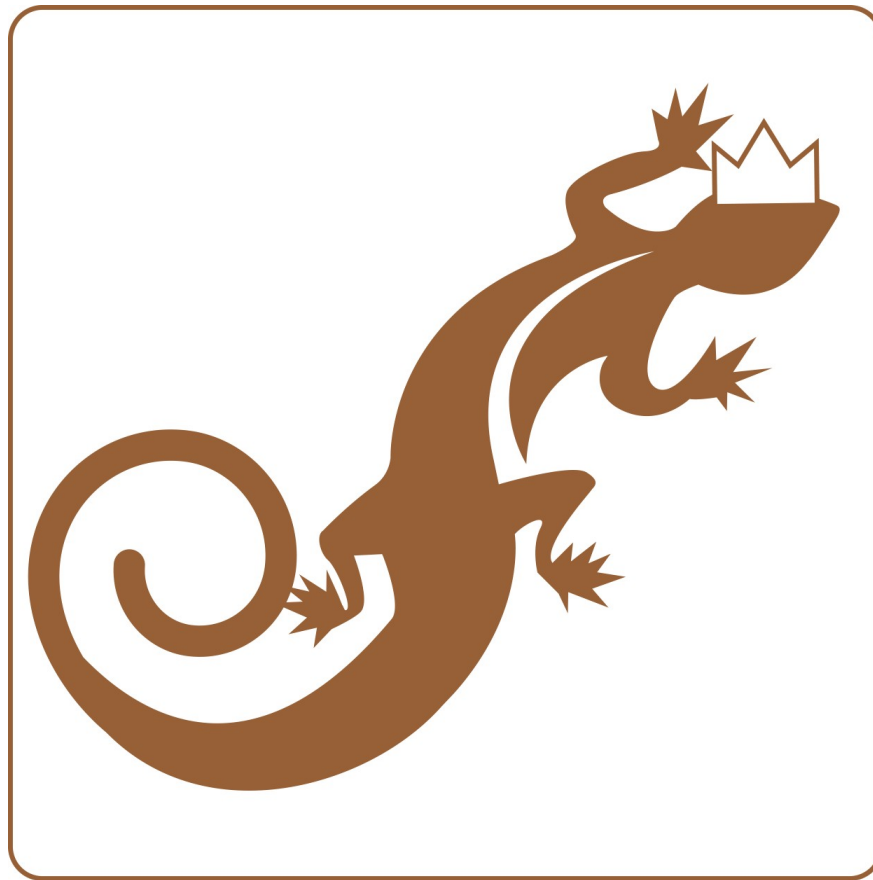




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CMT VNA Programming Manual



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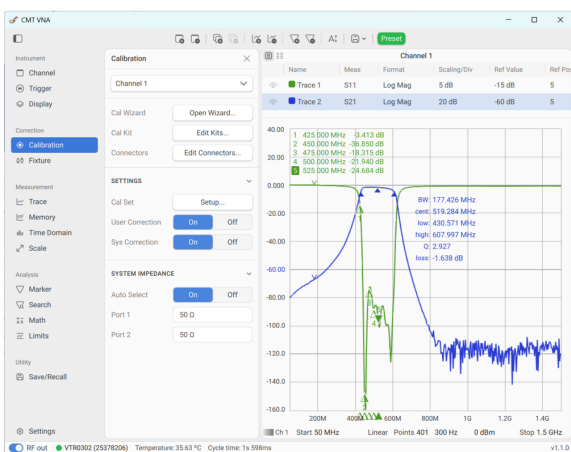
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CMT VNA Software

The Software Application is Part of the VNA

The analyzers include an RF measurement module, and a software application. The software application takes raw measurement data from the data acquisition (measurement) module and transforms into S-parameters in multiple presentation formats utilizing proprietary algorithms. The calibration and other accuracy enhancing algorithms were developed by our metrology experts.

The instruments use CMT VNA software, which can be installed on x86- or ARM-based processors and controlled via a USB interface. The software features an intuitive user interface with all available options organized in sub-menus, enabling quick and efficient navigation between different functions.



Two-level menu

Quick access toolbar

Hot keys

Calibration wizard

Kits and connectors libraries

Trace manager

Trace and marker math

Data analysis including markers and limit tests

Save/recall files and states, print

Automation

Free demo mode

The CMT VNA software can be downloaded free from our website, used on an unlimited number of PCs using either Linux or Windows operating systems, and enables easy analyzer integration with other software applications and automation. The software application features a fully functioning Demo Mode, which can be used for testing automation scripts and exploring the analyzers' features and capabilities without an actual measurement module connected to your PC.

Our software offers flexible options for controlling the analyzers. Users can configure parameters through a **two-level menu**, the **quick access toolbar**, the **channel status bar**, or by pressing **hotkeys**. The quick access toolbar can be customized to individual preferences, ensuring maximum efficiency and a personalized workflow.

Service

Accredited Calibration Labs



Periodic verification is used to check the instrument to ensure that it is operating within its specifications. Two years is recommended, but the interval should be determined by your organization's quality policy.

Our Indianapolis and Cyprus calibration laboratories are accredited in accordance with the recognized international standard ISO/IEC 17025 (2017) and meet the requirements of ANSI/NCSL Z540-1994-1.

Warranty, Service, & Repairs

All our products come with a standard three-year warranty from date of shipment. During that time we will repair or replace any product malfunctioning due to defective parts or labor.

While we pride ourselves on quality of our instruments, should your VNA malfunction for any reason, we will gladly offer a loaner unit while we service yours. With our USB VNAs where all data is stored on your PC, a simple swap of the measurement module assures uninterrupted workflow and little or no downtime.

The Crown Customer Service Package

The package includes support that goes beyond the analyzer. Our expert engineers give guidance to customers using CMT analyzers regarding their measurement setup, automation, and much more. This package provides an unparalleled level of service before, during, and after the purchase of the analyzer. And the best part? It's included with every purchase from every company. We are always here to provide reliable and timely customer support.

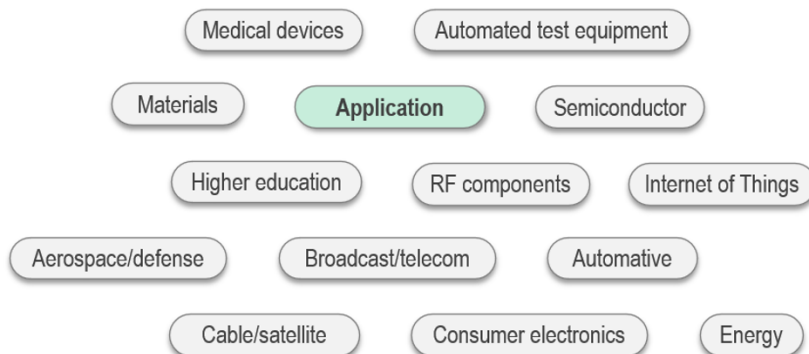
Automation Support

We understand that your time is valuable, which is why our team strives to provide rapid support for engineers using automation in their testing. Because we want to keep you working, our Crown Customer Service package includes help with setting up your testing automation for your analyzer. Our engineers have lots of experience with many coding languages, like C++, Python, MATLAB*, Visual Basic (Excel)*, and LabVIEW*.



Supporting Unique Applications

Technological advancements have engineers using analyzers for more things than ever before.



Customers are using CMT analyzers in industries such as agriculture, automotive R&D and manufacturing tests, medical applications, the expansive network of IoT and IIoT, energy, and more. Determining the ideal analyzer often requires extensive research, so the Crown Customer Support Package includes a consultation with our technical staff to discuss your specific application and recommend the best options. This support package comes at no charge with the purchase of a Copper Mountain Technologies VNA.

Having Issues with Your Analyzer?

We have built and supply high-quality test equipment we are proud of and stand behind. However, we know that issues happen, and when they do, we are here to help. Be it software support, repairs, or just a routine annual verification, the Crown Customer Service Package includes beyond-average rapid support for all of these occurrences. Our service and support teams do all they can to get the analyzer back to making accurate measurements as soon as possible.

For more detailed information, please visit our website:

<https://coppermountaintech.com/crown-customer-service-package/>

Programming

This manual describes programming for Analyzers using CMT VNA using SCPI commands.

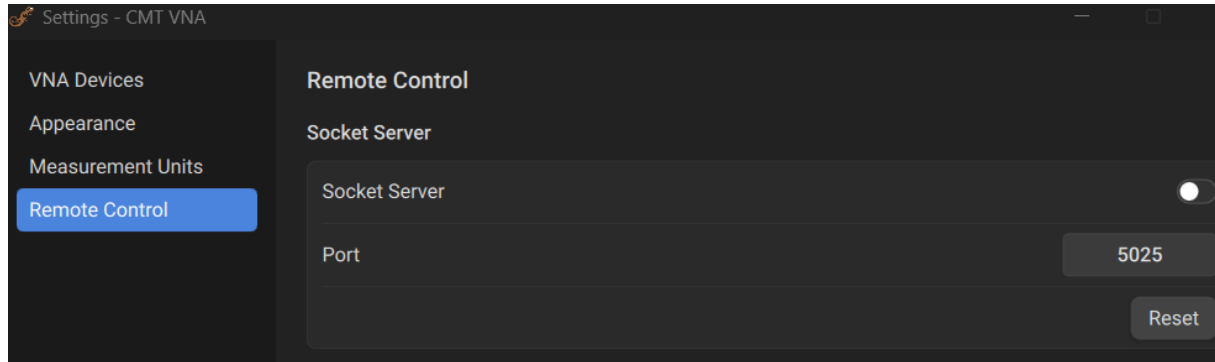
SCPI (Standard Commands for Programmable Instruments) defines a standard for syntax and commands to use in controlling programmable instruments. SCPI commands are ASCII textual strings that are sent to the analyzer program over the LAN physical layer using the HiSLIP or TCP/IP Socket network protocol. These protocols can also be used within a single PC when using the IP address 127.0.0.1 or *localhost*.

References

Standard Commands for Programmable Instruments (SCPI)
<http://www.ivifoundation.org/specifications>

Connection Setup

To enable remote control of the Analyzer, turn on the Socket server by navigating to Settings > Remote Control > Socket Server. Use the toggle to turn ON/OFF the Socket server. If needed, adjust the port number in the Port textbox.



SCPI Overview

The Analyzer implements a set of commands based on the standard SCPI-1999 (Standard Commands for Programmable Instruments). This is a set of instructions for the exchange of textual messages.

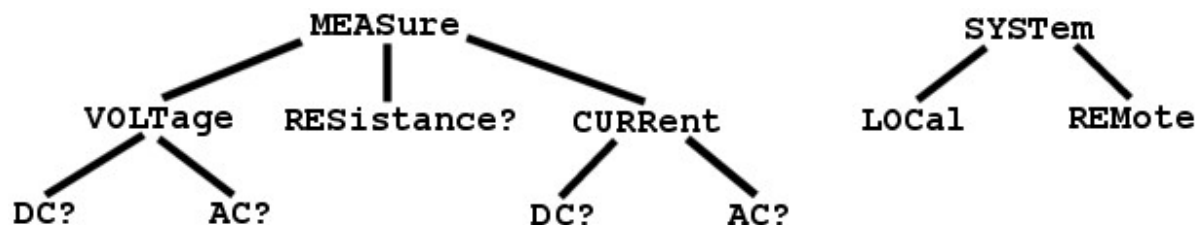
SCPI was developed by the SCPI Consortium (currently supported by the IVI Foundation). The main details of the SCPI standard are described further on. More information about the SCPI standard can be downloaded from the [IVI Foundation website](#).

Messages

The SCPI is a text message-oriented protocol. The commands are sent as character messages. One message can contain one or several commands. The answer from the instrument is read out as a text message by default. Optionally, an instrument can be programmed to output binary data.

Command Tree

The SCPI commands are organized in a tree structure. For example:



Each tree structure forms a functional system. The base of the tree is called the root, e.g. MEASure and SYSTem. Each functional system can have subsystems of lower level. The final nodes are called leaves. The entire sequence from root to leaf makes up the command. For example, part of the SOURCe functional system looks as follows:

```

:SOURCE
  :POWER
    :CENTer
      :START
      :SPAN
      :STOP
      [:LEVe]
        :SLOPe
          [:DATA]
            :STATe
  
```

This SOURce branch has several levels, where CENTer, START, SPAN, STOP, DATA, STATE are the leaves, which represent the following six commands:

```

:SOURCE:POWER:CENTer
:SOURCE:POWER:START
:SOURCE:POWER:SPAN
:SOURCE:POWER:STOP
:SOURCE:POWER[:LEVe]:SLOPe[:DATA]
:SOURCE:POWER[:LEVe]:SLOPe:STATe
  
```

The tree can contain subsystems and leaves with the same names if they belong to different branches, e.g. CENTER leaf is on the tips of different branches:

```
:SOURce                                :SENSe  
    :POWer                            :FREQuency  
        :CENTer                      :CENTer
```


Subsystems

A colon (':') separates the subsystems. The subsystems which follow the colon are on a lower level. For example, in command:

```
:SOURce:POWer:STARt
```

the start power STARt is a part of the POWer subsystem, which is a part of the SOURce subsystem. The stop power is also a part of the :SOURce:POWer subsystem. It is specified by:

```
:SOURce:POWer:STOP
```

The first colon in the line can be omitted, for example:

```
SOURce:POWer:STOP
```

Optional Subsystems

Some subsystems can be specified as optional, if omission of such a subsystem will not lead to ambiguity. This means that the subsystem can be omitted in the command line. The optional subsystems are bracketed ("[]"). For example, if the full command specification is written as:

```
SOURce:POWer[:LEVel]:SLOPe[:DATA]
```

subsystems LEVel and DATA are optional. Therefore, both commands are valid:

```
SOURce:POWer:LEVel:SLOPe:DATA
```

```
SOURce:POWer:SLOPe
```

Long and Short Formats

Each keyword in a command specification has a long format and a short format. The short format of a command is indicated by capital letters. For example, a command specification:

SENSe:FREQuency:CENTer

can be written as:

SENS:FREQ:CENT

SENS:FREQ:CENTer

Only one form can be used at a time, as combining forms will be incorrect. For example, the following specification is incorrect:

:SENS:FREQuen:CEN

Case Sensitivity

The commands are not case sensitive. Upper case and lower case letters are only used to indicate the long and short formats of a command specification. For example, the following commands are equivalent:

`SENS:FREQ:STAR`

`sens:freq:star`

Parameters

The commands can have parameters. The parameters are separated from the command by a space. If a command has several parameters, they are separated by commas (',').

Numeric Values

The numeric values are integers or real numbers. These parameters can have measurement units. For example:

```
SENS:FREQ 1000000000
```

```
SENS:FREQ 1000 MHz
```

```
SENS:FREQ 1 GHz
```

```
SENS:FREQ 1E9
```

Multiplier Prefixes

The SCPI standard allows specification of the numeric values with multiplier prefix to the measurement units.

Prefix	Multiplier
A	1e-18
F	1e-15
P	1e-12
N	1e-9
U	1e-6
M	1e-3
K	1e3
MA	1e6
G	1e9
T	1e12
PE	1e15
EX	1e18

There are two exceptions to the above designation: prefix M in combination with HZ or OHM means 1e6 (Mega), and not 1e-3 (milli), i.e. MHZ means Megahertz, same as MAHZ.

Notations

The SCPI standard allows numeric value specification in different notations. Decimal notation is used by default. To use other notations, specify the numeric values in the following way:

Notation	Prefix	Example
Binary	#B	#B11001010 = 202 ₁₀
Octal	#Q	#Q107 = 71 ₁₀
Hexadecimal	#H	#H10FF = 4351 ₁₀

Booleans

The Booleans can assume two values: logical yes and logical no (ON and OFF), and are specified in command as:

ON or 1 — logical yes

OFF or 0 — logical no

For example:

DISPlay:ENABLE OFF

DISPlay:ENABLE 0

Character Data

The SCPI standard allows specification of parameters as character data, as in the following command:

```
TRIGger:SOURce {BUS|IMMEDIATE|EXTernal}
```

where "BUS", "IMMEDIATE", "EXTernal" is the possible values of the character data.

The character data has a long and short format, and the formats are specified in accordance with the same rules as described in [Long and Short Formats](#)²⁷.

Apart from that, the character data can be combined with numerical parameters. For example:

```
SENSe:FREQuency:STARt {MINimum|MAXimum|<value>}
```

The following specifications are acceptable:

```
SENSe:FREQuency:STARt MIN
```

```
SENSe:FREQuency:STARt maximum
```

```
SENSe:FREQuency:STARt 1000000
```

String Parameters

In some cases, the Analyzer can accept parameters made of character strings. Such strings are enclosed with single quotes (') or double quotes ("). For example, the file name in the state saving command:

```
MMEMemory:STORe "state01.sta"
```

Numeric Lists

The numeric lists (<numeric list>) are used to specify a variable number of numerical parameters, for example:

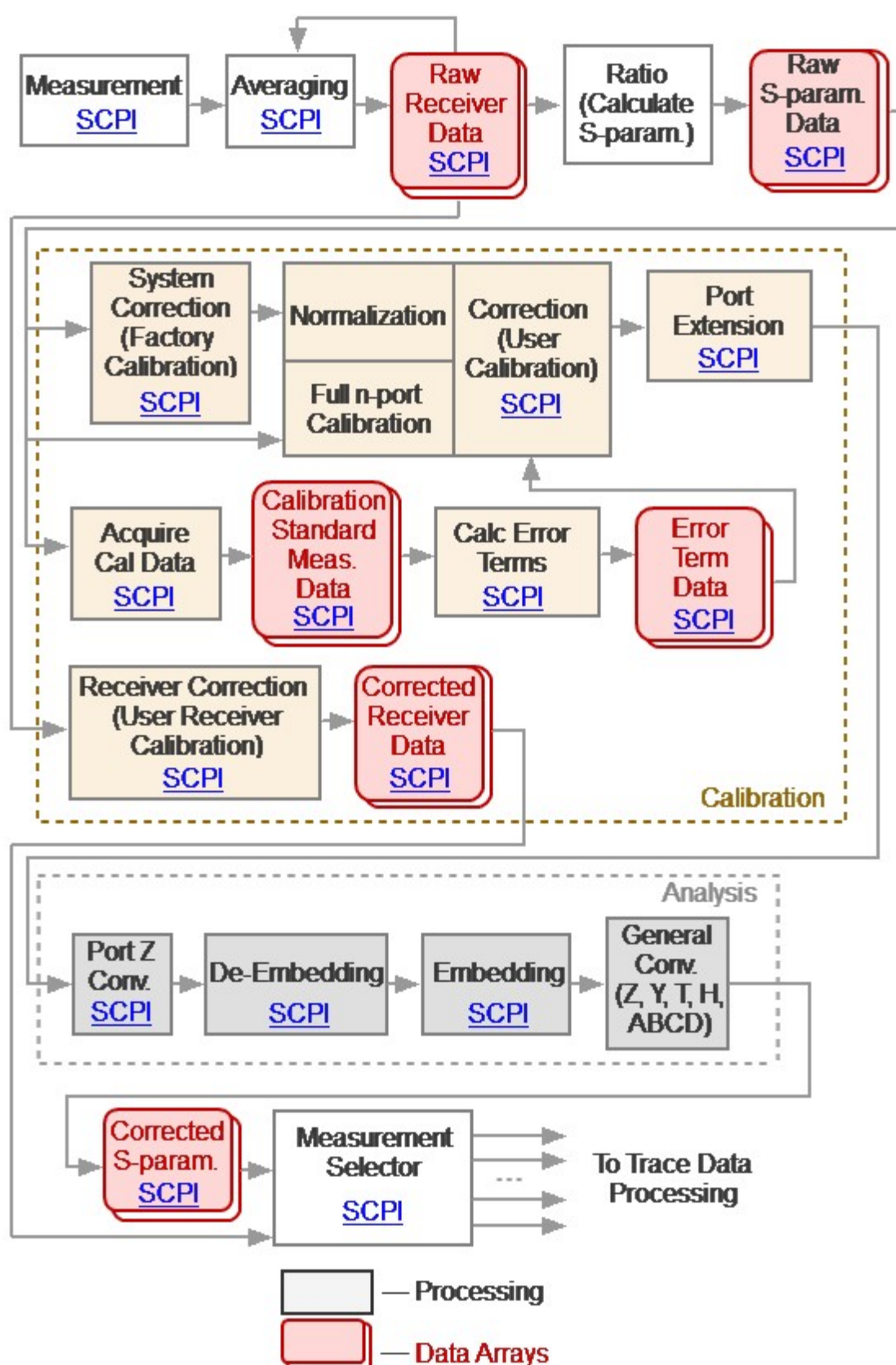
```
CALC:LIMit:DATA 2,1,1E9,3E9,0,0,2,1E9,3E9,-3,-3
```

Internal Data Arrays

This section describes the internal data arrays, access to them, as well as their position in the internal data flow of the Analyzer (See figure below). For a description of internal data processing, see Internal Data Processing.

Channel Data Processing

All internal arrays of channel data processing (See figure below) contain the number of elements equal to twice the number of stimulus points. Each measurement point is represented in the array by a pair of adjacent elements. The odd elements of the array contain the real part of the data, the even ones contain the imaginary part of the data.



Channel Data Processing

Channel data processing of the Analyzer consists of the following arrays:

- **Raw Receivers Data Arrays** are obtained as a result of analog-to-digital conversion and digital filtering of analog signals received by the receivers. If averaging is enabled, then the array elements are averaged pointwise over N sweep cycles.
- **Raw S-param. Data Arrays** are obtained by calculating the ratio of the signals two receivers.
- **Calibration Standard Meas. Data Arrays** are temporary arrays that contain the results of the performed measurements of the calibration standards. Upon completion of the calibration process, after calculating the error terms, the arrays are cleared. Array data is available for reading or writing using the SCPI commands [SENS:CORR:COLL:DATA:XXXX](#)^[327].
- **Error Term Data Arrays** are obtained as a result of processing measurements of calibration standards. Arrays are used in the correction when error terms are applied to the measured S-parameters. Array data is available for reading or writing using the SCPI command [SENS:CORR:COEF](#)^[347].

NOTE

Error terms will be interpolated if, for example, the number of measurement points or stimulus settings for measurements and during calibration differ. In this case, the [SENS:CORR:COEF](#)^[347] command will read the interpolated data from the array.

