Coppermountaintech S2VNA and S4VNA SCPI Programming Manual

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Introduction

This Manual contains information on programming the CMT network analyzers using **SCPI** (Standard Commands for Programmable Instruments).

This Manual relates to the 2-port CMT network analyzers running S2VNA application and to the 4-port CMT network analyzers running S4VNA application.

This manual describes the analyzer's command set and the network protocols used to deliver the commands. The commands are text messages that conform to the SCPI specification. The commands and data are sent between the user program and the SxVNA application over a computer network using HiSLIP or TCP/IP Socket network protocols. This protocols can also be used inside one computer using IP address 127.0.0.1 or *localhost*.

HiSLIP (High-Speed LAN Instrument Protocol) — a network protocol intended for remote control of measuring and testing equipment, is based on the TCP/IP network protocol. HiSLIP is developed by the consortium IVI Foundation as the successor to GPIB and VXI-11 protocols. The user program, as a rule, relies on the implementation of the HiSLIP protocol in the VISA library.

TCP/IP Socket is a general-purpose network protocol. The user program can connect to the analyzer using the TCP/IP Socket protocol both directly and through the VISA library.

VISA (Virtual Instrument Software Architecture) is a widely used software input-output interface in the field of testing and measurement for controlling devices from a personal computer. It is a library of functions for C / C ++, C #, Visual Basic, MATLAB, LabVIEW and others. The VISA library unifies access to all measuring instruments, regardless of the protocol and equipment used. The VISA library is installed on the client side, that is, on the computer where the user program is executed. The VISA library is available on the websites of many companies for free download. There are versions for Linux, Mac OS, Windows.

Connection Setup - Describes how to establish a network connection between the user program and the analyzer using the HiSLIP or TCP/IP Socket protocol. It shows the differences between the HiSLIP and TCP/IP Socket protocols in terms of writing user programs.

SCPI Overview - Describe general information about SCPI

Command Refernce - Describe the analyzer command set.

Programming Tips - Focuses on recommendations about programming in some specific situations.

IEE488.2 Status Reporting System, Error Codes, Programming Examples - Contain information about the IEE488.2 Status Reporting System, Error Codes, and Sample Programs.

Web Sites

Copper Mountain Technologies

IVI Foundation - Standard Commands for Programmable Instruments (SCPI), High-Speed LAN Instrument Protocol (HiSLIP), VISA specifications.

References

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

High-Speed LAN Instrument Protocol (HiSLIP), http://www.ivifoundation.org/specifications

VISA specifications, http://www.ivifoundation.org/specifications

Connection Setup

Overview

To enable remote control of the analyzer, the user must turn on the HiSLIP server and/or Socket server in the settings of the analyzer's program. Optionally the user can change the default TCP/IP port number of each protocol.

HiSLIP is a TCP/IP-based protocol specially designed for measuring and test equipment. TCP/IP Socket is a general-purpose protocol.

Typically the user program (client) uses VISA library to establish the connection. When using the VISA library, the client selects the protocol by specifying it in the VISA address of the analyzer.

The VISA library hides the details of protocol implementation from the client and provides an uniform I/O interface. Nevertheless, there are some minor differences in programming methods when using the HiSLIP and TCP/IP Socket protocols, which are described later in Differences in Use of HiSLIP and Socket Protocols.

After a connection has been established on the initiative of the client, the latter can send SCPI commands and read the results of the measurements. The command set is the same for both protocols and is described in Command Reference.

The client must specify the analyzer's computer IP address or network name in the VISA address string. However, it is possible that the user and analyzer program runs on the same computer. In this case, the client specifies the IP address 127.0.0.1 or *localhost*.

Multiple analyzer programs can be executed on the same computer (when several USB or PXI hardware blocks are connected). In this case, the user must specify a unique TCP/IP port number in the settings of each analyzer program.

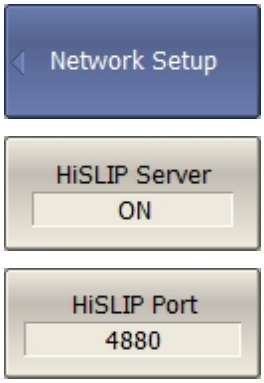
One analyzer program does not limit the number of simultaneously connected clients. Clients themselves are responsible for the absence of conflicts in the remote control of the analyzer. The HiSLIP protocol supports the exclusive or shared lock of the analyzer by the client. For more details about locks, see the VISA manual.

Analyzer Setting

For remote access to the analyzer it is necessary to make the following settings in its program:

- Enable HiSLIP server and/or Socket server;
- Configure the TCP/IP port number (optional).

Note Configuring the TCP/IP port number is necessary in the only case where several analyzer programs are simultaneously executed on the same computer, and these programs require remote remote control. In other cases, you should leave the default TCP/IP port number: for the HiSLIP server - 4880, and for the Socket server – 5025.



To enable remote control of the analyzer using the HiSLIP protocol, press the following softkeys:

System > Misc Setup > Network Setup > HiSLIP Server [ON/OFF].

To change the TCP/IP port number of the HiSLIP server, use the following softkeys:

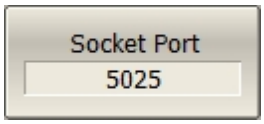
System > Misc Setup > Network Setup > HiSLIP Port.

To enable remote control of the analyzer using the Socket protocol, press the following softkeys:

System > Misc Setup > Network Setup > Socket Server [ON/OFF].

To change the TCP/IP port number of the Socket server, use the following softkeys:

System > Misc Setup > Network Setup > Socket Port.



Client Setting

Typically the client uses the VISA library to establish connection to analyzer software. In this case the easiest way to configure the network connection with the Analyzer is using a special utility from VISA package (for example, NI-MAX, Keysight Connection Expert).

According to the manual for the above utilities, add a new network device, specifying the network name or IP address of the Analyzer's computer, and the protocol. As a result of successful connection to the Analyzer, the VISA address of the analyzer will be automatically generated and displayed. Use this VISA address in the client program in order to open the connection.

The format of the VISA address for the HiSLIP and Socket protocols

HiSLIP	TCPIP[*board*]::*host address*[::*HiSLIP device name*[,*HiSLIP port*]][::INSTR]
Socket	TCPIP[*board*]::*host address*::*port*::SOCKET

Examples of VISA address for HiSLIP and Socket protocols

HiSLIP	TCPIP0::192.168.0.1::hislip0::INSTR TCPIP0::localhost::hislip0::INSTR
Socket	TCPIP0::192.168.0.1::5025::SOCKET TCPIP0::localhost::5025::SOCKET

If the client choose not use the VISA library, then only the TCP/IP Socket protocol is available. In this case, the user program establishes a connection using the IP address of the analyzer's Socket server.

The format of the IP address of the analyzer's Socket server

Socket	*host address:port*

Examples of the IP address of the analyzer's Socket server

Socket	192.168.0.1:5025 localhost:5025

VISA Library

Using the VISA (Virtual Instrument Software Architecture) library is most common approach. The VISA library is a widely used software input-output interface in the field of testing and measurement for controlling devices from a personal computer. It is a library of functions for C/C ++, C #, Visual Basic, MATLAB, LabVIEW and others.

The VISA Library unifies access to all measuring instruments, regardless of the protocol and equipment used.

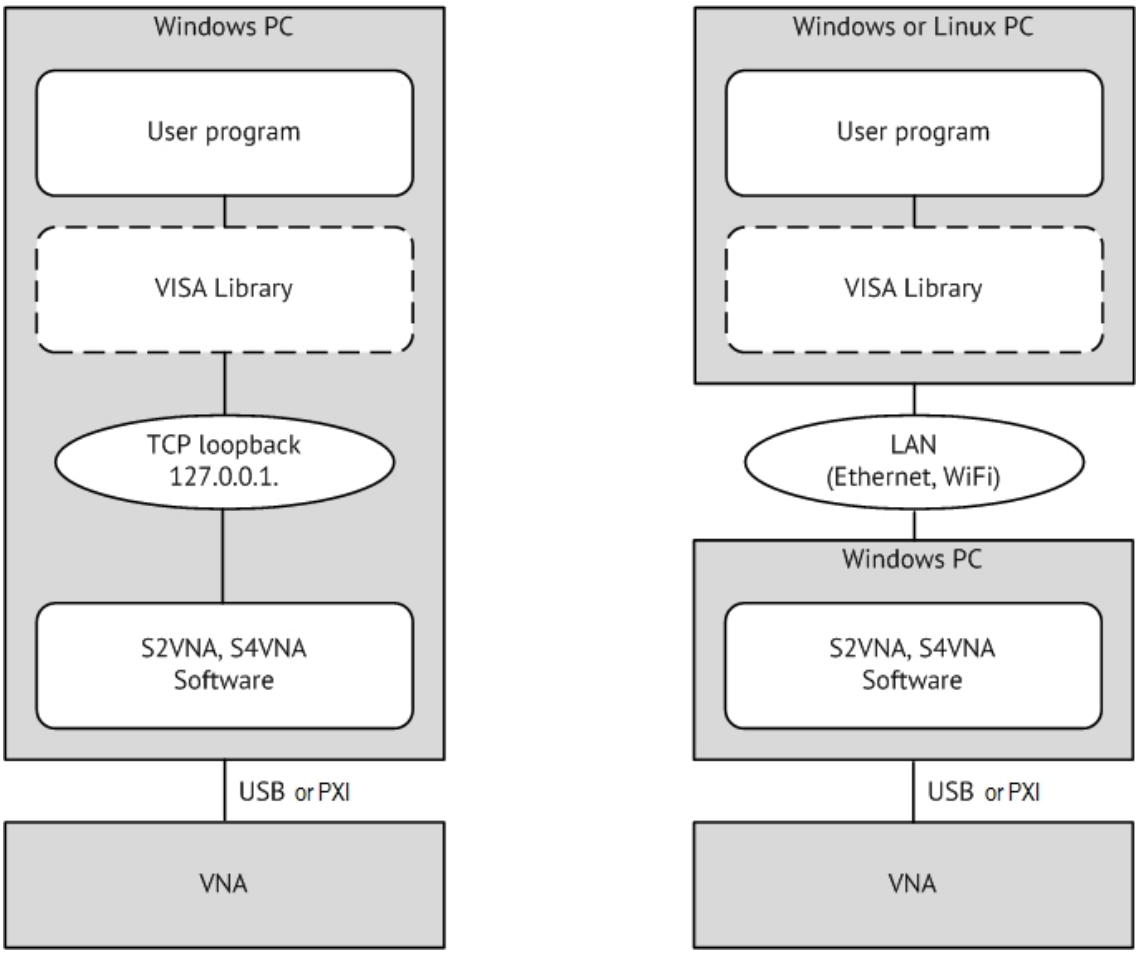
The VISA library is installed on the client side, that is, on the computer where the user program is executed. The VISA library is available on the websites of many companies for free download. There are versions for Linux, Mac OS, Windows.

Network and Local Configuration

A network configuration involves executing a user program and analyzer program on different computers connected by a local area network.

The local configuration involves executing the user program and the analyzer program on the single computer.

The figure shows the local configuration on the left and the network configuration on the right.



The local configuration is possible due to to the standard TCP/IP stack function – TCP loopback. The TCP loopback function allows network applications to communicate in a standard way within a single computer. The most widely used IP address in the TCP loopback mechanism is 127.0.0.1. Instead of the numeric address 127.0.0.1, it is possible to use the symbolic name *localhost*.

Note The network configuration does not restrict the client in choosing the OS. The local configuration limits the client in choosing the OS – only Windows.

Multiple USB Analyzers on Single Computer

Note. This section applies to USB network analyzers only

This section describes in detail how to configure the remote control of the multiple USB analyzer programs executed simultaneously on a single computer (provided several USB analyzer hardware units connected to the single computer).

• It is recommended that you create a separate folder with the software copy for each analyzer. This allows you to save individual settings for each analyzer.

• It is recommended that each copy of the software be linked to a specific hardware unit by its serial number or model (see at the end of this section).

• Assign a unique TCP/IP port number for each copy of the software for the HiSLIP or Socket protocol used. For example, if HiSLIP is used, assign port 4880 to the first analyzer, 4881 to the second, and so on. The assigned TCP/IP port number is preserved on subsequent launches of software for each copy of software.

• Specify the VISA address of the analyzer in the user program with the mandatory indication of the TCP/IP port number assigned, as in the examples below.

Examples of the VISA address for the HiSLIP and Socket protocols with the indication of the TCP/IP port

HiSLIP	TCPIP0::192.168.0.1::hislip0,4880::INSTR

	TCPIP0::192.168.0.1::hislip0,4881::INSTR
Socket	TCPIP0::192.168.0.1::5025::SOCKET TCPIP0::192.168.0.1::5026::SOCKET

Examples of the TCP/IP address of the analyzer's Socket server with the indication of the port

Socket	192.168.0.1:5025 192.168.0.1:5026

To link the analyzer program to the analyzer model, press the softkeys:

System > Misc Setup > Analyzer Model

To link the analyzer program to the analyzer serial number, press the softkeys:

System > Misc Setup > Analyzer Serial N

Multiple Analyzers on PXI Chassis

Note. This section applies to PXI network analyzers only

This section describes in detail how to configure the remote control of the multiple PXI analyzer programs executed simultaneously on a single chassis.

• Assign a unique TCP/IP port number for each analyzer on PXI chassis for the HiSLIP or Socket protocol used. For example, if HiSLIP is used, assign port 4880 to the first analyzer, 4881 to the second, and so on. Assigned TCP/IP port number is preserved on subsequent launches of software for each PXI analyzer.

• Specify the VISA address of the analyzer in the user program with the mandatory indication of the TCP/IP port number assigned, as in the examples below.

Examples of the VISA address for the HiSLIP and Socket protocols with the indication of the TCP/IP port

HiSLIP	TCPIP0::192.168.0.1::hislip0,4880::INSTR TCPIP0::192.168.0.1::hislip0,4881::INSTR
Socket	TCPIP0::192.168.0.1::5025::SOCKET TCPIP0::192.168.0.1::5026::SOCKET

Examples of the TCP/IP address of the analyzer's Socket server with the indication of the port

Socket	192.168.0.1:5025 192.168.0.1:5026

Differences in Use of HiSLIP and Socket Protocols

This section describes the differences in the methods of writing user programs due to the use of different HiSLIP and TCP/IP Socket protocols. It is assumed that the user program works through the

VISA library.

The list of differences in a brief form is given below. Then a detailed description of each item is given.

1. The terminal character <*newline*> in the commands sent to the analyzer.
2. The terminal character <*newline*> in the analyzer's responses.
3. Determine the interrupted violation of the messages exchange protocol of IEEE488.2.
4. Support for the IEEE488.2 *Status Reporting System*.
5. Support the transfer of binary data.

Terminal Character in Messages to Analyzer

The user program sends variable-length text messages to the analyzer. The end of the message, according to IEEE488.2, is transmitted either by protocol means (not by a symbol), or by the symbol <*newline*> ('\n', 0x0A, 10), or both methods together.

The HiSLIP has a mechanism for transmitting the end of the message by protocol means, while the Socket protocol does not. This makes the following requirements for programs sending commands to analyzer:

- Programs using the Socket protocol **shall** send a <*newline*> character at the end of the message;
- Programs using the HiSLIP protocol **may** send the <*newline*> symbol at the end of the message.

Note *For the graphical language LabVIEW when using the Socket protocol*: to be able to enter the symbol <*newline*> at the end of the message, you need to right-click on the string constant and enable **'\' Codes Display**. The <*newline*> character is entered as '**\n**'.

Note *For the textual languages*: it is recommended to use to the symbol <*newline*> at the end of the message regarless of the protocol used.

Terminal Character in Analyzer Responses

When using the HiSLIP protocol, the analyzer terminates messages with the symbol <*newline*> + the protocol defined end of message (not symbolic).

When using the Socket protocol, the analyzer terminates messages only with the <*newline*> symbol, since the Socket protocol does not have the protocol defined end of message.

Depending on the protocol used, you need to make the following settings for the VISA library so that it correctly determines the end of the message from the analyzer:

- When using the HiSLIP protocol – no settings are required, the VISA library functions normally with default settings;
- When using the Socket protocol, the user program must set the attribute VI_ATTR_TERMCHAR_EN to TRUE (completion of the read operation when the <*newline*> character is received).

Examples of setting up the VISA library using the Socket protocol

C/C++	viSetAttribute(instr, VI_ATTR_TERMCHAR_EN, VI_TRUE);
LabVIEW	

Interrupted Error

The HiSLIP protocol meets the requirements of the IEEE Std 488.2 message exchange protocol to detect an interrupted error. The interrupted error indicates that the Analyzer received an incoming message (command or query) before the client accepted a response from the previous request. In other words, the client is required to read the result of each query before sending the next query or command. If the client fails to do so, the protocol generates an error message and the response from the previous query is cleared by the protocol.

The Socket protocol does not detect the interrupted error. Multiple queries can be sent to the analyzer without a read operation between them. Answers from queries will be returned in the order in which they were sent. The client himself determines from which request a specific answer has been received.

IEEE488.2 Status Reporting System

The HiSLIP protocol fully supports the analyzer's IEEE488.2 Status Reporting System described in the appendix, while the Socket protocol supports it only partially. The Socket protocol does not support the following functions:

- The MAV (message available) bit in the Status Byte;
- SRQ (service request) generation - request from the analyzer, implemented by callback functions in the VISA library;
- Read the Status Byte using the dedicated function – viReadSTB.

Transfer of Binary Data

By default, data from the analyzer is sent in text form. To increase the throughput, the user has the option to use the binary data transfer. The transfer of binary data is enabled by the FORMat:DATA command and is effective for commands that transfer large data ammounts. A list of such commands is given in the description of the FORMat:DATA command.

The HiSLIP protocol supports the transfer of binary data, since it provides the protocol defined end of message (not symbolic).

The Socket protocol does not support the transfer of binary data, since it use the <*newline*> byte as the end of the message, which can occur in binary data.

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 oriented to the exchange of symbolic messages.

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

Messages

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

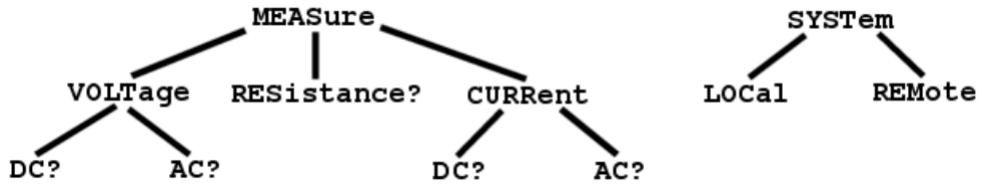
Note

The Analyzer supports the binary data output when using HiSLIP protocol.

The Analyzer does not support the binary data output when using TCP/IP Socket protocol.

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 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 the leaf makes up the command.

