return Type Character

Default POSitive

Last Modified:

31-Oct-2013	Added Pulse
6-Mar-2013	New command (6.25)

TRIGger:SOUrce <char>

(Read-Write) Set and query the source of trigger signals which initiate a measurement.
See Trigger:Source command for NA Mode.

Relevant Modes Pulse Measurements

Parameters

<char> Choose from:

FREerun - The USB Power Sensor acquires data without waiting for a trigger. This mode is NOT supported for Trace Graph measurements.

INTernal - The USB Power Sensor acquires data when a valid pulse signal is detected at the RF input. The following Trigger settings determine the validity of the trigger signal.

EXTernal - The USB Power Sensor acquires data when a valid TTL signal is detected at the USB Power Sensor external trigger input.

Examples

```
TRIG:SOU EXT
```

Query Syntax TRIGger:SOUrce?

Return Type Character

Default INTernal

Last Modified:

30-May-2014 New command

TRIGger:SOURce <char>

(Read-Write) Set and query the source of trigger signals which initiate a measurement.

See Trigger:Source command for Pulsed Measurements Mode.

Relevant Modes NA

Parameters

<char> Choose from:

INTernal - Sweeps are initiated by the FieldFox internal circuitry.

EXTernal - A sweep is initiated on the rising or falling edge of an external TTL signal at the Ref In/Trig In connector on the FieldFox top panel.

Examples

```
TRIG:SOUR EXT
```

Query Syntax TRIGger:SOURce?

Return Type Character

Default INTernal

Last Modified:

6-Mar-2013 New command (6.25)

UNIT:POWer <string>

(Read-Write) Set and query the units to display in Power Meter mode.

Relevant Modes Power Meter

Parameters

<string> Choose from:
"W" (Watts)
"DBM"

Examples
```
UNIT:POW "W"
```

Query Syntax UNIT:POWer?

Return Type String

Default DBM

:V5G:DATA:GPS?

(Read-Only) Returns 5GTF result with GPS information.

Relevant Modes 5GTF

Parameters None

Examples
```
V5G:DATA:GPS?
```

Return Results Format

Single Component Carrier

Record Length	Latitude	Longitude	Elevation	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	Latitude	Longitude	Elevation	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	Latitude	Longitude	Elevation	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	Latitude	Longitude	Elevation	CC2 Frequency	CC2 Measurement Results
…	…	…	…	…	…
CCN Record Length	Latitude	Longitude	Elevation	CCN Frequency	CCN Measurement Results

Measurement Results Format

5G TF

PCI	Channel Power	PSS Power	SSS Power	Sync Corr

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
06dec2019	New command

:V5G:DATA?

(Read-Only) Returns the measurement results.

Relevant Modes 5GTF

Parameters None

Examples

```
V5G:DATA?
```

Return Results Format

Single Component Carrier

Record Length	Frequency	Measurement Results

Multiple Component Carriers

CC0 Record Length	CC0 Frequency	CC0 Measurement Results
CC1 Record Length	CC1 Frequency	CC1 Measurement Results
CC2 Record Length	CC2 Frequency	CC2 Measurement Results
…	…	…
CC*n* Record Length	CC*n* Frequency	CC*n* Measurement Results

Measurement Results Format

5G TF

PCI	Channel Power	PSS Power	SSS Power	Sync Corr

Note: This query only supports returning ASCII data. It does **not** support binary block data.

Default Not Applicable

Last Modified:

26oct2021	Added: Measurement Results Format (A.12.3x)
16-Sep-2022	New command

Edition 1, September 2022

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