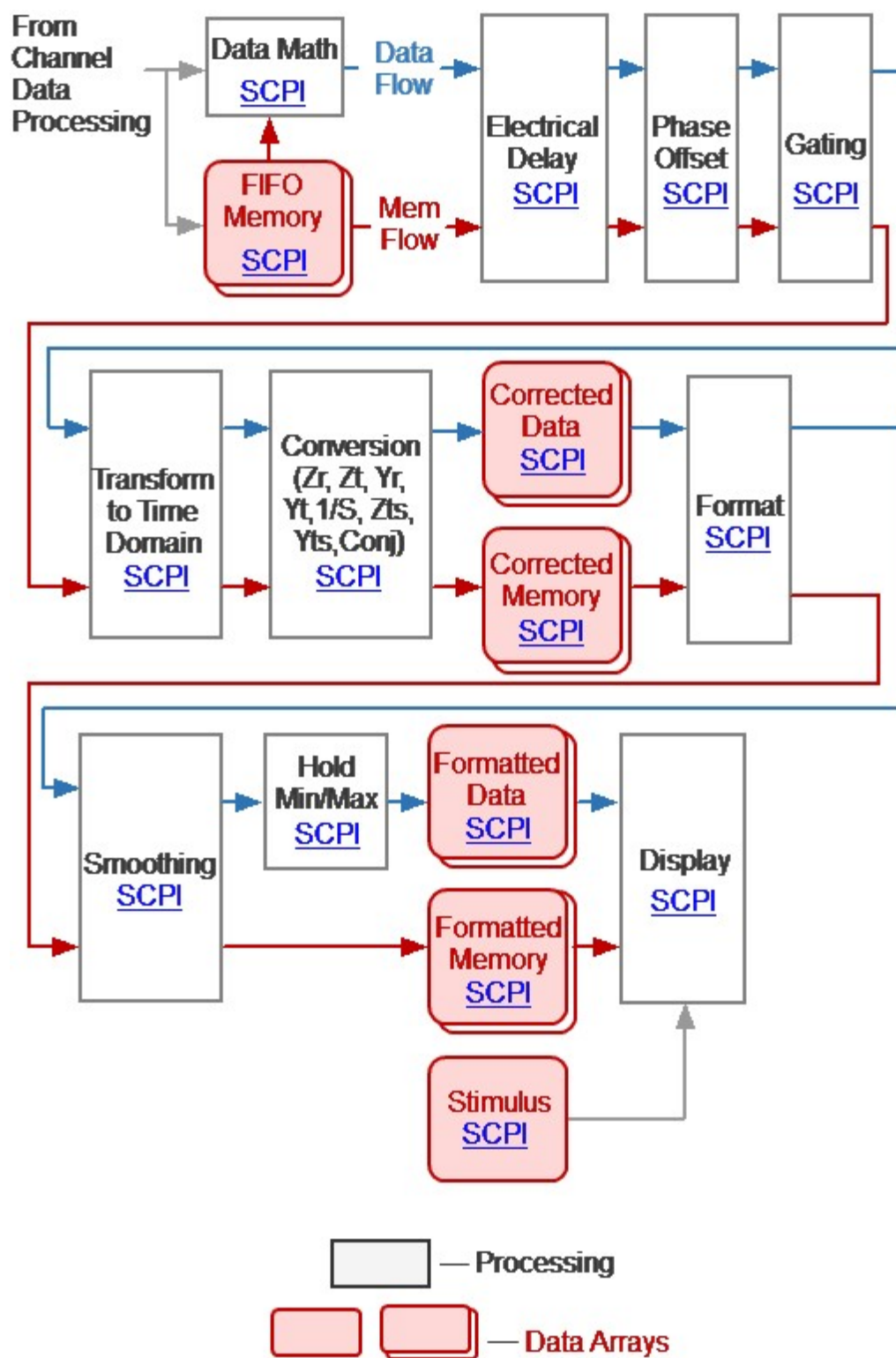
- **Corrected Receivers Data Arrays** are obtained as a result of the correction of the raw receiver data if the receivers are calibrated. This data is displayed on the screen if absolute measurements are selected.
- **Corrected S-param. Data Arrays** are obtained from raw S-parameter arrays by performing the following operations: Correction, Port Extension, Port Z conversion, Embedding/De-embedding, General Conversion.

Trace Data Processing

The following data arrays: FIFO memory, Corrected Data, and Corrected Memory, Formatted Data, and Formatted Memory (See figure below) contain the number of elements equal to twice the number of stimulus points. Each measurement point is represented in the array by a pair of adjacent elements. The stimulus data array has the number of elements equal to the number of stimulus points.

In the following data arrays: FIFO memory, Corrected Data, and Corrected Memory, the odd array elements contain the real part of the data, the even ones contain the imaginary part of the data.

The arrays of Formatted Data and Formatted Memory, depending on the selected data format, contain data of various types (See [table⁸⁸](#)).



Trace Data Processing

- **FIFO Memory** is the queue of memory arrays type "first-in-first-out" basis. The next array is saved in FIFO as the result of activating the "Data-> Memory" function. The measurement (S-parameter or receiver data) of the associated trace is copied to the array. By default, the FIFO depth (size) is one, which means each trace has one associated memory array. When the FIFO function is enabled, the queue depth increases to eight. The memory can be used both for display and for math operations in conjunction with data. Active memory is selected for math operation with data if the FIFO depth is greater than one. SCPI commands for accessing this array are absent.

NOTE

Math memory operations are performed between the complex data of the current measurements and the memory, not between their formatted values (memory traces and data traces).

NOTE

The memory arrays are processed in parallel with the measurement data array in subsequent processing stages. For example, the formatting has the same effect on the data trace as it does on the memory trace. In subsequent stages of processing, the number of memory arrays equal to the FIFO depth is used.

- **Corrected Data Array** is obtained from the corrected S-parameter arrays or the corrected receiver data arrays as a result of performing the following operations: Trace Math, Electrical Delay, Phase Offset, Gating, Transform to Time Domain, and Conversion S-parameters. Arrays contain data that has been processed, except for formatting. Array data is available for reading or writing using the SCPI command [CALC:DATA:SDAT](#)^[94].
- **Corrected Memory Arrays** is obtained from the Memory FIFO arrays as a result of performing the following operations: Electrical Delay, Phase Offset, Gating, Transform to Time Domain, and Conversion S-parameters. Arrays contain data that has been processed, with the exception of formatting. Array data is available for reading or writing using the SCPI command [CALC:DATA:SMEM](#)^[96].
- **Formatted Data Array** is obtained by formatting the corrected data array and applying smoothing and hold operations to it. Arrays contain data that is ready to be displayed as a trace. Depending on the data format, the arrays contain two values for each measuring point (See [table](#)^[88]). Array data is available for reading or writing using the SCPI command [CALC:DATA:FDAT](#)^[88].

- **Formatted Memory Data Arrays** are obtained by formatting corrected memory arrays and applying the smoothing operation to them. Arrays contain data that is ready to be displayed as a trace. Depending on the data format, the arrays contain two values for each measuring point (See [table 88](#)). Array data is available for reading or writing using the SCPI command [CALC:DATA:FMEM 91](#).
- **Stimulus Data Array** contains the channel stimulus values for all measurement points. The data is available for reading using the SCPI command [SENS:FREQ:DATA? 397](#).

IEEE488.2 Common Commands Overview

A SCPI compatible Analyzer must support a set of common commands of the IEEE488.2 standard. These commands start with an asterisk (*). The list of such commands can be seen below:

[*CLS](#)  52

[*IDN?](#)  53

[*OPC?](#)  54

[*RST](#)  55

[*TRG](#)  56

These commands are used for resetting, state queries, etc.

For additional information of functions see [IEEE488.2 Common Commands](#)  51.

Compound Commands

It is possible to enter more than one command in the same command line. The commands in the line are separated by a semicolon (;). The specification of the first command is valid for the following command, except for the last leaf before the semicolon. For example:

```
SENS:FREQ:STAR 1 MHZ;STOP 2MHZ
```

To start the next command from the highest level of the structure, begin the command using a colon (':'):

```
SENS:FREQ:STAR 1 MHZ;:CALC:PAR:DEF S21
```

Numeric Suffixes

The Analyzer contains several items of the same type, such as 16 channels, each of which in turn contains 16 traces, etc. A numeric suffix is used to denote the item number in a command. The suffix is added to the keyword of the item (channel, trace, etc.). For example, in the following specification the channel number <Ch> and trace number <Tr> indicate the channel and trace, to which this command is addressed:

```
CALCulate<Ch>:PARameter<Tr>:DEFine
```

According to this specification, the command referred to the trace 2 of the channel 1 will be written as follows:

```
CALC1:PAR2:DEF
```

The numeric suffix can be omitted. In this case, it is 1 by default. For example, the following commands are equivalent:

```
CALC:PAR:DEF
```

```
CALC1:PAR1:DEF
```

Query Commands

The query commands read out the parameter values from the Analyzer. After a query command has been sent, the response should return via remote control interface.

The query commands have a question mark ('?') at the end of the command. Many of the commands have two forms. The form with a question mark writes the parameter, the form without a question mark reads out the parameter. For example:

```
SENSe:FREQuency:STARt 1MHz
```

```
SENSe:FREQuency:STARt?
```

Command Reference

Conventions

The following conventions are used throughout this section.

Syntax

The following symbols are used in command syntax:

<>	Identifiers enclosed in angular brackets indicate that a particular type of data must be specified.
[]	Parts enclosed in square brackets can be omitted.
{ }	Parts enclosed in curly brackets indicate that you must select one of the items in this part. Individual items are separated by a vertical bar " ".
Space	Space separates commands from parameters.
,	Comma separates adjacent parameters.
...	Ellipses indicate that parameters in that part are omitted.

Identifiers

Identifier	Parameter	Description
<numeric>	Number	{<integer> <real>}
<frequency>	Frequency	<numeric>{[HZ] KHZ MHZ GHZ}
<power>	Power	<numeric>{[DBM] DBMW DBW KW W MW UW NW}
<time>	Time	<numeric>{[S] MS US NS PS FS}

Identifier	Parameter	Description
<phase>	Phase	<numeric>{[DEG] MADEG KDEG MDEG UDEG}
<stimulus>	Stimulus	{<frequency> <power> <time>}
<numeric list>	Numeric List	<numeric 1>,<numeric 2>,...<numeric N>
<bool>	Boolean parameter	{0 1 ON OFF}
<char>	Character parameter	Predefined set of character strings without quotes
<port>	Port Number	<integer>
<string>	String parameter	Quoted string

SCPI Command Tree

[ABORt](#)  57

Aborts all sweeps.

[CALCulate](#)  58

Data processing (conversion, electrical delay, phase offset, gating, fixture simulation, trace hold, smoothing, time domain), trace analysis, limit tests, markers, trace memory, math, statistic, trace data transfer.

[DISPlay](#)  278

Display settings.

[HCOPY](#)  301

Hardcopy printing.

[IEEE488.2](#)  51

IEEE488.2 Common commands.

[INITiate](#)  309

Channel initiation mode.

[MMEMory](#)  315

File operations.

[OUTP](#)  326

RF power ON/OFF.

[SENSe](#)  327

Averaging, calibration, calibration kit management, port extension, IFBW setting, frequency settings, sweep settings, frequency offset, channel data transfer.

[SERVICE](#)  16

Read active channel/trace/marker number, Analyzer capabilities.

[SOURCE](#)  425

Power settings, power calibration.

[SYSTEM](#)  437

System settings and preset.

[TRIGger](#)  456

Trigger system.

IEEE488.2 Common Commands

The set of common commands of IEEE488.2 standard. These commands start with an asterix ("*").

Command	Description	
*CLS  52	Status System	Clear status
*IDN?  53		Identify
*OPC?  54		Operation complete query
*RST  55		Reset
*TRG  56		Trigger signal

*CLS

SCPI Command

*CLS

Description

Clears the following:

- Error Queue.
- Status Byte Register.
- Standard Event Status Register.
- Operation Status Event Register.
- Questionable Status Event Register.
- Questionable Limit Status Event Register.
- Questionable Limit Channel Status Event Register.

no query

Target

Status Reporting System

Equivalent Softkeys

None

Back to [IEEE488.2 Common Commands](#)



*IDN?

SCPI Command

*IDN?

Description

Reads out the Analyzer identification string.

query only

Target

Analyzer

Query Response

The identification string in format: <manufacturer>, <model>, <serial number>, <software version>/<hardware version>.

For example: CMT, C1209, 08080188, 16.2/01

Equivalent Softkeys

None

Back to [IEEE488.2 Common Commands](#) 

*OPC?

SCPI Command

*OPC?

Description

Reads out the "1" at the completion of all pending operations. The query blocks the execution of the user program until execution of all previous instructions.

The query *OPC? can be used for waiting for the end of a sweep initiated by the command [TRIG:SING](#)⁴⁵⁹.

query only

Target

Analyzer

Query Response

1

Related Commands

[TRIG:SING](#)⁴⁵⁹

Equivalent Softkeys

None

Back to [IEEE488.2 Common Commands](#)⁵¹

*RST

SCPI Command

*RST

Description

Restores the default settings of the Analyzer.

There is difference from presetting the Analyzer with [SYST:PRES](#)⁴⁴⁶ command – in this case all channels are set to Hold.

no query

Target

Analyzer

Related Commands

[SYST:PRES](#)⁴⁴⁶

Equivalent Softkeys

None

Back to [IEEE488.2 Common Commands](#)⁵¹

*TRG

SCPI Command

*TRG

Description

Generates a trigger signal and initiates a sweep under the following conditions.

1. Trigger source is set to the BUS (set by the command [TRIG:SOUR](#)⁴⁶¹ BUS), otherwise an error occurs and the command is ignored.
2. Analyzer must be in the trigger waiting state, otherwise (the analyzer is in the measurement state or hold state) an error occurs, and the command is ignored.

The command is completed immediately after the generation of the trigger signal.

no query

Target

Analyzer

Related Commands

[TRIG:SOUR](#)⁴⁶¹

[INIT](#)³¹¹

[INIT:CONT](#)³¹²

Equivalent Softkeys

None

Back to [IEEE488.2 Common Commands](#)⁵¹

ABOR

SCPI Command

ABORt

Description

Aborts the sweep. The channels in the Single trigger initiation mode transfer to the Hold state. The channels in the Continuous trigger initiation mode transfer to the trigger waiting state. If the trigger source is set to Internal, the channel immediately starts a new sweep.

no query

Related Commands

[INIT:CONT](#) 

CALCulate

Command	Description	
CALC:ALLT:DATA:SDAT? 		Corrected data array
CALC:ALLT:DATA:FDAT? 		Formatted data array
CALC:CONV 	S-parameter Conversion	Conversion ON/OFF
CALC:CONV:FUNC 		Conversion type
CALC:CORR:EDEL:DIST 	Electrical Delay	Equivalent distance
CALL:CORR:EDEL:DIST:UNIT 		Distance units
CALC:CORR:EDEL:MED 		Media
CALC:CORR:EDEL:RVEL 		Velocity factor
CALC:CORR:EDEL:TIME 		Electrical delay
CALC:CORR:EDEL:WAV:CUT 		Waveguide cutoff frequency
CALC:CORR:OFFS:PHAS 	Phase Offset	Value of the phase offset
CALC:DATA:FDAT 	Data Transfer	Formatted data array
CALC:DATA:FMEM 		Formatted memory array

Command	Description	
CALC:DATA:SDAT  ⁹⁴		Corrected data array
CALC:DATA:SMEM  ⁹⁶		Corrected memory array
CALC:DATA:XAX?  ⁹⁸		X-axis values array
CALC:FILT:TIME  ¹⁰⁰	Gating	Gate type
CALC:FILT:TIME:CENT  ¹⁰²		Gate center
CALC:FILT:TIME:SHAP  ¹⁰⁴		Gate shape
CALC:FILT:TIME:SPAN  ¹⁰⁶		Gate span
CALC:FILT:TIME:STAR  ¹⁰⁸		Gate start
CALC:FILT:TIME:STAT  ¹¹⁰		Gating function ON/OFF
CALC:FILT:TIME:STOP  ¹¹²		Gate stop
CALC:FORM  ¹¹⁴	Channel and Trace Settings	Trace format
CALC:PAR:COUN  ²²⁴		Number of traces in the channel
CALC:PAR:SEL  ²²⁷		Active trace number (write)

Command	Description	
CALC:FSIM:SEND:DEEM:STAT  ¹¹⁶	Two-port Network De-embedding	De-embedding ON/OFF
CALC:FSIM:SEND:DEEM:PORT:STAT  ¹¹⁷		De-embedding for specified port ON/OFF
CALC:FSIM:SEND:DEEM:PORT:USER:FILE  ¹¹⁸		Name of *.S2P touchstone file of the de-embedded circuit
CALC:FSIM:SEND:PMC:STAT  ¹¹⁹	Two-port Network Embedding	Embedding ON/OFF
CALC:FSIM:SEND:PMC:PORT:STAT  ¹²⁰		Embedding for specified port ON/OFF
CALC:FSIM:SEND:PMC:PORT:USER:FILE  ¹²¹		Name of *.S2P Touchstone file of the embedded circuit
CALC:FSIM:SEND:ZCON:PORT:Z0  ¹²²	Port Impedance Conversion	Z0 Real part, Imaginary part is "0"
CALC:FSIM:SEND:ZCON:PORT:Z0:REAL  ¹²⁴		Z0 Real part
CALC:FSIM:SEND:ZCON:PORT:Z0:IMAG  ¹²⁶		Z0 Imaginary part
CALC:FSIM:SEND:ZCON:STAT  ¹²⁸		Port Z conversion ON/OFF
CALC:FSIM:SEND:ZCON:THE  ¹³⁰		Theory of Port Z Conversion
CALC:HOLD:TYPE  ¹³¹	Trace Hold	Trace hold type

Command	Description	
CALC:HOLD:CLE  ¹³³		Trace hold restart
CALC:LIM  ¹³⁴	Limit Test	Limit test ON/OFF
CALC:LIM:DATA  ¹³⁶		Limit line table
CALC:LIM:DISP  ¹³⁹		Limits display ON/OFF
CALC:LIM:FAIL?  ¹⁴¹		Limit test result
CALC:LIM:REP:ALL?  ¹⁴²		Limit test result report
CALC:LIM:REP:POIN?  ¹⁴⁴		Failed points
CALC:LIM:REP?  ¹⁴⁵		Stimulus values of failed points
CALC:MARK  ¹⁵⁰	Marker Properties	Marker ON/OFF
CALC:MARK:ACT  ¹⁵²		Sets active marker
CALC:MARK:COUN  ¹⁶³		Number of markers
CALC:MARK:COUP  ¹⁶⁵		Coupling of markers ON/OFF
CALC:MARK:DATA?  ¹⁶⁷		Response and stimulus values of all marker
CALC:MARK:DISC  ¹⁷⁰		Marker discrete mode ON/OFF

Command	Description	
CALC:MARK:REF  ²⁰²		Reference marker ON/OFF
CALC:MARK:X  ²⁰⁴		Stimulus value of marker
CALC:MARK:Y?  ²⁰⁶		Response value of marker
CALC:MARK:BWID  ¹⁵³	Bandwidth Search	Bandwidth search ON/OFF
CALC:MARK:BWID:DATA?  ¹⁵⁵		Bandwidth search result
CALC:MARK:BWID:REF  ¹⁵⁷		Reference of search
CALC:MARK:BWID:THR  ¹⁵⁹		Bandwidth threshold value
CALC:MARK:BWID:TYPE  ¹⁶¹		Type of search
CALC:MARK:FUNC:DOM  ¹⁷³	Marker Search	Arbitrary search range ON/OFF
CALC:MARK:FUNC:DOM:COUP  ¹⁷⁵		Coupling of marker search ranges ON/OFF
CALC:MARK:FUNC:DOM:STAR  ¹⁷⁷		Start of the marker search range
CALC:MARK:FUNC:DOM:STOP  ¹⁷⁹		Stop of the marker search range
CALC:MARK:FUNC:EXEC  ¹⁸¹		Executes search
CALC:MARK:FUNC:PEXC  ¹⁸²		Peak excursion value

Command	Description	
CALC:MARK:FUNC:PPOL 		Peak polarity
CALC:MARK:FUNC:TARG 		Target value
CALC:MARK:FUNC:TRAC 		Marker search tracking ON/OFF
CALC:MARK:FUNC:TTR 		Type of target transition
CALC:MARK:FUNC:TYPE 		Search type
CALC:MARK:MATH:FLAT:DATA? 	Flatness	Flatness function data
CALC:MARK:MATH:FLAT:STAT 		Marker flatness ON/OFF
CALC:MARK:MATH:FLAT:DOM:STAR 		Marker specifying start of frequency range
CALC:MARK:MATH:FLAT:DOM:STOP 		Marker specifying stop of frequency range
CALC:MATH:FUNC 	Memory Trace Function	Math operation
CALC:MATH:MEM 		Data => Memory
CALC:MST 	Statistic	Math statistics ON/OFF
CALC:MST:DATA? 		Math statistics data
CALC:MST:DOM 		Partial frequency range ON/OFF

Command	Description	
CALC:MST:DOM:STAR  ²¹⁸		Marker specifying start of frequency range
CALC:MST:DOM:STOP  ²²⁰		Marker specifying stop of frequency range
CALC:PAR:DEF  ²²⁵	Measurement Setting	Measurement parameter of a trace
CALC:PAR:SPOR  ²²⁸		Number of the stimulus port for an absolute measurements or DC Voltage measurements
CALC:RLIM  ²²⁹	Ripple Limit Test	Ripple limit test ON/OFF
CALC:RLIM:DATA  ²³²		Ripple limit line table
CALC:RLIM:DISP:LINE  ²³⁴		Ripple Limit line display ON/OFF
CALC:RLIM:DISP:SEL  ²³⁷		Number of band for ripple value display
CALC:RLIM:DISP:VAL  ²³⁹		Display type of ripple value
CALC:RLIM:FAIL?  ²⁴¹		Ripple limit test result
CALC:RLIM:REP?  ²⁴²		Ripple limit test result report
CALC:SMO  ²⁴⁵	Smoothing	Trace smoothing ON/OFF
CALC:SMO:APER  ²⁴⁷		Smoothing aperture

Command	Description
CALC:TRAN:TIME 	Selects Band-pass/Low-pass type
CALC:TRAN:TIME:CENT 	Time domain center
CALC:TRAN:TIME:EXTR:DC 	DC extrapolation ON/OFF
CALC:TRAN:TIME:KBES 	Kaiser-Bessel β
CALC:TRAN:TIME:LPFR 	Sets requency Low-Pass
CALC:TRAN:TIME:REFL:TYPE 	Selects One way/Round trip
CALC:TRAN:TIME:SPAN 	Time domain Span
CALC:TRAN:TIME:STAR 	Time domain Start
CALC:TRAN:TIME:STOP 	Time domain Stop
CALC:TRAN:TIME:STAT 	Time domain transformation ON/OFF
CALC:TRAN:TIME:STEP:RTIM 	Step rise time
CALC:TRAN:TIME:STIM 	Selects Impulse/Step type
CALC:TRAN:TIME:UNIT 	Time domain Unit

CALC:ALLT:DATA:SDAT?

SCPI Command

CALCulate<Ch>:ALLTrace:DATA:SDATa?

Description

Reads out or writes the corrected data array of all traces in the channel <Ch>. The corrected data array is the data, whose processing is completed excluding the formatting as the last step. Such data represent S-parameter complex values. The array size is number of traces times 2N, where N is the number of measurement points.

For the n-th point, where n from 1 to N:

<numeric 2n-1> the real part of corrected measurement of trace 1;

<numeric 2n> the imaginary part of corrected measurement of trace 1;

<numeric 2N + 2n-1> the real part of corrected measurement of trace 2;

<numeric 2N + 2n> the imaginary part of corrected measurement of trace 2;

...

query only

Query Response

<numeric 1 of trace 1>, <numeric 2 of trace 1>, ...<numeric 2N of trace 1>, <numeric 1 of trace 2>, <numeric 2 of trace 2>, ...<numeric 2N of trace 2>, ...

Back to [CALCulate](#)



CALC:ALLT:DATA:FDAT?

SCPI Command

CALCulate<Ch>:ALLTrace:DATA:FDATa?

Description

Reads out or writes the formatted data array of all traces in the channel <Ch>. Query only. The formatted data array is the data, whose processing is completed including the formatting as the last step. Such data represent the data trace values as they are shown on the screen. The array size is number of traces times 2N, where N is the number of measurement points.

For the n-th point, where n from 1 to N:

<numeric 2n-1> the real part of corrected measurement of trace 1;

<numeric 2n> the imaginary part of corrected measurement of trace 1;

<numeric 2N + 2n-1> the real part of corrected measurement of trace 2;

<numeric 2N + 2n> the imaginary part of corrected measurement of trace 2;

...

query only

Query Response

<numeric 1 of trace 1>, <numeric 2 of trace 1>, ...<numeric 2N of trace 1>, <numeric 1 of trace 2>, <numeric 2 of trace 2>, ...<numeric 2N of trace 2>, ...

Back to [CALCulate](#) 

CALC:CONV

SCPI Command

CALCulate<Ch>[:SElected]:CONVersion[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:CONVersion[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:CONVersion[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:CONVersion[:STATe]?

Description

Turns the S-parameter conversion function ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Related Commands

[CALC:CONV:FUNC](#)  70

Back to [CALCulate](#)  58

CALC:CONV:FUNC

SCPI Command

CALCulate<Ch>[:SElected]:CONVersion:FUNCtion <char>

CALCulate<Ch>[:SElected]:CONVersion:FUNCtion?

Or

CALCulate<Ch>:TRACe<Tr>:CONVersion:FUNCtion <char>

CALCulate<Ch>:TRACe<Tr>:CONVersion:FUNCtion?