For example, part of SOURCe functional system looks as follows:

```
:SOURce
        :POWer
                :CENTer
                :STARt
                :SPAN
                :STOP
```

```
                [:LEVel]
                        :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[:LEVel]:SLOPe[:DATA]

:SOURce:POWer[:LEVel]: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 of a lower level. For example, in command:

:SOURce:POWer:STARt

the start power STARt is a part of POWer subsystem, which is a part of SOURce subsystem.

The stop power is also a part of :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 command line. The optional subsystems are bracketed ("[]"). For example, if full command specification is written as:

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

subsystems LEVel and DATA are optional. Therefore the 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 long or short form of each keyword is acceptable. 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 integer 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

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 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}

the possible values of the character data – "BUS", "IMMediate", "EXTernal".

The character data have long and short format, and the formats are specified in accordance with the same rules as described in Long and Short Formats.

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:

MMEMory: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

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 has a question mark ('?') in 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 expample:

SENSe:FREQuency:STARt 1MHz

SENSe:FREQuency:STARt?

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 expample, 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

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 expample:

SENS:FREQ:STAR 1 MHZ;STOP 2MHZ

If you need to start the next command from the highest level of the structure, this command should start from a colon (':'):

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

IEEE488.2 Common Commands Overview

A SCPI compatible Analyzer must support a set of common commands of IEEE488.2 standard. These commands start with an asterix ('*'). The list of such commands see below:

*CLS
*ESE
*ESR?
*IDN?
*OPC
*OPC?
*RST
*SRE
*SRE?
*STB?
*TRG
*TST?
*WAI

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

For additional information of functions see IEEE488.2 Common Commands.

Command Reference

Conventions

The following conventions are used throughout the Manual.

Syntax

The following symbols are used in command syntax:

<>	Identifiers enclosed in angular brackets indicated that a particular type of data must be specified
[]	Part enclosed in square brackets can be omitted
{}	Part enclosed in curly brackets indicates 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 indicates 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}

<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

IEEE488.2 Common Commands

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

Name	Description
*CLS	Clears 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.
*ESE	Sets or reads out the value of the Standard Event Status Enable Register.
*ESR?	Reads out the value of the Standard Event Status Register. Executing this command clears the register value.
*IDN?	Reads out the Analyzer identification string.
*OPC	Sets the OPC bit (bit 0) of the Standard Event Status Register at the completion of all pending operations. The pending operation caused by the command TRIG:SING only.
*OPC?	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.
*RST	Restores the default settings of the Analyzer.
*SRE	Sets or reads out the value of the Service Request Enable Register
*STB?	Reads out the value of the Status Byte Register
*TRG	Generates a trigger signal and initiates a sweep under the following conditions.
*TST?	Reads out the analyzer self-test result. 0 indicates no failures found. A non-zero value indicates one or more of failure conditions exist. The SYST:TEST? query returns a textual description of the failures.
*WAI	Delays the execution by the analyzer of the next command till the completion of the command TRIG:SING.

*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

*ESE

SCPI Command

*ESE <numeric>
*ESE?

Description

Sets or reads out the value of the Standard Event Status Enable Register.

command/query

Target

Status Reporting System

Parameter

<numeric> 0 to 255

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to IEEE488.2 Common Commands

*ESR?

SCPI Command

*ESR?

Description

Reads out the value of the Standard Event Status Register. Executing this command clears the register value.
query only

Target

Status Reporting System

Query Response

<numeric>

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

Sets the OPC bit (bit 0) of the Standard Event Status Register at the completion of all pending operations.

The pending operation caused by the command TRIG:SING only.

no query

Target

Status Reporting System

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.

query only

Target

Analyzer

Query Response

1

Related Commands

TRIG:SING

Equivalent Softkeys

None

Back to IEEE488.2 Common Commands

*RST

SCPI Command

*RST

Description

Restores the default settings of the Analyzer. There is difference from presetting the Analyzer with SYST:PRES command – in this case all channels are set to Hold.
no query

Target

Analyzer

Related Commands

SYST:PRES

Equivalent Softkeys

None

Back to IEEE488.2 Common Commands

*SRE

SCPI Command

*SRE <numeric>
*SRE?

Description

Sets or reads out the value of the Service Request Enable Register.
command/query

Target

Status Reporting System

Parameter

<numeric> 0 to 255

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to IEEE488.2 Common Commands

*STB?

SCPI Command

*STB?

Description

Reads out the value of the Status Byte Register.
query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to IEEE488.2 Common Commands

*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 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

Equivalent Softkeys

None

Back to IEEE488.2 Common Commands

*TST?

SCPI Command

*TST?

Description

Reads out the analyzer self-test result. 0 indicates no failures found. A non-zero value indicates one or more of failure conditions exist. The SYST:TEST? query returns a textual description of the failures.

Note: the query returns a non-zero value when it is issued until the instrument is ready.

query only

Target

Instrument

Query Response

<numeric>

Related Commands

SYST:TEST?
SYST:READy?

Equivalent Softkeys

None

Back to IEEE488.2 Common Commands

*WAI

SCPI Command

*WAI

Description

Delays the execution by the analyzer of the next command till the completion of the command TRIG:SING.

In absence of a pending command TRIG:SING the command *WAI is equivalent to an empty operation.

A query that follows the command *WAI blocks the execution of the user program till the completion of the command TRIG:SING, similarly to the query *OPC?.

no query

Target

Analyzer

Related Commands

TRIG:SING

Equivalent Softkeys

None

Back to IEEE488.2 Common Commands

ABOR

SCPI Command

ABORt

Description

Aborts the sweep. The channels in the Single trigger initiation mode transit to the Hold state. The channels in the Continuous trigger initiation mode transit 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

Equivalent Softkeys

Stimulus > Trigger > Restart

CALCulate

Command	Description

CALC:CONV	Turns ON/OFF the S–parameter conversion function.
CALC:CONV:FUNC	Sets or reads out the S–parameter conversion function type.
CALC:CORR:EDEL:TIME	Sets or reads out the value of the electrical delay.
CALC:CORR:OFFS:PHAS	Sets or reads out the value of the phase offset.
CALC:CORR:STAT?	Reads out the interpolation/extrapolation status of the error correction.
CALC:DATA:FDAT	Reads out or writes the formatted data array.
CALC:DATA:FMEM	Reads out or writes the formatted memory array.
CALC:DATA:SDAT	Reads out or writes the corrected data array.
CALC:DATA:SMEM	Reads out or writes the corrected memory array.
CALC:DATA:XAX?	Reads out the X-axis values array.
CALC:FILT:TIME	Sets or reads out the gate type of the gating function.
CALC:FILT:TIME:CENT	Sets or reads out the gate center value of the gating function.
CALC:FILT:TIME:SHAP	Sets or reads out the gate shape of the gating function.
CALC:FILT:TIME:SPAN	Sets or reads out the gate span value of the gating function.
CALC:FILT:TIME:STAR	Sets or reads out the gate start value of the gating function.
CALC:FILT:TIME:STAT	Turns ON/OFF the gating function.
CALC:FILT:TIME:STOP	Sets or reads out the gate stop value of the gating function.
CALC:FORM	Sets or reads out the trace format.
CALC:FSIM:BAL:CZC:BPOR:Z0	Sets or reads out the impedance value for the common impedance conversion function of the balanced port. The impedance is real.
CALC:FSIM:BAL:CZC:STAT	Turns ON/OFF the common impedance conversion function of the balanced port.
CALC:FSIM:BAL:DEV	Selects the type of balanced device of the balance-unbalance fixture simulation function.
CALC:FSIM:BAL:DMC:BPOR:PAR:C	Sets or reads out the capacitance value of the C element of the differential matching circuit.
CALC:FSIM:BAL:DMC:BPOR:PAR:G	Sets or reads out the conductance value of the G element of the differential matching circuit.
CALC:FSIM:BAL:DMC:BPOR:PAR:L	Sets or reads out the inductance value of the L element of the differential matching circuit.
CALC:FSIM:BAL:DMC:BPOR:PAR:R	Sets or reads out the resistance value of the R element of the differential matching circuit.
CALC:FSIM:BAL:DMC:BPOR:TYPE	Selects the type of the differential matching circuit for the specified balanced port number Bpt of the channel Ch.
CALC:FSIM:BAL:DMC:BPOR:USER:FIL	Specifies a file defining the 2-port network which is used in the differential matching circuit, for the specified balanced port number Bpt of the channel Ch. The *.s2p file contains the circuit S–parameters in Touchstone format.
CALC:FSIM:BAL:DMC:STAT	Turns ON/OFF the differential matching circuit function.

CALC:FSIM:BAL:DZC:BPOR:Z0	Sets or reads out the impedance value for the differential impedance conversion function of the balanced port. The impedance is real.
CALC:FSIM:BAL:DZC:STAT	Turns ON/OFF the differential impedance conversion function of the balanced port.
CALC:FSIM:BAL:PAR:BAL	Selects the measurement parameter of the fixture simulation function when the device type is BALanced.
CALC:FSIM:BAL:PAR:BBAL	Selects the measurement parameter of the fixture simulation function when the device type is BBALanced.
CALC:FSIM:BAL:PAR:SBAL	Selects the measurement parameter of the fixture simulation function when the device type is SBALanced.
CALC:FSIM:BAL:PAR:SSB	Selects the measurement parameter of the fixture simulation function when the device type is SSBalanced.
CALC:FSIM:BAL:PAR:STAT	Turns ON/OFF the BalUn function for the specified trace.
CALC:FSIM:BAL:TOP:BAL	Sets or reads out the ports assigned to the balanced device when its type is "BALance".
CALC:FSIM:BAL:TOP:BBAL	Sets or reads out the ports assigned to the balanced device when its type is "BBALance".
CALC:FSIM:BAL:TOP:SBAL	Sets or reads out the ports assigned to the balanced device when its type is "SBALance".
CALC:FSIM:BAL:TOP:SSB	Sets or reads out the ports assigned to the balanced device when its type is "SBALance".
CALC:FSIM:BAL:TOP:PROP:STAT	Turns ON/OFF the BalUn property indication on the screen.
CALC:FSIM:EMB:NETW:FIL	Sets or reads out the name of 4-port touchstone file (*.s4p) of the 4-port network embedding/de-embedding feature. The file contains the circuit S–parameters in Touchstone format.
CALC:FSIM:EMB:NETW:TYPE	Selects the processing type of the 4-port network embedding/de-embedding feature.
CALC:FSIM:EMB:STAT	Turns ON/OFF the 4-port network embedding/de-embedding feature.
CALC:FSIM:EMB:TOP:A:PORT	Sets or reads out the test port assignment when the Topology is set to A, for the 4-port network embedding/de-embedding feature.
CALC:FSIM:EMB:TOP:B:PORT	Sets or reads out the test port assignment when the Topology is set to B, for the 4-port network embedding/de-embedding feature.
CALC:FSIM:EMB:TOP:C:PORT	Sets or reads out the test port assignment when the Topology is set to C, for the 4-port network embedding/de-embedding feature.
CALC:FSIM:EMB:TYPE	Selects the Topology for the 4-port network embedding/de-embedding feature.
CALC:FSIM:SEND:DEEM:STAT	Turns ON/OFF the 2-port network de–embedding function.
CALC:FSIM:SEND:DEEM:PORT:STAT	Turns ON/OFF the 2-port network de–embedding function for specified port.
CALC:FSIM:SEND:DEEM:PORT:USER:FIL	Sets or reads out the name of *.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.

CALC:FSIM:SEND:PMC:STAT	Turns ON/OFF the 2-port network embedding function.
CALC:FSIM:SEND:PMC:PORT:STAT	Turns ON/OFF the 2-port network embedding function for each port.
CALC:FSIM:SEND:PMC:PORT:USER:FIL	Sets or reads out the name of *.s2p file of the embedded circuit of the 2-port network embedding function. The file contains the circuit S–parameters in Touchstone format.
CALC:FSIM:SEND:ZCON:PORT:Z0	Sets or reads out the value of the impedance of the port impedance conversion function. The function sets real part and zeros the imaginary part of the port impedance.
CALC:FSIM:SEND:ZCON:PORT:Z0:REAL	Sets or reads out the real part of the impedance of the port impedance conversion function.
CALC:FSIM:SEND:ZCON:PORT:Z0:IMAGinary	Sets or reads out the imaginary part of the impedance of the port impedance conversion function.
CALC:FSIM:SEND:ZCON:STAT	Turns ON/OFF the port impedance conversion function.
CALC:FSIM:STAT	Turns ON/OFF the fixture simulation function.
CALC:FUNC:DATA?	Reads out the data array, which is the CALC:FUNC:EXEC command analysis result.
CALC:FUNC:DOM	Specify whether an arbitrary range or the entire sweep range is used when the CALC:FUNC:EXEC command is executed.
CALC:FUNC:DOM:COUP	If the arbitrary range turned ON by the CALC:FUNC:DOM:STAT command, specifies whether all traces of channel use the same range (coupling) or each trace uses individual range when the CALC:FUNC:EXEC command is executed.
CALC:FUNC:DOM:STAR	Sets the start value of the analysis range of the CALC:FUNC:EXEC command.
CALC:FUNC:DOM:STOP	Sets the stop value of the analysis range of the CALC:FUNC:EXEC command.
CALC:FUNC:EXEC	Executes the analysis specified by the CALC:FUNC:TYPE command.
CALC:FUNC:PEXC	Sets the lower limit for the peak excursion value when executing the peak search with the CALC:FUNC:EXEC command.
CALC:FUNC:POIN?	Reads out the number of points (data pairs) of the analysis result by the CALC:FUNC:EXEC command.
CALC:FUNC:PPOL	Selects the polarity when performing the peak search with the CALC:FUNC:EXEC command.
CALC:FUNC:TARG	Selects the target level when performing the search for the trace and the target level crosspoints with the CALC:FUNC:EXEC command.
CALC:FUNC:TTR	Selects the transition type when performing the search for the trace and the target level crosspoints with the CALC:FUNC:EXEC command.
CALC:FUNC:TYPE	Selects the type of analysis executed with the CALC:FUNC:EXEC command.
CALC:HOLD:TYPE	Sets the type of the trace hold function. The function holds the trace at the maximum or minimum point.

CALC:HOLD:CLEar	This command resets the trace hold function.
CALC:LIM	Turns ON/OFF the limit test.
CALC:LIM:DATA	Sets the data array, which is the limit line in the limit test function.
CALC:LIM:DISP	Turns ON/OFF the limit line display of the limit test function.
CALC:LIM:FAIL?	Reads out the limit test result.
CALC:LIM:OFFS:AMPL	Sets and reads out the value of the limit line offset along Y–axis.
CALC:LIM:OFFS:MARK	Sets the value of the limit line offset along Y–axis to the active marker value.
CALC:LIM:OFFS:STIM	Sets and reads out the value of the limit line offset along X–axis.
CALC:LIM:REP:ALL?	Reads out the data array, which is the limit test result.
CALC:LIM:REP:POIN?	Reads out the number of the measurement points that failed the limit test.
CALC:LIM:REP?	Reads out the data array, which is the stimulus values of the measurement points that failed the limit test.
CALC:MARK	Turns ON/OFF the marker.
CALC:MARK:ACT	Sets the active marker.
CALC:MARK:BWID	Turns ON/OFF the bandwidth search function.
CALC:MARK:BWID:DATA?	Reads out the bandwidth search result.
CALC:MARK:BWID:REF	Selects the reference point for the bandwidth search function: reference marker or absolute maximum value of the trace.
CALC:MARK:BWID:THR	Sets the bandwidth definition value.
CALC:MARK:BWID:TYPE	Sets the type of the bandwidth search function.
CALC:MARK:COUN	Sets the number of the turned ON markers.
CALC:MARK:COUP	Turns ON/OFF the marker coupling between traces. When coupled the markers of different traces with same number track the X-axis position.
CALC:MARK:DATA?	Reads out the data array of all turned ON markers.
CALC:MARK:DISC	Turns ON/OFF the marker discrete mode.
CALC:MARK:FUNC:DOM	Specify whether an arbitrary range or the entire sweep range is used when the marker search is performed.
CALC:MARK:FUNC:DOM:COUP	If the arbitrary search range turned ON by the CALC:MARK:FUNC:DOM command, specifies whether all traces of channel use the same range (coupling) or each trace uses individual range when the marker search is performed.
CALC:MARK:FUNC:DOM:STAR	Sets or reads out the start value of the marker search range.
CALC:MARK:FUNC:DOM:STOP	Sets or reads out the stop value of the marker search range.
CALC:MARK:FUNC:EXEC	Executes the marker search according to the specified criterion. The type of the marker search is set by the CALC:MARK:FUNC:TYPE command.

CALC:MARK:FUNC:PEXC	Sets or reads out the peak excursion value, when the marker search for peak is performed by the CALC:MARK:FUNC:EXEC command.
CALC:MARK:FUNC:PPOL	Selects the peak polarity, when the marker search for peak is performed by the CALC:MARK:FUNC:EXEC command.
CALC:MARK:FUNC:TARG	Sets or reads out the target value, when the marker search for target is performed by the CALC:MARK:FUNC:EXEC command.
CALC:MARK:FUNC:TRAC	Turns ON/OFF the marker search tracking.
CALC:MARK:FUNC:TTR	Selects the type of the target transition, when the marker search for transition is performed by the CALC:MARK:FUNC:EXEC command.
CALC:MARK:FUNC:TYPE	Selects the type of the marker search, which is performed by the CALC:MARK:FUNC:EXEC command.
CALC:MARK:MATH:FLAT:DATA?	Reads out FLATNESS function data array. The FLATNESS function is applied within the range determined by two markers.
CALC:MARK:MATH:FLAT:STAT	Turns ON/OFF the marker FLATNESS function.
CALC:MARK:MATH:FLAT:DOM:STAR	Sets or reads out the number of the marker, which specifies the start frequency of the FLATNESS function domain.
CALC:MARK:MATH:FLAT:DOM:STOP	Sets or reads out the number of the marker, which specifies the stop frequency of the FLATNESS function domain.
CALC:MARK:REF	Turns ON/OFF the reference marker.
CALC:MARK:SET	Sets the value of the specified item to the value of the position of the marker.
CALC:MARK:X	Sets or reads out the stimulus value of the marker.
CALC:MARK:Y?	Reads out the response value of the marker.
CALC:MATH:FUNC	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.
CALC:MATH:MEM	Copies the measurement data to the memory trace. Automatically turns on the display the memory trace.
CALC:MST	Turns ON/OFF the math statistics display.
CALC:MST:DATA?	Reads out the math statistics values.
CALC:MST:DOM	Selects either partial frequency range or entire frequency range is used for math statistic calculation. The partial frequency range is limited by two markers.
CALC:MST:DOM:STAR	Sets or reads out the number of the marker, which specifies the start frequency of the math statistics range.
CALC:MST:DOM:STOP	Sets or reads out the number of the marker, which specifies the stop frequency of the math statistics range.
CALC:PAR:COUN	Sets or reads out the number of traces in the channel.
CALC:PAR:DEF	Selects the measurement parameter of the trace.
CALC:PAR:SEL	Selects the active trace in channel.

CALC:PAR:SPOR	Sets or reads out the number of the stimulus port, when performing absolute measurements.
CALC:RLIM	Turns ON/OFF the ripple limit test.
CALC:RLIM:DATA	Sets the data array, which is the limit line for the ripple limit function.
CALC:RLIM:DISP:LINE	Turns ON/OFF the ripple limit line display.
CALC:RLIM:DISP:SEL	Sets or reads out the number of the ripple limit test band selected for the ripple value display.
CALC:RLIM:DISP:VAL	Selects the display type of the ripple value in the specified band.
CALC:RLIM:FAIL?	Reads out the ripple limit test result.
CALC:RLIM:REP?	Reads out the data array, which is the ripple limit test result.
CALC:SMO	Turns ON/OFF the trace smoothing.
CALC:SMO:APER	Sets or reads out the smoothing aperture, when performing smoothing function.
CALC:TRAN:TIME	Selects the transformation type for the time domain transformation function: band-pass or low-pass.