Description

Sets or reads out the S-parameter conversion function type.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies parameter:

ZREFlection Reflection equivalent impedance

ZTRansmit Transmission equivalent impedance

YREFlection	Reflection equivalent admittance
YTRansmit	Transmission equivalent admittance
INVersion	Inverse S-parameter
ZTSHunt	Shunt equivalent impedance
YTSHunt	Shunt equivalent admittance
CONJugation	S-parameter conjugate

Query Response

{ZREF|ZTR|YREF|YTR|INV|ZTSH|YTSH|CONJ}

Preset Value

ZREF

Equivalent Softkeys

Analysis > Conversion > {Zr | Zt | Yr | Yt | 1/S | Z Trans–Shunt | Y Trans–Shunt | Conjugation}

Back to [CALCulate](#) 

CALC:CORR:EDEL:DIST

SCPI Command

CALCulate<Ch>[:SElected]:CORRection:EDELay:DISTanCe <numeric>

CALCulate<Ch>[:SElected]:CORRection:EDELay:DISTanCe?

or

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:DISTanCe <numeric>

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:DISTanCe?

Description

Sets or reads out the value of the equivalent distance in the electrical delay function.

command/query

Description

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> the distance value.

Unit

meter, feet or inches depending on the [CALC:CORR:EDEL:DIST:UNIT](#) ⁷⁴ command.

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:CORR:EDEL:DIST:UNIT

SCPI Command

CALCulate<Ch>[:SElected]:CORRection:EDELay:DISTanCe:UNITs <char>

CALCulate<Ch>[:SElected]:CORRection:EDELay:DISTanCe:UNITs?

or

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:DISTanCe:UNITs <char>

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:DISTanCe:UNITs?

Description

Sets or reads out the distance units in the electrical delay function.

command/query

Description

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies parameter:

METer Meters

FEET Feet

INCHes Inches

Query Response

{MET|FEET|INCH}

Preset Value

METer

Back to [CALCulate](#) 

CALC:CORR:EDEL:MED

SCPI Command

CALCulate<Ch>[:SElected]:CORRection:EDELay:MEDia <char>

CALCulate<Ch>[:SElected]:CORRection:EDELay:MEDia?

or

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:MEDia <char>

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:MEDia?

Description

Sets or reads out the type of media in the electrical delay function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies parameter:

COAXial Coaxial type of media

WAVeguide Waveguide type of media

Query Response

{COAX|WAV}

Preset Value

COAX

Back to [CALCulate](#) 

CALC:CORR:EDEL:RVEL

SCPI Command

CALCulate<Ch>[:SElected]:CORRection:EDELay:RVELocity <numeric>

CALCulate<Ch>[:SElected]:CORRection:EDELay:RVELocity?

Or

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:RVELocity <numeric>

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:RVELocity?

Description

Sets or reads out the value of the velocity factor used to calculate between delay and distance in the electrical delay function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> the velocity factor value from 0 to 1.

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:CORR:EDEL:TIME

SCPI Command

CALCulate<Ch>[:SElected]:CORRection:EDELay:TIME <time>

CALCulate<Ch>[:SElected]:CORRection:EDELay:TIME?

Or

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:TIME <time>

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:TIME?

Description

Sets or reads out the value of the electrical delay.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the electrical delay value from –10 to 10

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:CORR:EDEL:WAV:CUT**SCPI Command**

CALCulate<Ch>[:SElected]:CORRection:EDELay:WAVEguide:CUToff <numeric>

CALCulate<Ch>[:SElected]:CORRection:EDELay:WAVEguide:CUToff?

Or

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:WAVEguide:CUToff <numeric>

CALCulate<Ch>:TRACe<Tr>:CORRection:EDELay:WAVEguide:CUToff?

Description

Sets or reads out the value of the waveguide cutoff frequency in the electrical delay function if the type of media set to the "WAVEguide" by the command [CALC:CORR:EDEL:MED](#)⁷⁶.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> the cutoff frequency 0 to 999e9.

Unit

Hz (hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:CORR:OFFS:PHAS

SCPI Command

CALCulate<Ch>[:SElected]:CORRection:OFFSet:PHASe <phase>

CALCulate<Ch>[:SElected]:CORRection:OFFSet:PHASe?

Or

CALCulate<Ch>:TRACe<Tr>:CORRection:OFFSet:PHASe <phase>

CALCulate<Ch>:TRACe<Tr>:CORRection:OFFSet:PHASe?

Description

Sets or reads out the value of the phase offset.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<phase> the phase offset value from –360 to 360

Unit

° (degree)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:DATA:FDAT

SCPI Command

CALCulate<Ch>[:SElected]:DATA:FDATa <numeric list>

CALCulate<Ch>[:SElected]:DATA:FDATa?

Or

CALCulate<Ch>:TRACe<Tr>:DATA:FDATa <numeric list>

CALCulate<Ch>:TRACe<Tr>:DATA:FDATa?

Description

Reads out or writes the formatted data array.

The formatted data array is the data, whose processing is completed including the formatting as the last step. Such data represent the data trace values as they are shown on the screen.

The array size is $2N$, where N is the number of measurement points.

For the n -th point, where n from 1 to N :

<numeric $2n-1$ > Value 1 depends on the trace format (see table below);

<numeric $2n$ > Value 2 depends on the trace format (see table below). Reads out or writes the formatted data array.

Trace Format	Value 1	Value 2
Log Mag	Logarithmic magnitude, dB	0
SWR	Voltage standing wave ratio	0
Phase	Phase, deg	0
Expand Phase	Expanded phase, deg	0

Trace Format	Value 1	Value 2
Group Delay	Group delay, sec	0
Lin Mag	Linear magnitude	0
Real	Real part	0
Imag	Imaginary part	0
Smith (Log/Phase)	Logarithmic magnitude, dB	Phase, deg
Smith (Lin/Phase)	Linear magnitude	Phase, deg
Smith (Real/Imag)	Real part	Imaginary part
Smith (R + jX)	Impedance (real part), Ohm	Impedance (imaginary part), Ohm
Smith (G + jB)	Admittance (real part), S	Admittance (imaginary part), S
Polar (Log/Phase)	Logarithmic magnitude, dB	Phase, deg
Polar (Lin/Phase)	Linear magnitude	Phase, deg
Polar (Real/Imag)	Real part	Imaginary part

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 2N>

Related Commands

[CALC:FORM](#)  114

Back to [CALCulate](#)  58

CALC:DATA:FMEM

SCPI Command

CALCulate<Ch>[:SElected]:DATA:FMEMory <numeric list>

CALCulate<Ch>[:SElected]:DATA:FMEMory?

Or

CALCulate<Ch>:TRACe<Tr>:DATA:FMEMory <numeric list>

CALCulate<Ch>:TRACe<Tr>:DATA:FMEMory?

Description

Reads out or writes the formatted memory array.

The formatted memory array is the data, whose processing is completed including the formatting as the last step. Such data represent the memory trace values as they are shown on the screen.

The array size is $2N$, where N is the number of measurement points.

For the n -th point, where n from 1 to N :

<numeric $2n-1$ > Value 1 depends on the trace format (see table below);

<numeric $2n$ > Value 2 depends on the trace format (see table below).

Trace Format	Value 1	Value 2
Log Mag	Logarithmic magnitude, dB	0
SWR	Voltage standing wave ratio	0
Phase	Phase, deg	0
Expand Phase	Expanded phase, deg	0

Trace Format	Value 1	Value 2
Group Delay	Group delay, sec	0
Lin Mag	Linear magnitude	0
Real	Real part	0
Imag	Imaginary part	0
Smith (Log/Phase)	Logarithmic magnitude, dB	Phase, deg
Smith (Lin/Phase)	Linear magnitude	Phase, deg
Smith (Real/Imag)	Real part	Imaginary part
Smith (R + jX)	Impedance (real part), Ohm	Impedance (imaginary part), Ohm
Smith (G + jB)	Admittance (real part), S	Admittance (imaginary part), S
Polar (Log/Phase)	Logarithmic magnitude, dB	Phase, deg
Polar (Lin/Phase)	Linear magnitude	Phase, deg
Polar (Real/Imag)	Real part	Imaginary part

Note: When data is being written it is recommended to hold the sweep before and update the screen after write.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 2N>

Related Commands

[CALC:MATH:MEM](#)  ₂₁₁

[CALC:FORM](#)  ₁₁₄

Back to [CALCulate](#)  ₅₈

CALC:DATA:SDAT

SCPI Command

CALCulate<Ch>[:SElected]:DATA:SDATa <numeric list>

CALCulate<Ch>[:SElected]:DATA:SDATa?

Or

CALCulate<Ch>:TRACe<Tr>:DATA:SDATa <numeric list>

CALCulate<Ch>:TRACe<Tr>:DATA:SDATa?

Description

Reads out or writes the corrected data array.

The corrected data array is the data, whose processing is completed excluding the formatting as the last step. Such data represent S-parameter complex values.

The array size is 2N, where N is the number of measurement points.

For the n-th point, where n from 1 to N:

<numeric 2n-1> the real part of corrected measurement;

<numeric 2n> the imaginary part of corrected measurement.

Note: When data is being written it is recommended to hold the sweep before and update the screen after write.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 2N>

Back to [CALCulate](#) 

CALC:DATA:SMEM

SCPI Command

CALCulate<Ch>[:SElected]:DATA:SMEMory <numeric list>

CALCulate<Ch>[:SElected]:DATA:SMEMory?

Or

CALCulate<Ch>:TRACe<Tr>:DATA:SMEMory <numeric list>

CALCulate<Ch>:TRACe<Tr>:DATA:SMEMory?

Description

Reads out or writes the corrected memory array.

The corrected memory array is the data, whose processing is completed excluding the formatting as the last step. Such data represent S-parameter complex values.

The array size is 2N, where N is the number of measurement points.

For the n-th point, where n from 1 to N:

<numeric 2n-1> the real part of corrected measurement memory;

<numeric 2n> the imaginary part of corrected measurement memory.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 2N>

Back to [CALCulate](#) 

CALC:DATA:XAX?

SCPI Command

CALCulate<Ch>[:SElected]:DATA:XAXis?

Or

CALCulate<Ch>:TRACe<Tr>:DATA:XAXis?

Description

Reads out the X-axis values array.

The X-axis values array is the frequency, power or time values array depending on the trace setup. The array contains real values.

The array size is N, where N is the number of measurement points.

For the n–th point, where n from 1 to N:

<numeric n> the X-axis value.

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1> , <numeric 2> , ...<numeric N>

Related Commands

[SENS:SWE:TYPE](#)  412

[CALC:TRAN:TIME:STAT](#)  268

Back to [CALCulate](#)  58

CALC:FILT:TIME

SCPI Command

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME[:TYPE] <char>

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME[:TYPE]?

Or

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME[:TYPE] <char>

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME[:TYPE]?

Description

Sets or reads out the gate type of the gating function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the gate type:

BPASs Bandpass type

NOTCh Notch type

Query Response

{BPAS|NOTC}

Preset Value

BPAS

Back to [CALCulate](#) 

CALC:FILT:TIME:CEN

SCPI Command

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:CENTer <time>

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:CENTer?

Or

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:CENTer <time>

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:CENTer?

Description

Sets or reads out the gate center value of the gating function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the center value of the gate, the range varies depending on the frequency span and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:FILT:TIME:SHAP**SCPI Command**

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:SHAPE <char>

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:SHAPE?

Or

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:SHAPE <char>

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:SHAPE?

Description

Sets or reads out the gate shape of the gating function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the gate shape:

MAXimum Maximum shape

WIDE Wide shape

NORMAL Normal shape

MINimum Minimum shape

Query Response

{MAX|WIDE|NORM|MIN}

Preset Value

NORM

Back to [CALCulate](#) 

CALC:FILT:TIME:SPAN

SCPI Command

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:SPAN <time>

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:SPAN?

Or

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:SPAN <time>

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:SPAN?

Description

Sets or reads out the gate span value of the gating function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the span value of the gate, the range varies depending on the frequency span and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

2e-8

Back to [CALCulate](#) 

CALC:FILT:TIME:STAR

SCPI Command

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:START <time>

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:START?

Or

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:START <time>

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:START?

Description

Sets or reads out the gate start value of the gating function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the start value of the gate, the range varies depending on the frequency span and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

-1e-8

Back to [CALCulate](#) 

CALC:FILT:TIME:STAT

SCPI Command

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:STATe {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:STATe?

Or

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:STATe {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:STATe?

Description

Turns the gating function ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:FILT:TIME:STOP

SCPI Command

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:STOP <time>

CALCulate<Ch>[:SElected]:FILTer[:GATE]:TIME:STOP?

Or

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:STOP <time>

CALCulate<Ch>:TRACe<Tr>:FILTer[:GATE]:TIME:STOP?

Description

Sets or reads out the gate stop value of the gating function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the stop value of the gate, the range varies depending on the frequency span and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

+1e-8

Back to [CALCulate](#) 

CALC:FORM

SCPI Command

CALCulate<Ch>[:SElected]:FORMat <char>

CALCulate<Ch>[:SElected]:FORMat?

Or

CALCulate<Ch>:TRACe<Tr>:FORMat <char>

CALCulate<Ch>:TRACe<Tr>:FORMat?

Description

Sets or reads out the trace format.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the trace format:

MLOGarithmic	Logarithmic magnitude
---------------------	-----------------------

PHASe	Phase
--------------	-------

GDELay	Group delay time
---------------	------------------

SLINear	Smith chart format (Lin)
SLOGarithmic	Smith chart format (Log)
SCOMplex	Smith chart format (Real/Imag)
SMITh	Smith chart format ($R + jX$)
SADMittance	Smith chart format ($G + jB$)
PLINear	Polar format (Lin)
PLOGarithmic	Polar format (Log)
POLar	Polar format (Real/Imag)
MLINear	Linear magnitude
SWR	Voltage standing wave ratio
REAL	Real part
IMAGinary	Imaginary part
UPHase	Expanded phase

Query Response

{MLOG|PHAS|GDEL|SLIN|SLOG|SCOM|SMIT|SADM|PLIN|PLOG|POL|MLIN|SWR|
REAL|IMAG|UPH}

Preset Value

MLOG

Back to [CALCulate](#) 

CALC:FSIM:SEND:DEEM:STAT**SCPI Command**

CALCulate<Ch>:FSIMulator:SENDEd:DEEMbed:STATe {OFF|ON|0|1}

CALCulate<Ch>:FSIMulator:SENDEd:DEEMbed:STATe?

Description

Turns the 2-port network de-embedding function ON/OFF.

command/query

Target

The channel <Ch>={[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:FSIM:SEND:DEEM:PORT:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:DEEMbed:PORT<Pt>:STATe {OFF|ON|0|1}

CALCulate<Ch>:FSIMulator:SENDEd:DEEMbed:PORT<Pt>:STATe?

Description

Turns the 2-port network de-embedding function for specified port ON/OFF.

command/query

Target

Port <Pt> of channel <Ch>,

<Ch>={[1]|2|...16}

<Pt>={[1]|2}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:FSIM:SEND:DEEM:PORT:USER:FIL

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:DEEMbed:PORT<Pt>:USER:FILEname <string>

CALCulate<Ch>:FSIMulator:SENDEd:DEEMbed:PORT<Pt>:USER:FILEname?

Description

Sets or reads out the name of the *.S2P file of the de-embedded circuit of the 2-port network de-embedding function. The file contains the circuit S-parameters in Touchstone format.

Note: If the full path of the file is not specified, the \FixtureSim subdirectory of the application directory will be searched for the file.

command/query

Target

Port <Pt> of channel <Ch>,

<Ch>={[1]|2|...16}

<Pt>={[1]|2}

Parameter

<string>, up to 256 characters

Back to [CALCulate](#)

CALC:FSIM:SEND:PMC:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:PMCircuit:STATe {OFF|ON|0|1}

CALCulate<Ch>:FSIMulator:SENDEd:PMCircuit:STATe?

Description

Turns the 2-port network embedding function ON/OFF.

command/query

Target

The channel <Ch>={1|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#)



CALC:FSIM:SEND:PMC:PORT:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:PMCircuit:PORT<Pt>:STATe {OFF|ON|0|1}

CALCulate<Ch>:FSIMulator:SENDEd:PMCircuit:PORT<Pt>:STATe?

Description

Turns the 2-port network embedding function for each port ON/OFF.

command/query

Target

Port <Pt> of channel <Ch>,

<Ch>={[1]|2|...16}

<Pt>={[1]|2}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:FSIM:SEND:PMC:PORT:USER:FIL

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:PMCircuit:PORT<Pt>:USER:FILEname <string>

CALCulate<Ch>:FSIMulator:SENDEd:PMCircuit:PORT<Pt>:USER:FILEname?

Description

Sets or reads out the name of the *.S2P file of the embedded circuit of the 2-port network embedding function. The file contains the circuit S-parameters in Touchstone format.

Note: If the full path of the file is not specified, the \FixtureSim subdirectory of the application directory will be searched for the file.

command/query

Target

Port <Pt> of channel <Ch>,

<Ch>={[1]|2|...16}

<Pt>={[1]|2}

Parameter

<string>, up to 256 characters

Back to [CALCulate](#)



CALC:FSIM:SEND:ZCON:PORT:Z0

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:PORT<Pt>:Z0[:R] <numeric>

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:PORT<Pt>:Z0[:R]?

Description

Sets or reads out the value of the impedance of the port impedance conversion function. The function sets the real part and zeros the imaginary part of the port impedance.

command/query

Target

Port <Pt> of channel <Ch>,

<Ch>={[1]|2|...16}

<Pt>={[1]|2}

Parameter

<numeric> the impedance value from 1e-6 to 1e10

Unit

Ω (Ohm)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

50 Ω

Back to [CALCulate](#) 

CALC:FSIM:SEND:ZCON:PORT:Z0:REAL

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:PORT<Pt>:Z0:REAL <numeric>

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:PORT<Pt>:Z0:REAL?

Description

Sets or reads out the real part of the impedance of the port impedance conversion function.

command/query

Target

Port <Pt> of channel <Ch>,

<Ch>={[1]|2|...16}

<Pt>={[1]|2}

Parameter

<numeric> the impedance value from 1e-6 to 1e10

Unit

Ω (Ohm)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

50 Ω

Back to [CALCulate](#) 

CALC:FSIM:SEND:ZCON:PORT:Z0:IMAG

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:PORT<Pt>:Z0:IMAGinary
<numeric>

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:PORT<Pt>:Z0:IMAGinary?

Description

Sets or reads out the imaginary part of the impedance of the port impedance conversion function.

command/query

Target

Port <Pt> of channel <Ch>,

<Ch>={[1]|2|...16}

<Pt>={[1]|2}

Parameter

<numeric> the impedance value from 1e-6 to 1e10

Unit

Ω (Ohm)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:FSIM:SEND:ZCON:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:STATe {OFF|ON|0|1}

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:STATe?

Description

Turns the port impedance conversion function ON/OFF.

command/query

Target

The channel <Ch>={1|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#)



CALC:FSIM:SEND:ZCON:STAT (2)

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:STATe {OFF|ON|0|1}

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:STATe?

Description

Turns the port impedance conversion function ON/OFF.

command/query

Target

The channel <Ch>={1|2|...32}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:FSIM:SEND:ZCON:THE

SCPI Command

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:THEory {TRAVelling | POWer}

CALCulate<Ch>:FSIMulator:SENDEd:ZCONversion:THEory?

Description

Selects the theory of the S-parameters Re-normalization (Port Z Conversion).

command/query

Target

The channel <Ch>={[1]|2|...16}

Parameter

<char> Specifies Theory:

TRAVelling	The travelling waves theory
-------------------	-----------------------------

POWer	The power waves theory
--------------	------------------------

Query Response

{TRAV|POV}

Preset Value

TRAV

Back to [CALCulate](#) 

CALC:HOLD:TYPE

SCPI Command

CALCulate<Ch>[:SElected]:HOLD:TYPE <char>

CALCulate<Ch>[:SElected]:HOLD:TYPE?

Or

CALCulate<Ch>:TRACe<Tr>:HOLD:TYPE <char>

CALCulate<Ch>:TRACe<Tr>:HOLD:TYPE?

Description

Sets the type of the trace hold function. The function holds the trace at the maximum or minimum point.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the type of the trace hold function:

OFF Turns off the trace hold function

MAXimum Maximum hold

MINimum Minimum hold

Query Response

{OFF|MAX|MIN}

Preset Value

OFF

Related Commands

[CALC:HOLD:CLEar](#)  133

Back to [CALCulate](#)  60

CALC:HOLD:CLE

SCPI Command

CALCulate<Ch>[:SElected]:HOLD:CLEar

Or

CALCulate<Ch>:TRACe<Tr>:HOLD:CLEar

Description

This command resets the trace hold function.

command

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Related Commands

[CALC:HOLD:TYPE](#)

Equivalent Softkeys

Display > Trace Hold > Restart

Back to [CALCulate](#)

CALC:LIM

SCPI Command

CALCulate<Ch>[:SElected]:LIMit[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:LIMit[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:LIMit[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:LIMit[:STATe]?

Description

Turns the limit test ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:LIM:DATA

SCPI Command

CALCulate<Ch>[:SElected]:LIMit:DATA <numeric list>

CALCulate<Ch>[:SElected]:LIMit:DATA?

Or

CALCulate<Ch>:TRACe<Tr>:LIMit:DATA <numeric list>

CALCulate<Ch>:TRACe<Tr>:LIMit:DATA?

Description

Sets the data array, which is the limit line in the limit test function.

The array size is $1 + 5N$, where N is the number of limit line segments.

For the n -th point, where n from 1 to N :

<numeric 1> the number of limit line segments N is from 0 to 100. Setting 0 clears the limit line.

<numeric $5n-3$ > type of the n -th limit line segment:

0: Off.

1: Upper limit

2: Lower limit

3: Single Point limit

<numeric $5n-2$ > the stimulus value in the start point of the n -th segment

<numeric $5n-1$ > the stimulus value in the end point of the n -th segment

<numeric $5n-0$ > the response value in the start point of the n -th segment

<numeric $5n+1$ > the response value in the end point of the n -th segment

Note: If the array size is not $1 + 5N$, where N is <numeric 1>, an error occurs. If <numeric $5n-3$ > is less than 0 or more than 2, an error occurs. When <numeric $5n-2$ >, <numeric $5n-1$ >, <numeric $5n-0$ >, and <numeric $5n+1$ > elements are out of allowable range, the value is set to the limit, which is closer to the specified value.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 5N+1>

Back to [CALCulate](#) 

CALC:LIM:DISP

SCPI Command

CALCulate<Ch>[:SElected]:LIMit:DISPlay[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:LIMit:DISPlay[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:LIMit:DISPlay[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:LIMit:DISPlay[:STATe]?

Description

Turns the limit line display of the limit test function ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:LIM:FAIL?

SCPI Command

CALCulate<Ch>[:SElected]:LIMit:FAIL?

Or

CALCulate<Ch>:TRACe<Tr>:LIMit:FAIL?

Description

Reads out the limit test result.

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

1 Fail

0 Pass

Back to [CALCulate](#) 

CALC:LIM:REP:ALL?

SCPI Command

CALCulate<Ch>[:SElected]:LIMit:REPort:ALL?

Or

CALCulate<Ch>:TRACe<Tr>:LIMit:REPort:ALL?

Description

Reads out the limit test result report.

The array size is 4N, where N is the number of measurement points.

For the n-th point, where n from 1 to N:

<numeric 4n-3> the stimulus value in the n-th point;

<numeric 4n-2> the limit test result in the n-th point;

-1: No limit

0: Fail

1: Pass

<numeric 4n-1> the upper limit value in the n-th point (0 — if there is no limit)

<numeric 4n-0> the lower limit value in the n-th point (0 — if there is no limit)

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 4N>

Back to [CALCulate](#) 

CALC:LIM:REP:POIN?

SCPI Command

CALCulate<Ch>[:SElected]:LIMit:REPort:POINts?

Or

CALCulate<Ch>:TRACe<Tr>:LIMit:REPort:POINts?

Description

Reads out the number of the measurement points that failed the limit test.

The stimulus data array of these points can be read out by the [CALC:LIM:REP?](#)¹⁴⁵ command.

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric>

Related Commands

[CALC:LIM:REP?](#)¹⁴⁵

Back to [CALCulate](#)⁶¹

CALC:LIM:REP?

SCPI Command

CALCulate<Ch>[:SElected]:LIMit:REPort[:DATA]?

Or

CALCulate<Ch>:TRACe<Tr>:LIMit:REPort[:DATA]?

Description

Reads out the data array, which is the stimulus values of the measurement points that failed the limit test.

The array size is set by the [CALC:LIM:REP:POIN?](#)¹⁴⁴ command.

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1> , <numeric 2> , ... <numeric N>

Related Commands

[CALC:LIM:REP:POIN?](#)¹⁴⁴

Back to [CALCulate](#)⁶¹

CALC:PLIM:DATA

SCPI Command

CALCulate:PLIMit:DATA

CALCulate:PLIMit:DATA?

Description

Sets or reads out all settings of the Peak Limits test. The array has the following format:

<flag 1> Type setting (0-all, 1-stimulus, 2-response)

<flag 2> Polarity setting (0-negative, 1-positive)

<left> numeric setting

<Right> numeric setting

<High> numeric setting

<Low> numeric setting

<Search range start> numeric setting

<Search range stop> numeric setting

command/query

Example Command

CALC:PLIM:DATA 0, 0, 3.9GHz, 4.02 GHz, -20, -10, 3.9 GHz, 9 GHz

Back to [CALCulate](#) 

CALC:PLIM:STAT

SCPI Command

CALCulate:PLIMit:STATus

CALCulate:PLIMit:STATus?

Description

Sets or reads out Peak Limits Test status.

command/query

Query Response

0 for OFF, 1 for ON

Back to [CALCulate](#)



CALC:PLIM:DISP:STAT

SCPI Command

CALCulate:PLIMit:DISPlay:STATus

CALCulate:PLIMit:DISPlay:STATus?

Description

Sets or reads out Peak Limits Test line visibility status.

command/query

Query Response

0 for HIDE, 1 for SHOW

Back to [CALCulate](#)



CALC:PLIM:FAIL?

SCPI Command

CALCulate:PLIMit:FAIL?

Description

Reads out if Peak Limits Test failed.

query only

Query Response

0 for NO, 1 for YES

Back to [CALCulate](#)



CALC:MARK

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer<Mk>[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>[:STATe]?

Description

Turns the marker ON/OFF.

Turning ON a marker with the number from 1 to 15 will turn ON all the markers of smaller numbers. Turning OFF a marker with the number from 1 to 15 will turn OFF all the markers of greater numbers (except of the reference marker with number 16). Turning ON/OFF the reference marker with number 16 does not turn ON/OFF the markers with the numbers from 1 to 15, but switches these markers between relative and absolute measurement mode.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:MARK:ACT

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:ACTivate

Or

CALCulate<Ch>:TRACe<Tr>MARKer<Mk>:ACTivate

Description

Sets the active marker.

If the marker is not ON, this function will turn the marker ON. Turning ON a marker with the number from 1 to 15 will turn ON all the markers of smaller numbers. Turning ON the reference marker with number 16 does not turn ON the markers with the numbers from 1 to 15, but switches these markers to the relative measurement mode.

no query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Related Commands

[SERV:CHAN:TRAC:MARK:ACT?](#) 

Back to [CALCulate](#) 

CALC:MARK:BWID

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:BWIDth[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer:BWIDth[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:BWIDth[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer:BWIDth[:STATe]?

Description

Turns the bandwidth search function ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:MARK:BWID:DATA?

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:BWIDth:DATA?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:BWIDth:DATA?

Description

Reads out the bandwidth search result.

The bandwidth search can be performed relatively to the marker <Mk>, or relatively to the absolute maximum value of the trace (in this case the number of the marker is ignored), what is set by the CALC:MARK:BWID:REF command.

The data include 4 elements:

<numeric 1> Bandwidth;

<numeric 2> Center frequency;

<numeric 3> Q value;

<numeric 4> Loss.

Note: If the bandwidth search is impossible, all the read-out values are 0. If the search is performed relatively to a maker, which is OFF, an error occurs.

query only

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 4>

Related Commands

[CALC:MARK:BWID:REF](#)  157

Back to [CALCulate](#)  62

CALC:MARK:BWID:REF**SCPI Command**

CALCulate<Ch>[:SElected]:MARKer:BWIDth:REFerence <char>

CALCulate<Ch>[:SElected]:MARKer:BWIDth:REFerence?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:BWIDth:REFerence <char>

CALCulate<Ch>:TRACe<Tr>:MARKer:BWIDth:REFerence?

Description

Selects the reference for the bandwidth search function: reference marker or absolute maximum value of the trace.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Choose from:

MARKer Bandwidth search relative to the reference marker

MAXimum Bandwidth search relative to the absolute maximum of the trace

MINimum

Bandwidth search relative to the absolute minimum of the trace

Query Response

{MAX|MARK|MIN}

Preset Value

MAX

Back to [CALCulate](#) 

CALC:MARK:BWID:THR

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:BWIDth:THReshold <numeric>

CALCulate<Ch>[:SElected]:MARKer<Mk>:BWIDth:THReshold?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:BWIDth:THReshold <numeric>

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:BWIDth:THReshold?

Description

Sets the bandwidth search threshold value.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

<numeric> the bandwidth definition value, the range varies depending on the data format.

Unit

dB |° |s

Query Response

<numeric>

Preset Value

-3.0

Back to [CALCulate](#) 

CALC:MARK:BWID:TYPE

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:BWIDth:TYPE <char>

CALCulate<Ch>[:SElected]:MARKer:BWIDth:TYPE?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:BWIDth:TYPE <char>

CALCulate<Ch>:TRACe<Tr>:MARKer:BWIDth:TYPE?

Description

Sets the type of the bandwidth search function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the type of the bandwidth:

BPASs Bandpass

NOTCh Notch

Query Response

{BPAS|NOTC}

Preset Value

BPAS

Back to [CALCulate](#) 

CALC:MARK:COUN

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:COUNT <numeric>

CALCulate<Ch>[:SElected]:MARKer:COUNT?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:COUNT <numeric>

CALCulate<Ch>:TRACe<Tr>:MARKer:COUNT?

Description

Sets the number of turned ON markers.

Note: Choosing 16 turns on the reference marker and sets the markers 1 to 15 to the relative values.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric>, range from 0 to 16

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:MARK:COUP

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:COUPle {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer:COUPle?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:COUPle {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer:COUPle?

Description

Turns the marker coupling between traces ON/OFF. When coupled, the markers of different traces but with the same number track the X-axis position.

command/query

Target

All the traces of channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Back to [CALCulate](#) 

CALC:MARK:DATA?

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:DATA?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:DATA?

Description

Reads out the data array of all turned ON markers.

The array size is $3N + 1$, where N is the number of turned ON markers including the reference marker. If the reference marker is turned ON the last three elements of array contain the reference marker data and the rest elements of array contain the relative values.

For the n -th marker, where n from 1 to N :

<numeric 1> the number of turned ON markers including the reference marker (N);

<numeric $3n-1$ > the stimulus value of the n -th marker;

<numeric $3n$ > the real data in rectangular format, real part in polar and Smith chart formats of the n -th marker;

<numeric $3n+1$ > 0 in rectangular format, imaginary part in polar and Smith chart formats of the n -th marker.

query only

Target

CALCulate<Ch>[:SElected] — All markers of the active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — All markers of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

$\langle \text{Tr} \rangle = \{[1]|2|\dots 16\}$

All markers of the active trace of channel <Ch>,

<Ch>={[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 3N+1>

Related Commands

[CALC:MARK:COUN](#)  163

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CALC:MARK:DISC

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:DISCcrete {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer:DISCcrete?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:DISCcrete {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer:DISCcrete?

Description

Turns the marker discrete mode ON/OFF.

command/query

Target

All traces of channel <Ch> (if the marker coupling is set to ON by the CALC:MARK:COUP command),

Or

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Back to [CALCulate](#) 

CALC:MARK:FUNC:DOM

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:FUNCtion:DOMain[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer:FUNCtion:DOMain[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:FUNCtion:DOMain[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer:FUNCtion:DOMain[:STATe]?

Description

Turns the state of the arbitrary range when executing the marker search ON/OFF. If the state of an arbitrary range is ON, marker search is performed in the range specified by the [CALC:MARK:FUNC:DOM:STAR¹⁷⁷](#), [CALC:MARK:FUNC:DOM:STOP¹⁷⁹](#) commands. Otherwise, the search is performed over the entire sweep range.

command/query

Target

All traces of channel <Ch> (if the marker search range coupling is set to ON by the CALC:MARK:FUNC:DOM:COUP command),

Or

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} Arbitrary range

{OFF|0} Entire sweep range

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:MARK:FUNC:DOM:COUP

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:FUNCtion:DOMain:COUPle {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer:FUNCtion:DOMain:COUPle?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:FUNCtion:DOMain:COUPle {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer:FUNCtion:DOMain:COUPle?

Description

Turns the state of the marker search range coupling for different traces ON/OFF. If the arbitrary search range turned ON by the [CALC:MARK:FUNC:DOM](#)¹⁷³ command, specifies whether (coupling) or each trace uses individual range when the marker search is performed.

command/query

Target

All the traces of channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

Specifies the state of the marker search range coupling:

{ON|1} All traces of channel use the same range

{OFF|0} Each trace uses individual range

Query Response

{0|1}

Preset Value

1

Back to [CALCulate](#) 

CALC:MARK:FUNC:DOM:STAR

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:FUNCtion:DOMain:STARt <stimulus>

CALCulate<Ch>[:SElected]:MARKer:FUNCtion:DOMain:STARt?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:FUNCtion:DOMain:STARt <stimulus>

CALCulate<Ch>:TRACe<Tr>:MARKer:FUNCtion:DOMain:STARt?

Description

Sets or reads out the start value of the marker search range.

command/query

Target

All traces of channel <Ch> (if the marker search range coupling is set to ON by the CALC:MARK:FUNC:DOM:COUP command),

Or

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<stimulus> the start value of the marker search

Unit

Hz | s | dBm

Query Response

<numeric>

Preset Value

Lower limit of the analyzer frequency range

Back to [CALCulate](#) 

CALC:MARK:FUNC:DOM:STOP

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:FUNCtion:DOMain:STOP <stimulus>

CALCulate<Ch>[:SElected]:MARKer:FUNCtion:DOMain:STOP?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:FUNCtion:DOMain:STOP <stimulus>

CALCulate<Ch>:TRACe<Tr>:MARKer:FUNCtion:DOMain:STOP?

Description

Sets or reads out the stop value of the marker search range.

command/query

Target

All traces of channel <Ch> (if the marker search range coupling is set to ON by the [CALC:MARK:FUNC:DOM:COUP](#)^[179] command),

Or

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<stimulus> the stop value of the marker search

Unit

Hz | s | dBm

Query Response

<numeric>

Preset Value

Upper limit of the analyzer frequency range

Back to [CALCulate](#) 

CALC:MARK:FUNC:EXEC

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNCtion:EXECute

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNCtion:EXECute

Description

Executes the marker search according to the specified criterion. The type of the marker search is set by the [CALC:MARK:FUNC:TYPE](#)¹⁹² command.

no query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Related Commands

[CALC:MARK:FUNC:TYPE](#)¹⁹²

[CALC:MARK:FUNC:DOM](#)¹⁷³

Back to [CALCulate](#)⁶²

CALC:MARK:FUNC:PEXC

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNction:PEXCursion <numeric>

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNction:PEXCursion?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNction:PEXCursion <numeric>

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNction:PEXCursion?

Description

Sets or reads out the peak excursion value when the marker peak search is performed by the [CALC:MARK:FUNC:EXEC](#)₁₈₁ command.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

<numeric> the peak excursion value, the range varies depending on the data format

Unit

dB | ° | s

Query Response

<numeric>

Preset Value

1

Back to [CALCulate](#) 

CALC:MARK:FUNC:PPOL

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNction:PPOLarity <char>

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNction:PPOLarity?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNction:PPOLarity <char>

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNction:PPOLarity?

Description

Selects the peak polarity when the marker peak search is performed by the [CALC:MARK:FUNC:EXEC](#)₁₈₁ command.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

<char> Specifies the peak polarity:

POSitive	Positive polarity
NEGative	Negative polarity
BOTH	Both positive polarity and negative polarity

Query Response

{POS|NEG|BOTH}

Preset Value

POS

Related Commands

[CALC:MARK:FUNC:EXEC](#)  ¹⁸¹

Back to [CALCulate](#)  ⁶²

CALC:MARK:FUNC:TARG

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNction:TARGet <numeric>

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNction:TARGet?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNction:TARGet <numeric>

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNction:TARGet?

Description

Sets or reads out the target value when the marker target search is performed by the [CALC:MARK:FUNC:EXEC](#)  command.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

<numeric> the peak excursion value, the range varies depending on the data format

Unit

dB | ° | s

Query Response

<numeric>

Preset Value

0

Back to [CALCulate](#) 

CALC:MARK:FUNC:TRAC

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNction:TRACking {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNction:TRACking?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNction:TRACking {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNction:TRACking?

Description

Turns the marker search tracking ON/OFF.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:MARK:FUNC:TTR

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNCtion:TTRansition <char>

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNCtion:TTRansition?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNCtion:TTRansition <char>

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNCtion:TTRansition?

Description

Selects the type of the target transition when the marker transition search is performed by the [CALC:MARK:FUNC:EXEC](#)^[181] command.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

<char> Specifies the type of the target transition:

POSitive Positive target transition

NEGative Negative target transition

BOTH Both positive target transition and negative target transition

Query Response

{POS|NEG|BOTH}

Preset Value

POS

Related Commands

[CALC:MARK:FUNC:EXEC](#)  181

Back to [CALCulate](#)  62

CALC:MARK:FUNC:TYPE

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNCtion:TYPE <char>

CALCulate<Ch>[:SElected]:MARKer<Mk>:FUNCtion:TYPE?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNCtion:TYPE <char>

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:FUNCtion:TYPE?

Description

Selects the type of the marker search, which is performed by the [CALC:MARK:FUNC:EXEC](#) 181 command.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

<char> Specifies the type of the marker search:

MAXimum Maximum value search

MINimum	Minimum value search
PEAK	Peak search
LPEak	Peak search to the left from the marker
RPEak	Peak search to the right from the marker
TARGet	Target search
LTARget	Target search to the left from the marker
RTARget	Target search to the right from the marker

Query Response

{MAX|MIN|PEAK|LPE|RPE|TARG|LTAR|RTAR}

Preset Value

MAX

Related Commands

[CALC:MARK:FUNC:EXEC](#)  181

Back to [CALCulate](#)  62

CALC:MARK:MATH:FLAT:DATA?

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:MATH:FLATness:DATA?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:MATH:FLATness:DATA?

Description

Reads out the FLATNESS function data array. The FLATNESS function is applied within the range determined by two markers.

The array includes 4 elements:

- <numeric 1> Span;
- <numeric 2> Gain;
- <numeric 3> Slope;
- <numeric 4> Flatness.

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1> , <numeric 2> ,...<numeric 4>

Related Commands

[CALC:MARK:MATH:FLAT:DOM:STAR](#)  198

[CALC:MARK:MATH:FLAT:DOM:STOP](#)  200

Back to [CALCulate](#)  63

CALC:MARK:MATH:FLAT:STAT**SCPI Command**

CALCulate<Ch>[:SElected]:MARKer:MATH:FLATness:STATe {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer:MATH:FLATness:STATe?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:MATH:FLATness:STATe {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer:MATH:FLATness:STATe?

Description

Turns the marker flatness function ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:MARK:MATH:FLAT:DOM:STAR

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:MATH:FLATness:STARt <numeric>

CALCulate<Ch>[:SElected]:MARKer:MATH:FLATness:STARt?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:MATH:FLATness:STARt <numeric>

CALCulate<Ch>:TRACe<Tr>:MARKer:MATH:FLATness:STARt?

Description

Sets or reads out the number of the marker, which specifies the start frequency of the flatness function domain.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> marker number from 1 to 16

Query Response

<numeric>

Preset Value

1

Back to [CALCulate](#) 

CALC:MARK:MATH:FLAT:DOM:STOP

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:MATH:FLATness:STOP <numeric>

CALCulate<Ch>[:SElected]:MARKer:MATH:FLATness:STOP?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:MATH:FLATness:STOP <numeric>

CALCulate<Ch>:TRACe<Tr>:MARKer:MATH:FLATness:STOP?

Description

Sets or reads out the number of the marker, which specifies the stop frequency of the flatness function domain.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> marker number from 1 to 16

Query Response

<numeric>

Preset Value

2

Back to [CALCulate](#) 

CALC:MARK:REF

SCPI Command

CALCulate<Ch>[:SElected]:MARKer:REFerence[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MARKer:REFerence[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer:REFerence[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MARKer:REFerence[:STATe]?

Description

Turns the reference marker ON/OFF. When the reference marker is turned ON, all the values of the other markers turn to relative values.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} Reference marker ON

{OFF|0} Reference marker OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:MARK:X

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:X <stimulus>

CALCulate<Ch>[:SElected]:MARKer<Mk>:X?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:X <stimulus>

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:X?

Description

Sets or reads out the stimulus value of the marker.

command/query

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Parameter

<stimulus> the stimulus value of the marker, the range is from the stimulus start value to the stimulus stop value currently set

Unit

Hz | s | dBm

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

Stimulus center value

Back to [CALCulate](#) 

CALC:MARK:Y?

SCPI Command

CALCulate<Ch>[:SElected]:MARKer<Mk>:Y?

Or

CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:Y?

Description

Reads out the response value of the marker.

If the reference marker is turned ON, the values of the markers from 1 to 15 are read out as relative values to the reference marker.

The data include 2 elements:

<numeric 1> real number in rectangular format, real part in polar and Smith chart formats;

<numeric 2> 0 in rectangular format, imaginary part in polar and Smith chart formats.

query only

Target

Marker <Mk> of the active trace of channel <Ch>,

Or

Marker <Mk> of the trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

<Mk> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>

Related Commands

[CALC:MARK:REF](#)  202

Back to [CALCulate](#)  61

CALC:MATH:FUNC

SCPI Command

CALCulate<Ch>[:SElected]:MATH:FUNCTION <char>

CALCulate<Ch>[:SElected]:MATH:FUNCTION?

Or

CALCulate<Ch>:TRACe<Tr>:MATH:FUNCTION <char>

CALCulate<Ch>:TRACe<Tr>:MATH:FUNCTION?

Description

Selects the math operation between the data trace and the memory trace. The math result replaces the data trace. If the memory trace does not exist, the command is ignored.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the math operation:

DIVide	Division Data / Mem
MULTiPLY	Multiplication Data x Mem

ADD	Addition Data + Mem
SUBTract	Subtraction Data – Mem
OFF	No math

Query Response

{OFF|DIV|MULT|SUBT|ADD}

Preset Value

OFF

Related Commands

[CALC:MATH:MEM](#)

Back to [CALCulate](#)

CALC:MATH:MEM

SCPI Command

CALCulate<Ch>[:SElected]:MATH:MEMorize

Or

CALCulate<Ch>:TRACe<Tr>:MATH:MEMorize

Description

Copies the measurement data to the memory trace. Automatically turns on the display the memory trace.

no query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Back to [CALCulate](#) 

CALC:MST

SCPI Command

CALCulate<Ch>[:SElected]:MSTatistics[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MSTatistics[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:MSTatistics[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MSTatistics[:STATe]?

Description

Turns the math statistics display ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} Reference marker ON

{OFF|0} Reference marker OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:MST:DATA?

SCPI Command

CALCulate<Ch>[:SElected]:MSTatistics:DATA?

Or

CALCulate<Ch>:TRACe<Tr>:MSTatistics:DATA?

Description

Reads out the math statistics values.

The statistics function is applied either over the whole range, or within the range specified by the [CALC:MST:DOM](#)^[216] command (the range limits are determined by two markers).

The data include 3 elements:

<numeric 1> Mean value;

<numeric 2> Standard deviation;

<numeric 3> Peak-to-peak (difference between the maximum value and the minimum value).

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, numeric 3>

Related Commands

[CALC:MST](#)  212

Back to [CALCulate](#)  63

CALC:MST:DOM**SCPI Command**

CALCulate<Ch>[:SElected]:MSTatistics:DOMain[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:MSTatistics:DOMain[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:MSTatistics:DOMain[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:MSTatistics:DOMain[:STATe]?

Description

Selects either the partial frequency range or the entire frequency range to be used for math statistic calculation. The partial frequency range is limited by two markers.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

Choose from:

{ON|1} Partial frequency range

{OFF|0} Entire frequency range

Query Response

{0|1}

Preset Value

0

Related Commands

[CALC:MST:DOM:STAR](#)  ₂₁₈

[CALC:MST:DOM:STOP](#)  ₂₂₀

Back to [CALCulate](#)  ₆₃

CALC:MST:DOM:STAR

SCPI Command

CALCulate<Ch>[:SElected]:MSTatistics:DOMain[:MARKer]:START <numeric>

CALCulate<Ch>[:SElected]:MSTatistics:DOMain[:MARKer]:START?

Or

CALCulate<Ch>:TRACe<Tr>:MSTatistics:DOMain[:MARKer]:START <numeric>

CALCulate<Ch>:TRACe<Tr>:MSTatistics:DOMain[:MARKer]:START?

Description

Sets or reads out the number of the marker, which specifies the start frequency of the math statistics range.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> marker number from 1 to 16

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

1

Back to [CALCulate](#) 

CALC:MST:DOM:STOP

SCPI Command

CALCulate<Ch>[:SElected]:MSTatistics:DOMain[:MARKer]:STOP <numeric>

CALCulate<Ch>[:SElected]:MSTatistics:DOMain[:MARKer]:STOP?

Or

CALCulate<Ch>:TRACe<Tr>:MSTatistics:DOMain[:MARKer]:STOP <numeric>

CALCulate<Ch>:TRACe<Tr>:MSTatistics:DOMain[:MARKer]:STOP?

Description

Sets or reads out the number of the marker, which specifies the stop frequency of the math statistics range.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> marker number from 1 to 16

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

2

Back to [CALCulate](#) 

CALC:MST:DOM:VAL:STAR

SCPI Command

CALCulate<Ch>[:SElected]:MStatistcs:DOMain:VALue:STARt<numeric>

CALCulate<Ch>[:SElected]:MStatistcs:DOMain:VALue:STARt?

Description

Sets or reads out Math Statistics Start value.

command/query

Query Response

<numeric>

Back to [CALCulate](#) 

CALC:MST:DOM:VAL:STOP

SCPI Command

CALCulate<Ch>[:SElected]:MStatistcs:DOMain:VALue:STOP<numeric>

CALCulate<Ch>[:SElected]:MStatistcs:DOMain:VALue:STOP?

Description

Sets or reads out Math Statistics Stop value.

command/query

Query Response

<numeric>

Back to [CALCulate](#) 

CALC:PAR:COUN

SCPI Command

CALCulate<Ch>:PARAmeter:COUNT <numeric>

CALCulate<Ch>:PARAmeter:COUNT?

Description

Sets or reads out the number of traces in the channel.

command/query

Target

The channel <Ch> ,

<Ch>={[1]|2|...16}

Parameter

<numeric> The number of the traces in the channel from 1 to 16

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

1

Back to [CALCulate](#) 

CALC:PAR:DEF

SCPI Command

CALCulate<Ch>:PARAmeter<Tr>:DEFine <char>

CALCulate<Ch>:PARAmeter<Tr>:DEFine?