CALC:TRAN:TIME:CENT	Sets or reads out the time domain center value, when the time domain transformation function is turned ON.
CALC:TRAN:TIME:IMP:WIDT	Sets or reads out the impulse width (time domain transformation resolution), coupled with the Kaiser–Bessel window shape β parameter.
CALC:TRAN:TIME:KBES	Sets or reads out the β parameter, which controls the Kaiser–Bessel window shape, when performing time domain transformation.
CALC:TRAN:TIME:LPFR	Changes the frequency range to match with the low-pass type of the time domain transformation function.
CALC:TRAN:TIME:REFL:TYPE	Selects the reflection distance either one way or round trip for the time domain transformation function.
CALC:TRAN:TIME:SPAN	Sets or reads out the time domain span value, when the time domain transformation function is turned ON.
CALC:TRAN:TIME:STAR	Sets or reads out the time domain start value, when the time domain transformation function is turned ON.
CALC:TRAN:TIME:STOP	Sets or reads out the time domain stop value, when the time domain transformation function is turned ON.
CALC:TRAN:TIME:STAT	Turns ON/OFF the time domain transformation function.
CALC:TRAN:TIME:STEP:RTIM	Sets or reads out the time domain span value, when the time domain transformation function is turned ON.
CALC:TRAN:TIME:STIM	Selects the stimulus type for the time domain transformation function: impulse or step.
CALC:TRAN:TIME:UNIT	Selects the the transformation unit for the time domain transformation function: seconds, meters, feet.

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 ON/OFF the S–parameter conversion 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

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Conversion > Conversion

Back to CALCulate

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: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

Equivalent Softkeys

Scale > Electrical Delay

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

Equivalent Softkeys

Scale > Phase Offset

Back to CALCulate

CALC:CORR:STAT?

SCPI Command

CALCulate<Ch>[:SELected]:CORRection:STATus?
Or
CALCulate<Ch>:TRACe<Tr>:CORRection:STATus?

Description

Reads out the interpolation/extrapolation status of the error correction.

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

Trace represents S-parameter:

NONE	Correction not applied
COR	Correction applied exactly
C?	Correction interpolated
C!	Correction extrarpolated

Trace represents absolute parameter:

NONE	Correction not applied
RC	Correction applied exactly
RC?	Correction interpolated
RC!	Correction extrarpolated

Equivalent Softkeys

None

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> real number in rectangular format, real part in polar and Smith chart formats;

<numeric 2n> 0 in rectangular format, imaginary part in polar and Smith chart formats.

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:FORM

Equivalent Softkeys

None

Back to CALCulate

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> real number in rectangular format, real part in polar and Smith chart formats;
<numeric 2n> 0 in rectangular format, imaginary part in polar and Smith chart formats.

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
CALC:FORM

Equivalent Softkeys

None

Back to CALCulate

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>

Equivalent Softkeys

None

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>

Related Commands

CALC:MATH:MEM

Equivalent Softkeys

None

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

CALC:TRAN:TIME:STAT

Equivalent Softkeys

None

Back to CALCulate

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

Equivalent Softkeys

Analysis > Gating > Type

Back to CALCulate

CALC:FILT:TIME:CENT

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

Equivalent Softkeys

Analysis > Gating > Center

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

Equivalent Softkeys

Analysis > Gating > Shape > { Maximum | Wide | Normal | Minimum }

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

Equivalent Softkeys

Analysis > Gating > Span

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

Equivalent Softkeys

Analysis > Gating > Start

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 ON/OFF 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

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Gating > Gating

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

Equivalent Softkeys

Analysis > Gating > Stop

Back to CALCulate

CALC:FSIM:BAL:CZC:BPOR:Z0

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:CZConversion:BPORt<Bpt>:Z0[:R] <numeric>
CALCulate<Ch>:FSIMulator:BALun:CZConversion:BPORt<Bpt>:Z0[:R]?

Description

Sets or reads out the impedance value for the common impedance conversion function of the balanced port. The impedance is real. The default impedance value equals to 25 Ω.
command/query

Target

Balanced Port <Bpt> of channel <Ch>,

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

<Bpt>={[1]|2}, 1 or 2 for the Bal-Bal topology, always 1 for the SE-Bal, SE-SE-Bal and Bal topology.

Parameter

<numeric> the new value of the common impedance of the balanced port from 1 mΩ to 10 MΩ.

Unit

Ω (Ohm)

Out of Range

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

Query Response

<numeric>

Preset Value

25 Ω

Equivalent Softkeys

Analysis > Fixture Simulator > Cmn ZConversion > Bal Port n

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

Equivalent Softkeys

Format > { Log Mag | Phase | Group Delay | Lin Mag | SWR | Real | Imag | Phase > 180 }

Format > Smith > { Log/Phase | Lin/Phase | Real/Imag | R+jX | G+jB }

Format > Polar > { Log/Phase | Ling/Phase | Real/Imag }

Back to CALCulate

CALC:FSIM:BAL:CZC:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:CZConversion:STATe {OFF|ON|0|1}
CALCulate<Ch>:FSIMulator:BALun:CZConversion:STATe?

Description

Turns ON/OFF the common impedance conversion function of the balanced port.
command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Cmn ZConversion > Cmn ZConversion [On/Off]

Back to CALCulate

CALC:FSIM:BAL:DEV

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DEVice <char>
CALCulate<Ch>:FSIMulator:BALun:DEVice?

Description

Selects the type of balanced device of the balance-unbalance fixture simulation function

command/query, S4 only

Target

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

Parameter

<char> Specifies type of the balanced device:

SBALanced	Unbalance-Balance (3 ports)
BBALanced	Balance-Balance (4 ports)
SSBalanced	Unbalance-Unbalance-Balance (4 ports)
BALanced	Balance (2 ports)

Query Response

{SBAL|BBAL|SSB|BAL}

Preset Value

BBAL

Equivalent Softkeys

Analysis > Fixture Simulator > Topology > Device > {SE-Bal | Bal-Bal | SE-SE-Bal | Bal }

Back to CALCulate

CALC:FSIM:BAL:DMC:BPOR:PAR:G

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:PARameters:G <numeric>
CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:PARameters:G?

Description

Sets or reads out the conductance value of the G element of the differential matching circuit.

command/query

Target

Balanced Port <Bpt> of channel <Ch>,

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

<Bpt>={[1]|2}, 1 or 2 for the Bal-Bal topology, always 1 for the SE-Bal, SE-SE-Bal and Bal topology.

Parameter

<numeric> the capacitance value of the C element of the differential matching circuit from 1e–18 to 1e18.

Unit

S (Siemens)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Diff Matching > Bal Port n > G

Back to CALCulate

CALC:FSIM:BAL:DMC:BPOR:PAR:C

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:PARameters:C <numeric>

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:PARameters:C?

Description

Sets or reads out the capacitance value of the C element of the differential matching circuit.
command/query

Target

Balanced Port <Bpt> of channel <Ch>,

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

<Bpt>={[1]|2}, 1 or 2 for the Bal-Bal topology, always 1 for the SE-Bal, SE-SE-Bal and Bal topology.

Parameter

<numeric> the capacitance value of the C element of the differential matching circuit from 1e–18 to 1e18.

Unit

F (Farad)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Diff Matching > Bal Port n > C

Back to CALCulate

CALC:FSIM:BAL:DMC:BPOR:PAR:L

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:PARameters:L <numeric>

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:PARameters:L?

Description

Sets or reads out the inductance value of the L element of the differential matching circuit.

Note: If both elements L and R are equal to zero, then L and R elements are omited in the sheme. If any element L or R is not zero, then zero value of the rest element means short circuit.

command/query

Target

Balanced Port <Bpt> of channel <Ch>,

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

<Bpt>={[1]|2}, 1 or 2 for the Bal-Bal topology, always 1 for the SE-Bal, SE-SE-Bal and Bal topology.

Parameter

<numeric> the capacitance value of the C element of the differential matching circuit from 1e–18 to 1e18.

Unit

H (Henry)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Diff Matching > Bal Port n > L

Back to CALCulate

CALC:FSIM:BAL:DMC:BPOR:PAR:R

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:PARameters:R <numeric>
CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:PARameters:R?

Description

Sets or reads out the resistance value of the R element of the differential matching circuit.

Note: If both elements L and R are equal to zero, then L and R elements are omited in the sheme. If any element L or R is not zero, then zero value of the rest element means short circuit.

command/query

Target

Balanced Port <Bpt> of channel <Ch>,

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

<Bpt>={[1]|2}, 1 or 2 for the Bal-Bal topology, always 1 for the SE-Bal, SE-SE-Bal and Bal topology.

Parameter

<numeric> the capacitance value of the C element of the differential matching circuit from 1e–18 to 1e18.

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

Equivalent Softkeys

Analysis > Fixture Simulator > Diff Matching > Bal Port n > R

Back to CALCulate

CALC:FSIM:BAL:DMC:BPOR:TYPE

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:TYPE <char>

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:TYPE?

Description

Selects the type of the differential matching circuit for the specified balanced port number Bpt of the channel Ch.
command/query

Target

Balanced Port <Bpt> of channel <Ch>,

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

<Bpt>={[1]|2}, 1 or 2 for the Bal-Bal topology, always 1 for the SE-Bal, SE-SE-Bal and Bal topology.

Parameter

<char> Specifies the differential matching circuit:

NONE	No-circuit
PLPC	Shunt L – Shunt C
USER	User defined circuit by touchstone file

Query Response

{NONE|PLPC|USER}

Preset Value

NONE

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > > Diff Matching > Bal Port n > {None | Shunt L - Shunt C |

User }

Back to CALCulate

CALC:FSIM:BAL:DMC:BPOR:USER:FIL

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:USER:FILename <string>

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:BPORt<Bpt>:USER:FILename?

Description

Specifies a file defining the 2-port network which is used in the differential matching circuit, for the specified balanced port number Bpt of the channel Ch. The *.s2p file contains the circuit S–parameters in Touchstone format.

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

command/query

Target

Balanced Port <Bpt> of channel <Ch>,

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

<Bpt>={[1]|2}, 1 or 2 for the Bal-Bal topology, always 1 for the SE-Bal, SE-SE-Bal and Bal topology.

Parameter

<srting>, up to 256 characters

Related Commands

CALC:FSIM:BAL:DMC:BPOR:TYPE

Equivalent Softkeys

Analysis > Fixture Simulator > > Diff Matching > Bal Port n > User File

Back to CALCulate

CALC:FSIM:BAL:DMC:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:STATe {OFF|ON|0|1}

CALCulate<Ch>:FSIMulator:BALun:DMCircuit:STATe?

Description

Turns ON/OFF the differential matching circuit function.

command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Diff Matching > Diff Matching

Back to CALCulate

CALC:FSIM:BAL:DZC:BPOR:Z0

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DZConversion:BPORt<Bpt>:Z0[:R] <numeric>

CALCulate<Ch>:FSIMulator:BALun:DZConversion:BPORt<Bpt>:Z0[:R]?

Description

Sets or reads out the impedance value for the differential impedance conversion function of the balanced port. The impedance is real. The default impedance value equals to 100 Ω.

command/query

Target

Balanced Port <Bpt> of channel <Ch>,

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

<Bpt>={[1]|2}, 1 or 2 for the Bal-Bal topology, always 1 for the SE-Bal, SE-SE-Bal and Bal topology.

Parameter

<numeric> the new value of the differential impedance of the balanced port from 1 mΩ to 10 MΩ.

Unit

Ω (Ohm)

Out of Range

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

Query Response

<numeric>

Preset Value

100 Ω

Equivalent Softkeys

Analysis > Fixture Simulator > Diff ZConversion > Bal Port n

Back to CALCulate

CALC:FSIM:BAL:DZC:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:DZConversion:STATe {OFF|ON|0|1}
CALCulate<Ch>:FSIMulator:BALun:DZConversion:STATe?

Description

Turns ON/OFF the differential impedance conversion function of the balanced port.
command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Diff ZConversion > Diff ZConversion [On/Off]

Back to CALCulate

CALC:FSIM:BAL:PAR:BAL

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:BALanced[:DEFine] <char>
CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:BALanced[:DEFine]?

Description

Selects the measurement parameter of the fixture simulation function when the device type is BALanced.

command/query

Target

Trace <Tr> of channel <Ch>,
<Tr>={[1]|2|...16}
<Ch>={[1]|2|...16}

Parameter

<char> Specifies the measurement parameter:

SDD11
SCD11
SDC11
SCC11

Query Response

{SDD11|SCD11|SDC11|SCC11}

Preset Value

SDD11

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > Measurement > {Sdd11|Scd11|Sdc11| Scc11 }

Back to CALCulate

CALC:FSIM:BAL:PAR:BBAL

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:BBALanced[:DEFine] <char>
CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:BBALanced[:DEFine]?

Description

Selects the measurement parameter of the fixture simulation function when the device type is BBALanced.

command/query

Target

Trace <Tr> of channel <Ch>,

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

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

Parameter

<char> Specifies the measurement parameter:

SDD11

SDD21

SDD12

SDD22

SCD11

SCD21

SCD12

SCD22

SDC11

SDC21

SDC12

SDC22

SCC11

SCC21

SCC12

SCC22

IMB1 Imbalance1

IMB2 Imbalance1

CMRR Sdd21/Scc21

Query Response

{SDD11|SDD21|SDD12|SDD22|SCD11|SCD21|SCD12|SCD22|SDC11|SDC21| SDC12|SDC22|SCC11| SCC21|SCC12|SCC22|IMB1|IMB2|CMRR}

Preset Value

SDD11

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > Measurement > {Sdd11|... CMRR }

Back to CALCulate

CALC:FSIM:BAL:PAR:SBAL

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:SBALanced[:DEFine] <char>
CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:SBALanced[:DEFine]?

Description

Selects the measurement parameter of the fixture simulation function when the device type is SBALanced.
command/query

Target

Trace <Tr> of channel <Ch>,
<Tr>={[1]|2|...16}
<Ch>={[1]|2|...16}

Parameter

<char> Specifies the measurement parameter:

SSS11	
SDS21	
SSD12	
SCS21	
SSC12	
SDD22	
SCD22	
SDC22	
SCC22	
IMB	Imbalance
CMRR1	Sds21/Scs21
CMRR2	Ssd12/Ssc12

Query Response

{SSS11|SDS21|SSD12|SCS21|SSC12|SDD22|SCD22|SDC22|SCC22| IMB|CMRR1|CMRR2}

Preset Value

SSS11

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > Measurement > {Sss11|... CMRR2 }

Back to CALCulate

CALC:FSIM:BAL:PAR:SSB

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:SSBalanced[:DEFine] <char>
CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:SSBalanced[:DEFine]?

Description

Selects the measurement parameter of the fixture simulation function when the device type is SSBalanced.
command/query

Target

Trace <Tr> of channel <Ch>,
<Tr>={[1]|2|...16}
<Ch>={[1]|2|...16}

Parameter

<char> Specifies the measurement parameter:

SSS11
SSS21
SSS12
SSS22
SDS31
SDS32
SSD13
SSD23
SCS31
SCS32
SSC13
SSC23
SDD33
SCD33
SDC33
SCC33

IMB1	Imbalance1
IMB2	Imbalance2
IMB3	Imbalance3
IMB4	Imbalance4
CMRR1	Sds31/Scs31
CMRR2	Sds32/Scs32

Query Response

{SSS11|SSS21|SSS12|SSS22|SDS31|SDS32|SSD13|SSD23|SCS31|SCS32| SSC13|SSC23|SDD33|SCD33|SDC33|SCC33|IMB1|IMB2|IMB3|IMB4|CMRR1|CMRR2}

Preset Value

SSS11

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > Measurement > {Sss11|... CMRR2 }

Back to CALCulate

CALC:FSIM:BAL:PAR:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:STATe {OFF|ON|0|1}

CALCulate<Ch>:FSIMulator:BALun:PARameter<Tr>:STATe?

Description

Turns ON/OFF the BalUn function for the specified trace.

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

Equivalent Softkeys

Analysis > Fixture Simulator > BalUn

Back to CALCulate

CALC:FSIM:BAL:TOP:BAL

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:TOPology:BALanced[:PPORts] <port1>,<port2>
CALCulate<Ch>:FSIMulator:BALun:TOPology:BALanced[:PPORts]?

Description

Sets or reads out the ports assigned to the balanced device when its type is "BALance".
command/query

Target

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

Parameter

<port1>	First port number
<port2>	Second port number

Query Response

<port1>, <port2>

Preset Value

1, 2

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > Topology > Port 1 (bal)

Back to CALCulate

CALC:FSIM:BAL:TOP:BBAL

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:TOPology:BBALanced[:PPORts] <port1>,<port2>, <port3>,<port4>
CALCulate<Ch>:FSIMulator:BALun:TOPology:BBALanced[:PPORts]?

Description

Sets or reads out the ports assigned to the balanced device when its type is "BBALance".

command/query

Target

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

Parameter

<port1>	First port number
<port2>	Second port number
<port3>	Third port number
<port4>	Fourth port number

Query Response

<port1>, <port2>, <port3>, <port4>

Preset Value

1, 2, 3, 4

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > Topology > Port 1 (bal), Port 2 (bal)

Back to CALCulate

CALC:FSIM:BAL:TOP:SBAL

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:TOPology:SBALanced[:PPORts] <port1>,<port2>, <port3>
CALCulate<Ch>:FSIMulator:BALun:TOPology:SBALanced[:PPORts]?

Description

Sets or reads out the ports assigned to the balanced device when its type is "SBALance".

command/query

Target

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

Parameter

<port1>	First port number
<port2>	Second port number
<port3>	Third port number

Query Response

<port1>, <port2>, <port3>

Preset Value

1, 2, 3, 4

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > Topology > Port 1 (se) , Port 2 (bal)

Back to CALCulate

CALC:FSIM:BAL:TOP:SSB

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:TOPology:SBALanced[:PPORts] <port1>,<port2>, <port3>
CALCulate<Ch>:FSIMulator:BALun:TOPology:SBALanced[:PPORts]?

Description

Sets or reads out the ports assigned to the balanced device when its type is "SBALance".
command/query

Target

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

Parameter

<port1>	First port number
<port2>	Second port number
<port3>	Third port number

Query Response

<port1>, <port2>, <port3>

Preset Value

1, 2, 3, 4

Related Commands

CALC:FSIM:BAL:DEV

Equivalent Softkeys

Analysis > Fixture Simulator > Topology > Port 1 (se) , Port 2 (bal)

Back to CALCulate

CALC:FSIM:BAL:TOP:PROP:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:BALun:TOPology:PROPerty:STATe {OFF|ON|0|1}
CALCulate<Ch>:FSIMulator:BALun:TOPology:PROPerty:STATe?

Description

Turns ON/OFF the BalUn property indication on the screen.
command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Topology > Property

Back to CALCulate

CALC:FSIM:EMB:NETW:FIL

SCPI Command

CALCulate<Ch>:FSIMulator:EMBed:NETWork<Nk>:FILename <string>
CALCulate<Ch>:FSIMulator:EMBed:NETWork<Nk>:FILename?

Description

Sets or reads out the name of 4-port touchstone file (*.s4p) of the 4-port network embedding/de-embedding feature. The file contains the circuit S–parameters in Touchstone format.

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

command/query

Target

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

Parameter

<srting>, up to 256 characters

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding S4P > File (ntwk1), File (ntwk2)

Back to CALCulate

CALC:FSIM:EMB:NETW:TYPE

SCPI Command

CALCulate<Ch>:FSIMulator:EMBed:NETWork<Nk>:TYPE <char>
CALCulate<Ch>:FSIMulator:EMBed:NETWork<Nk>:TYPE?

Description

Selects the processing type of the 4-port network embedding/de-embedding feature.

command/query, S4 only

Target

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