Description

Selects the measurement parameter of the trace.

command/query

Target

Trace <Tr> of channel <Ch> ,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Parameter

<char> Specifies parameter:

S11, S21, S12, S22	S-parameter
A, B or	Test receiver
T1, T2	
R1, R2	Reference receiver
AUX1, AUX2 or	DC Voltage
V1, V2	

Query Response

{S11|S21|S12|S22|R1(n)|R2(n)|A(n)|B(n)|V1(n)|V2(n)},

Where n is the stimulus port number

Preset Value

Depends on the trace number.

Back to [CALCulate](#) 

CALC:PAR:SEL

SCPI Command

CALCulate<Ch>:PARAmeter<Tr>:SELEct

Description

Selects the active trace in the channel.

Note: If the trace number is greater than the number of the traces displayed in the channel, an error occurs, and the command is ignored.

no query

Target

Trace <Tr> of channel <Ch>,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Related Commands

[CALC:PAR:COUN](#)₂₂₄

[SERV:CHAN:TRAC:ACT?](#)₄₁₅

Back to [CALCulate](#)₅₉

CALC:PAR:SPOR

SCPI Command

CALCulate<Ch>:PARAmeter<Tr>:SPORT <port>

CALCulate<Ch>:PARAmeter<Tr>:SPORT?

Description

Sets or reads out the number of the stimulus port when performing absolute measurements or DC Voltage measurements.

command/query

Target

Trace <Tr> of channel <Ch>,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Parameter

<port> the number of the stimulus port

Out of Range

Error occurs. The command is ignored.

Query Response

<port>

Preset Value

1

Back to [CALCulate](#)



64

CALC:RLIM

SCPI Command

CALCulate<Ch>[:SElected]:RLIMit[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:RLIMit[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:RLIMit[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:RLIMit[:STATe]?

Description

Turns the ripple limit test ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

Choose from:

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:RLIM:DATA

SCPI Command

CALCulate<Ch>[:SElected]:RLIMit:DATA <numeric list>

CALCulate<Ch>[:SElected]:RLIMit:DATA?

Or

CALCulate<Ch>:TRACe<Tr>:RLIMit:DATA <numeric list>

CALCulate<Ch>:TRACe<Tr>:RLIMit:DATA?

Description

Sets the data array, which is the limit line for the ripple limit function.

The array size is $1 + 4N$, where N is the number of limit line segments.

For the n -th point, where n from 1 to N :

<numeric 1> the number of limit line segments N is the integer from 0 to 12.
Setting 0 clears the limit line.

<numeric $4n-2$ > type of the n -th limit line segment

0: Off.

1: On

<numeric $4n-1$ > the stimulus value in the beginning point of the n -th segment

<numeric $4n-0$ > the stimulus value in the end point of the n -th segment

<numeric $4n+1$ > the ripple limit value of the n -th segment.

Note: If the array size is not $1 + 4N$, where N is <numeric 1>, an error occurs. If <numeric $4n-2$ > is less than 0 or more than 1, an error occurs. When <numeric $4n-1$ >, <numeric $4n-0$ >, and <numeric $4n+1$ > elements are out of allowable range, the value is set to the limit, which is closer to the specified value.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 4N+1>

Back to [CALCulate](#)

CALC:RLIM:DISP:LINE

SCPI Command

CALCulate<Ch>[:SElected]:RLIMit:DISPlay:LINE {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:RLIMit:DISPlay:LINE?

Or

CALCulate<Ch>:TRACe<Tr>:RLIMit:DISPlay:LINE {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:RLIMit:DISPlay:LINE?

Description

Turns the ripple limit line display ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

Choose from:

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:RLIM:DISP:SEL

SCPI Command

CALCulate<Ch>[:SElected]:RLIMit:DISPlay:SElect <numeric>

CALCulate<Ch>[:SElected]:RLIMit:DISPlay:SElect?

Or

CALCulate<Ch>:TRACe<Tr>:RLIMit:DISPlay:SElect <numeric>

CALCulate<Ch>:TRACe<Tr>:RLIMit:DISPlay:SElect?

Description

Sets or reads out the number of the ripple limit test band selected for the ripple value display.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric>, range from 1 to 12

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

1

Back to [CALCulate](#) 

CALC:RLIM:DISP:VAL**SCPI Command**

CALCulate<Ch>[:SElected]:RLIMit:DISPlay:VALue <char>

CALCulate<Ch>[:SElected]:RLIMit:DISPlay:VALue?

Or

CALCulate<Ch>:TRACe<Tr>:RLIMit:DISPlay:VALue <char>

CALCulate<Ch>:TRACe<Tr>:RLIMit:DISPlay:VALue?

Description

Selects the display type of the ripple value in the specified band.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the math operation:

OFF	Ripple value display OFF
ABSolute	Absolute value
MARgin	Margin (difference between the ripple limit and the absolute value)

Query Response

{OFF|ABS|MAR}

Preset Value

OFF

Back to [CALCulate](#) 

CALC:RLIM:FAIL?**SCPI Command**

CALCulate<Ch>[:SElected]:RLIMit:FAIL?

Or

CALCulate<Ch>:TRACe<Tr>:RLIMit:FAIL?

Description

Reads out the ripple limit test result.

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

1 Fail

0 Pass

Back to [CALCulate](#) 

CALC:RLIM:REP?**SCPI Command**

CALCulate<Ch>[:SElected]:RLIMit:REPort[:DATA]?

Or

CALCulate<Ch>:TRACe<Tr>:RLIMit:REPort[:DATA]?

Description

Reads out the data array, which is the ripple limit test result.

The array size is 1+3N, where N is the number of ripple limit bands.

For the n–th point, where n from 1 to N:

<numeric 1> N total number of the bands

<numeric 3n–1> n number of the band

<numeric 3n–0> Ripple value in the n–th band

<numeric 3n+1> Ripple limit test result in the n–th band:

0 — Pass

1 — Fail

query only

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric 3N+1>

Back to [CALCulate](#) 

CALC:SMO

SCPI Command

CALCulate<Ch>[:SElected]:SMOothing[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:SMOothing[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:SMOothing[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:SMOothing[:STATe]?

Description

Turns the trace smoothing ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

Choose from:

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:SMO:APER

SCPI Command

CALCulate<Ch>[:SElected]:SMOothing:APERture <numeric>

CALCulate<Ch>[:SElected]:SMOothing:APERture?

Or

CALCulate<Ch>:TRACe<Tr>:SMOothing:APERture <numeric>

CALCulate<Ch>:TRACe<Tr>:SMOothing:APERture?

Description

Sets or reads out the smoothing aperture when performing smoothing function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> the smoothing aperture from 0.01 to 20

Unit

% (percent)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

1

Back to [CALCulate](#) 

CALC:TRAN:TIME

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME[:TYPE] <char>

CALCulate<Ch>[:SElected]:TRANSform:TIME[:TYPE]?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME[:TYPE] <char>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME[:TYPE]?

Description

Selects the transformation type for the time domain transformation function: bandpass or lowpass.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the transformation type:

BPASs Bandpass

LPASs Lowpass

Query Response

{BPAS|LPAS}

Preset Value

BPAS

Back to [CALCulate](#) 

CALC:TRAN:TIME:WIND

CALCulate<Ch>[:SElected]:TRANSform:TIME[:TYPE] <char>:WINDow

CALCulate<Ch>[:SElected]:TRANSform:TIME[:TYPE]:WINDow?

Description

Sets or reads out the Time Domain transform type.

command/query

Parameters

BPAS	Bandpass mode
LPST	Lowpass step mode
LPIM	Lowpass impulse mode

Back to [CALCulate](#) 

CALC:TRAN:TIME:CEN

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:CENTer <time>

CALCulate<Ch>[:SElected]:TRANSform:TIME:CENTer?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:CENTer <time>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:CENTer?

Description

Sets or reads out the time domain center value when the time domain transformation function is turned ON.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the time domain center value, the range varies depending on the specified frequency range and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

1

Related Commands

[CALC:TRAN:TIME:UNIT](#)  275

Back to [CALCulate](#)  65

CALC:TRAN:TIME:EXTR:DC

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:EXTRapolate:DC[:STATe] {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:TRANSform:TIME:EXTRapolate:DC[:STATe]?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:EXTRapolate:DC[:STATe] {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:EXTRapolate:DC[:STATe]?

Description

Turns ON/OFF the DC extrapolation, when the time domain transformation function is turned ON. The DC value is used in the lowpass type of transformation.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Back to [CALCulate](#) 

CALC:TRAN:TIME:KBES**SCPI Command**

CALCulate<Ch>[:SElected]:TRANSform:TIME:KBESsel <numeric>

CALCulate<Ch>[:SElected]:TRANSform:TIME:KBESsel?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:KBESsel <numeric>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:KBESsel?

Description

Sets or reads out the β parameter, which controls the Kaiser–Bessel window shape when performing the time domain transformation.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<numeric> β parameter from 0 to 13

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

6

Back to [CALCulate](#) 

CALC:TRAN:TIME:LPFR

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:LPFRequency

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:LPFRequency

Description

Changes the frequency range to the harmonic grid in order to match with the lowpass type of the time domain transformation function.

no query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Back to [CALCulate](#) 

CALC:TRAN:TIME:REFL:TYPE

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:REFLection:TYPE <char>

CALCulate<Ch>[:SElected]:TRANSform:TIME:REFLection:TYPE?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:REFLection:TYPE <char>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:REFLection:TYPE?

Description

Selects the reflection distance either one way or round trip for the time domain transformation function.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Choose from:

RTRip Round Trip

OWAY One Way

Query Response

{RTR|OWAY}

Preset Value

RTR

Back to [CALCulate](#) 

CALC:TRAN:TIME:SPAN

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:SPAN <time>

CALCulate<Ch>[:SElected]:TRANSform:TIME:SPAN?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:SPAN <time>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:SPAN?

Description

Sets or reads out the time domain span value when the time domain transformation function is turned ON.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the time domain span value, the range varies depending on the specified frequency range and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

2e-8

Related Commands

[CALC:TRAN:TIME:UNIT](#)  275

Back to [CALCulate](#)  65

CALC:TRAN:TIME:STAR

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:START <time>

CALCulate<Ch>[:SElected]:TRANSform:TIME:START?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:START <time>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:START?

Description

Sets or reads out the time domain start value when the time domain transformation function is turned ON.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the time domain start value, the range varies depending on the specified frequency range and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

-1e-8

Related Commands

[CALC:TRAN:TIME:UNIT](#)  275

Back to [CALCulate](#)  65

CALC:TRAN:TIME:STOP

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:STOP <time>

CALCulate<Ch>[:SElected]:TRANSform:TIME:STOP?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:STOP <time>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:STOP?

Description

Sets or reads out the time domain stop value when the time domain transformation function is turned ON.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the time domain stop value, the range varies depending on the specified frequency range and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

+1e-8

Related Commands

[CALC:TRAN:TIME:UNIT](#)  275

Back to [CALCulate](#)  65

CALC:TRAN:TIME:STAT

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:STATe {OFF|ON|0|1}

CALCulate<Ch>[:SElected]:TRANSform:TIME:STATe?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:STATe {OFF|ON|0|1}

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:STATe?

Description

Turns the time domain transformation function ON/OFF.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [CALCulate](#) 

CALC:TRAN:TIME:STEP:RTIM

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:STEP:RTIME <time>

CALCulate<Ch>[:SElected]:TRANSform:TIME:STEP:RTIME?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:STEP:RTIME <time>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:STEP:RTIME?

Description

Sets or reads out the rise time of the step signal (time domain transformation resolution), coupled with the Kaiser–Bessel window shape β parameter. The impulse width setting changes the β parameter and setting of β parameter changes the impulse width.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<time> the impulse width, the range varies depending on the specified frequency range and the number of points

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Back to [CALCulate](#) 

CALC:TRAN:TIME:STIM**SCPI Command**

CALCulate<Ch>[:SElected]:TRANSform:TIME:STIMulus <char>

CALCulate<Ch>[:SElected]:TRANSform:TIME:STIMulus?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:STIMulus <char>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:STIMulus?

Description

Selects the stimulus type for the time domain transformation function: impulse or step. The stimulus type is valid for the lowpass devices. For the bandpass devices the impulse type is always used.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch> ,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Specifies the stimulus type:

IMPulse Impulse

STEP Step

Query Response

{IMP|STEP}

Preset Value

IMP

Back to [CALCulate](#) 

CALC:TRAN:TIME:UNIT

SCPI Command

CALCulate<Ch>[:SElected]:TRANSform:TIME:UNIT <char>

CALCulate<Ch>[:SElected]:TRANSform:TIME:UNIT?

Or

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:UNIT <char>

CALCulate<Ch>:TRACe<Tr>:TRANSform:TIME:UNIT?

Description

Selects the transformation unit for the time domain transformation function: seconds, meters, feet.

command/query

Target

CALCulate<Ch>[:SElected] — active trace of channel <Ch>,

Or

CALCulate<Ch>:TRACe<Tr> — trace <Tr> of channel <Ch>,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Parameter

<char> Choose from:

SEConds Seconds

METers Meters

FEET Feet

Query Response

{SEC|MET|FEET}

Preset Value

SEC

Back to [CALCulate](#) 

DISPlay

Command	Description	
DISP:ENAB 		Display update ON/OFF
DISP:HIDE 		Hides the Analyzer window
DISP:SHOW 		Shows the Analyzer window
DISP:WIND:ANN:MARK:SING 		Active marker only ON/OFF
DISP:SPL 	Channel and Trace Settings	Number and Layout of channels
DISP:WIND:ACT 		Active channel number (write)
DISP:WIND:SPL 		Allocation of traces in the channel window
DISP:WIND:TRAC:MEM 	Memory Trace Function	Memory trace display ON/OFF
DISP:WIND:TRAC:STAT 		Data trace display ON/OFF
DISP:WIND:TRAC:Y:AUTO 	Scale	Auto scale
DISP:WIND:TRAC:Y:PDIV 		Scale per division
DISP:WIND:TRAC:Y:RLEV 		Reference line value
DISP:WIND:TRAC:Y:RLEV:AUTO 		Auto Reference Level

Command	Description	
DISP:WIND:TRAC:Y:RPOS  298		Reference line position
DISP:WIND:Y:DIV  299		Number of the scale divisions

DISP:ENAB

SCPI Command

DISPlay:ENABle {OFF|ON|0|1}

DISPlay:ENABle?

Description

Turns the display update ON/OFF.

command/query

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

Display > Update

Back to [DISPlay](#)  278

DISP:HIDE

SCPI Command

DISPlay:HIDE

Description

Blanks the Analyzer window, displaying the label "Remote Control".

no query

Related Commands

[DISP:SHOW](#)  282

Equivalent Softkeys

None

Back to [DISPlay](#)  278

DISP:SHOW

SCPI Command

DISPlay:SHOW

Description

Shows the Analyzer window hidden by the [DISP:HIDE](#)^[281] command.

no query

Related Commands

[DISP:HIDE](#)^[281]

Back to [DISPlay](#)^[278]

DISP:SPL

SCPI Command

DISPlay:SPLit <numeric>

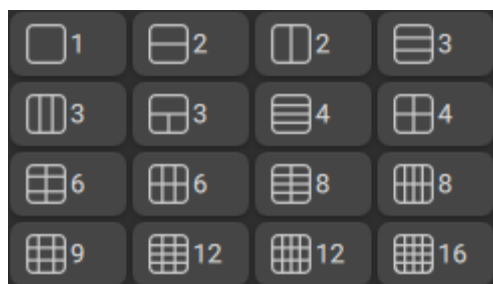
DISPlay:SPLit?

Description

Sets or reads out the number of channels and channel layout on the screen. The channel layouts on the screen is shown below.

command/query

Channel window layout on the screen



Parameter

<numeric> the code of the channel window layout from 1 to 16. Note: the layout code does not correspond to the number of channels.

Query Response

<numeric>

Preset Value

1

Back to [DISPlay](#) 

DISP:WIND:ACT

SCPI Command

DISPlay:WINDow<Ch>:ACTivate

Description

Sets the active channel.

Note: Trying to set an active channel that is not displayed with the [DISP:SPL](#)²⁸³ command will produce an error.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Related Commands

[DISP:SPL](#)²⁸³

[SERV:CHAN:ACT?](#)⁴¹⁵

Back to [DISPlay](#)²⁷⁸

DISP:WIND:ANN:MARK:SING

SCPI Command

DISPlay:WINDow<Ch>:ANNotation:MARKer:SINGle[:STATe] {OFF|ON|0|1}

DISPlay:WINDow<Ch>:ANNotation:MARKer:SINGle[:STATe]?

Description

Selects display of either the active trace markers or all trace markers.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<char> Choose from:

{ON|1} Active trace markers

{OFF|0} All trace markers

Query Response

{0|1}

Preset Value

1

Back to [DISPlay](#)  278

DISP:WIND:SPL

SCPI Command

DISPlay:WINDow<Ch>:SPLit <numeric>

DISPlay:WINDow<Ch>:SPLit?

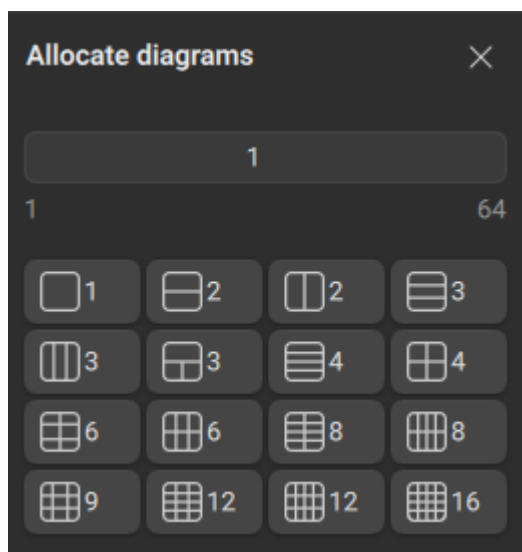
Description

Sets or reads out the number of the graph layout in the channel window. The graph layout in the channel window is shown below.

Note: This function does not determine the number of traces in the channel window; the [CALC:PAR:COUN](#)²²⁴ command sets the number of traces.

command/query

Graph layout in the channel window



Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<numeric> the number of the graph layout from 1 to 16

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

1

Back to [DISPlay](#)

DISP:WIND:TRAC:MEM

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:MEMory[:STATe] {OFF|ON|0|1}

DISPlay:WINDow<Ch>:TRACe<Tr>:MEMory[:STATe]?

Description

Turns the memory trace display ON/OFF.

Note: If the memory trace does not exist, an error occurs, and the command is ignored.

command/query

Target

Trace <Tr> of channel <Ch>,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [DISPlay](#)  278

DISP:WIND:TRAC:STAT

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:STATe {OFF|ON|0|1}

DISPlay:WINDow<Ch>:TRACe<Tr>:STATe?Description

Turns the data trace display ON/OFF.

command/query

Target

Trace <Tr> of channel <Ch> ,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Back to [DISPlay](#)  278

DISP:WIND:TRAC:Y:AUTO

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:Y[:SCALe]:AUTO

Description

Executes the auto scale function for the trace. The function automatically sets both the PDIVision and the RLEVel values.

no query

Target

Trace <Tr> of channel <Ch>,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Related Commands

[DISP:WIND:TRAC:Y:PDIV](#)  292

[DISP:WIND:TRAC:Y:RLEV](#)  295

Back to [DISPlay](#)  278

DISP:WIND:TRAC:Y:PDIV

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:Y[:SCALe]:PDIVision <numeric>

DISPlay:WINDow<Ch>:TRACe<Tr>:Y[:SCALe]:PDIVision?

Description

Sets or reads out the trace scale. Sets the scale per division when the data format is in the rectangular format. Sets the full-scale value when the data format is in the Smith chart format or the polar format.

command/query

Target

Trace <Tr> of channel <Ch> ,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Parameter

<numeric> the scale value from 10E-18 to 1E18

Out of Range

Sets the value of the limit, which is closer to the specified value.

Unit

dB |° |s

Out of Range

<numeric>

Query Response

<numeric>

Preset Value

Varies depending on the format.

Logarithmic Magnitude: 10 dB/Div

Phase: 40 °/Div

Expand Phase: 100 °/Div

Group Delay: 10e-9 s/Div

Smith Chart, Polar, SWR: 1 /Div

Linear Magnitude: 0.1 /Div

Real part, Imaginary part: 0.2 /Div

Back to [DISPlay](#) 

DISP:WIND:TRAC:Y:RLEV

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:Y[:SCALe]:RLEVel <numeric>

DISPlay:WINDow<Ch>:TRACe<Tr>:Y[:SCALe]:RLEVel?

Description

Sets the value of the reference line (response value on the reference line). For the rectangular format only.

command/query

Target

Trace <Tr> of channel <Ch>,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Parameter

<numeric> the scale value from 10E–18 to 1E18

Out of Range

Sets the value of the limit, which is closer to the specified value.

Unit

dB |° |s

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0 (except for SWR: 1)

Back to [DISPlay](#)  278

DISP:WIND:TRAC:Y:RLEV:AUTO

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:Y[:SCALe]:RLEVel:AUTO

Description

Executes the auto reference function for the trace. The function automatically sets the RLEVel value.

no query

Target

Trace <Tr> of channel <Ch>,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Related Commands

[DISP:WIND:TRAC:Y:RLEV](#) 295

Back to [DISPlay](#) 278

DISP:WIND:TRAC:Y:RPOS

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:Y[:SCALe]:RPOSition <numeric>

DISPlay:WINDow<Ch>:TRACe<Tr>:Y[:SCALe]:RPOSition?

Description

Sets the position of the reference line. For the rectangular format only.

command/query

Target

Trace <Tr> of channel <Ch> ,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Parameter

<numeric> the reference line position from 0 to the number of the scale divisions (set by the DISP:WIND:Y:DIV command, 10 by default)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

5 (except for SWR: 0)

Back to [DISPlay](#)²⁷⁸

DISP:WIND:Y:DIV

SCPI Command

DISPlay:WINDow<Ch>:Y[:SCALe]:DIVisions <numeric>

DISPlay:WINDow<Ch>:Y[:SCALe]:DIVisions?

Description

Sets the number of the vertical scale divisions. For the rectangular format only.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<numeric> the number of the vertical scale divisions from 4 to 30

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

10

Resolution

2

Back to [DISPlay](#) 

HCOPy

Command	Description	
HCOP  ³⁰³	Printing	Quick print
HCOP:ABOR  ³⁰⁴		Aborts the printout
HCOP:DATE:STAM  ³⁰⁵		Date and time stamp ON/OFF
HCOP:IMAG  ³⁰⁶		Inverted color of image
HCOP:PAIN  ³⁰⁷		Color chart for image printout

HCOP

SCPI Command

HCOPy[:IMMediate]

Description

Prints out the image displayed on the screen without previewing.

no query

Back to [HCOPY](#) 

HCOP:ABOR

SCPI Command

HCOPy:ABORt

Description

Aborts the printout.

no query

Back to [HCOPY](#)



HCOP:DATE:STAM

SCPI Command

HCOPy:DATE:STAMp {OFF|ON|0|1}

HCOPy:DATE:STAMp?

Description

Turns the date and time printout in the upper right corner of the image ON/OFF.

no query

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Back to [HCOPy](#) 

HCOP:IMAG

SCPI Command

HCOPy:IMAGe <char>

HCOPy:IMAGe?

Description

Sets or reads out the inverted color image printout.

command/query

Parameter

<char> Choose from:

NORMal Normal printout

INVert Inverted color printout

Query Response

{NORM|INV}

Preset Value

NORM

Back to [HCOPy](#) 

HCOP:PAIN

SCPI Command

HCOPy:PAINt <char>

HCOPy:PAINt?

Description

Sets or reads out the color chart for the image printout.

command/query

Parameter

<char> Choose from:

COLor	Color printout
GRAY	Grayscale printout
BW	Black&white printout

Query Response

{COL|GRAY|BW}

Preset Value

BW

Back to [HCOPy](#) 

INITiate

Command	Description	
INIT  ³¹¹	Trigger	Initiates channel once
INIT:CONT  ³¹²		Continuous channel initiation mode ON/OFF
INIT:CONT:ALL  ³¹⁴		Continuous channel initiation mode for all channels ON/OFF

INIT

SCPI Command

INITiate<Ch>[:IMMediate]

Description

Puts the channel into the Trigger Waiting state for one trigger event. The channel should be in the hold state, otherwise an error occurs, and the command is ignored. The channel goes into Hold as a result of the command [INIT:CONT](#)₃₁₂ OFF.

If the Internal trigger source is selected by the command [TRIG:SOUR](#)₄₆₁ INT, then the command initiates a sweep in the single channel, otherwise the channel goes to Waiting for a Single Trigger mode.

Upon receipt of a trigger from the selected source, the sweep starts for the channels awaiting trigger. On completion of the sweep the channel goes to the Hold state.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Related Commands

[TRIG:SOUR](#)₄₆₁

[INIT:CONT](#)₃₁₂

Back to [INITiate](#)₃₀₉

INIT:CONT

SCPI Command

INITiate<Ch>:CONTInuous {OFF|ON|0|1}

INITiate<Ch>:CONTInuous?

Description

Turns the continuous trigger initiation mode ON/OFF.

When the continuous initiation mode is turned ON:

- If the Internal trigger source is selected by the command [TRIG:SOUR](#)⁴⁶¹ INT, then the channel continuously sweeps;
- If the trigger source selected is one other than the internal, then the channel goes to the trigger waiting state. Upon receipt of a trigger from the selected source, the sweep starts for the channels awaiting trigger. On completion of the sweep the channel goes to the trigger waiting state.

When the continuous trigger initiation mode is turned OFF the channel is in the Hold state, to initiate a sweep use the [INIT](#)³¹¹ command.

command /query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

Specifies the continuous trigger initiation mode:

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Related Commands

[TRIG:SOUR](#)  461

[INIT](#)  311

Back to [INITiate](#)  309

INIT:CONT:ALL

SCPI Command

INITiate:CONTinuous:ALL {OFF|ON|0|1}

Description

Turns the continuous trigger initiation mode for all channels ON/OFF.

command

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

Specifies the continuous trigger initiation mode:

{ON|1} ON

{OFF|0} OFF

Preset Value

1

Related Commands

[INIT:CONT](#) 

Back to [INITiate](#) 

MMEMory

Command	Description	
MMEM:LOAD  ³¹⁶	Save/Recall Analyzer State, Calibration	Recalls the Analyzer state
MMEM:STOR  ³¹⁷		Saves the Analyzer state
MMEM:STOR:FDAT  ³¹⁸	Save Trace Data to CSV File	Saves CSV file
MMEM:STOR:SNP  ³¹⁹	Save S-parameters to Touchstone File	Saves channel data
MMEM:STOR:SNP:FORM  ³²⁰		Data format
MMEM:STOR:SNP:SEP  ³²¹		Separator of touchstone file
MMEM:STOR:SNP:TYPE?  ³²²		Save type query
MMEM:STOR:SNP:TYPE:S1P  ³²³		Sets 1-port file type and port number
MMEM:STOR:SNP:TYPE:S2P  ³²⁴		Sets 2-port file type and ports number

MMEM:LOAD

SCPI Command

MMEMory:LOAD[:STATe] <string>

Description

Recalls the specified Analyzer state file. The file must be saved by the [MMEM:STOR](#)₃₁₇ command.

Note: If the full path of the file is not specified, the \State subdirectory of the application directory will be searched. The Analyzer state file has *.STA extension by default.

no query

Parameter

<string> File name

Back to [MMEMory](#)₃₁₅

MMEM:STOR

SCPI Command

MMEMory:STORe[:STATe] <string>

Description

Saves the Analyzer state into a file.

Note: If the full path of the file is not specified, the \State subdirectory of the application directory will be searched. The state file has *.STA extension by default.

no query

Parameter

<string> File name

Back to [MMEMory](#)  315

MMEM:STOR:FDAT

SCPI Command

MMEMory:STORe:FDATa <string>

Description

Saves the data of one or several traces to a CSV file. The trace number and the file settings can be configured using the [MMEM:STOR:FDAT:XXXX](#)³¹⁵ commands.

Note: If the full path of the file is not specified, the \CSV subdirectory of the application directory will be searched. The file has *.CSV extension by default.

no query

Target

Depending on the MMEM:STOR:FDAT:SCOPE setting, the active trace or all traces of the active channel.

Parameter

<string> File name

Equivalent Softkeys

Save/Recall > Save Trace Data

Back to [MMEMory](#)³¹⁵

MMEM:STOR:SNP

SCPI Command

MMEMory:STORe:SNP[:DATA] <string>

Description

Saves the measured S-parameters of the active channel into a Touchstone file. The file type (1-port to 4-port) is set by the following commands: [MMEM:STOR:SNP:TYPE:S1P](#)³²³, [MMEM:STOR:SNP:TYPE:S2P](#)³²⁴

Note: If the full path of the file is not specified, the \FixtureSim subdirectory of the application directory will be searched. The file has *.SNP extension by default.

no query

Target

Active channel, set by the DISP:WIND:ACT command.

Parameter

<string> File name

Back to [MMEMory](#)³¹⁵

MMEM:STOR:SNP:FORM

SCPI Command

MMEMory:STORe:SNP:FORMat <char>

MMEMory:STORe:SNP:FORMat?

Description

Sets or reads out the data format for the S-parameter saved using the [MMEM:STOR:SNP](#)₃₁₉ command.

command/query

Parameter

<char> Choose from:

DB Logarithmic Magnitude / Angle format

MA Linear Magnitude / Angle format

RI Real part /Imaginary part format

Query Response

{RI|DB|MA}

Preset Value

RI

Back to [MMEMory](#)₃₁₅

MMEM:STOR:SNP:SEP

SCPI Command

MMEMory:STORe:SNP:SEParator <char>

MMEMory:STORe:SNP:SEParator?

Description

Sets or reads out the Touchstone file separator symbol when the S-parameters are saved using the [MMEM:STOR:SNP](#)₃₁₉ command.

command/query

Parameter

<char> Choose from:

TAB Tab symbol (0x09)

SPACe Space symbol (0x20)

Query Response

{TAB|SPAC}

Preset Value

TAB

Back to [MMEMory](#)₃₁₅

MMEM:STOR:SNP:TYPE?

SCPI Command

MMEMory:STORe:SNP:TYPE?

Description

Reads out the type of Touchstone file (S1P, S2P) to be used when saving S-parameters with the [MMEM:STOR:SNP](#)³¹⁹ command.

query only

Query Response

<string>

{S1P|S2P}

Back to [MMEMory](#)³¹⁵

MMEM:STOR:SNP:TYPE:S1P

SCPI Command

MMEMory:STORe:SNP:TYPE:S1P <port>

MMEMory:STORe:SNP:TYPE:S1P?

Description

Sets or reads out the 1-port Touchstone file type (*.S1P) and the port number when saving S-parameters using the [MMEM:STOR:SNP](#)₃₁₉ command.

command/query

Parameter

<port> port number from 1 to 2

Query Response

<numeric>

Preset Value

1

Back to [MMEMory](#)₃₁₅

MMEM:STOR:SNP:TYPE:S2P

SCPI Command

MMEMory:STORe:SNP:TYPE:S2P <port1>,<port2>

MMEMory:STORe:SNP:TYPE:S2P?

Description

Sets or reads out the 2-port Touchstone file type (*.S2P) and the port number when saving S-parameters using the [MMEM:STOR:SNP](#)³¹⁹ command.

command/query

Parameter

<port1> First port number

<port2> Second port number

<port> port number from 1 to 2

Query Response

<numeric1>, <numeric2>

Back to [MMEMory](#)³¹⁵

MMEM:STOR:SNP:TYPE:SNP

SCPI Command

MMEMory:STORe:SNP:TYPE:SNP <port1>, ... <portN>

MMEMory:STORe:SNP:TYPE:SNP?

Description

Sets or reads out the N-port Touchstone file type (*.SNP) and the port number when saving S-parameters using the [MMEM:STOR:SNP](#)³¹⁹ command.

command/query

Parameter

<portN> Port number from 1 to n

<port> number of port

Query Response

<numeric1>, ... <numericN>

Related Section of Operating Manual

Touchstone Data

Related Controls of User Interface

Save/Recall > Save .sNp > Select VNA Ports (select port numbers in the Save .sNp pop-up window)

Back to [MMEMory](#)³¹⁵

OUTP

SCPI Command

OUTPut[:STATe] {OFF|ON|0|1}

OUTPut[:STATe]?

Description

Turns the RF signal output ON/OFF. Measurements cannot be performed when the RF signal output is turned OFF.

command/query

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

Stimulus > Power > RF Out

SENSe

Command	Description	
SENS:AVER  ³³³	Averaging	Averaging ON/OFF
SENS:AVER:CLE  ³³⁴		Restart averaging
SENS:AVER:COUN  ³³⁵		Averaging factor
SENS:BAND  ³³⁶	IFBW	IF bandwidth
SENS:BWID  ³³⁹		IF bandwidth
SENS:CORR:COLL:CLE  ³⁴²		Clears data of calibration standards
SENS:CORR:STAT  ³⁴³		S-parameter error correction state
SENS:SYST:CORR:STAT  ³⁴⁴		System error correction status
SENS:CORR:TYPE?  ³⁴⁴		Information about trace (calibration type, number of ports)
SENS:CORR:COEF  ³⁴⁷	Read/Write Calibration Coefficients	Calibration coefficient data
SENS:CORR:COEF:METH:ERES  ³⁴⁹		Selects one-path two-port method
SENS:CORR:COEF:METH:OPEN  ³⁵⁰		Selects Response Open method

Command	Description	
SENS:CORR:COEF:METH:ROS  ³⁵²		Selects Response Open and Short method
SENS:CORR:COEF:METH:SHOR  ³⁵¹		Selects Response Short method
SENS:CORR:COEF:METH:SOLT1  ³⁵²		Selects full one-port method
SENS:CORR:COEF:METH:SOLT2  ³⁵⁴		Selects full two-port method
SENS:CORR:COEF:METH:THRU  ³⁵⁵		Selects Response Thru method
SENS:CORR:COEF:SAVE  ³⁵⁶		Enables calibration coefficients
SENS:CORR:COLL:CKIT  ³⁵⁷	Calibration Kit Management	calibration kit selection
SENS:CORR:COLL:CKIT:LAB		calibration kit label
SENS:CORR:COLL:CKIT:STAN:ARB	Calibration Standard Definition	Arbitrary impedance (Load)
SENS:CORR:COLL:CKIT:STAN:C0		Capacitance C0 (Open)
SENS:CORR:COLL:CKIT:STAN:C1		Capacitance C1 (Open)
SENS:CORR:COLL:CKIT:STAN:C2		Capacitance C2 (Open)
SENS:CORR:COLL:CKIT:STAN:C3		Capacitance C3 (Open)

Command	Description	
SENS:CORR:COLL:CKIT:STAN:COUN?		Number of standards in the calibration kit
SENS:CORR:COLL:CKIT:STAN:DEL		Offset delay
SENS:CORR:COLL:CKIT:STAN:FMAX		Max frequency
SENS:CORR:COLL:CKIT:STAN:FMIN		Min frequency
SENS:CORR:COLL:CKIT:STAN:LAB		Standard label
SENS:CORR:COLL:CKIT:STAN:LOSS		Offset loss
SENS:CORR:COLL:CKIT:STAN:L0		Inductance L0 (Short)
SENS:CORR:COLL:CKIT:STAN:L1		Inductance L1 (Short)
SENS:CORR:COLL:CKIT:STAN:L2		Inductance L2 (Short)
SENS:CORR:COLL:CKIT:STAN:L3		Inductance L3 (Short)
SENS:CORR:COLL:CKIT:STAN:TYPE		Standard type
SENS:CORR:COLL:CKIT:STAN:Z0		Offset Z0
SENS:CORR:COLL:LOAD 		Load
SENS:CORR:COLL:OPEN 		Open

Command	Description	
SENS:CORR:COLL:SHOR 		Short
SENS:CORR:COLL:THRU 		Thru
SENS:CORR:COLL:METH:ERES 	Calibration Method	One path two-port
SENS:CORR:COLL:METH:OPEN 		Response Open
SENS:CORR:COLL:METH:SHOR 		Response Short
SENS:CORR:COLL:METH:SOLT1 		Full one-port (SOL)
SENS:CORR:COLL:METH:SOLT2 		Full two-port (SOLT)
SENS:CORR:COLL:METH:THRU 		Response Thru
SENS:CORR:COLL:METH:TYPE? 		Calibration method query.
SENS:CORR:COLL:SAVE 	Calibration Completion	Calibration completion
SENS:CORR:IMP 	System Impedance Setting	System Z0
SENS:CORR:IMP:SEL:AUTO 		Auto-select Z0 ON/OFF
SENS:CORR:PORT:IMP 		System Z0 for the specified port
SENS:CORR:TRAN:TIME:FREQ 	Cable Correction	Frequency at which cable loss specified

Command	Description	
SENS:CORR:TRAN:TIME:LOSS 		Cable loss
SENS:CORR:TRAN:TIME:RVEL 		Cable velocity factor
SENS:CORR:TRAN:TIME:STAT 		Cable correction ON/OFF
SENS:PORT:ATT 		Receiver attenuation setting
SENS:FREQ:DATA? 		Stimulus data
SENS:FREQ 	Stimulus Settings	Fixed frequency for a power sweep
SENS:FREQ:CENT 		Center frequency
SENS:FREQ:SPAN 		Span frequency
SENS:FREQ:STAR 		Start power
SENS:FREQ:STOP 		Stop power
SENS:SEGM:DATA 		Segment sweep table
SENS:SWE:CW:TIME 		Sweep Time
SENS:SWE:POIN 		Number of points
SENS:SWE:POIN:TIME 		Point delay

Command	Description	
SENS:SWE:TYPE  ₄₁₂		Sweep type

SENS:AVER

SCPI Command

SENSe<Ch>:AVERage[:STATe] {OFF|ON|0|1}

SENSe<Ch>:AVERage[:STATe]?

Description

Turns the measurement averaging function ON/OFF.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Related Commands

[SENS:AVER:COUN](#)  ₃₃₅

Back to [SENSe](#)  ₃₂₇

SENS:AVER:CLE

SCPI Command

SENSe<Ch>:AVERage:CLEar

Description

Restarts the averaging process when the averaging function is turned on.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Related Commands

[SENS:AVER](#)  333

Back to [SENSe](#)  327

SENS:AVER:COUN

SCPI Command

SENSe<Ch>:AVERage:COUNT <numeric>

SENSe<Ch>:AVERage:COUNT?

Description

Sets or reads out the averaging factor when the averaging function is turned on.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<numeric> the averaging factor from 1 to 999

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

10

Related Commands

[SENS:AVER](#)  ₃₃₃

Back to [SENSe](#)  ₃₂₇

SENS:BAND

SCPI Command

SENSe<Ch>:BANDwidth[:RESolution] <frequency>

SENSe<Ch>:BANDwidth[:RESolution]?

Description

Sets or reads out the IF bandwidth.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<frequency> the IF bandwidth value

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

10 kHz

Resolution

In steps of 1, 1.5, 2, 3, 5, 7

Related Commands

[SENS:BWID](#) — similar command

Back to [SENSe](#)

SENS:BWID

SCPI Command

SENSe<Ch>:BWIDth[:RESolution] <frequency>

SENSe<Ch>:BWIDth[:RESolution]?

Description

Sets or reads out the IF bandwidth.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<frequency> the IF bandwidth value

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

10 kHz

Resolution

In steps of 1, 1.5, 2, 3, 5, 7

Related Commands

[SENS:BAND](#) — similar command

Back to [SENSe](#)

SENS:CORR:COLL:CLE

SCPI Command

SENSe<Ch>:CORRection:COLLect:CLEar

Description

Clears the measurement data of the calibration standards.

no query

Target

Channel <Ch>,

<Ch>={ [1] | 2 | ... 16 }

Back to [SENSe](#)  327

SENS:CORR:STAT

SCPI Command

SENSe<Ch>:CORRection:STATe {OFF|ON|0|1}

SENSe<Ch>:CORRection:STATe?

Description

Turns the S-parameter error correction ON/OFF.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [SENSe](#) 

SENS:SYST:CORR:STAT

SCPI Command

SENSe<Ch>:SYSTem:CORRection:STATe {OFF|ON|0|1}

SENSe<Ch>:SYSTem:CORRection:STATe?

Description

Turns the system error correction ON/OFF.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [SENSe](#)  327

SENS:CORR:TYPE?

SCPI Command

SENSe<Ch>:CORRection:TYPE<Tr>?

Description

Reads the information about the calibration type and the number of ports to which the calibration is applied for the specified trace. The response format is as follows.

query only

Target

Trace <Tr> of channel <Ch> ,

<Tr>={[1]|2|...16}

<Ch>={[1]|2|...16}

Query Response

<Type>,<Port1>...,<PortN>

Where <Type> is:

RESPO	Response (Open)
RESPS	Response (Short)
RESPT	Response (Thru)
SOLT1	Full one-port calibration

SOLT2	Full two-port calibration
1PATH	One path two-port calibration
NONE	Not defined

Back to [SENSe](#)

SENS:CORR:COEF

SCPI Command

SENSe<Ch>:CORRection:COEFFicient[:DATA] <char>,<rcvport>,<srcport>,<numeric list>

SENSe<Ch>:CORRection:COEFFicient[:DATA]? <char>,<rcvport>,<srcport>

Description

Writes or reads out the calibration coefficient data array.

The array size is 2N, where N is the number of measurement points. For the n–th point, where n from 1 to N:

<numeric 2n–1> real part of the calibration coefficients;

<numeric 2n> imaginary part of the calibration coefficients.

Note: The written calibration coefficients become effective only after the [SENS:CORR:COEF:SAVE](#)  command is executed.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<char> Specifies the Error term:

ER Reflection tracking

ED Directivity

ES Source match

ET Transmission tracking

EX Isolation

EL Load match

<rcvport> the number of the receiver port from 1 to 2

<srcport> the number of the source port from 1 to 2

<numeric list> the calibration coefficient array

When ES, ER, or ED is used, the numbers of the ports <rcvport> and <srcport> must be the same. When EL, ET, or EX is used, the numbers of the ports <rcvport> and <srcport> must be different.

Query Response

<numeric 1>, <numeric 2>, ...<numeric 2N>

Related Commands

SENS:CORR:COEF:SAVE

Back to [SENSe](#)

SENS:CORR:COEF:METH:ERES

SCPI Command

SENSe<Ch>:CORRection:COEFFicient:METHod:ERESponse <rcvport>,<srcport>

Description

Selects the ports and sets the 1–path 2–port calibration type when the written calibration coefficients are made effective by the [SENS:CORR:COEF:SAVE](#)³⁵⁶ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<rcvport> The number of the receiver port from 1 to 2

<srcport> The number of the source port from 1 to 2

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

[SENS:CORR:COEF:SAVE](#)³⁵⁶

Back to [SENSe](#)³²⁷

SENS:CORR:COEF:METH:OPEN

SCPI Command

SENSe<Ch>:CORRection:COEFFicient:METHod[:RESPonse]:OPEN <port>

Description

Selects the port and sets the response calibration (Open) type when the written calibration coefficients are made effective by the [SENS:CORR:COEF:SAVE](#)³⁵⁶ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Related Commands

[SENS:CORR:COEF:SAVE](#)³⁵⁶

Back to [SENSe](#)³²⁷

SENS:CORR:COEF:METH:SHOR

SCPI Command

SENSe<Ch>:CORRection:COEFFicient:METHod[:RESPonse]:SHORT <port>

Description

Selects the port and sets the response calibration (Short) type when the written calibration coefficients are made effective by the [SENS:CORR:COEF:SAVE](#)³⁵⁶ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 2

Related Commands

[SENS:CORR:COEF:SAVE](#)³⁵⁶

Back to [SENSe](#)³²⁷

SENS:CORR:COEF:METH:ROS

SCPI Command

SENSe<Ch>:CORRection:COEFFicient:METHod[:RESPonse]:ROS <port>

Description

Selects the port and sets the response calibration (Open&Short) type when the written calibration coefficients are made effective by the [SENS:CORR:COEF:SAVE](#)³⁵⁶ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Related Commands

[SENS:CORR:COEF:SAVE](#)³⁵⁶

Back to [SENSe](#)³²⁷

SENS:CORR:COEF:METH:SOLT1

SCPI Command

SENSe<Ch>:CORRection:COEFFicient:METHod:SOLT1 <port>

Description

Selects the port and sets the full one–port calibration type when the written calibration coefficients are made effective by the [SENS:CORR:COEF:SAVE](#)³⁵⁶ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Related Commands

[SENS:CORR:COEF:SAVE](#)³⁵⁶

Back to [SENSe](#)³²⁷

SENS:CORR:COEF:METH:SOLT2

SCPI Command

SENSe<Ch>:CORRection:COEFFicient:METHod:SOLT2 <port1>,<port2>

Description

Selects the ports and sets the full two-port calibration type when the written calibration coefficients are made effective by the [SENS:CORR:COEF:SAVE](#)³⁵⁶ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port1> The first port number from 1 to 2

<port2> The second port number from 1 to 2

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

[SENS:CORR:COEF:SAVE](#)³⁵⁶

Back to [SENSe](#)³²⁷

SENS:CORR:COEF:METH:THRU

SCPI Command

SENSe<Ch>:CORRection:COEFFicient:METHod[:RESPonse]:THRU <rcvport>,
<srcport>

Description

Selects the ports and sets the response calibration (Thru) type when the written calibration coefficients are made effective by the [SENS:CORR:COEF:SAVE](#) 356 command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<rcvport> The number of the receiver port from 1 to 2

<srcport> The number of the source port from 1 to 2

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

[SENS:CORR:COEF:SAVE](#) 356

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SENS:CORR:COEF:SAVE

SCPI Command

SENSe<Ch>:CORRection:COEFficient:SAVE

Description

Enables the written calibration coefficients depending on the selected calibration type. On completion of the command, the error correction automatically turns ON.

Executing this command before all necessary calibration coefficients have been written will result in an error and the command will be ignored.

no query

Target

Channel <Ch>,

<Ch>={ [1]|2|...16 }

Related Commands

Calibration type selection:

[SENS:CORR:COEF:METH:ERES](#)  349

[SENS:CORR:COEF:METH:OPEN](#)  350

[SENS:CORR:COEF:METH:SHOR](#)  351

[SENS:CORR:COEF:METH:THRU](#)  355

[SENS:CORR:COEF:METH:SOLT1](#)  352

[SENS:CORR:COEF:METH:SOLT2](#)  354

Calibration coefficient writing:

[SENS:CORR:COEF](#)  347

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SENS:CORR:COLL:CKIT

SCPI Command

SENSe:CORRection:COLLect:CKIT[:SELection] <numeric>

SENSe:CORRection:COLLect:CKIT[:SELection]?

Description

Sets or reads out the number of the selected calibration kit in the table of calibration kits. The selected calibration kit is used in the subsequent calibration and is used for editing by the commands [SENS:CORR:COLL:CKIT:XXXX](#)³²⁸.

command/query

Parameter

<numeric> the number of the calibration kit from 1 to 64

Query Response

<numeric>

Preset Value

1

Back to [SENSe](#)³²⁸

SENS:CORR:COLL:CKIT:LAB

SCPI Command

SENSe:CORRection:COLLect:CKIT:LABel <string>

SENSe:CORRection:COLLect:CKIT:LABel?

Description

Sets or reads out the calibration kit label.

command/query

Target

Selected calibration kit

Parameter

<string>, up to 254 characters

Query Response

<string>

Back to [SENSe](#)  328

SENS:CORR:COLL:CKIT:STAN:ARB

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:ARBitrary <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:ARBitrary?

Description

Sets or reads out the value of the arbitrary impedance for the load standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the arbitrary impedance value from $-1\text{E}18$ to $1\text{E}18$

Unit

Ω (Ohm)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

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SENS:CORR:COLL:CKIT:STAN:C0

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:C0 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:C0?

Description

Sets or reads out the C0 value for the open calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the arbitrary impedance value from $-1E18$ to $1E18$

Unit

$1E-15$ F (Farad)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:C1

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:C1 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:C1?