Parameter

<char> Specifies processing type:

NONE	No processing
EMBed	Embedding
DEEMbed	De-Embedding

Query Response

{NONE|EMB|DEEM}

Preset Value

NONE

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding S4P > Type (ntwk1), Type (ntwk2) > {None| Embed| De-Embed}

Back to CALCulate

CALC:FSIM:EMB:STAT

SCPI Command

CALCulate<Ch>:FSIMulator:EMBed:STATe {OFF|ON|0|1}
CALCulate<Ch>:FSIMulator:EMBed:STATe?

Description

Turns ON/OFF the 4-port network embedding/de-embedding feature.

command/query, S4 only

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding S4P > De–Embedding S4P

Back to CALCulate

CALC:FSIM:EMB:TOP:A:PORT

SCPI Command

CALCulate<Ch>:FSIMulator:EMBed:TOPology:A:PORTs <port1>,<port2>

CALCulate<Ch>:FSIMulator:EMBed:TOPology:A:PORTs?

Description

Sets or reads out the test port assignment when the Topology is set to A, for the 4-port network embedding/de-embedding feature.
command/query

Target

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

Parameter

<port1>	First port number
<port2>	Second port number

Query Response

1,2

Related Commands

CALC:FSIM:EMB:TYPE

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding S4P > Ports

Back to CALCulate

CALC:FSIM:EMB:TOP:B:PORT

SCPI Command

CALCulate<Ch>:FSIMulator:EMBed:TOPology:B:PORTs <port1>,<port2>,<port3>

CALCulate<Ch>:FSIMulator:EMBed:TOPology:B:PORTs?

Description

Sets or reads out the test port assignment when the Topology is set to B, for the 4-port network embedding/de-embedding feature.
command/query

Target

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

Parameter

<port1>	First port number
<port2>	Second port number
<port3>	Third port number

Query Response

1,2,3

Related Commands

CALC:FSIM:EMB:TYPE

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding S4P > Ports

Back to CALCulate

CALC:FSIM:EMB:TOP:C:PORT

SCPI Command

CALCulate<Ch>:FSIMulator:EMBed:TOPology:C:PORTs <port1>,<port2>,<port3>, <port4>
CALCulate<Ch>:FSIMulator:EMBed:TOPology:C:PORTs?

Description

Sets or reads out the test port assignment when the Topology is set to C, for the 4-port network embedding/de-embedding feature.

command/query

Target

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

Parameter

<port1>	First port number
<port2>	Second port number
<port3>	Third port number
<port4>	Fourth port number

Query Response

1,2,3,4

Related Commands

CALC:FSIM:EMB:TYPE

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding S4P > Ports

Back to CALCulate

CALC:FSIM:EMB:TYPE

SCPI Command

CALCulate<Ch>:FSIMulator:EMBed:TYPE <char>
CALCulate<Ch>:FSIMulator:EMBed:TYPE?

Description

Selects the Topology for the 4-port network embedding/de-embedding feature.
command/query, S4 only

Target

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

Parameter

<char> Specifies Topology:

A	Topology A
B	Topology B
C	Topology C

Query Response

{A|B|C}

Preset Value

A

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding S4P > Topology > {A| B| C}

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

command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding > De–Embedding

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

command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding > Port n

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 *.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 \FixtireSim 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} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<srting>, up to 256 characters

Equivalent Softkeys

Analysis > Fixture Simulator > De–Embedding > S–parameters File

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 ON/OFF the 2-port network embedding function.

command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Embedding > Embedding

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

command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Embedding > Port n

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 *.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 \FixtireSim 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} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<srting>, up to 256 characters

Equivalent Softkeys

Analysis > Fixture Simulator > Embedding > S–parameters File

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 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} for S2VNA or {[1]|2|3|4} for S4VNA

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

Equivalent Softkeys

Analysis > Fixture Simulator > Port Z Conversion > Port n Z0

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} for S2VNA or {[1]|2|3|4} for S4VNA

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

Equivalent Softkeys

Analysis > Fixture Simulator > Port Z Conversion > Port n Z0 Real

Back to CALCulate

CALC:FSIM:SEND:ZCON:PORT:Z0:IMAGinary

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} for S2VNA or {[1]|2|3|4} for S4VNA

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

Equivalent Softkeys

Analysis > Fixture Simulator > Port Z Conversion > Port n Z0 Imag

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 ON/OFF the port impedance conversion function.
command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Port Z Conversion > Port Z Conversion

Back to CALCulate

CALC:FSIM:STAT

SCPI Command

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

Description

Turns ON/OFF the fixture simulation function.
command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Fixture Simulator > Fixture Simulator

Back to CALCulate

CALC:FUNC:DATA?

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:DATA?

Or

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

Description

Reads out the data array, which is the CALC:FUNC:EXEC command analysis result.

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

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

<numeric 2n–1> the response value in n–th measurement point;

<numeric 2n> the stimulus value in n–th measurement point. Always set to 0 for the analysis of mean value, standard deviation, and peak–to–peak 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 2N>

Related Commands

CALC:FUNC:EXEC

CALC:FUNC:POIN?

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:DOM

SCPI Command

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

CALCulate<Ch>[:SELected]:FUNCtion:DOMain[:STATe]?

Or

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

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

Description

Specify whether an arbitrary range or the entire sweep range is used when the CALC:FUNC:EXEC command is executed.

command/query

Target

All traces of channel <Ch> (if the coupling is set to ON by the CALC: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

Select the following:

{ON|1}	Arbitrary range
{OFF|0}	Entire sweep range

Query Response

{0|1}

Preset Value

0

Related Commands

CALC:FUNC:EXEC
CALC:FUNC:DOM:COUP

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:DOM:COUP

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:DOMain:COUPle {OFF|ON|0|1}
CALCulate<Ch>[:SELected]:FUNCtion:DOMain:COUPle?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:DOMain:COUPle {OFF|ON|0|1}
CALCulate<Ch>:TRACe<Tr>:FUNCtion:DOMain:COUPle?

Description

If the arbitrary range turned ON by the CALC:FUNC:DOM command, specifies whether all traces of channel use the same range (coupling) or each trace uses individual range when the CALC:FUNC:EXEC command is executed.

command/query

Target

All traces of channel <Ch>,
<Ch> = {[1]|2|...16}

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Related Commands

CALC:FUNC:EXEC

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:DOM:STAR

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:DOMain:STARt <stimulus>
CALCulate<Ch>[:SELected]:FUNCtion:DOMain:STARt?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:DOMain:STARt <stimulus>
CALCulate<Ch>:TRACe<Tr>:FUNCtion:DOMain:STARt?

Description

Sets the start value of the analysis range of the CALC:FUNC:EXEC command.

command/query

Target

All traces of channel <Ch> (if the coupling is set to ON by the CALC: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 analysis range

Unit

Hz |s |dBm

Query Response

<numeric>

Preset Value

0

Related Commands

CALC:FUNC:DOM

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:DOM:STOP

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:DOMain:STOP <stimulus>
CALCulate<Ch>[:SELected]:FUNCtion:DOMain:STOP?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:DOMain:STOP <stimulus>
CALCulate<Ch>:TRACe<Tr>:FUNCtion:DOMain:STOP?

Description

Sets the stop value of the analysis range of the CALC:FUNC:EXEC command.
command/query

Target

All traces of channel <Ch> (if the coupling is set to ON by the CALC: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 analysis range

Unit

Hz |s |dBm

Query Response

<numeric>

Preset Value

0

Related Commands

CALC:FUNC:DOM

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:EXEC

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:EXECute
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:EXECute

Description

Executes the analysis specified by the CALC:FUNC:TYPE command.
The analysis result can be read out by the CALC:FUNC:DATA? command.

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}

Related Commands

CALC:FUNC:TYPE
CALC:FUNC:DATA?

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:PEXC

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:PEXCursion <numeric>
CALCulate<Ch>[:SELected]:FUNCtion:PEXCursion?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:PEXCursion <numeric>
CALCulate<Ch>:TRACe<Tr>:FUNCtion:PEXCursion?

Description

Sets the lower limit for the peak excursion value when executing the peak search with the CALC:FUNC:EXEC command.

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 lower limit of the peak excursion value, varies depending on the data format

Unit

dB |° |s

Query Response

<numeric>

Preset Value

3.0

Related Commands

CALC:FUNC:EXEC

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:POIN?

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:POINts?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:POINts?

Description

Reads out the number of points (data pairs) of the analysis result by the CALC:FUNC:EXEC command.

Always reads out 1, when the search is executed for the maximum, minimum, mean, standard deviation, peak, and peak–to–peak values. The actual number of points is read out, when the search is executed for all peak or all targets.

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:FUNC:EXEC

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:PPOL

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:PPOLarity <char>
CALCulate<Ch>[:SELected]:FUNCtion:PPOLarity?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:PPOLarity <char>
CALCulate<Ch>:TRACe<Tr>:FUNCtion:PPOLarity?

Description

Selects the polarity when performing the peak search with the CALC:FUNC:EXEC command.

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 polarity:

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

Query Response

{POS|NEG|BOTH}

Preset Value

POS

Related Commands

CALC:FUNC:EXEC

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:TARG

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:TARGet <numeric>
CALCulate<Ch>[:SELected]:FUNCtion:TARGet?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:TARGet <numeric>
CALCulate<Ch>:TRACe<Tr>:FUNCtion:TARGet?

Description

Selects the target level when performing the search for the trace and the target level crosspoints with the CALC:FUNC:EXEC command.

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 target value, varies depending on the data format

Unit

dB |° |s

Query Response

<numeric>

Preset Value

0

Related Commands

CALC:FUNC:EXEC

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:TTR

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:TTRansition <char>
CALCulate<Ch>[:SELected]:FUNCtion:TTRansition?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:TTRansition <char>
CALCulate<Ch>:TRACe<Tr>:FUNCtion:TTRansition?

Description

Selects the transition type when performing the search for the trace and the target level crosspoints with the CALC:FUNC:EXEC command.

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 transition:

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

Query Response

{POS|NEG|BOTH}

Preset Value

POS

Related Commands

CALC:FUNC:EXEC

Equivalent Softkeys

None

Back to CALCulate

CALC:FUNC:TYPE

SCPI Command

CALCulate<Ch>[:SELected]:FUNCtion:TYPE <char>
CALCulate<Ch>[:SELected]:FUNCtion:TYPE?
Or
CALCulate<Ch>:TRACe<Tr>:FUNCtion:TYPE <char>
CALCulate<Ch>:TRACe<Tr>:FUNCtion: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 transition:

PTPeak	Peak–to–peak (difference between the maximum value and the minimum value)
STDEV	Standard deviation
MEAN	Mean value
MAXimum	Maximum value
MINimum	Minimum value
PEAK	Search for peak
APEak	Search for all the peaks
ATARget	Search for all targets

Query Response

{PTP|STDEV|MEAN|MAX|MIN|PEAK|APE|ATAR}

Preset Value

PTP

Related Commands

CALC:FUNC:EXEC

Equivalent Softkeys

None

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

Equivalent Softkeys

Display > Trace Hold > { OFF | Maximum | Minimum }

Back to CALCulate

CALC:HOLD:CLEar

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 > Reset

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 ON/OFF the limit test.
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

Equivalent Softkeys

Analysis > Limit Test > Limit Test

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>

Equivalent Softkeys

Analysis > Limit Test > Edit Limit Line

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 ON/OFF the limit line display of the limit test 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

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Limit Test > Limit Line

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

Equivalent Softkeys

None

Back to CALCulate

CALC:LIM:OFFS:AMPL

SCPI Command

CALCulate<Ch>[:SELected]:LIMit:OFFSet:AMPLitude <numeric>
CALCulate<Ch>[:SELected]:LIMit:OFFSet:AMPLitude?
Or
CALCulate<Ch>:TRACe<Tr>:LIMit:OFFSet:AMPLitude <numeric>
CALCulate<Ch>:TRACe<Tr>:LIMit:OFFSet:AMPLitude?

Description

Sets and reads out the value of the limit line offset along Y–axis.
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 value of the limit line offset along Y–axis, varies depending on the data format.

Unit

dB |° |s

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Analysis > Limit Test > Limit Line Offsets > Response Offset

Back to CALCulate

CALC:LIM:OFFS:MARK

SCPI Command

CALCulate<Ch>[:SELected]:LIMit:OFFSet:MARKer
Or
CALCulate<Ch>:TRACe<Tr>:LIMit:OFFSet:MARKer

Description

Sets the value of the limit line offset along Y–axis to the active marker 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}

Equivalent Softkeys

Analysis > Limit Test > Limit Line Offsets > Marker > Response Ofs

Back to CALCulate

CALC:LIM:OFFS:STIM

SCPI Command

CALCulate<Ch>[:SELected]:LIMit:OFFSet:STIMulus <stimulus>
CALCulate<Ch>[:SELected]:LIMit:OFFSet:STIMulus?
Or
CALCulate<Ch>:TRACe<Tr>:LIMit:OFFSet:STIMulus <stimulus>
CALCulate<Ch>:TRACe<Tr>:LIMit:OFFSet:STIMulus?

Description

Sets and reads out the value of the limit line offset along X–axis.
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

<stimulus> the value of the limit line offset along X–axis

Unit

Hz | s | dBm

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Analysis > Limit Test > Limit Lines Offsets > Stimulus Offset

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 data array, which is the limit test result.
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>

Equivalent Softkeys

None

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? 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?

Equivalent Softkeys

None

Back to CALCulate

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? 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?

Equivalent Softkeys

None

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 ON/OFF the marker.

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 switchs 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

Equivalent Softkeys

Markers > Add Marker | Remove Marker

Markers > Reference Marker

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 switchs 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}

Equivalent Softkeys

Markers > Select > Marker n

Markers > Reference Marker

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 ON/OFF 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

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Markers > Marker Math > Bandwidth Search > Bandwidth Search

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 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

Equivalent Softkeys

None

Back to CALCulate

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 point 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

Equivalent Softkeys

Markers > Marker Math > Bandwidth Search > Search Ref To

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 definition 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

Equivalent Softkeys

Markers > Marker Math > Bandwidth Search > Bandwidth Value

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

Equivalent Softkeys

Markers > Marker Math > Bandwidth Search > Type

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 the 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

Equivalent Softkeys

None

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 ON/OFF the marker coupling between traces. When coupled the markers of different traces with 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

Equivalent Softkeys

Marker > Properties > Marker Couple

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}

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

Equivalent Softkeys

None

Back to CALCulate

CALC:MARK:DISC

SCPI Command

CALCulate<Ch>[:SELected]:MARKer:DISCrete {OFF|ON|0|1}

CALCulate<Ch>[:SELected]:MARKer:DISCrete?

Or

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

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

Description

Turns ON/OFF the marker discrete mode.

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

Equivalent Softkeys

Marker > Properties > Discrete

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

Specify whether an arbitrary range or the entire sweep range is used when the marker search is performed.
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}	Arbitrary range
{OFF|0}	Entire sweep range

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Markers > Marker Search > Search Range

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

If the arbitrary search range turned ON by the CALC:MARK:FUNC:DOM command, specifies whether all traces of channel use the same range (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 search range coupling:

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

Markers > Marker Search > Couple

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

Equivalent Softkeys

Markers > Marker Search > Search Start

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 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

Equivalent Softkeys

Markers > Marker Search > Search Stop

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 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

CALC:MARK:FUNC:DOM

Equivalent Softkeys

Markers > Marker Search > { Maximum | Minimum }

Markers > Marker Search > Peak > { Search Peak | Search Max Peak | Search Peak Left | Search Peak Right }

Markers > Marker Search > Target > { Search Target | Search Target Left | Search Target Right }

Back to CALCulate

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 search for peak 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

1

Equivalent Softkeys

Markers > Marker Search > Peak > Peak Excursion

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 search for peak 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

<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

Equivalent Softkeys

Markers > Marker Search > Peak > Peak Polarity > { Positive | Negative | Both }

Back to CALCulate

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 search for target 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

Equivalent Softkeys

Markers > Marker Search > Target > Target Value

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 ON/OFF the marker search tracking.
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

Equivalent Softkeys

Markers > Marker Search > Tracking

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 search for transition 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

<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

Equivalent Softkeys

Marker > Marker Search > Target > Target Transition > { Positive | Negative | Both }