Description

Sets or reads out the C1 value for the open calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the arbitrary impedance value from $-1E18$ to $1E18$

Unit

$1E-27$ F/Hz (Farad/Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:C2

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:C2 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:C2?

Description

Sets or reads out the C2 value for the open calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the arbitrary impedance value from $-1E18$ to $1E18$

Unit

$1E-36$ F/Hz² (Farad/Hertz²)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:C3

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:C3 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:C3?

Description

Sets or reads out the C3 value for the open calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the arbitrary impedance value from $-1E18$ to $1E18$

Unit

$1E-45$ F/Hz³ (Farad/Hertz³)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:COUN?

SCPI Command

SENSe:CORRection:COLLect:CKIT:STANdard:COUNT?

Description

Reads out the count of standards in the selected calibration kit.

query only

Target

Query Response

<number>

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SENS:CORR:COLL:CKIT:STAN:DEL

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:DELay <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:Delay?

Description

Sets or reads out the offset delay value for the calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the offset delay value form $-1\text{E}18$ to $1\text{E}18$

Unit

s (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:FMAX

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:FMAXimum <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:FMAXimum?

Description

Sets or reads out the maximum frequency limit of the calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the maximum frequency limit form 0 to 1E14

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:FMIN

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:FMINimum <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:FMINimum?

Description

Sets or reads out the minimum frequency limit of the calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the minimum frequency limit form 0 to 1E14

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:LAB

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:LABel <string>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:LABel?

Description

Sets or reads out the label for the calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<string>, up to 254 characters

Query Response

<string>

Back to [SENSe](#) 

SENS:CORR:COLL:CKIT:STAN:LOSS

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:LOSS <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:LOSS?

Description

Sets or reads out the offset loss value for the calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the offset loss value from $-1\text{E}18$ to $1\text{E}18$

Unit

Ω/s (Ohm/second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

Back to [SENSe](#) 

SENS:CORR:COLL:CKIT:STAN:L0

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:L0 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:L0?

Description

Sets or reads out the L0 value for the short calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>=[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the L0 value from $-1\text{E}18$ to $1\text{E}18$

Unit

$1\text{E}-12$ H (Henry)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:L1

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:L1 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:L1?

Description

Sets or reads out the L1 value for the short calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the L0 value from $-1\text{E}18$ to $1\text{E}18$

Unit

$1\text{E}-24$ H/Hz (Henry/Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:L2

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:L2 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:L2?

Description

Sets or reads out the L2 value for the short calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the L2 value from $-1\text{E}18$ to $1\text{E}18$

Unit

$1\text{E}-33\text{ H/Hz}^2$ (Henry/Hertz²)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:L3

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:L3 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:L3?

Description

Sets or reads out the L3 value for the short calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the L3 value from $-1\text{E}18$ to $1\text{E}18$

Unit

$1\text{E}-42\text{ H/Hz}^3$ (Henry/Hertz³)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

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SENS:CORR:COLL:CKIT:STAN:TYPE**SCPI Command**

SENSe:CORRection:COLLect:CKIT:STAN<Std>:TYPE <char>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:TYPE?

Description

Sets or reads out the type of calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<char> Specifies the type of calibration standard:

OPEN	Open
SHORT	Short
LOAD	Load
THRU	Thru
UTHR	Unknown Thru
SLID	Sliding Load
DATA	Data Based
NONE	Not defined

Query Response

{OPEN|SHOR|LOAD|THRU|UTHR|SLID|DATA|NONE}

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SENS:CORR:COLL:CKIT:STAN:Z0

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:Z0 <numeric>

SENSe:CORRection:COLLect:CKIT:STAN<Std>:Z0?

Description

Sets or reads out the offset Z0 value for the calibration standard.

command/query

Target

Standard <Std> of the calibration kit,

<Std>={[1]|2|...N}, where N — the number of the standards in the calibration kit

Parameter

<numeric> the offset Z0 value from $-1\text{E}18$ to $1\text{E}18$

Unit

Ω (Ohm)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

50 or 75 Ω , depending on the selected calibration kit

Back to [SENSe](#) 

SENS:CORR:COLL:LOAD

SCPI Command

SENSe<Ch>:CORRection:COLLEct[:ACQuire]:LOAD <port>

Description

Measures the calibration data of the load standard for the specified port.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Back to [SENSe](#) 

SENS:CORR:COLL:OPEN

SCPI Command

SENSe<Ch>:CORRection:COLLect[:ACQuire]:OPEN <port>

Description

Measures the calibration data of the open standard for the specified port.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Back to [SENSe](#) 

SENS:CORR:COLL:SHOR

SCPI Command

SENSe<Ch>:CORRection:COLLect[:ACQuire]:SHORT <port>

Description

Measures the calibration data of the short standard for the specified port.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Back to [SENSe](#) 

SENS:CORR:COLL:THRU

SCPI Command

SENSe<Ch>:CORRection:COLLect[:ACQuire]:THRU <rcvport>,<srcport>

Description

Measures the calibration data of the thru standard between the receiver port <rcvport> and the source port <srcport>.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<rcvport> The number of the receiver port from 1 to 2

<srcport> The number of the source port from 1 to 2

Out of Range

If the same port numbers are specified, an error occurs.

Back to [SENSe](#) 

SENS:CORR:COLL:METH:ERES

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:ERESponse <rcvport>,<srcport>

Description

Selects the ports and sets the one path 2–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the [SENS:CORR:COLL:SAVE](#)³⁸⁸ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<rcvport> The number of the receiver port from 1 to 2

<srcport> The number of the source port from 1 to 2

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

[SENS:CORR:COLL:SAVE](#)³⁸⁸

Back to [SENSe](#)³³⁰

SENS:CORR:COLL:METH:OPEN

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod[:RESPonse]:OPEN <port>

Description

Selects the port and sets the response calibration (Open) type for the calculation of the calibration coefficients on completion of the calibration executed by the [SENS:CORR:COLL:SAVE](#)³⁸⁸ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Related Commands

[SENS:CORR:COLL:SAVE](#)³⁸⁸

Back to [SENSe](#)³³⁰

SENS:CORR:COLL:METH:SHOR

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod[:RESPonse]:SHORT <port>

Description

Selects the port and sets the response calibration (Short) type for the calculation of the calibration coefficients on completion of the calibration executed by the [SENS:CORR:COLL:SAVE](#)³⁸⁸ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Related Commands

[SENS:CORR:COLL:SAVE](#)³⁸⁸

Back to [SENSe](#)³³⁰

SENS:CORR:COLL:METH:SOLT1

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:SOLT1 <port>

Description

Selects the port and sets the full one-port (SOL) calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the [SENS:CORR:COLL:SAVE](#)³⁸⁸ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port> The number of the port from 1 to 2

Related Commands

[SENS:CORR:COLL:SAVE](#)³⁸⁸

Back to [SENSe](#)³³⁰

SENS:CORR:COLL:METH:SOLT2

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:SOLT2 <port1>,<port2>

Description

Selects the port and sets the full two-port (SOLT) calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the [SENS:CORR:COLL:SAVE](#)³⁸⁸ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<port1> The first port number from 1 to 2

<port2> The second port number from 1 to 2

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

[SENS:CORR:COLL:SAVE](#)³⁸⁸

Back to [SENSe](#)³³⁰

SENS:CORR:COLL:METH:THRU

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod[:RESPonse]:THRU <rcvport>,<srcport>

Description

Selects the ports and sets the response calibration (Thru) type for the calculation of the calibration coefficients on completion of the calibration executed by the [SENS:CORR:COLL:SAVE](#)³⁸⁸ command.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<rcvport> The number of the receiver port from 1 to 2

<srcport> The number of the source port from 1 to 2

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

[SENS:CORR:COLL:SAVE](#)³⁸⁸

Back to [SENSe](#)³³⁰

SENS:CORR:COLL:METH:TYPE?

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:TYPE?

Description

Reads out the calibration method selected for the calculation of the calibration coefficients on completion of the calibration executed by the [SENS:CORR:COLL:SAVE](#)³⁸⁸ command.

query only

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Query Response

RESPO	Response (Open)
RESPS	Response (Short)
RESPT	Response (Thru)
SOLT1	Full one-port calibration
SOLT2	Full two-port calibration
1PATH	One path two-port calibration
NONE	Not defined

Back to [SENSe](#)³³⁰

SENS:CORR:COLL:SAVE

SCPI Command

SENSe<Ch>:CORRection:COLLect:SAVE

Description

Calculates the calibration coefficients from the calibration standards measurements depending on the selected calibration type. The calibration type is selected by one of commands [SENS:CORR:COLL:METH:XXXX](#)^[330].

On completion of the command, all the calibration standards measurements are cleared, and the error correction automatically turns ON.

At the attempt to execute this command before all the needed standards are measured, an error occurs, and the command is ignored.

no query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Related Commands

Calibration type selection:

[SENS:CORR:COLL:METH:XXXX](#)^[330]

Calibration standards measurement:

[SENS:CORR:COLL:LOAD](#)^[377]

[SENS:CORR:COLL:OPEN](#)^[378]

[SENS:CORR:COLL:SHOR](#)^[379]

[SENS:CORR:COLL:THRU](#)^[380]

Back to [SENSe](#)^[330]

SENS:CORR:COLL:SUBC

SCPI Command

SENSe<Ch>:CORRection:COLLect[:ACQuire]:SUBClass <numeric>

SENSe<Ch>:CORRection:COLLect[:ACQuire]:SUBClass?

Description

Selects the subclass number of calibration standard used for measurement by the subsequent command [SENS:CORR:COLL:XXXX](#)³²⁷. If the calibration kit contains several calibration standards of the same type, say SHORTs, this allows select the particular SHORT.

command/query

Target

Calibration kit, selected for channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<numeric> the subclass number from 1 to 8

Query Response

<numeric>

Preset Value

1

Back to [SENSe](#)³²⁷

SENS:CORR:IMP

SCPI Command

SENSe:CORRection:IMPedance[:INPut][:MAGNitude] <numeric>

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

Description

Sets or reads out the system impedance Z0 of all analyzer ports.

command/query

Parameter

<numeric> the Z0 value from 0.001 to 1000.

Unit

Ω (Ohm)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

50 Ω

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SENS:CORR:PORT:IMP

SCPI Command

SENSe:CORRection:PORT<Pt>:IMPedance[:INPut][:MAGNitude] <numeric>

SENSe:CORRection:PORT<Pt>:IMPedance[:INPut][:MAGNitude]?

Description

Sets or reads out the impedance Z0 of port <Pt>

command/query

Target

Port <Pt>,

<Pt>={[1]|2|}

Parameter

<numeric> the Z0 value from 0.001 to 1000

Unit

Ω (Ohm)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

50 Ω

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SENS:CORR:IMP:SEL:AUTO

SCPI Command

SENSe:CORRection:IMPedance[:INPut]:SELection:AUTO {OFF|ON|0|1}

SENSe:CORRection:IMPedance[:INPut]:SELection:AUTO?

Description

Turns the auto select Z0 function ON/OFF. When enabled the function sets the port impedance Z0 to the corresponding value of measuring calibration standard.

command/query

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [SENSe](#)  330

SENS:CORR:TRAN:TIME:FREQ

SCPI Command

SENSe<Ch>:CORRection:TRANsform:TIME:FREQuency <frequency>

SENSe<Ch>:CORRection:TRANsform:TIME:FREQuency?

Description

Sets or reads out the frequency value at which the cable loss is specified for the cable correction function when the time domain transformation function is turned on.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<frequency> the frequency value.

Unit

Hz (Hertz)

Query Response

<numeric>

Preset Value

1 GHz

Back to [SENSe](#)  330

SENS:CORR:TRAN:TIME:LOSS

SCPI Command

SENSe<Ch>:CORRection:TRANsform:TIME:LOSS <numeric>

SENSe<Ch>:CORRection:TRANsform:TIME:LOSS?

Description

Sets or reads out the cable loss value for the cable correction function when the time domain transformation function is turned ON.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<numeric> the cable loss value

Unit

dB/m (decibell / meter)

Query Response

<numeric>

Preset Value

0 dB/m

Back to [SENSe](#)  330

SENS:CORR:TRAN:TIME:RVEL

SCPI Command

SENSe<Ch>:CORRection:TRANsform:TIME:RVELocity <numeric>

SENSe<Ch>:CORRection:TRANsform:TIME:RVELocity?

Description

Sets or reads out the cable relative wave speed velocity for the cable correction function, when the time domain transformation function is turned ON.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<numeric> the cable velocity factor

Query Response

<numeric>

Preset Value

1.0

Back to [SENSe](#) 

SENS:CORR:TRAN:TIME:STAT

SCPI Command

SENSe<Ch>:CORRection:TRANsform:TIME:STATe {OFF|ON|0|1}

SENSe<Ch>:CORRection:TRANsform:TIME:STATe?

Description

Turns the cable correction ON/OFF when the time domain transformation function is turned ON.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Back to [SENSe](#)  330

SENS:FREQ:DATA?

SCPI Command

SENSe<Ch>:FREQuency:DATA?

Description

Reads out the frequency array of the measurement points.

The array size is N, where N is the number of measurement points.

For the n–th point, where n from 1 to N:

<numeric n> the frequency value at the n–th measurement point
query only

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Query Response

<numeric 1>, <numeric 2>, ...<numeric N>

Back to [SENSe](#)₃₂₇

SENS:FREQ

SCPI Command

SENSe<Ch>:FREQuency[:CW] <frequency>

SENSe<Ch>:FREQuency[:FIXed] <frequency>

SENSe<Ch>:FREQuency[:CW]?

SENSe<Ch>:FREQuency[:FIXed]?

Description

Sets or reads out the fixed frequency value when the power sweep type is selected.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<frequency> the frequency value within the frequency limits of the analyzer.

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

The minimum frequency limit of the analyzer.

Back to [SENSe](#)

SENS:FREQ:CENT

SCPI Command

SENSe<Ch>:FREQuency:CENTer <frequency>

SENSe<Ch>:FREQuency:CENTer?

Description

Sets or reads out the stimulus center value of the sweep range for linear or logarithmic sweep type.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<frequency> the stimulus center value within the frequency limits of the analyzer.

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

The center frequency of the analyzer

Back to [SENSe](#) 

SENS:FREQ:SPAN

SCPI Command

SENSe<Ch>:FREQuency:SPAN <frequency>

SENSe<Ch>:FREQuency:SPAN?

Description

Sets or reads out the stimulus span value of the sweep range for linear or logarithmic sweep type.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<frequency> the stimulus span value from 0 to the maximum frequency span of the analyzer.

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

The maximum frequency span of the analyzer

Back to [SENSe](#) 

SENS:FREQ:STAR

SCPI Command

SENSe<Ch>:FREQuency:STARt <frequency>

SENSe<Ch>:FREQuency:STARt?

Description

Sets or reads out the stimulus start value of the sweep range for linear or logarithmic sweep type.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<frequency> the stimulus start value within the frequency limits of the analyzer.

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

The minimum frequency span of the analyzer

Back to [SENSe](#) 

SENS:FREQ:STOP

SCPI Command

SENSe<Ch>:FREQuency:STOP <frequency>

SENSe<Ch>:FREQuency:STOP?

Description

Sets or reads out the stimulus stop value of the sweep range for linear or logarithmic sweep type.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<frequency> the stimulus stop value within the frequency limits of the analyzer.

Unit

Hz (Hertz)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

The maximum frequency limit of the analyzer.

Back to [SENSe](#) 

SENS:PORT:ATT

SCPI Command

SENSe<Ch>:PORT<Port>:ATTenuation <Receiver>,<Value>

SENSe<Ch>:PORT<Port>:ATTenuation? <Receiver>

Description

Sets or reads out a specific receiver's attenuation setting. Before changing the receiver's attenuation setting, make sure the signal level into the receiver is low enough to avoid compression and damage to VNA receiver.

command/query

Target

Channel <Ch>

Port <Port>

Parameter

<Receiver> the receiver name, {Reference, Test} or {R, T}

<Value> the attenuation value

Unit

dB

Query Response

<numeric>

Related Commands

[SYSTem:CAPability:ATTenuation?](#) 

Back to [SENSe](#) 

SENS:SEGM:DATA

SCPI Command

SENSe<Ch>:SEGMent:DATA <numeric list>

SENSe<Ch>:SEGMent:DATA?

Description

Sets or reads out the array of the segment sweep table.

The array has the following format:

```
{<Buf>, <Flag1>, <Flag2>, <Flag3>, <Flag4>, <Flag5>, <N>,
<Start 1>, <Stop 1>, <NOP 1> [,<IFBW 1>] [,<Pow 1>] [,<Del 1>] [,<Time 1>],
<Start 2>, <Stop 2>, <NOP 2> [,<IFBW 2>] [,<Pow 2>] [,<Del 2>] [,<Time 2>],
...
<StartN>, <StopN>, <NOP N> [,<IFBW N>] [,<Pow N>] [,<Del N>] [,<TimeN>]}
```

<Buf> : Always 5,
 <Flag1> : Stimulus start setting (0 — start/stop, 1 — center/span),
 <Flag2> : Setting of the <IFBW> field (0 — disabled, 1 — enabled),
 <Flag3> : Setting of the <Pow> field (0 — disabled, 1 — enabled),
 <Flag4> : Setting of the field (0 — disabled, 1 — enabled),
 <Flag5> : Setting of the <Time> field (0 — disabled, 1 — enabled),
 <N> : Number of segments,
 <Start n> : Start value of the n-th segment,
 <Stop n> : Stop value of the n-th segment,
 <NOP n> : Number of points of the n-th segment,
 <IFBW n> : IF bandwidth of the n-th segment (if enabled),
 <Pow n> : Power of the n-th segment (if enabled),
 <Del n> : Measurement delay of the n-th segment (if enabled),
 <Time n> : Reserved for future use (if enabled)

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Query Response

<numeric 1>,<numeric 2>,...<numeric 7+M×N>

Where:

N – the number of the segments,

M – depends on the values of the flags:

$M = 3 + \text{<Flag2>} + \text{<Flag3>} + \text{<Flag4>} + \text{<Flag5>}$

Back to [SENSe](#) 

SENS:SWE:CW:TIME

SCPI Command

SENSe<Ch>:SWEep:CW:TIME <numeric>

SENSe<Ch>:SWEep:CW:TIME?

Description

Sets or reads out the sweep time value when the CW time mode is ON (the span is set to zero).

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<numeric> the sweep time value.

Unit

sec (second)

Query Response

<numeric>

Back to [SENSe](#) 

SENS:SWE:POIN

SCPI Command

SENSe<Ch>:SWEep:POINts <numeric>

SENSe<Ch>:SWEep:POINts?

Description

Sets or reads out the number of measurement points.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<numeric> the number of measurement points from 2 to maximum limit of the analyzer.

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

201

Back to [SENSe](#) 

SENS:SWE:POIN:TIME

SCPI Command

SENSe<Ch>:SWEep:POINt:TIME <time>

SENSe<Ch>:SWEep:POINt:TIME?

Description

Sets or reads out the delay before measurement in each measurement point.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<time> the measurement delay value from 0 to 0.3 sec.

Unit

sec (second)

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0

Back to [SENSe](#) 

SENS:SWE:TYPE

SCPI Command

SENSe<Ch>:SWEep:TYPE <char>

SENSe<Ch>:SWEep:TYPE?

Description

Sets or reads out the sweep type.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<char> Specifies the sweep type:

LINear	Linear frequency sweep
LOGarithmic	Logarithmic frequency sweep
SEGMENT	Segment frequency sweep
POWer	Power sweep

Query Response

{LIN|LOG|SEGM|POW}

Preset Value

LIN

Back to [SENSe](#) 

SERVice

Command	Description		
SERV:CHAN:ACT?  ⁴¹⁵	Channel and Trace Settings	Active channel number (read)	
SERV:CHAN:TRAC:ACT?  ⁴¹⁵		Active trace number (read)	
SERV:PORT:COUN?  ⁴¹⁷		Ports number	
SERV:SWE:FREQ:MAX?  ⁴¹⁸		Upper limit of frequency	
SERV:SWE:FREQ:MIN?  ⁴¹⁹		Lower limit of frequency	
SERV:SWE:POIN?  ⁴²⁰		Maximum number of points	
SERV:SWE:POW:MAX?  ⁴²¹		Upper limit of source power	
SERV:SWE:POW:MIN?  ⁴²²		Lower limit of source power	
SERV:CHAN:TRAC:MARK:ACT?  ⁴²²	Marker Properties	Gets active marker	

SERV:CHAN:ACT?

SCPI Command

SERVice:CHANnel:ACTive?

Description

Reads out the active channel number.

query only

Query Response

<numeric> from 1 to 16

Related Commands

[DISP:WIND:ACT](#) 

Back to [SERVice](#) 

SERV:CHAN:TRAC:ACT?

SCPI Command

SERVice:CHANnel<Ch>:TRACe:ACTive?

Description

Reads out the active trace number of the channel.

query only

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Query Response

<numeric> from 1 to 16

Back to [SERVice](#) 

SERV:PORT:COUN?

SCPI Command

SERVice:PORT:COUNt?

Description

Reads out the number of analyzer ports.

query only

Query Response

<numeric>

Back to [SERVice](#)



16

SERV:SWE:FREQ:MAX?

SCPI Command

SERVice:SWEep:FREQuency:MAXimum?

Description

Reads out the upper limit of the analyzer measurement frequency.

query only

Query Response

<numeric>

Unit

Hz (Hertz)

Back to [SERVice](#) 

SERV:SWE:FREQ:MIN?

SCPI Command

SERVice:SWEep:FREQuency:MINimum?

Description

Reads out the lower limit of the analyzer measurement frequency.

query only

Query Response

<numeric>

Unit

Hz (Hertz)

Back to [SERVice](#) 

SERV:SWE:POIN?

SCPI Command

SERVice:SWEep:POINts?

Description

Reads the maximum number of analyzer measurement points.

query only

Query Response

<numeric>

Back to [SERVice](#)



16

SERV:SWE:POW:MAX?

SCPI Command

SERVice:SWEep:POWer:MAXimum?

Description

Reads out the upper limit of the source power.

query only

Query Response

<numeric>

Unit

dBm (decibels above 1 milliwatt)

Back to [SERVice](#) 

SERV:SWE:POW:MIN?

SCPI Command

SERVice:SWEep:POWer:MINimum?

Description

Reads out the lower limit of the source power.

query only

Query Response

<numeric>

Unit

dBm (decibels above 1 milliwatt)

Back to [SERVice](#) 

SERV:CHAN:TRAC:MARK:ACT?

SCPI Command

SERVice:CHANnel<Ch>:TRACe<Tr>:MARKer:ACTive?

Description

Gets the active marker number of the specified trace of the specified channel.

query only

Target

Trace <Tr> of channel <Ch> ,

<Ch> = {[1]|2|...16}

<Tr> = {[1]|2|...16}

Query Response

<numeric>

Related Commands

[CALC:MARK:ACT](#)  152

Back to [SERVice](#)  16

SOURce

Command	Description	
SOUR:POW  ₄₂₆	Stimulus Settings	Power level for a frequency sweep
SOUR:POW:CEN  ₄₂₉		Center power
SOUR:POW:SPAN  ₄₃₁		Span power
SOUR:POW:STAR  ₄₃₃		Start power
SOUR:POW:STOP  ₄₃₅		Stop frequency

SOUR:POW

SCPI Command

SOURce<Ch>:POWer[:LEVel][:IMMediate][:AMPLitude] <power>

SOURce<Ch>:POWer[:LEVel][:IMMediate][:AMPLitude]?

Description

Sets or reads out the power level for the frequency sweep type.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<power> the power level within the power limits of the analyzer.

Unit

dBm (decibels above 1 milliwatt)

Resolution

0.05 dBm

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

0 dBm

Back to [SOURce](#) 

SOUR:POW:CEN

SCPI Command

SOURce<Ch>:POWer:CENTer <power>

SOURce<Ch>:POWer:CENTer?

Description

Sets or reads out the center value of the power sweep type.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<power> the power level within the power limits of the analyzer.