Back to CALCulate

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 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

Equivalent Softkeys

Markers > Marker Search > { Maximum | Minimum }

Markers > Marker Search > Peak > { Search Peak | Search Max Peak | Search Peak Left | Search Peak Right }

Markers > Marker Search > Target > { Search Target | Search Target Left | Search Target Right }

Back to CALCulate

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 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
CALC:MARK:MATH:FLAT:DOM:STOP

Equivalent Softkeys

None

Back to CALCulate

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 ON/OFF the marker FLATNESS 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

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Markers > Marker Math > Flatness > Flatness

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

Equivalent Softkeys

Markers > Marker Math > Flatness > Flatness Start

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

Equivalent Softkeys

Markers > Marker Math > Flatness > Flatness Stop

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 ON/OFF the reference marker.
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

Equivalent Softkeys

Markers > Reference Marker

Back to CALCulate

CALC:MARK:SET

SCPI Command

CALCulate<Ch>[:SELected]:MARKer<Mk>:SET <char>
Or
CALCulate<Ch>:TRACe<Tr>:MARKer<Mk>:SET <char>

Description

Sets the value of the specified item to the value of the position of the marker.

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}

Parameter

<char> Specifies the type of the marker search:

STARt	Sweep start value set to the stimulus value of the marker position.
STOP	Sweep stop value set to the stimulus value of the marker position.
CENTer	Sweep center value set to the stimulus value of the marker position.
RLEVel	Reference value set to the response value of the marker position.
DELay	Delay value set to the response value of the marker position

Equivalent Softkeys

Markers > Marker Functions > { Marker–>Start | Marker–>Stop | Marker –>Center | Marker–>Ref Value | Marker–>Delay }

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

Equivalent Softkeys

Markers > Edit Stimulus

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

Equivalent Softkeys

None

Back to CALCulate

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

Equivalent Softkeys

Display > Data Math > { Data/Mem | Data*Mem | Data+Mem | Data–Mem | OFF }

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}

Equivalent Softkeys

Display > Data–>Memory

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 ON/OFF the math statistics 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

{ON|1}	Reference marker ON
{OFF|0}	Reference marker OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Markers > Marker Math > Statistics > Statistics

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 CALC:MST:DOM 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

Equivalent Softkeys

None

Back to CALCulate

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 partial frequency range or entire frequency range is 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
CALC:MST:DOM:STOP

Equivalent Softkeys

Markers > Marker Math > Statistics > Statistics Range

Back to CALCulate

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

Equivalent Softkeys

Markers > Marker Math > Statistics > Statistics Start

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

Equivalent Softkeys

Markers > Marker Math > Statistics > Statistics Stop

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>={[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

Equivalent Softkeys

Display > Num of Traces

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, S12, S13, S14, S21, S22, S23, S24, S31, S32, S33, S34, S41, S42, S43, S44	S – parameter
A, B, C, D or T1, T2, T3, T4	Test receiver
R1, R2, R3, R4	Reference receiver
AUX1, AUX2 or V1, V2	DC Voltage

Query Response

{S11|S12|S13|S14|S21|S22|S23|S24|S31|S32|S33|S34|S41|S42|S43| S44|R1(n)|R2(n)|R3(n)|R4(n)|A(n)|B(n)|C(n)|D(n)|V1(n)|V2(n)},

Where n is the stimulus port number

Preset Value

Depends on the trace number.

Equivalent Softkeys

Measurement > S11 | S21 | S12 | S22 ...

Measurement > Absolute

Back to CALCulate

CALC:PAR:SEL

SCPI Command

CALCulate<Ch>:PARameter<Tr>:SELect

Description

Selects the active trace in 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

Equivalent Softkeys

Display > Active Trace/Channel > Active Trace

Back to CALCulate

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.
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

Equivalent Softkeys

Measurement > Absolute > { A(1) | B(1) | R1(1) | A(2) | B(2) | R2(2) }

Back to CALCulate

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 ON/OFF the ripple limit test.
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

Equivalent Softkeys

Analysis > Ripple Limit > Ripple Test

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>

Equivalent Softkeys

Analysis > Ripple Limit > Edit Ripple Limit

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 ON/OFF the ripple limit line 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

Choose from:

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Ripple Limit > Ripple Limit

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

Equivalent Softkeys

Analysis > Ripple Limit > Ripple Value Band

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

Equivalent Softkeys

Analysis > Ripple Limit > Ripple Value

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

Equivalent Softkeys

None

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>

Equivalent Softkeys

None

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 ON/OFF the trace smoothing.

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

Equivalent Softkeys

Average > Smoothing

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

Equivalent Softkeys

Average > Smo Aperture

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: band-pass or low-pass.
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	Ban-dpass
LPASs	Low-pass

Query Response

{BPAS|LPAS}

Preset Value

BPAS

Equivalent Softkeys

Analysis > Time Domain > Type > { Bandpass | Lowpass Step | Lowpass Impulse }

Back to CALCulate

CALC:TRAN:TIME:CENT

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

Equivalent Softkeys

Analysis > Time Domain > Center

Back to CALCulate

CALC:TRAN:TIME:IMP:WIDT

SCPI Command

CALCulate<Ch>[:SELected]:TRANsform:TIME:IMPulse:WIDTh <time>

CALCulate<Ch>[:SELected]:TRANsform:TIME:IMPulse:WIDTh?

Or

CALCulate<Ch>:TRACe<Tr>:TRANsform:TIME:IMPulse:WIDTh <time>

CALCulate<Ch>:TRACe<Tr>:TRANsform:TIME:IMPulse:WIDTh?

Description

Sets or reads out the impulse width (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>

Equivalent Softkeys

Analysis > Time Domain > Window > Impulse Width (when the transformation type is set to Bandpass or Lowpass Impulse)

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 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

Equivalent Softkeys

Analysis > Time Domain > Window > Kaiser Beta

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 match with the low-pass 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}

Equivalent Softkeys

Analysis > Time Domain > Set Frequency Low Pass

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

Equivalent Softkeys

Analysis > Time Domain >Reflection Type > Round Trip | One Way

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

Equivalent Softkeys

Analysis > Time Domain > Span

Back to CALCulate

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

Equivalent Softkeys

Analysis > Time Domain > Start

Back to CALCulate

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

Equivalent Softkeys

Analysis > Time Domain > Stop

Back to CALCulate

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 ON/OFF 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

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Time Domain > Time Domain

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>

Equivalent Softkeys

Analysis > Time Domain > Window > Impulse Width (when the transformation type is set to Lowpass Step)

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.
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

Equivalent Softkeys

Analysis > Time Domain > Type > { Bandpass | Lowpass Step | Lowpass Impulse }

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 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

Equivalent Softkeys

Analysis > Time Domain > Unit > Seconds | Meters | Feet

Back to CALCulate

DISPlay

Command	Description
DISP:COL:BACK	Sets or reads out the background color for trace display.
DISP:COL:GRAT	Sets or reads out the grid and the graticule label color for trace display.
DISP:COL:RES	Restores the display settings to the default values.

DISP:COL:TRAC:DATA	Sets or reads out the data trace color.
DISP:COL:TRAC:MEM	Sets or reads out the memory trace color.
DISP:ENAB	Turns ON/OFF the display update.
DISP:FSIG	Turns ON/OFF the "Fail" sign display, when performing limit test or ripple limit test.
DISP:IMAG	Turns ON/OFF the invertion of display colors of the traces area.
DISP:HIDE	Hides the Analyzer GUI.
DISP:MARKer:TABL	Turns ON/OFF of the marker table.
DISP:MAX	Turns ON/OFF of the maximization of the active channel window.
DISP:SHOW	Shows the Analyzer GUI hidden by the DISP:HIDE command.
DISP:SPL	Sets or reads out the layout of the channel windows on the screen.
DISP:UPD	Updates the display once, when the display update is set to OFF by the DISP:ENAB command.
DISP:WIND:ACT	Sets the active channel.
DISP:WIND:ANN:MARK:ALIG	Sets or reads out the alignment mode of the marker display position of each trace, when the only active trace display feature is turned OFF by the DISP:WIND:ANN:MARK:SING command.
DISP:WIND:ANN:MARK:SING	Selects display either the active trace markers or the all trace markers.
DISP:WIND:MAX	Turn ON/OFF the active trace maximization inside the specified channel.
DISP:WIND:SPL	Sets or reads out the layout of the graph in the channel window.
DISP:WIND:TITL	Turns ON/OFF the channel title display.
DISP:WIND:TITL:DATA	Sets or reads out the channel title label.
DISP:WIND:TRAC:ANN:MARK:POS:X	Sets or reads out the display position of the marker annotation on the X–axis by a percentage of the display width.
DISP:WIND:TRAC:ANN:MARK:POS:Y	Sets or reads out the display position of the marker annotation on the Y–axis by a percentage of the display height.
DISP:WIND:TRAC:MEM	Turns ON/OFF the memory trace display.
DISP:WIND:TRAC:STAT	Turns ON/OFF the data trace display.
DISP:WIND:TRAC:Y:AUTO	Executes the auto scale function for the trace. The function automatically sets both the PDIVision and the RLEVel values.
DISP:WIND:TRAC:Y:PDIV	Sets or reads out the trace scale. Sets the scale per division, when the data format is the rectangular format. Sets the full scale value, when the data format is the Smith chart format or the polar format.
DISP:WIND:TRAC:Y:RLEV	Sets the value of the reference line (response value on the reference line). For the rectangular format only.
DISP:WIND:TRAC:Y:RLEV:AUTO	Executes the auto reference function for the trace. The function automatically sets the RLEVel value.
DISP:WIND:TRAC:Y:RPOS	Sets the position of the reference line. For the rectangular format only.

DISP:WIND:X:SPAC	Sets or reads out the display method of the graph horizontal axis for the segment sweep.
DISP:WIND:Y:DIV	Sets the number of the vertical scale divisions. For the rectangular format only.

DISP:COL:BACK

SCPI Command

DISPlay:COLor:BACK <numeric 1>,<numeric 2>,<numeric 3>
DISPlay:COLor:BACK?

Description

Sets or reads out the background color for trace display.

command/query

Parameter

<numeric 2>	Red value R from 0 to 255
<numeric 3>	Green value G from 0 to 255
<numeric 4>	Blue value B from 0 to 255

Out of Range

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

Query Response

<numeric 1>, <numeric 2>, <numeric 3>

Preset Value

0,0,0

Equivalent Softkeys

Display > Properties > Color > Background > { Red | Green | Blue }

Back to DISPlay

DISP:COL:GRAT

SCPI Command

DISPlay:COLor:GRATicule <numeric 1>,<numeric 2>,<numeric 3>
DISPlay:COLor:GRATicule?

Description

Sets or reads out the grid and the graticule label color for trace display.

command/query

Parameter

<numeric 2>	Red value R from 0 to 255
<numeric 3>	Green value G from 0 to 255
<numeric 4>	Blue value B from 0 to 255

Out of Range

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

Query Response

<numeric 1>, <numeric 2>, <numeric 3>

Preset Value

160,160,164

Equivalent Softkeys

Display > Properties > Color > Grid > { Red | Green | Blue }

Back to DISPlay

DISP:COL:RES

SCPI Command

DISPlay:COLor:RESet

Description

Restores the display settings to the default values.

no query

Equivalent Softkeys

Display > Properties > Set Defaults

Back to DISPlay

DISP:COL:TRAC:DATA

SCPI Command

DISPlay:COLor:TRACe<Tr>:DATA <numeric 1>,<numeric 2>,<numeric 3>
DISPlay:COLor:TRACe<Tr>:DATA?

Description

Sets or reads out the data trace color.

command/query

Target

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

Parameter

<numeric 2>	Red value R from 0 to 255
<numeric 3>	Green value G from 0 to 255
<numeric 4>	Blue value B from 0 to 255

Out of Range

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

Query Response

<numeric 1>, <numeric 2>, <numeric 3>

Preset Value

Varies depending on the trace number.

Equivalent Softkeys

Display > Properties > Color > Data Trace > { Red | Green | Blue }

Back to DISPlay

DISP:COL:TRAC:MEM

SCPI Command

DISPlay:COLor:TRACe<Tr>:MEMory <numeric 1>,<numeric 2>,<numeric 3>
DISPlay:COLor:TRACe<Tr>:MEMory?

Description

Sets or reads out the memory trace color.

command/query

Target

Trace <Tr>,

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

Parameter

<numeric 2>	Red value R from 0 to 255
<numeric 3>	Green value G from 0 to 255
<numeric 4>	Blue value B from 0 to 255

Out of Range

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

Query Response

<numeric 1>, <numeric 2>, <numeric 3>

Preset Value

Varies depending on the trace number.

Equivalent Softkeys

Display > Properties > Color > Memory Trace > { Red | Green | Blue }

Back to DISPlay

DISP:ENAB

SCPI Command

DISPlay:ENABle {OFF|ON|0|1}
DISPlay:ENABle?

Description

Turns ON/OFF the display update.
command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

Display > Update

Back to DISPlay

DISP:FSIG

SCPI Command

DISPlay:FSIGn {OFF|ON|0|1}
DISPlay:FSIGn?

Description

Turns ON/OFF the "Fail" sign display, when performing limit test or ripple limit test.

command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Analysis > Limit Test > Fail Sign
Analysis > Ripple Limit > Fail Sign

Back to DISPlay

DISP:IMAG

SCPI Command

DISPlay:IMAGe <char>
DISPlay:IMAGe?

Description

Turns ON/OFF the invertion of display colors of the traces area.

command/query

Parameter

<char> Choose from:

NORMal	Normal display
INVert	Inverted color display

Query Response

{NORM|INV}

Preset Value

NORM

Equivalent Softkeys

Display > Properties > Invert Color

Back to DISPlay

DISP:HIDE

SCPI Command

DISPlay:HIDE

Description

Hides the Analyzer GUI.

no query

Related Commands

DISP:SHOW

Equivalent Softkeys

None

Back to DISPlay

DISP:MARKer:TABL

SCPI Command

DISPlay:MARKer:TABLe[:STATe] {OFF|ON|0|1}
DISPlay:MARKer:TABLe[:STATe]?

Description

Turns ON/OFF of the marker table.

command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Display > Marker > Properties > Marker Table

Back to DISPlay

DISP:MAX

SCPI Command

DISPlay:MAXimize {OFF|ON|0|1}
DISPlay:MAXimize?

Description

Turns ON/OFF of the maximization of the active channel window.

command/query

Target

The active channel set by the command DISP:WIND:ACT.

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Display > Active Trace/Channel > Maximize channel

Back to DISPlay

DISP:SHOW

SCPI Command

DISPlay:SHOW

Description

Shows the Analyzer GUI hidden by the DISP:HIDE command.
no query

Related Commands

DISP:HIDE

Equivalent Softkeys

None

Back to DISPlay

DISP:SPL

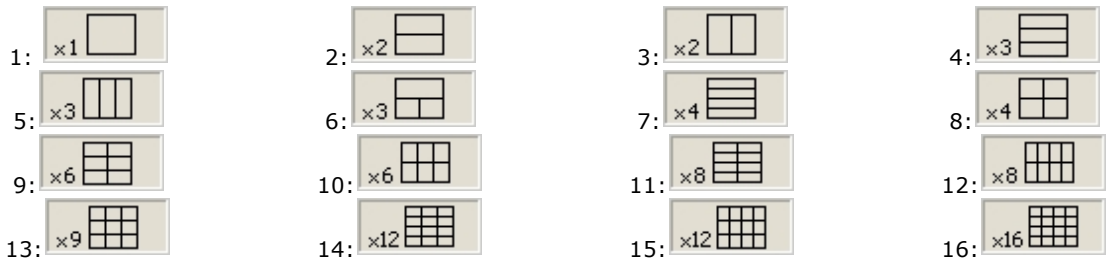
SCPI Command

DISPlay:SPLit <numeric>
DISPlay:SPLit?

Description

Sets or reads out the layout of the channel windows on the screen. The channel window layout on the screen see below.
command/query

Channel window layout on the screen



Parameter

<numeric> the number of the channel window layout from 1 to 16

Query Response

<numeric>

Preset Value

1

Equivalent Softkeys

Display > Allocate channels

Back to DISPlay

DISP:UPD

SCPI Command

DISPlay:UPDate[:IMMediate]

Description

Updates the display once, when the display update is set to OFF by the DISP:ENAB command.
no query

Related Commands

DISP:ENAB

Equivalent Softkeys

None

Back to DISPlay

DISP:WIND:ACT

SCPI Command

DISPlay:WINDow<Ch>:ACTivate

Description

Sets the active channel. **Note:** At attempt to set to the active channel the channel, which is not displayed by the DISP:SPL command, an error occurs.
no query

Target

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

Related Commands

DISP:SPL

Equivalent Softkeys

Display > Active Trace / Channel > Active Channel

Back to DISPlay

DISP:WIND:ANN:MARK:ALIG

SCPI Command

DISPlay:WINDow<Ch>:ANNotation:MARKer:ALIGn[:TYPE] <char>
DISPlay:WINDow<Ch>:ANNotation:MARKer:ALIGn[:TYPE]?

Description

Sets or reads out the alignment mode of the marker display position of each trace, when the only active trace display feature is turned OFF by the DISP:WIND:ANN:MARK:SING command.

command/query

Target

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

Parameter

<char> Choose from:

VERTical	Vertical alignment
HORizontal	Horizontal alignment
NONE	No alignment

Query Response

{NONE|VERT|HOR}

Preset Value

NONE

Related Commands

DISP:WIND:ANN:MARK:SING

Equivalent Softkeys

Markers > Properties > Align > { Vertical | Horizontal | OFF }

Back to DISPlay

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 either the active trace markers or the 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

Equivalent Softkeys

Markers > Properties > Active Only

Back to DISPlay

DISP:WIND:MAX

SCPI Command

DISPlay:WINDow<Ch>:MAXimize {OFF|ON|0|1}
DISPlay:WINDow<Ch>:MAXimize?

Description

Turn ON/OFF the active trace maximization inside the specified channel.

command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Display > Active Trace/Channel > Maximize Trace

Back to DISPlay

DISP:WIND:SPL

SCPI Command

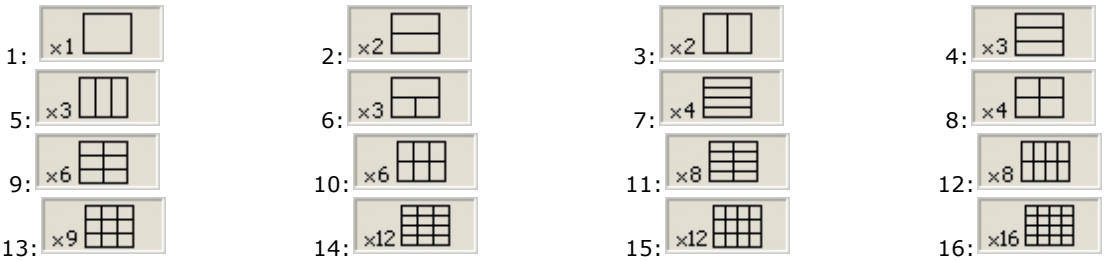
DISPlay:WINDow<Ch>:SPLit <numeric>
DISPlay:WINDow<Ch>:SPLit?

Description

Sets or reads out the layout of the graph in the channel window.
The graph layout in the channel window see below.

command/query

Graph layout in the channel window



Target

Channel <Ch>,

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

Parameter

<numeric> the number of the channel window 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

Equivalent Softkeys

Display > Allocate Traces

Back to DISPlay

DISP:WIND:TITL

SCPI Command

DISPlay:WINDow<Ch>:TITLe[:STATe] {OFF|ON|0|1}
DISPlay:WINDow<Ch>:TITLe[:STATe]?

Description

Turns ON/OFF the channel title display.
command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Display > Title Label

Back to DISPlay

DISP:WIND:TITL:DATA

SCPI Command

DISPlay:WINDow<Ch>:TITLe:DATA <string>
DISPlay:WINDow<Ch>:TITLe:DATA?

Description

Sets or reads out the channel title label.

command/query

Target

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

Parameter

<string>, up to 256 characters

Query Response

<string>

Preset Value

Empty string

Equivalent Softkeys

Display > Edir Title Label

Back to DISPlay

DISP:WIND:TRAC:ANN:MARK:POS:X

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:ANNotation:MARKer:POSition:X <numeric>
DISPlay:WINDow<Ch>:TRACe<Tr>:ANNotation:MARKer:POSition:X?

Description

Sets or reads out the display position of the marker annotation on the X–axis by a percentage of the

display width.
command/query

Target

Trace <Tr> of channel <Ch>,
<Tr>={[1]|2|...16}
<Ch>={[1]|2|...16}

Parameter

<numeric> the display position of the marker value on the X–axis from 0 to 100

Unit

% (percent)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Markers > Properties > Data X Position

Back to DISPlay

DISP:WIND:TRAC:ANN:MARK:POS:Y

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:ANNotation:MARKer:POSition:Y <numeric>
DISPlay:WINDow<Ch>:TRACe<Tr>:ANNotation:MARKer:POSition:Y?

Description

Sets or reads out the display position of the marker annotation on the Y–axis by a percentage of the display height.
command/query

Target

Trace <Tr> of channel <Ch>,
<Tr>={[1]|2|...16}

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

Parameter

<numeric> the display position of the marker value on the Y–axis from 0 to 100

Unit

% (percent)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Markers > Properties > Data Y Position

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 ON/OFF the memory trace display.

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

Equivalent Softkeys

Display > Display > Memory | Data & Memory (ON)
Display > Display > { Data | OFF } (OFF)

Back to DISPlay

DISP:WIND:TRAC:STAT

SCPI Command

DISPlay:WINDow<Ch>:TRACe<Tr>:STATe {OFF|ON|0|1}
DISPlay:WINDow<Ch>:TRACe<Tr>:STATe?

Description

Turns ON/OFF the data trace display.
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

Equivalent Softkeys

Display > Display > Data | Data & Memory (ON)
Display > Display > { Memory | OFF } (OFF)

Back to DISPlay

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
DISP:WIND:TRAC:Y:RLEV

Equivalent Softkeys

Scale > Auto Scale

Back to DISPlay

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 the rectangular format. Sets the full scale value, when the data format is 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

Equivalent Softkeys

Scale > Scale

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)

Equivalent Softkeys

Scale > Ref Value

Back to DISPlay

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

Equivalent Softkeys

Scale > Auto Ref Value

Back to DISPlay

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.

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)

Equivalent Softkeys

Scale > Ref Position

Back to DISPlay

DISP:WIND:X:SPAC

SCPI Command

DISPlay:WINDow<Ch>:X:SPACing <char>
DISPlay:WINDow<Ch>:X:SPACing?

Description

Sets or reads out the display method of the graph horizontal axis for the segment sweep.
command/query

Target

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

Parameter

<char> Choose from:

LINear	Frequency base (linear frequency axis)
OBASe	Order base (linear axis of the point numbers)

Out of Range

The command is ignored.

Query Response

{LIN|OBAS}

Preset Value

LIN

Related Commands

SENS:SWE:TYPE

Equivalent Softkeys

Stimulus > Segment Table > Segment Display

Back to DISPlay

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

Equivalent Softkeys

Scale > Divisions

Back to DISPlay

FORMat

Command	Description
FORM:BORD	Sets or reads out the transfer order of each byte in data, when the binary data transfer format is set by the FORM:DATA command.
FORM:DATA	Sets or reads out the data transfer format, when responding to the queries.
FORM:PUSH	Saves the current settings and sets new values for the data transfer format and byte order.
FORM:POP	Restores the settings for the data transfer format and byte order saved by the preceeding FORM:PUSH command.

FORM:BORD

SCPI Command

FORMat:BORDer <char>

FORMat:BORDer?

Description

Sets or reads out the transfer order of each byte in data, when the binary data transfer format is set by the FORM:DATA command.

Note: The x86 compatible processors use the little-endian format.

command/query

Parameter

<char> Choose from:

NORMal	Normal (big-endian format)
SWAPped	Swapped (little-endian format)

Query Response

{NORM|SWAP}

Preset Value

NORM

Related Commands

FORM:DATA

Equivalent Softkeys

None

Back to FORMat

FORM:DATA

SCPI Command

FORMat:DATA <char>

FORMat:DATA?

Description

Sets or reads out the data transfer format, when responding to the following queries:

CALC:DATA:FDAT?
CALC:DATA:FMEM?
CALC:DATA:SDAT?
CALC:DATA:SMEM?
CALC:DATA:XAX?
CALC:FUNC:DATA?
CALC:LIM:DATA?
CALC:LIM:REP?
CALC:LIM:REP:ALL?
CALC:MARK:DATA?
SENS:CORR:COLL:DATA:LOAD?
SENS:CORR:COLL:DATA:OPEN?
SENS:CORR:COLL:DATA:SHOR?
SENS:CORR:COLL:DATA:THRU:MATCh?
SENS:CORR:COLL:DATA:THRU:TRAN?
SENS:DATA:CORR?
SENS:DATA:RAWD?
SENS:FREQ:DATA?
SENS:OFFS:SOUR:DATA?
SENS:OFFS:REC:DATA?

CALC:RLIM:DATA? CALC:RLIM:REP? SENS:CORR:COEF? SENS:CORR:COLL:DATA:ISOL?	SENS:OFFS:PORT:DATA? SENS:SEGM:DATA? SOUR:POW:PORT:CORR:COLL:TABL:LOSS:DATA? SOUR:POW:PORT:CORR:DATA?

Note: The command is applicable with the TCP/IP HiSLIP protocol. The command is NOT applicable with the TCP/IP Socket protocol.

command/query

Parameter

<char> Choose from:

ASCii	Character format
REAL	Binary format (IEEE–64 floating point)
REAL32	Binary format (IEEE–32 floating point)

Query Response

{ASC|REAL|REAL32}

Preset Value

ASC

Related Commands

FORM:BORD

Equivalent Softkeys

None

Back to FORMat

FORM:PUSH

SCPI Command

FORMat:PUSH <format>,<border>

Description

Saves the current settings and sets new values for the data transfer format and byte order.

Note: The x86 compatible processors use the little-endian format.

command only

Parameter

<char> Choose from:

ASCii	Character format

REAL	Binary format (IEEE–64 floating point)
REAL32	Binary format (IEEE–32 floating point)

<border> Choose from:

NORMal	Normal (big-endian format)
SWAPped	Swapped (little-endian format)

Related Commands

FORM:POP

Equivalent Softkeys

None

Back to FORMat

FORM:POP

SCPI Command

FORMat:POP

Description

Restores the settings for the data transfer format and byte order saved by the preceeding FORM:PUSH command.
command/query

Related Commands

FORM:PUSH

Equivalent Softkeys

None

Back to FORMat

HCOPy

Command	Description
HCOP	Prints out the image displayed on the screen without previewing.
HCOP:ABOR	Aborts the printout.
HCOP:DATE:STAM	Turns ON/OFF the date and time printout in the upper right corner of the image.
HCOP:IMAG	Sets or reads out the inverted color image printout.
HCOP:PAIN	Sets or reads out the color chart for the image printout.

HCOP

SCPI Command

HCOPy[:IMMediate]

Description

Prints out the image displayed on the screen without previewing.
no query

Equivalent Softkeys

System > Print > Print Embedded

Back to HCOPy

HCOP:ABOR

SCPI Command

HCOPy:ABORt

Description

Aborts the printout.
no query

Equivalent Softkeys

None

Back to HCOPy

HCOP:DATE:STAM

SCPI Command

HCOPy:DATE:STAMp {OFF|ON|0|1}
HCOPy:DATE:STAMp?

Description

Turns ON/OFF the date and time printout in the upper right corner of the image.
command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

System > Print > Print Date & Time

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

Equivalent Softkeys

System > Print > Invert Image

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

Equivalent Softkeys

System > Print > Print Color

Back to HCOPy

INITiate

Command	Description
INIT	Puts the channel to the Trigger Waiting state for the one trigger event. The channel should be in the hold state, otherwise an error occurs and the command is ignored.
INIT:CONT	Turns ON/OFF the continuous trigger initiation mode.
INIT:CONT:ALL	Turns ON/OFF the continuous trigger initiation mode for all channels.

INIT

SCPI Command

INITiate<Ch>[:IMMediate]

Description

Puts the channel to the Trigger Waiting state for the one trigger event. The channel should be in the hold state, otherwise an error occurs and the command is ignored. The channel goes into the Hold as a result of the command INIT:CONT OFF.

If the Internal trigger source is selected by the command TRIG:SOUR INT, then the command initiates a sweep in the single channel, otherwise the channel goes to the 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

INIT:CONT

Equivalent Softkeys

Stimulus > Trigger > Single

Back to INITiate

INIT:CONT

SCPI Command

INITiate<Ch>:CONTinuous {OFF|ON|0|1}

INITiate<Ch>:CONTinuous?

Description

Turns ON/OFF the continuous trigger initiation mode.

When the continuous initiation mode turned ON:

- If the Internal trigger source is selected by the command TRIG:SOUR INT, then the channel continuously sweeps;
- If the trigger source other than the internal is selected, 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 turned OFF the channel is in the Hold state, to initiate a sweep one should use the INIT 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
INIT

Equivalent Softkeys

Stimulus > Trigger > Continuous
Stimulus > Trigger > Hold

Back to INITiate

INIT:CONT:ALL

SCPI Command

INITiate:CONTinuous:ALL {OFF|ON|0|1}

Description

Turns ON/OFF the continuous trigger initiation mode for all channels.
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

Equivalent Softkeys

Stimulus > Trigger > Continuous All Channels
Stimulus > Trigger > Hold All Channels

Back to INITiate

MMEMory

Command	Description
MMEM:CAT?	This command reads out the following information on the hard drive: space in use, available space, name and size of all files (including directories) in the specified directory
MMEM:COPY	Copies a file.
MMEM:DEL	Deletes a file.
MMEM:LOAD	Recalls the specified Analyzer state file. The file must be saved by the MMEM:STOR command.
MMEM:LOAD:CHAN	Recalls the Analyzer state for the active channel. The file must be saved in one of the four memory registers by the MMEM:STOR:CHAN command.
MMEM:LOAD:CKIT	Recalls the limit table file. The file must be saved by the MMEM:STOR:LIM command.
MMEM:LOAD:LIM	Recalls the limit table file. The file must be saved by the MMEM:STOR:LIM command.
MMEM:LOAD:PLOS	Recalls the loss compensation file. The file must be saved by the MMEM:STOR:PLOS command.
MMEM:LOAD:RLIM	Recalls the ripple limit table file. The file must be saved by the MMEM:STOR:RLIM command.
MMEM:LOAD:SEGM	Recalls the segment table file. The file must be saved by the MMEM:STOR:SEGM command.
MMEM:LOAD:SNP	Loads the Touchstone file with the specified name to the measured S–parameters of the active channel. The Touchstone file types 1, 2, 3 or 4 port (file extensions s1p, s2p, s3p or s4p) are supported. On completion of the command, the channel goes to the hold state.
MMEM:LOAD:SNP:TRAC:MEM	Loads the Touchstone file with the specified name to the memory trace. The Touchstone file types 1, 2, 3 or 4 port (file extensions s1p, s2p, s3p or s4p) are supported.
MMEM:MDIR	Creates a new directory.
MMEM:STOR	Saves the Analyzer state into a file.
MMEM:STOR:CHAN	Saves the Analyzer state of the items set for the active channel into one of the four memory registers.
MMEM:STOR:CHAN:CLE	Clears the memory of the channel state saved by the MMEM:STOR:CHAN command.

MMEM:STOR:CKIT	Saves the definition file for the calibration kit.
MMEM:STOR:FDAT	Saves the CSV formatted data into a file.
MMEM:STOR:IMAG	Saves the display image in BMP or PNG format into a file.
MMEM:STOR:LIM	Saves the limit table into a file.
MMEM:STOR:PLOS	Saves the loss compensation table into a file.
MMEM:STOR:RLIM	Saves the ripple limit table into a file.
MMEM:STOR:SEGM	Save the segment table in a file.
MMEM:STOR:SNP	Saves the measured S–parameters of the active channel into a Touchstone file.
MMEM:STOR:SNP:FORM	Sets the data format for the S–parameter saving by the MMEM:STOR:SNP command.
MMEM:STOR:SNP:SEP	Sets and reads out the Touchstone file separator symbol when the S–parameters are saved by the MMEM:STOR:SNP command.
MMEM:STOR:SNP:TYPE?	Reads out the type of Touchstone file (S1P, S2P, S3P or S4P) to will be used when saving S–parameters with the MMEM:STOR:SNP command.
MMEM:STOR:SNP:TYPE:S1P	Sets and reads out the 1-port Touchstone file type (*.s1p) and the port number, when saving S–parameters by the MMEM:STOR:SNP command.
MMEM:STOR:SNP:TYPE:S2P	Sets and reads out the 2-port Touchstone file type (*.s2p) and the port number, when saving S–parameters by the MMEM:STOR:SNP command.
MMEM:STOR:SNP:TYPE:S3P	Sets and reads out the 3-port Touchstone file type (*.s3p) and the port number, when saving S–parameters by the MMEM:STOR:SNP command.
MMEM:STOR:SNP:TYPE:S4P	Sets and reads out the 4-port Touchstone file type (*.s4p) and the port number, when saving S–parameters by the MMEM:STOR:SNP command.
MMEM:STOR:STYP	Selects the type of the Analyzer or channel state saving by the MMEM:STOR:CHAN command.
MMEM:TRAN?	Transfers the contents of a specified file from the Analyzer to the external computer.

MMEM:CAT?

SCPI Command

MMEMory:CATalog? <string>

Description

This command reads out the following information on the hard drive:

- Space in use
- Available space

• Name and size of all files (including directories) in the specified directory
query only

Parameter

<string> Directory name

Query Response

Format:
("{A},{B},{Name 1},,{Size 1},{Name 2},,{Size 2}, ... ,{Name N},,{Size N}")

Where: N is the number of all files in the specified directory and n is an integer between 1 and N;
{A}: Space in use of the hard drive (byte);
{B}: Available space of the hard drive (byte);
{Name n}: Name of the n-th file (directory);
{Size n}: Size (byte) of the n-th file (directory). Always 0 for directories.

Equivalent Softkeys

None

Back to MMEMory

MMEM:COPY

SCPI Command

MMEMory:COPY <string1>,<string2>

Description

Copies a file.
no query

Parameter

<string1> Source file name
<string2> Destination file name

Equivalent Softkeys

None

Back to MMEMory

MMEM:DEL

SCPI Command

MMEMory:DELete <string>

Description

Deletes a file.

no query

Parameter

<string> File name

Equivalent Softkeys

None

Back to MMEMory

MMEM:LOAD

SCPI Command

MMEMory:LOAD[:STATe] <string>

Description

Recalls the specified Analyzer state file. The file must be saved by the MMEM:STOR command.

Note: If the full path of the file is not specified, the *\State* subdirectory of the application directory will be searched for the file. The Analyzer state file has **.sta* extension by default.

no query

Parameter

<string> File name

Equivalent Softkeys

Save/Recall > Recall State > State...

Back to MMEMory

MMEM:LOAD:CHAN

SCPI Command

MMEMory:LOAD:CHANnel[:STATe] <char>

Description

Recalls the Analyzer state for the active channel. The file must be saved in one of the four memory registers by the MMEM:STOR:CHAN command.

no query

Target

Active channel set by the DISP:WIND:ACT command.

Parameter

<char> Choose from:

A	Recall from register A
B	Recall from register B
C	Recall from register C
D	Recall from register D

Equivalent Softkeys

Save/Recall > Recall Channel > { State A | B | C | D }

Back to MMEMory

MMEM:LOAD:CKIT

SCPI Command

MMEMory:LOAD:LIMit <string>

Description

Recalls the limit table file. The file must be saved by the MMEM:STOR:LIM command.

Note: If the full path of the file is not specified, the \Limit subdirectory of the application directory will be searched for the file. The limit table file has *.lim extension by default.

no query

Target

Active trace of the active channel, set by the CALC:PAR:SEL command.

Parameter

<string> File name

Equivalent Softkeys

Analysis > Limit Test > Edit Limit Line > Restore Limit Table

Back to MMEMory

MMEM:LOAD:LIM

SCPI Command

MMEMory:LOAD:LIMit <string>

Description

Recalls the limit table file. The file must be saved by the MMEM:STOR:LIM command.

Note: If the full path of the file is not specified, the \Limit subdirectory of the application directory will be searched for the file. The limit table file has *.lim extension by default.

no query

Target

Active trace of the active channel, set by the CALC:PAR:SEL command.

Parameter

<string> File name

Equivalent Softkeys

Analysis > Limit Test > Edit Limit Line > Restore Limit Table

Back to MMEMory

MMEM:LOAD:PLOS

SCPI Command

MMEMory:LOAD:PLOSs<Pt> <string>

Description

Recalls the loss compensation file. The file must be saved by the MMEM:STOR:PLOS command.

Note: If the full path of the file is not specified, the \CalKit subdirectory of the application directory will be searched for the file. The loss compensation file has *.lct extension by default.

no query

Target

Port <Pt> of the active channel, set by the DISP:WIND:ACT command

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<string> File name

Equivalent Softkeys

Calibration > Power Calibration > Loss Compen > Import Loss Table

Back to MMEMory

MMEM:LOAD:RLIM

SCPI Command

MMEMory:LOAD:RLIMit <string>

Description

Recalls the ripple limit table file. The file must be saved by the MMEM:STOR:RLIM command.

Note: If the full path of the file is not specified, the \Limit subdirectory of the application directory will be searched for the file. The ripple limit file has *.rlm extension by default.

no query

Target

Active trace of the active channel, set by the CALC:PAR:SEL command.

Parameter

<string> File name

Equivalent Softkeys

Analysis > Ripple Limit > Edit Ripple Limit > Restore Ripple Limit Table

Back to MMEMory

MMEM:LOAD:SEGM

SCPI Command

MMEMory:LOAD:SEGMent <string>

Description

Recalls the segment table file. The file must be saved by the MMEM:STOR:SEGM command.

Note: If the full path of the file is not specified, the \Segment subdirectory of the application directory will be searched for the file. The segment file has *.seg extension by default.

no query

Target

Active channel, set by the DISP:WIND:ACT command.

Parameter

<string> File name

Equivalent Softkeys

Stimulus > Segment Table > Recall...

Back to MMEMory

MMEM:LOAD:SNP

SCPI Command

MMEMory:LOAD:SNP[:DATA] <string>

Description

Loads the Touchstone file with the specified name to the measured S–parameters of the active channel. The Touchstone file types 1, 2, 3 or 4 port (file extensions s1p, s2p, s3p or s4p) are supported. On completion of the command, the channel goes to the hold state.

no query

Target

The active channel set by the DISP:WIND:ACT command.

Parameter

<string> File name

Equivalent Softkeys

Save/Recall > Load Data From Touchstone File > To S-parameters...

Back to MMEMory

MMEM:LOAD:SNP:TRAC:MEM

SCPI Command

MMEMory:LOAD:SNP:TRACe<Tr>:MEMory <string>

Description

Loads the Touchstone file with the specified name to the memory trace. The Touchstone file types 1, 2, 3 or 4 port (file extensions s1p, s2p, s3p or s4p) are supported. The current measured S-parameter of data trace selects the appropriate S-parameter from the Touchstone file. After successful load the display of memory trace is automatically switched on.

no query

Target

The specified memory trace <Tr> of active channel,

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

Active channel set by the DISP:WIND:ACT command.

Parameter

<string> File name

Equivalent Softkeys

Save/Recall > Load Data From Touchstone File > To Active Trace Memory…

Back to MMEMory

MMEM:MDIR

SCPI Command

MMEMory:MDIRectory <string>

Description

Creates a new directory.

no query

Parameter

<string> Directory full name

Equivalent Softkeys

None

Back to MMEMory

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 for the file. The state file has *.sta extension by default.

no query

Parameter

<string> File name

Equivalent Softkeys

Save/Recall > Save State > State...

Back to MMEMory

MMEM:STOR:CHAN

SCPI Command

MMEMory:STORe:CHANnel[:STATe] <char>

Description

Saves the Analyzer state of the items set for the active channel into one of the four memory registers.
no query

Target

Active channel set by the DISP:WIND:ACT command

Parameter

<char> Choose from:

A	Save to register A
B	Save to register B
C	Save to register C
D	Save to register D

Equivalent Softkeys

Save/Recall > Save Channel > { State A | B | C | D }

Back to MMEMory

MMEM:STOR:CHAN:CLE

SCPI Command

MMEMory:STORe:CHANnel:CLEar

Description

Clears the memory of the channel state saved by the MMEM:STOR:CHAN command.
no query

Equivalent Softkeys

Save/Recall > Save Channel > Clear States

Back to MMEMory

MMEM:STOR:CKIT

SCPI Command

MMEMory:STORe:CKIT<Ck> <string>

Description

Saves the definition file for the calibration kit.

Note: If the full path of the file is not specified, the \CalKit subdirectory of the application directory will be searched for the file. The calibration kit definition file has *.ckd extension by default.

no query

Target

Calibration kit <Ck>,
<Ck>={[1]|2|...50}

Parameter

<string> File name

Equivalent Softkeys

None

Back to MMEMory

MMEM:STOR:FDAT

SCPI Command

MMEMory:STORe:FDATa <string>

Description

Saves the CSV formatted data into a file.

Note: If the full path of the file is not specified, the \CSV subdirectory of the application directory will be searched for the file. The file has *.csv extension by default.

no query

Target

Active trace of the active channel, set by the CALC:PAR:SEL command.

Parameter

<string> File name

Equivalent Softkeys

Save/Recall > Save Trace Data

Back to MMEMory

MMEM:STOR:IMAG

SCPI Command

MMEMory:STORe:IMAGe <string>

Description

Saves the display image in BMP or PNG format into a file.

Note: If the full path of the file is not specified, the \Image subdirectory of the application directory will be searched for the file. If the file has *.png extension, the file had PNG format, in all the other cases the file has BMP format.

no query

Parameter

<string> File name

Equivalent Softkeys

System > Print > Print Windows > Save as...

Back to MMEMory

MMEM:STOR:LIM

SCPI Command

MMEMory:STORe:LIMit <string>

Description

Saves the limit table into a file.

Note: If the full path of the file is not specified, the \Limit subdirectory of the application directory will be searched for the file. The file has *.lim extension by default.

no query

Target

Active trace of the active channel, set by the CALC:PAR:SEL command.