Unit

dBm (decibels above 1 milliwatt)

Resolution

0.05 dBm

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

Depends on the Analyzer

Back to [SOURce](#)

SOUR:POW:SPAN

SCPI Command

SOURce<Ch>:POWer:SPAN <power>

SOURce<Ch>:POWer:SPAN?

Description

Sets or reads out the power span when the power sweep type is active.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<power> the power sweep span value from 0 to maximum limit of the analyzer

Unit

dBm (decibels above 1 milliwatt)

Resolution

0.05 dBm

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

Depends on the analyzer

Back to [SOURce](#)

SOUR:POW:STAR

SCPI Command

SOURce<Ch>:POWer:STARt <power>

SOURce<Ch>:POWer:STARt?

Description

Sets or reads out the power sweep start value when the power sweep type is active.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<power> the power sweep start value within the power limits of the analyzer

Unit

dBm (decibels above 1 milliwatt)

Resolution

0.05 dBm

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

Depends on the analyzer

Back to [SOURce](#)

SOUR:POW:STOP

SCPI Command

SOURce<Ch>:POWer:STOP <power>

SOURce<Ch>:POWer:STOP?

Description

Sets or reads out the power sweep stop value when the power sweep type is active.

command/query

Target

Channel <Ch>,

<Ch>={[1]|2|...16}

Parameter

<power> the power sweep stop value within the power limits of the analyzer

Unit

dBm (decibels above 1 milliwatt)

Resolution

0.05 dBm

Out of Range

Sets the value of the limit, which is closer to the specified value.

Query Response

<numeric>

Preset Value

Depends on the analyzer

Back to [SOURce](#)

SYSTem

Command	Description	
SYST:CORR  ⁴⁴²		System correction ON/OFF
SYST:READ?  ⁴⁴⁷		Analyzer readiness status
SYST:TIME  ⁴⁵²		Current time
SYST:CAP:ATT  ⁴³⁹	Analyzer Capabilities	Receiver attenuation
SYST:CAP:IFBW:MAX?  ⁴⁴⁰		Upper limit of IFBW
SYST:CAP:IFBW:MIN?  ⁴⁴¹		Lower limit of IFBW
SYST:ERR?  ⁴⁴³	Status System	Reads the error message queue
SYST:HIDE  ⁴⁴⁴	Interface Settings	Minimizes the Analyzer window
SYST:LOC  ⁴⁴⁵		Sets the local mode
SYST:REM  ⁴⁴⁸		Sets the remote mode
SYST:RWL  ⁴⁴⁹		Sets the remote mode with lock
SYST:SHOW  ⁴⁵⁰		Restores the Analyzer window
SYST:PRES  ⁴⁴⁶	Presets	Reset to default settings

Command	Description	
SYST:TEMP:SENS?	Analyzer Parameters	Reads the Analyzer temperature
SYST:TIME		Current time
SYST:UNIT:DIST		Distance units
SYST:UNIT:TEMP		Temperature units

SYST:CAP:ATT

SCPI Command

SYSTem:CAPability:ATTenuation?

Description

Reads out the receiver attenuation setting capability of the VNA.

query only

Query Response

comma-separated values in the format of
<count>,<port>,<receiver>,<attCount>,<att1>,<att2>,...

<count> - total number of receivers whose attenuation value can be adjusted

<port> - port number

<receiver> - receiver type: 0 = Test receiver, 1 = Reference receiver

<attCount> - number of available attenuation values for this receiver on this port

<att1>, <att2>... - available attenuation values in dB

Example Response

"2,1,0,4,0,6,12,18,2,1,3,0,10,20"

means there is a total of 2 receivers whose attenuation value can be adjusted on this VNA, port 1's test receiver has 4 available attenuation values which are 0 dB, 6 dB, 12 dB, 18 dB. Port 2's reference receiver has 3 available attenuation values which are 0 dB, 10 dB, 20 dB

Related Commands

[SENSe<Ch>:PORT<Port>:ATTenuation <Receiver>,<Value>](#) 

Back to [SYSTem](#) 

SYST:CAP:IFBW:MAX?

SCPI Command

SYSTem:CAPability:IFBW:MAXimum?

Description

Reads out the upper limit of the IFBW.

query only

Query Response

<numeric>

Unit

Hz (Hertz)

Back to [SYSTem](#)⁴³⁷

SYST:CAP:IFBW:MIN?

SCPI Command

SYSTem:CAPability:IFBW:MINimum?

Description

Reads out the lower limit of the IFBW.

query only

Query Response

<numeric>

Unit

Hz (Hertz)

Back to [SYSTem](#)

SYST:CORR

SCPI Command

SYSTem:CORRection[:STATe] {OFF|ON|0|1}

SYSTem:CORRection[:STATe]?

Description

Turns the system correction ON/OFF. The system correction is the factory full one-port calibration performed at the port connectors.

command/query

Parameter

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

1

Back to [SYSTem](#)₄₃₇

SYST:ERR?

SCPI Command

SYSTem:ERRor[:NEXT]?

Description

Reads out the error message when executing SCPI commands, from the FIFO (First In First Out) error queue stored in the Analyzer. The read-out error is deleted from the error queue. The [*CLS](#)⁵² command clears the error queue. The maximum size of the queue is 100 messages.

command/query

Query Response

<numeric>, <string>

Where:

<numeric> — error code,

<string> — error message.

If there is no error in the queue, "0, No error" is read out.

Back to [SYSTem](#)⁴³⁷

SYST:HIDE

SCPI Command

SYSTem:HIDE

Description

Hides the Analyzer main window, removing it from the desktop.

query only

Related Commands

[SYST:SHOW](#)  450

Back to [SYSTem](#)  437

SYST:LOC

SCPI Command

SYSTem:LOCal

Description

Sets the Analyzer to the local operation mode, when all the keys on the front panel, mouse, and touch screen are active.

no query

Related Commands

[SYST:REM](#)  448

[SYST:RWL](#)  449

Back to [SYSTem](#)  437

SYST:PRES

SCPI Command

SYSTem:PRESet

Description

Resets the Analyzer to default settings.

Note: The difference from the [*RST](#)⁵⁵ command is that the trigger is set to the Continuous trigger mode.

no query

Related Commands

[*RST](#)⁵⁵

Back to [SYSTem](#)⁴³⁷

SYST:READ?

SCPI Command

SYSTem:READy[:STATe]?

Description

Reads out the Analyzer readiness status. 1 indicates that the Analyzer is ready. 0 indicates that the Analyzer is not ready. The state is ready after the initialization is completed. Initialization occurs after connecting and turning on the Analyzer hardware or after starting the software. Initialization takes about 10-15 seconds.

query only

Query Response

{0|1}, 1 — the Analyzer is ready, 0 — the Analyzer is not ready.

Back to [SYSTem](#)⁴³⁷

SYST:REM

SCPI Command

SYSTem:REMOte

Description

Sets the Analyzer to the remote operation mode, when all the keys on the front panel, mouse, and the touch screen are not active, except for one key labeled "Return to Local". Pushing this button will reset the Analyzer to the local operation mode.

no query

Related Commands

[SYST:LOC](#)  445

[SYST:RWL](#)  449

Back to [SYSTem](#)  437

SYST:RWL

SCPI Command

SYSTem:RWLock

Description

Sets the Analyzer to the remote operation mode, when all the keys on the front panel, mouse, and touch screen are not active. Only [SYST:LOC](#)⁴⁴⁵ or [SYST:REM](#)⁴⁴⁸ command can release this remote operation mode.

no query

Related Commands

[SYST:LOC](#)⁴⁴⁵

[SYST:REM](#)⁴⁴⁸

Back to [SYSTem](#)⁴³⁷

SYST:SHOW

SCPI Command

SYSTem:SHOW

Description

Restores the Analyzer window hidden by [SYST:HIDE](#)^[444].

no query

Related Commands

[SYST:HIDE](#)^[444]

Back to [SYSTem](#)^[437]

SYST:TEMP:SENS?

SCPI Command

SYSTem:TEMPerature:SENSor<Idx>?

Description

Reads out the specified sensor temperature inside the Analyzer. The sensor number is specified by <Idx>:

<Idx> = 1 specifies the RF block;

<Idx> = 2 specifies the LO block.

query only

Target

Analyzer

Unit

°C (degrees Celsius)

Query Response

<numeric>

Equivalent Softkeys

None

Back to [SYSTem](#)⁴³⁷

SYST:TIME

SCPI Command

SYSTem:TIME <numeric 1>,<numeric 2>,<numeric 3>

SYSTem:TIME?

Description

Sets or reads out the current time.

command/query

Parameter

<numeric 1> Hours from 0 to 23

<numeric 2> Minutes from 0 to 59

<numeric 3> Seconds from 0 to 59

Query Response

<numeric 1>, <numeric 2>, <numeric 3>

Back to [SYSTem](#)⁴³⁷

SYST:UNIT:DIST

SCPI Command

SYSTem:UNIT:DISTance {METers|FEET|INCH}

Description

Sets or queries the global distance unit used for display throughout the application.

command/query

Syntax

SYSTem:UNIT:DISTance <unit>

SYSTem:UNIT:DISTance?

Parameters

unit - one of the following:

METers - Meters (default)

FEET - Feet

INCH - Inches

Back to [SYSTem](#)⁴³⁷

SYST:UNIT:TEMP

SCPI Command

SYSTem:UNIT:DISTance {METers|FEET|INCH}

Description

Sets or queries the global temperature unit used for display throughout the application.

command/query

Syntax

SYSTem:UNIT:TEMPerature <unit>

SYSTem:UNIT:TEMPerature?

Parameters

unit - one of the following:

C - Celsius (default)

K - Kelvin

F - Farenheit

Notes

Settings are global and persistent — they survive preset (`\*RST` / `SYST:PRES`) and are saved between sessions

The distance unit also affects Time Domain traces that use Distance mode. See [CALC:TRAN:TIME:UNIT](#)^[275].

Back to [SYSTem](#)^[437]

TRIGger

Command	Description	
TRIG  ⁴⁵⁸	Trigger Settings	Generates the trigger signal
TRIG:SING  ⁴⁵⁹		Generates the trigger signal. The command is pending until the sweep end
TRIG:SCOP  ⁴⁶⁰		Trigger scope
TRIG:SOUR  ⁴⁶¹		Trigger source
TRIG:STAT?  ⁴⁶³		Current state of the trigger system
TRIG:WAIT  ⁴⁶⁴		Waits for the specified trigger state to be reached
TRIG:EXT:DEL  ⁴⁶⁶	External Trigger Settings	Response delay to the external trigger
TRIG:EXT:SLOP  ⁴⁶⁷		Trigger polarity
TRIG:EXT:POS  ⁴⁶⁸		Trigger position
TRIG:POIN  ⁴⁷⁰		Point trigger ON/OFF
TRIG:OUTP:FUNC  ⁴⁷³	Trigger Output Settings	Trigger output function

Command	Description
TRIG:OUTP:PORT?  ⁴⁷¹	Trigger output port
TRIG:OUTP:IMME  ⁴⁷²	Single pulse on trigger output
TRIG:OUTP:POL  ⁴⁷⁷	Trigger polarity
TRIG:OUTP:PORT#:POL  ⁴⁷⁸	Trigger polarity on selected port
TRIG:OUTP:PWID  ⁴⁷⁹	Pulse width
TRIG:OUTP:PORT#:PWID  ⁴⁸⁰	Pulse width on selected port
TRIG:OUTP:STAT  ⁴⁷⁵	Trigger output ON/OFF
TRIG:OUTP:PORT#:STAT  ⁴⁷⁶	Trigger output ON/OFF on selected port
TRIG:OUTP:EV  ⁴⁸¹	Trigger output pulse

TRIG

SCPI Command

TRIGger[:SEQuence][:IMMediate]

Description

Generates a trigger signal and initiates a sweep under the following conditions:

1. Trigger source is set to the BUS (set by the command [TRIG:SOUR](#)^[461] BUS), otherwise an error occurs and the command is ignored.
2. Analyzer must be in the trigger waiting state, otherwise (the analyzer is in the measurement state or in the hold state) an error occurs, and the command is ignored.

The command is completed immediately after the generation of the trigger signal (does not wait the end of a sweep).

no query

Related Commands

[TRIG:SOUR](#)^[461] BUS

[INIT:CONT](#)^[312]

[INIT](#)^[311]

Back to [TRIGger](#)^[456]

TRIG:SING

SCPI Command

TRIGger[:SEQuence]:SINGle

Description

Generates a trigger signal and initiates a sweep under the following conditions.

- Trigger source is set to the BUS (set by the command [TRIG:SOUR](#)^[461] BUS), otherwise an error occurs and the command is ignored.
- Analyzer must be in the trigger waiting state, otherwise (the Analyzer is in the measurement state or in the hold state) an error occurs, and the command is ignored.

As opposed to the [TRIG](#)^[458] command this command is pending till the end of the sweep. The end of the sweep initiated by the [TRIG:SING](#)^[459] command can be waited using the [*OPC?](#)^[54] query.

no query

Related Commands

[TRIG:SOUR](#)^[461]

[*OPC?](#)^[54]

[INIT:CONT](#)^[312]

[INIT](#)^[311]

Back to [TRIGger](#)^[456]

TRIG:SCOP

SCPI Command

TRIGger[:SEQuence]:SCOPe <char>

TRIGger[:SEQuence]:SCOPe?

Description

Sets or reads out the trigger scope. The trigger scope determines the response on the trigger signal arrival: either starts a sweep of all waiting channels in turn or starts a sweep in the active channel only.

command/query

Parameter

<char> Choose from:

ALL All channels

ACTive Active channel

Query Response

{ALL|ACT}

Preset Value

ALL

Related Commands

[TRIG](#)  458

[TRIG:SING](#)  459

[*TRG](#)  56

Back to [TRIGger](#)  456

TRIG:SOUR

SCPI Command

TRIGger[:SEQuence]:SOURce <char>

TRIGger[:SEQuence]:SOURce?

Description

Selects the trigger source (See options below).

If the continuous trigger initiation mode is enabled with the command [INIT:CONT](#)^[312] ON, the INTERNAL choice leads to continuous sweep. The choice of another option switches the analyzer to the trigger waiting state from the corresponding source.

If the continuous trigger initiation mode is disabled with the command [INIT:CONT](#)^[312] OFF, the reaction to INIT command is different. Selecting INTERNAL leads to a single sweep in response to the command [INIT](#)^[311], selection another option puts the <conditional-text type="IF" value="CHM,HTML"/> in a single trigger waiting state in response to the [INIT](#)^[311] command.

command/query

Parameter

<char> Choose from:

INTERNAL	Internal
EXTERNAL	External (hardware trigger input)
MANUAL	Manual (user interface)
BUS	Bus (program)

Query Response

{INT|EXT|MAN|BUS}

Preset Value

INT

Related Commands

[INIT](#)  311

[INIT:CONT](#)  312

[TRIG:SING](#)  459

[*TRG](#)  56

Back to [TRIGger](#)  456

TRIG:STAT?

SCPI Command

TRIGger[:SEQuence]:STATus?

Description

Reads out the current state of the Analyzer trigger system.

query only

Parameter

HOLD	Stop
MEAS	Measurement Cycle
WAIT	Waiting for trigger

Back to [TRIGger](#)



456

TRIG:WAIT

SCPI Command

TRIGger[:SEquence]:WAIT <char>

Description

Delays the execution of the next command until the specified state of the analyzer trigger system is reached (see options below).

The analyzer trigger system can be "Stop", "Waiting for Trigger", or "Measurement Cycle". When the continuous initiation mode is turned OFF ([INIT:CONT](#)₃₁₂ OFF), the trigger system transits between all three states. When the continuous initiation mode is turned ON ([INIT:CONT](#)₃₁₂ ON), the trigger system transits between the "Waiting for Trigger" and "Measurement Cycle" states.

This command is useful for waiting for a sweep end initiated by the [TRIG](#)₄₅₈, [*TRG](#)₅₆ commands or initiated by the external trigger signal, because the [*OPC?](#)₅₄ command cannot be used. (The [*OPC?](#)₅₄ command can wait the sweep end initiated by the [TRIG:SING](#)₄₅₉ command only).

no query

Parameter

<char> Choose from:

HOLD	Waits for the "Stop" state
MEASure	Waits for the "Measurement Cycle" state
WTRG	Waits for the "Waiting for Trigger" state
ENDM	Waits for the "End of Measurement" event. The event occurs when the trigger system transits from the "Measurement Cycle" state to any other state

Related Commands

[TRIG](#)  458

[*TRG](#)  56

Back to [TRIGger](#)  456

TRIG:EXT:DEL

SCPI Command

TRIGger[:SEQuence]:EXTernal:DELaY <time>

TRIGger[:SEQuence]:EXTernal:DELaY?

Description

Sets or reads out the response delay with respect to the external trigger signal.

command/query

Parameter

<time> the delay value from 0 to 100 sec.

Unit

sec (second)

Query Response

<numeric>

Preset Value

0

Out of Range

Sets the value of the limit, which is closer to the specified value.

Related Commands

[TRIG:SOUR](#)^[461] EXT

Back to [TRIGger](#)^[456]

TRIG:EXT:SLOP

SCPI Command

TRIGger[:SEQuence]:EXTernal:SLOPe <char>

TRIGger[:SEQuence]:EXTernal:SLOPe?

Description

Sets or reads out the polarity of the external trigger.

command/query

Parameter

<char> Choose from:

POSitive Positive edge

NEGative Negative edge

Query Response

{POS|NEG}

Preset Value

NEG

Related Commands

[TRIG:SOUR](#)  461

Back to [TRIGger](#)  456

TRIG:EXT:POS

SCPI Command

TRIGger[:SEQuence]:EXTernal:POSition <char>

TRIGger[:SEQuence]:EXTernal:POSition?

Description

Selects the position of the external trigger. The Analyzer waits for external trigger:

- Before sampling, when the frequency of the stimulus port has been set.
- Before the frequency setup and subsequent measurement. The frequency change of the stimulus port begins when the external trigger arrives.

Depending on the command TRIG:POIN the external trigger wait occurs before each point or before the first point of the full sweep cycle.

command/query

Parameter

<char> Choose from:

BSAM Before sampling

BSET Before frequency setup

Query Response

{BSAM|BSET}

Preset Value

BSAM

Related Commands

[TRIG:SOUR](#)  461

Back to [TRIGger](#) 

TRIG:POIN

SCPI Command

TRIGger[:SEQuence]:POINT {OFF|ON|0|1}

TRIGger[:SEQuence]:POINT?

Description

Turns the point trigger feature ON/OFF.

When the point trigger is turned ON, the external trigger response is the single point. When the point trigger feature is turned OFF, the external trigger response is the entire sweep.

command/query

Parameter

Specifies the point trigger function state:

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Related Commands

[TRIG:SOUR](#)⁴⁶¹ EXT

Back to [TRIGger](#)⁴⁵⁶

TRIG:OUTP:PORT?

SCPI Command

TRIGger:OUTPut:PORTs?

Description

Reads out available Trigger Output port numbers.

query only

Query Response

<numeric 1>, <numeric 2> , ...<numeric n>

Back to [TRIGger](#)⁴⁵⁶

TRIG:OUTP:IMME

SCPI Command

TRIGger:OUTPut:IMMEdiate

Description

Sends out a single pulse on Trigger Output port. The Trigger Output must be set to Software type first. This can be set using the command [TRIG:OUTP:FUNC PLIM](#)^[473]. Pulse width is set by using [TRIG:OUTP:PWID](#)^[479].

no query

Back to [TRIGger](#)^[456]

TRIG:OUTP:FUNC

SCPI Command

TRIGger:OUTPut:FUNctIon <char>

TRIGger:OUTPut:FUNctIon?

Description

Selects the trigger output function. The trigger output outputs various waveforms depending on the setting of the Output Trigger Function (see the Trigger Output Function).

command/query

Parameter

<char> Choose from:

BSET	Before frequency setup pulse
BSAM	Before sampling pulse
ASAM	After sampling pulse
RTRG	Ready for trigger signal
ESWP	End of sweep pulse
MEAS	Measurement sweep signal
PLIM	Peak limit test pass/fail. TRIG OUT port 1 set to Peak Limits Pass, TRIG OUT port 2 will be set to Peak Limits Fail.

Query Response

{BSET|BSAM|ASAM|RTGR|ESWP|MEAS|PLIM}

Preset Value

BSET

Related Commands

[TRIG:OUTP:STAT](#)  475

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TRIG:OUTP:STAT

SCPI Command

TRIGger:OUTPut:STATe {OFF|ON|0|1}

TRIGger:OUTPut:STATe?

Description

Turns the trigger output ON/OFF.

command/query

Parameter

Specifies the trigger output function state:

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Related Commands

[TRIG:OUTP:FUNC](#)  473

[TRIG:OUTP:POL](#)  477

Back to [TRIGger](#)  456

TRIG:OUTP:PORT#:STAT

SCPI Command

TRIGger:OUTPut:PORT#:STATe {OFF|ON|0|1}

TRIGger:OUTPut:PORT#:STATe?

Description

Turns the trigger output of selected port ON/OFF.

command/query

Parameter

Specifies the trigger output function state:

{ON|1} ON

{OFF|0} OFF

Query Response

{0|1}

Preset Value

0

Related Commands

[TRIG:OUTP:FUNC](#)  473

[TRIG:OUTP:POL](#)  477

Back to [TRIGger](#)  456

TRIG:OUTP:POL

SCPI Command

TRIGger:OUTPut:POLarity <char>

TRIGger:OUTPut:POLarity?

Description

Sets or reads out the polarity of the trigger output.

command/query

Parameter

<char> Choose from:

POSitive Positive edge

NEGative Negative edge

Query Response

{POS|NEG}

Preset Value

NEG

Related Commands

[TRIG:OUTP:FUNC](#) 

[TRIG:OUTP:STAT](#) 

Back to [TRIGger](#) 

TRIG:OUTP:PORT#:POL

SCPI Command

TRIGger:OUTPut:PORT#:POLarity <char>

TRIGger:OUTPut:PORT#:POLarity?

Description

Sets or reads out the polarity of the trigger output of selected port.

command/query

Parameter

<char> Choose from:

POSitive Positive edge

NEGative Negative edge

Query Response

{POS|NEG}

Preset Value

NEG

Back to [TRIGger](#)⁴⁵⁶

TRIG:OUTP:PWID

SCPI Command

TRIGger:OUTPut:PWIDth <number>

TRIGger:OUTPut:PWIDth?

Description

Sets or reads out the pulse width of Trigger Output signal, when the Trigger Output Type is set to "Software".

command/query

Query Response

<numeric>

Unit

seconds

Back to [TRIGger](#) 

TRIG:OUTP:PORT#:PWID

SCPI Command

TRIGger:OUTPut:PORT#:PWIDth <number>

TRIGger:OUTPut:PORT#:PWIDth?

Description

Sets or reads out the pulse width of Trigger Output signal of selected port, when the Trigger Output Type is set to "Software".

command/query

Query Response

<numeric>

Unit

seconds

Back to [TRIGger](#)



TRIG:OUTP:EV

SCPI Command

TRIGger:OUTPut[:SElected]:EVEnt <event_category>,<parameter list>

TRIGger:OUTPut[:SElected]:EVEnt?

TRIGger:OUTPut:PORT<Pt>:EVEnt <event_category>,<parameter list>

TRIGger:OUTPut:PORT<Pt>:EVEnt?

Description

Generates a trigger output pulse on the instrument's trigger output connector for various event categories, such as peak limits test. The first input parameter defines the event category that is the source of the trigger output. The following parameters define arguments specific to the event category.

command/query

Target

Port <Pt>

<Pt>=1

<Pt>={ [1]...[16] } (in N-port mode only)

Parameter

<event_category> - string parameter is chosen from:

UNDEFINED - undefined

TEST - all test events

<parameter list> - additional parameters for the chosen event category

The category TEST for peak limits test contains:

<parameter1> - "PLIMint" tag for peak limits test definition

<parameter2> - one of available values:

FAIL - peak limits fail

PASS - peak limits pass

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