Parameter

<string> File name

Equivalent Softkeys

Analysis > Limit Test > Edit Limit Line > Save Limit Table

Back to MMEMory

MMEM:STOR:PLOS

SCPI Command

MMEMory:STORe:PLOSs<Pt> <string>

Description

Saves the loss compensation table into a file.

Note: If the full path of the file is not specified, the \CalKit subdirectory of the application directory will be searched for the file. The loss compensation file has *.lct extension by default.

no query

Target

Port <Pt> of the active channel, set by the DISP:WIND:ACT command

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<string> File name

Equivalent Softkeys

Calibration > Power Calibration > Loss Compen > Export Loss Table

Back to MMEMory

MMEM:STOR:RLIM

SCPI Command

MMEMory:STORe:RLIMit <string>

Description

Saves the ripple limit table into a file.

Note: If the full path of the file is not specified, the \Limit subdirectory of the application directory will be searched for the file. The ripple limit file has *.rlm extension by default.

no query

Target

Active trace of the active channel, set by the CALC:PAR:SEL command

Parameter

<string> File name

Equivalent Softkeys

Analysis > Ripple Limit > Edit Ripple Limit > Save Ripple Limit Table

Back to MMEMory

MMEM:STOR:SEGM

SCPI Command

MMEMory:STORe:SEGMent <string>

Description

Save the segment table in a file.

Note: If the full path of the file is not specified, the \Segment subdirectory of the application directory will be searched for the file. The segment file has *.seg extension by default.

no query

Target

Active channel, set by the DISP:WIND:ACT command.

Parameter

<string> File name

Equivalent Softkeys

Stimulus > Segment Table > Save...

Back to MMEMory

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 commands: MMEM:STOR:SNP:TYPE:S1P, MMEM:STOR:SNP:TYPE:S2P, MMEM:STOR:SNP:TYPE:S3P, MMEM:STOR:SNP:TYPE:S4P.

Note: If the full path of the file is not specified, the \FixtureSim subdirectory of the application directory will be searched for the file. The file has *.sNp extension by default.

no query

Target

Active channel, set by the DISP:WIND:ACT command.

Parameter

<string> File name

Equivalent Softkeys

Save/Recall > Save Data to Touchstone File > Save File...

Back to MMEMory

MMEM:STOR:SNP:FORM

SCPI Command

MMEMory:STORe:SNP:FORMat <char>

MMEMory:STORe:SNP:FORMat?

Description

Sets and reads out the data format for the S–parameter saving by the MMEM:STOR:SNP command.

command/query

Parameter

<char> Choose from:

MA	Logarithmic Magnitude / Angle format
DB	Linear Magnitude / Angle format
RI	Real part /Imaginary part format

Query Response

{RI|DB|MA}

Preset Value

RI

Equivalent Softkeys

Save/Recall > Save Data to Touchstone File > Format

Back to MMEMory

MMEM:STOR:SNP:SEP

SCPI Command

MMEMory:STORe:SNP:SEParator <char>
MMEMory:STORe:SNP:SEParator?

Description

Sets and reads out the Touchstone file separator symbol when the S-parameters are saved by the MMEM:STOR:SNP command.

command/query

Parameter

<char> Choose from:

TAB	Tab symbol (0x09)
SPACe	Space symbol (0x20)

Query Response

{TAB|SPAC}

Preset Value

TAB

Equivalent Softkeys

Save/Recall > Save Data to Touchstone File > Separator

Back to MMEMory

MMEM:STOR:SNP:TYPE?

SCPI Command

MMEMory:STORe:SNP:TYPE?

Description

Reads out the type of Touchstone file (S1P, S2P, S3P or S4P) to will be used when saving S-parameters with the MMEM:STOR:SNP command.

query only

Query Response

<string>

{S1P|S2P|S3P|S4P}

Equivalent Softkeys

Save/Recall > Save Data to Touchstone File > Type

Back to MMEMory

MMEM:STOR:SNP:TYPE:S1P

SCPI Command

MMEMory:STORe:SNP:TYPE:S1P <port>
MMEMory:STORe:SNP:TYPE:S1P?

Description

Sets and reads out the 1-port Touchstone file type (*.s1p) and the port number, when saving S-parameters by the MMEM:STOR:SNP command.

command/query

Parameter

<port> port number from 1 to 2 (or 4 for S4 software)

Query Response

<numeric>

Preset Value

1

Equivalent Softkeys

Save/Recall > Save Data to Touchstone File > Type > 1-Port (s1p)

Save/Recall > Save Data to Touchstone File > Select Port

Back to MMEMory

MMEM:STOR:SNP:TYPE:S2P

SCPI Command

MMEMory:STORe:SNP:TYPE:S2P <port1>,<port2>
MMEMory:STORe:SNP:TYPE:S2P?

Description

Sets and reads out the 2-port Touchstone file type (*.s2p) and the port number, when saving S-parameters by the MMEM:STOR:SNP command.

command/query

Parameter

<port1> First port number

<port2> Second port number

<port> port number from 1 to 2 (or 4 for S4 software)

Query Response

<numeric1>, <numeric2>

Equivalent Softkeys

Save/Recall > Save Data to Touchstone File > Type > 2-Port (s2p)

Back to MMEMory

MMEM:STOR:SNP:TYPE:S3P

SCPI Command

MMEMory:STORe:SNP:TYPE:S3P <port1>,<port2>,<port3>

MMEMory:STORe:SNP:TYPE:S3P?

Description

Sets and reads out the 3-port Touchstone file type (*.s3p) and the port number, when saving S-parameters by the MMEM:STOR:SNP command.

command/query

Parameter

<port1> First port number

<port2> Second port number

<port3> Third port number

<port> port number from 1 to 4 (S4 software only)

Query Response

<numeric1>, <numeric2>, <numeric3>

Equivalent Softkeys

Save/Recall > Save Data to Touchstone File > Type > 3-Port (s3p)

Back to MMEMory

MMEM:STOR:SNP:TYPE:S4P

SCPI Command

MMEMory:STORe:SNP:TYPE:S4P <port1>,<port2>,<port3>,<port4>

MMEMory:STORe:SNP:TYPE:S4P?

Description

Sets and reads out the 4-port Touchstone file type (*.s4p) and the port number, when saving S-parameters by the MMEM:STOR:SNP command.

command/query

Parameter

<port1>	First port number
<port2>	Second port number
<port3>	Third port number
<port4>	Fourth port number

<port> port number from 1 to 4 (S4 software only)

Query Response

<numeric1>, <numeric2>, <numeric3>, <numeric4>

Equivalent Softkeys

Save/Recall > Save Data to Touchstone File > Type > 4-Port (s4p)

Back to MMEMory

MMEM:STOR:STYP

SCPI Command

MMEMory:STORe:STYPe <char>

MMEMory:STORe:STYPe?

Description

Selects the type of the Analyzer or channel state saving by the MMEM:STOR:CHAN command.

command/query

Parameter

<char> Choose from:

STATe	Measurement conditions
CSTate	Measurement conditions and calibration
DSTate	Measurement conditions and data

CDSTate	Measurement conditions, calibration, data and memory
CMSTate	Measurement conditions, calibration and memory

Query Response

{STAT|CST|DST|CDST|CMST}

Preset Value

CST

Equivalent Softkeys

Save/Recall > Save Type

Back to MMEMory

MMEM:TRAN?

SCPI Command

MMEMory:TRANsfer? <string>

Description

Transfers the contents of a specified file from the Analyzer to the external computer.

Note: The command is not applicable with the TCP/IP Socket protocol. The file must be 20 Mbytes or less.

command/query

Parameter

<string> the file name with the full path

Query Response

Block data transfer format. For example:

#6001000<binary block 1000 bytes>

#6	Symbol # introduces the data block. The next number indicates how many of the following digits describe the length of the data block;
001000	Length of the data block;

Equivalent Softkeys

None

Back to MMEMory

OUTP

SCPI Command

OUTPut[:STATe] {OFF|ON|0|1}
OUTPut[:STATe]?

Description

Turns ON/OFF the RF signal output. 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	Turns ON/OFF the measurement averaging function.
SENS:AVER:CLE	Restarts the averaging process, when the averaging function turned on.
SENS:AVER:COUN	Sets or reads out the averaging factor, when the averaging function turned on.
SENS:BAND	Sets or reads out the IF bandwidth.
SENS:BWID	Sets or reads out the IF bandwidth.
SENS:CORR:CLE	Clears the calibration coefficient table.
SENS:CORR:COEF	Writes or reads out the calibration coefficient data array.
SENS:CORR:COEF:METH:ERES	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 command.
SENS:CORR:COEF:METH:OPEN	Selects the port and sets the response calibration (Open) type, when the written calibration

	coefficients are made effective by the SENS:CORR:COEF:SAVE command.
SENS:CORR:COEF:METH:SHOR	Selects the port and sets the response calibration (Short) type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.
SENS:CORR:COEF:METH:SOLT1	Selects the port and sets the full 1–port calibration type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.
SENS:CORR:COEF:METH:SOLT2	Selects the ports and sets the full 2–port calibration type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.
SENS:CORR:COEF:METH:SOLT3	Selects the ports and sets the full 3–port calibration type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.
SENS:CORR:COEF:METH:SOLT4	Selects the ports and sets the full 4–port calibration type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.
SENS:CORR:COEF:METH:THRU	Selects the ports and sets the response calibration (Thru) type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.
SENS:CORR:COEF:SAVE	Enables the written calibration coefficients depending on the selected calibration type. On completion of the command the error correction automatically turns ON.
SENS:CORR:COLL:ADAP:DEL	Sets or reads out the approximate delay value of an adapter in the adapter removal/insertion function.
SENS:CORR:COLL:ADAP:LENG	Sets or reads out the approximate value of the mechanical length of the adapter in the adapter removal/insertion function.
SENS:CORR:COLL:ADAP:UNIT	Selects the display units of the adapter delay (length) in the adapter removal/insertion function.
SENS:CORR:COLL:ADAP:MED	Specifies the adapter media in the adapter removal/insertion function.
SENS:CORR:COLL:ADAP:PERM	Sets or reads out the value of the permittivity of an adapter media in the adapter removal/insertion function.
SENS:CORR:COLL:ADAP:WAV:CUT	Sets or reads out the value of the cutoff frequency of the waveguide adapter.
SENS:CORR:COLL:METH:ADAP:REM	Selects the port number and sets the adapter removal/insertion function for the calculation of the calibration coefficients when the SENS:CORR:COLL:SAVE command has been executed.
SENS:CORR:COLL:CKIT	Sets or reads out the number of the selected calibration kit in the table of calibration kits.

SENS:CORR:COLL:CKIT:DESC	Sets or reads out the calibration kit description string.
SENS:CORR:COLL:CKIT:LAB	Sets or reads out the calibration kit label.
SENS:CORR:COLL:CKIT:ORD:LOAD	Sets or reads out the number of the calibration standard of the load type, used for the measurement of the specified port.
SENS:CORR:COLL:CKIT:ORD:OPEN	Sets or reads out the number of the calibration standard of the open type, used for the measurement of the specified port.
SENS:CORR:COLL:CKIT:ORD:SEL	The subclass used to specify classes of calbration standards by the commands SENSe<Ch>:CORRection:COLLect:CKIT:ORDer:XXXX.
SENS:CORR:COLL:CKIT:ORD:SHOR	Sets or reads out the number of the calibration standard of the short type, used for the measurement of the specified port.
SENS:CORR:COLL:CKIT:ORD:THRU	Sets or reads out the number of the calibration standard of the thru type, used for the measurement between the <port1> and <port2> ports.
SENS:CORR:COLL:CKIT:ORD:TRLL	Sets or reads out the number of the calibration standard of the TRL line type, used for the measurement between the <port1> and <port2> ports.
SENS:CORR:COLL:CKIT:ORD:TRLT	Sets or reads out the number of the calibration standard of the TRL thru type, used for the measurement between the <port1> and <port2> ports.
SENS:CORR:COLL:CKIT:ORD:TRLR	Sets or reads out the number of the calibration standard of the TRL Reflect type, used for the measurement of the specified port.
SENS:CORR:COLL:CKIT:RES	Resets the calibration kit to the factory settings. Restores the predefined calibration kit. Removes the user defined calibration kit.
SENS:CORR:COLL:CKIT:STAN:ARB	Sets or reads out the value of the arbitrary impedance for the load standard.
SENS:CORR:COLL:CKIT:STAN:C0	Sets or reads out the C0 value for the open calibration standard.
SENS:CORR:COLL:CKIT:STAN:C1	Sets or reads out the C1 value for the open calibration standard.
SENS:CORR:COLL:CKIT:STAN:C2	Sets or reads out the C2 value for the open calibration standard.
SENS:CORR:COLL:CKIT:STAN:C3	Sets or reads out the C3 value for the open calibration standard.
SENS:CORR:COLL:CKIT:STAN:DATA	Writes or reads out the data array of the data-based calibration standard.
SENS:CORR:COLL:CKIT:STAN:DEL	Sets or reads out the offset delay value for the calibration standard.
SENS:CORR:COLL:CKIT:STAN:FMAX	Sets or reads out the maximum frequency limit of the calibration standard.

SENS:CORR:COLL:CKIT:STAN:FMIN	Sets or reads out the minimum frequency limit of the calibration standard.
SENS:CORR:COLL:CKIT:STAN:INS	Inserts the calibration standard into the selected calibration kit. The existing standards with indices greater than or equal to <std> are shifted by +1.
SENS:CORR:COLL:CKIT:STAN:L0	Sets or reads out the L0 value for the short calibration standard.
SENS:CORR:COLL:CKIT:STAN:L1	Sets or reads out the L1 value for the short calibration standard.
SENS:CORR:COLL:CKIT:STAN:L2	Sets or reads out the L2 value for the short calibration standard.
SENS:CORR:COLL:CKIT:STAN:L3	Sets or reads out the L3 value for the short calibration standard.
SENS:CORR:COLL:CKIT:STAN:LAB	Sets or reads out the label for the calibration standard.
SENS:CORR:COLL:CKIT:STAN:LOSS	Sets or reads out the offset loss value for the calibration standard.
SENS:CORR:COLL:CKIT:STAN:REM	Deletes the calibration standard into the selected calibration kit. The existing standards with indices greater than the <std> are shifted by −1.
SENS:CORR:COLL:CKIT:STAN:TYPE	Sets or reads out the type of calibration standard.
SENS:CORR:COLL:CKIT:STAN:Z0	Sets or reads out the offset Z0 value for the calibration standard.
SENS:CORR:COLL:CLE	Clears the measurement data of the calibration standards.
SENS:CORR:COLL:DATA:ISOL	Writes or reads out the array of the isolation calibration measurement performed between the receiver port <rcvport> and the source port <srcport>.
SENS:CORR:COLL:DATA:LOAD	Writes or reads out the array of the load calibration standard measurement for the port <port>.
SENS:CORR:COLL:DATA:OPEN	Writes or reads out the array of the open calibration standard measurement for the port <port>.
SENS:CORR:COLL:DATA: SHOR	Writes or reads out the array of the short calibration standard measurement for the port <port>.
SENS:CORR:COLL:DATA:THRU:MATC	Writes or reads out the array of the reflection measurement of the thru standard connected between the receiver port <rcvport> and the source port <srcport>.
SENS:CORR:COLL:DATA:THRU:TRAN	Writes or reads out the array of the transmission measurement performed between the receiver port <rcvport> and the source port <srcport> using the thru standard.
SENS:CORR:COLL:ECAL:CCH	Executes the confidence check of the calibration coefficients of specified channel using the AutoCal module.

SENS:CORR:COLL:ECAL:ERES	Executes one path 2–port calibration between the specified 2 ports of specified channel using the AutoCal module.
SENS:CORR:COLL:ECAL:INF?	Gets information of the AutoCal Module connected to the Network Analyzer.
SENS:CORR:COLL:ECAL:ORI:EXEC	Executes the Auto-Orientation procedure of the AutoCal Module. The AutoCal Module must be connected to the ports of Analyzer.
SENS:CORR:COLL:ECAL:ORI:STAT	Turns ON/OFF the Auto-Orientation function when the AutoCal Module calibration is executed.
SENS:CORR:COLL:ECAL:PATH	Sets or reads out the AutoCal module port number which is connected to a specified port of Network Analyzer.
SENS:CORR:COLL:ECAL:SOLT1	Executes 1-port calibration of the specified port of specified channel using the AutoCal module.
SENS:CORR:COLL:ECAL:SOLT2	Executes full 2-port calibration between the specified 2 ports of specified channel using the AutoCal module.
SENS:CORR:COLL:ECAL:SOLT3	Executes full 3-port calibration between the specified 3 ports of specified channel using the AutoCal module.
SENS:CORR:COLL:ECAL:SOLT4	Executes full 4-port calibration between the specified 4 ports of specified channel using the AutoCal module
SENS:CORR:COLL:ECAL:UCH	Sets or reads out the characterization number used when executing AutoCal (factory or user characterizations).
SENS:CORR:COLL:ECAL:UTHR:STAT	Turns ON/OFF the Unknown Thru feature when the AutoCal Module calibration is executed.
SENS:CORR:COLL:ISOL	Measures the isolation calibration data between the receiver port <rcvport> and the source port <srcport>.
SENS:CORR:COLL:LOAD	Measures the calibration data of the load standard for the specified port.
SENS:CORR:COLL:OPEN	Measures the calibration data of the open standard for the specified port.
SENS:CORR:COLL:SHOR	Measures the calibration data of the short standard for the specified port.
SENS:CORR:COLL:THRU	Measures the calibration data of the thru standard between the receiver port <rcvport> and the source port <srcport>.
SENS:CORR:COLL:TRLL	Measures the calibration data of the TRL line standard between the <port1> and the <port2>.
SENS:CORR:COLL:TRLT	Measures the calibration data of the TRL thru standard between the <port1> and the <port2>.
SENS:CORR:COLL:TRLR	Measures the calibration data of the TRL reflect standard for the specified port.
SENS:CORR:COLL:SUBC	Selects the subclass number of calibration standard used for measurement by the

	subsequent command SENS:CORR:COLL:XXXX. If the calibration kit contains several calibration standards of the same type, say SHORTs, this allows select the particular SHORT. The subclasses must be set in advance by the commands SENS:CORR:COLL:CKIT:ORD:XXXX or in the user interface "Specify Classes".
SENS:CORR:COLL:METH:ERES	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 command.
SENS:CORR:COLL:METH:OPEN	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 command.
SENS:CORR:COLL:METH: SHOR	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 command.
SENS:CORR:COLL:METH:SOLT1	Selects the port and sets the full 1–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
SENS:CORR:COLL:METH:SOLT2	Selects the port and sets the full 2–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
SENS:CORR:COLL:METH:SOLT3	Selects the port and sets the full 3–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
SENS:CORR:COLL:METH:SOLT4	Selects the port and sets the full 4–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
SENS:CORR:COLL:METH:THRU	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 command.
SENS:CORR:COLL:METH:TRL2	Selects the ports and sets the 2–port TRL calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
SENS:CORR:COLL:METH:TRL3	Selects the ports and sets the 3–port TRL calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
SENS:CORR:COLL:METH:TRL4	Selects the ports and sets the 4–port TRL calibration type for the calculation of the

	calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
SENS:CORR:COLL:METH:TYPE?	Reads out the calibration type selected for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
SENS:CORR:COLL:SAVE	Calculates the calibration coefficients from the calibration standards measurements depending on the selected calibration type.
SENS:CORR:COLL:SIMP:SAVE	Calculates the calibration coefficients for the simplified 3 or 4 port calibration from the calibration standards measurements when the 3 or 4 port calibration is selected as the calibration type.
SENS:CORR:COLL:THRU:ADD:DEL	Sets or reads out the approximate delay value of an unknown thru in the thru addition function.
SENS:CORR:COLL:THRU:ADD:LENG	Sets or reads out the approximate value of the mechanical length of an unknown thru in the thru addition function.
SENS:CORR:COLL:THRU:ADD:UNIT	Selects the display units of the thru delay (length) in the thru addition function.
SENS:CORR:COLL:THRU:ADD:MED	Specifies the media of the thru in the thru addition function.
SENS:CORR:COLL:THRU:ADD:PERM	Sets or reads out the value of the permittivity of the thru media in the thru addition function.
SENS:CORR:COLL:THRU:ADD:WAV:CUT	Sets or reads out the value of the cutoff frequency of the waveguide thru in the thru addition function.
SENS:CORR:COLL:THRU:ADD:FULL2:COMP	Completes the full 2-port calibration between the specified ports provided that each port was calibrated using full 1-port calibration.
SENS:CORR:COLL:THRU:ADD:FULL3:PORT	Selects the pors to comlete the 3–port calibration in the thru addition function.
SENS:CORR:COLL:THRU:ADD:FULL3:ACQ	Measures an arbitrary thru between the specified ports. The measurements are used to complete the 3-port calibration in the thru addition function by the command SENS:CORR:COLL:THRU:ADD:FULL3:COMP.
SENS:CORR:COLL:THRU:ADD:FULL3:COMP	Completes the full 3-port calibration between the ports specified by the command SENS:CORR:COLL:THRU:ADD:FULL3:PORT.
SENS:CORR:COLL:THRU:ADD:FULL4:ACQ	Measures an arbitrary thru between the specified ports. The measurements are used to complete the 4-port thru addition function by the command SENS:CORR:COLL:THRU:ADD:FULL4:COMP.
SENS:CORR:COLL:THRU:ADD:FULL4:COMP	Completes the full 4-port calibration.
SENS:CORR:EXT	Turns ON/OFF the port extension function.
SENS:CORR:EXT:AUTO:CONF	Specifies the frequency range used for calculation of the results of the Auto Port Extension function.

SENS:CORR:EXT:AUTO:DCOF	Turns ON/OFF the usage of "Loss at DC" value for the results of the auto port extension function.
SENS:CORR:EXT:AUTO:LOSS	Turns ON/OFF the usage of "Loss1"and "Loss2" values for the results of the auto port extension function.
SENS:CORR:EXT:AUTO:MEAS	Performs measurement of the standard "SHORT" or "OPEN", automatically calculates and sets the parameters of the Port Extension.
SENS:CORR:EXT:AUTO:PORT	Turns ON/OFF the status of the auto port extension for the Port number <Pt>.
SENS:CORR:EXT:AUTO:RES	Deletes the finished measurement data of OPEN and SHORT standards of the auto port extension function. Allows to start averaging again between the SHORT and OPEN standards.
SENS:CORR:EXT:AUTO:STAR	Sets or reads out the start value of the user span of the auto port extension function.
SENS:CORR:EXT:AUTO:STOP	Sets or reads out the stop value of the user span of the auto port extension function.
SENS:CORR:EXT:PORT:FREQ	Sets or reads out the values of the frequency 1 and frequency 2 to calculate the loss for the port extension function.
SENS:CORR:EXT:PORT:INCL	Turns ON/OFF the loss compensation of the loss 1 and loss 2 for the port extension function.
SENS:CORR:EXT:PORT:LDC	Sets or reads out the loss value at DC for the port extension function.
SENS:CORR:EXT:PORT:LOSS	Sets or reads out the values of the loss 1 and loss 2 for the port extension function.
SENS:CORR:EXT:PORT:TIME	Sets or reads out the electrical delay value for the port extension function.
SENS:CORR:INF?	Reads out the information string of the calibration acting between the <rcvport> and <srcport>.
SENS:CORR:IMP	Sets or reads out the system impedance Z0.
SENS:CORR:IMP:SEL:AUTO	Turns ON/OFF the auto-select Z0 function. When enabled the function sets the port impedance Z0 to the corresponding value of measuring calibration standard.
SENS:CORR:OFFS:CLE	Clears the scalar mixer calibration coefficient table.
SENS:CORR:OFFS:COLL:CLE	Clears the calibration measurement data of scalar mixer calibration when the frequency offset feature is ON.
SENS:CORR:OFFS:COLL:LOAD	Measures the calibration data of the load standard of the specified port when the frequency offset feature is on for scalar mixer calibration.
SENS:CORR:OFFS:COLL:METH:SMIX2	Measures the calibration data of the load standard of the specified port when the frequency offset feature is on for scalar mixer calibration.
SENS:CORR:OFFS:COLL:OPEN	Measures the calibration data of the open standard of the specified port when the frequency

	offset feature is on for scalar mixer calibration.
SENS:CORR:OFFS:COLL:PMETer	Measures the scalar-mixer calibration data using the power meter when the frequency offset feature is ON.
SENS:CORR:OFFS:COLL:SHOR	Measures the calibration data of the short standard of the specified port when the frequency offset feature is on for scalar mixer calibration.
SENS:CORR:OFFS:COLL:THRU	Measures the calibration data of the thru standard of the specified port when the frequency offset feature is on for scalar mixer calibration.
SENS:CORR:OFFS:COLL:SAVE	Calculates the calibration coefficient for the selected calibration type (scalar mixer calibration only) from the calibration data measured with the frequency offset feature is ON.
SENS:CORR:PORT:IMP	Sets or reads out the impedance Z0 of port <Pt>
SENS:CORR:REC	Turns ON/OFF the receiver correction of the specified port.
SENS:CORR:REC:COLL:ACQ	Executes receiver calibration of both the test receiver and the reference receiver of the specified port <Pt>.The test receiver calibration uses port number <srcport> as the source port. The reference receiver calibration uses its own port <Pt> as the source port.
SENS:CORR:REC:COLL:RCH:ACQ	Executes receiver calibration of the reference receiver of the specified port <Pt>.The reference receiver calibration uses its own port <Pt> as the source port.
SENS:CORR:REC:COLL:TCH:ACQ	Executes receiver calibration of the test receiver of the specified port <Pt>.The test receiver calibration uses port number <srcport> as the source port.
SENS:CORR:REC:OFFS:AMPL	Sets or reads out the power offset value when the Receiver Calibration is performed. Receiver calibration is done at the condition of <source power> + < power offset>.
SENS:CORR:STAT	Turns ON/OFF the S-parameter error correction.
SENS:CORR:TRAN:TIME:FREQ	Sets or reads out the frequency value at which the cable loss specified for the cable correction function, when the time domain transformation function is turned ON.
SENS:CORR:TRAN:TIME:LOSS	Sets or reads out the cable loss value for the cable correction function, when the time domain transformation function is turned ON.
SENS:CORR:TRAN:TIME:RVEL	Sets or reads out the cable relative wave speed velocity for the cable correction function, when the time domain transformation function is turned ON.
SENS:CORR:TRAN:TIME:STAT	Turns ON/OFF the cable correction when the time domain transformation function is turned ON.
SENS:CORR:TRIG:FREE	Enables/disables the internal trigger source for calibration.

SENS:CORR:TYPE?	Reads the information about the calibration type and the number of ports to which the calibration is applied for the specified trace.
SENS:CORR:VMC:COLL:PORT	Sets or reads out the number of the port used in the vector mixer calibration. To this port the calibration mixer with IF filter is connected.
SENS:CORR:VMC:COLL:LO:FREQ	Sets or reads out the LO frequency value used in the vector mixer calibration. The LO source is an external signal generator. The LO frequency is common for both the calibration and the mixer under test.
SENS:CORR:VMC:COLL:IF:SEL	Selects the IF frequency from RF+LO, RF-LO and LO-RF, depending on the IF frequency of the calibration mixer in the vector mixer calibration.
SENS:CORR:VMC:COLL:LOAD	Measures the load standard in order to characterize the calibration mixer + filter in the vector mixer calibration
SENS:CORR:VMC:COLL:OPEN	Measures the open standard in order to characterize the calibration mixer + filter in the vector mixer calibration.
SENS:CORR:VMC:COLL:SHOR	Measures the short standard in order to characterize the calibration mixer + filter in the vector mixer calibration.
SENS:CORR:VMC:COLL:OPT	Turns ON/OFF the setup option in the vector mixer calibration. This option forces the de-embedding S-parameters of the calibration mixer + filter when the S-parameters have been calculated and written to the touchstone file.
SENS:CORR:VMC:COLL:SAVE	Completes the vector mixer calibration procedure. Calculates S-parameters of the calibration mixer + filter and writes them to a touchstone file. Optionally turns on the de-embedding S-parameters of the calibration mixer + filter.
SENS:DATA:CORR?	Reads out the corrected S-parameter data array or the corrected receiver data array
SENS:DATA:RAWD?	Reads out the raw S-parameter data array or the raw receiver data array.
SENS:FREQ	Sets or reads out the fixed frequency value when the power sweep type selected.
SENS:FREQ:DATA?	Reads out the frequency array of the measurement points.
SENS:FREQ:CENT	Sets or reads out the stimulus center value of the sweep range for linear or logarithmic sweep type.
SENS:FREQ:SPAN	Sets or reads out the stimulus span value of the sweep range for linear or logarithmic sweep type.
SENS:FREQ:STAR	Sets or reads out the stimulus start value of the sweep range for linear or logarithmic sweep type.
SENS:FREQ: STOP	Sets or reads out the stimulus stop value of the sweep range for linear or logarithmic sweep type.
SENS:OFFS	Turns ON/OFF the frequency offset feature.

SENS:OFFS:PORT:DATA?	Reads out the array of the frequency points of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
SENS:OFFS:PORT:DIV	Sets or reads out the basic frequency range multiplier of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
SENS:OFFS:PORT:MULT	Sets or reads out the basic frequency range multiplier of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
SENS:OFFS:PORT:OFFS	Sets or reads out the basic frequency range offset of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
SENS:OFFS:PORT:STAR	Sets or reads out the frequency sweep start of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
SENS:OFFS:PORT:STOP	Sets or reads out the frequency sweep stop of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
SENS:OFFS:REC:DATA?	Reads out the array of the receiver frequency points when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:REC:DIV	Sets or reads out the basic frequency range divisor to get the receiver frequency when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:REC:MULT	Sets or reads out the basic frequency range multiplier to get the receiver frequency when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:REC:OFFS	Sets or reads out the basic frequency range offset to get the receiver frequency when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:REC:STAR	Sets or reads out the frequency sweep start of the receivers when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:REC:STOP	Sets or reads out the frequency sweep stop of the receivers when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:SOUR:DATA?	Reads out the array of the frequency points of the source when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:SOUR:DIV	Sets or reads out the basic frequency range divisor to get the source frequency when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:SOUR:MULT	Sets or reads out the basic frequency range multiplier to get the source frequency when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:SOUR:OFFS	Sets or reads out the basic frequency range offset to get the source frequency when the frequency offset feature is ON and offset type is "SRCRcv".

SENS:OFFS:SOUR:STAR	Sets or reads out the frequency sweep start of the source when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:SOUR:STOP	Sets or reads out the frequency sweep stop of the source when the frequency offset feature is ON and offset type is "SRCRcv".
SENS:OFFS:TYPE	Sets or reads out the frequency offset type when the frequency offset feature is ON.
SENS:ROSC:SOUR	Sets or reads out an internal or external source of the 10 MHz reference frequency.
SENS:ROSC:EXT:ROUT	Sets or reads out the route of the external 10 MHz reference frequency. (PXIe-S5090 model only).
SENS:SEGM:DATA	Sets or reads out the array of the segment sweep table.
SENS:SWE:POIN	Sets or reads out the number of measurement points.
SENS:SWE:POIN:TIME	Sets or reads out the delay before measurement in each measurement point.
SENS:SWE:TYPE	Sets or reads out the sweep type.
SENS:VOLT:DC:RANG:UPP	Sets or reads out the DC voltage range at the connector AUX1 or AUX2.

SENS:AVER

SCPI Command

SENSe<Ch>:AVERage[:STATe] {OFF|ON|0|1}
SENSe<Ch>:AVERage[:STATe]?

Description

Turns ON/OFF the measurement averaging function.
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

Equivalent Softkeys

Average > Averaging

Back to SENSe

SENS:AVER:CLE

SCPI Command

SENSe<Ch>:AVERage:CLEar

Description

Restarts the averaging process, when the averaging function turned on.

no query

Target

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

Related Commands

SENS:AVER

Equivalent Softkeys

None

Back to SENSe

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 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

Equivalent Softkeys

Average > Avg Factor

Back to SENSe

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

Equivalent Softkeys

Average > IF Bandwidth

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

Equivalent Softkeys

Average > IF Bandwidth

Back to SENSe

SENS:CORR:CLE

SCPI Command

SENSe<Ch>:CORRection:CLEar

Description

Clears the calibration coefficient table.

no query

Target

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

Equivalent Softkeys

None

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 (or 4)

<srcport> the number of the source port from 1 to 2 (or 4)

<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

Equivalent Softkeys

None

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 command.

no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COEF:SAVE

Equivalent Softkeys

None

Back to SENSe

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 command.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Related Commands

SENS:CORR:COEF:SAVE

Equivalent Softkeys

None

Back to SENSe

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 command.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Related Commands

SENS:CORR:COEF:SAVE

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COEF:METH:SOLT1

SCPI Command

SENSe<Ch>:CORRection:COEFficient:METHod:SOLT1 <port>

Description

Selects the port and sets the full 1–port calibration type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Related Commands

SENS:CORR:COEF:SAVE

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COEF:METH:SOLT2

SCPI Command

SENSe<Ch>:CORRection:COEFficient:METHod:SOLT2 <port1>,<port2>

Description

Selects the ports and sets the full 2–port calibration type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.

no query

Target

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

Parameter

<port1>	the first port number from 1 to 2 (or 4)
<port2>	the second port number from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COEF:SAVE

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COEF:METH:SOLT3

SCPI Command

SENSe<Ch>:CORRection:COEFficient:METHod:SOLT3 <port1>,<port2>,<port3>

Description

Selects the ports and sets the full 3–port calibration type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.
no query

Target

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4
<port3>	the third port number from 1 to 4

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COEF:SAVE

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COEF:METH:SOLT4

SCPI Command

SENSe<Ch>:CORRection:COEFficient:METHod:SOLT4 <port1>,<port2>,<port3>,<port4>

Description

Selects the ports and sets the full 4–port calibration type, when the written calibration coefficients are made effective by the SENS:CORR:COEF:SAVE command.

no query

Target

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4
<port3>	the third port number from 1 to 4
<port4>	the fourth port number from 1 to 4

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COEF:SAVE

Equivalent Softkeys

None

Back to SENSe

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 command.

no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COEF:SAVE

Equivalent Softkeys

None

Back to SENSe

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.

At the attempt to execute this command before all the needed calibration coefficients are written, an error occurs and the command is ignored.

no query

Target

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

Related Commands

Calibration type selection:
SENS:CORR:COEF:METH:ERES
SENS:CORR:COEF:METH:OPEN
SENS:CORR:COEF:METH:SHOR
SENS:CORR:COEF:METH:THRU
SENS:CORR:COEF:METH:SOLT1
SENS:CORR:COEF:METH:SOLT2
Calibration coefficient writing:
SENS:CORR:COEF

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COLL:ADAP:DEL

SCPI Command

SENSe<Ch>:CORRection:COLLect:ADAPter:DELay <numeric>

SENSe<Ch>:CORRection:COLLect:ADAPter:DELay?

Description

Sets or reads out the approximate delay value of an adapter in the adapter removal/insertion function. This value is used to eliminate the uncertainty of ± 180 ° when calculating the phase response of the adapter.

The sign of the value depends on the type of the removal / insertion function. The value must be negative for the adapter removal function and must be positive for the adapter insertion function.

If this value is set to zero, the analyzer uses an algorithm to automatically determine the delay of the adapter. In most cases setting this value to zero is enough. Setting this value to non zero is required when:

$$Frequence\ Step > \frac{1}{2\ Delay}$$

.

Note: The delay and the length of the adapter can be set mutually .

$$Delay = \frac{Length\sqrt{Permittivity}}{C}$$

command/query

Target

Channel <Ch>,

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

Parameter

<numeric> the approximate delay value of the adapter (with minus sign when adapter is removed).

Unit

sec (Seconds)

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Calibration > Calibrate > Adapter Removal / Insertion > Adapter Delay

Back to SENSe

SENS:CORR:COLL:ADAP:LENG

SCPI Command

SENSe<Ch>:CORRection:COLLect:ADAPter:LENGth <numeric>

SENSe<Ch>:CORRection:COLLect:ADAPter:LENGth?

Description

Sets or reads out the approximate value of the mechanical length of the adapter in the adapter removal/insertion function. This value is used to eliminate the uncertainty of ± 180 ° when calculating the phase response of the adapter.

The sign of the value depends on the type of the removal / insertion function. The value must be negative for the adapter removal function and must be positive for the adapter insertion function.

If this value is set to zero, the analyzer uses an algorithm to automatically determine the delay of the adapter. In most cases setting this value to zero is enough. Setting this value to non zero is required when:

$$Frequence\ Step > \frac{1}{2\ Delay}$$

.

Note: The delay and the length of the adapter can be set mutually

$$Delay = \frac{Length\sqrt{Permittivity}}{C}$$

.

command/query

Target

Channel <Ch>,

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

Parameter

<numeric> the approximate delay length of the adapter (with minus sign when adapter is removed).

Unit

m (Meters)

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Calibration > Calibrate > Adapter Removal / Insertion > Adapter Delay

Back to SENSe

SENS:CORR:COLL:ADAP:UNIT

SCPI Command

SENSe<Ch>:CORRection:COLLect:ADAPter:UNIT {SEConds|METers}
SENSe<Ch>:CORRection:COLLect:ADAPter:UNIT?

Description

Selects the display units of the adapter delay (length) in the adapter removal/insertion function.

command/query

Target

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

Parameter

SEConds	Selects the seconds
METers	Selects the meters

Query Response

{SEC|MET}

Preset Value

SEConds

Equivalent Softkeys

Calibration > Calibrate > Adapter Removal / Insertion > Delay Unit

Back to SENSe

SENS:CORR:COLL:ADAP:MED

SCPI Command

SENSe<Ch>:CORRection:COLLect:ADAPter:MEDia {COAXial|WAVeguide}
SENSe<Ch>:CORRection:COLLect:ADAPter:MEDia?

Description

Specifies the adapter media in the adapter removal/insertion function.

Note: When the waveguide adapter is used it is recommended to specify the adapter length instead of delay.

command/query

Target

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

Parameter

COAXial	Specifies the coaxial adapter
WAVeguide	Specifies the waveguide adapter

Query Response

{COAX|WAV}

Preset Value

COAXial

Equivalent Softkeys

Calibration > Calibrate > Adapter Removal / Insertion > Adapter Media

Back to SENSe

SENS:CORR:COLL:ADAP:PERM

SCPI Command

SENSe<Ch>:CORRection:COLLect:ADAPter:PERMittivity <numeric>
SENSe<Ch>:CORRection:COLLect:ADAPter:PERMittivity?

Description

Sets or reads out the value of the permittivity of an adapter media in the adapter removal/insertion function.

When setting the adapter length, this parameter is used to calculate the adapter delay; therefore this parameter must be set before setting of the adapter length. When setting the adapter delay, this parameter is not used.

command/query

Target

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

Parameter

<numeric> the value of the permittivity of an adapter

Query Response

<numeric>

Preset Value

1.000649 (air)

Equivalent Softkeys

Calibration > Calibrate > Adapter Removal / Insertion > Permittivity

Back to SENSe

SENS:CORR:COLL:ADAP:WAV:CUT

SCPI Command

SENSe<Ch>:CORRection:COLLect:ADAPter:WAVeguide:CUToff <numeric>
SENSe<Ch>:CORRection:COLLect:ADAPter:WAVeguide:CUToff?

Description

Sets or reads out the value of the cutoff frequency of the waveguide adapter.
command/query

Target

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

Parameter

<numeric> the value of the cutoff frequency of the waveguide adapter.

Query Response

<numeric>

Preset Value

1.0 GHz

Equivalent Softkeys

Calibration > Calibrate > Adapter Removal / Insertion> Cutoff Frequency

Back to SENSe

SENS:CORR:COLL:METH:ADAP:REM

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:ADAPter:REMoval <port>

Description

Selects the port number and sets the adapter removal/insertion function for the calculation of the calibration coefficients when the SENS:CORR:COLL:SAVE command has been executed.

no query

Target

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

Parameter

<port> the number of the port from 1 to 2 (4 for S4VNA)

Query Response

<numeric>

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > Adapter Removal / Insertion> Select Port

Back to SENSe

SENS:CORR:COLL:CKIT

SCPI Command

SENSe:CORRection:COLLect:CKIT[:SELect] <numeric>
SENSe:CORRection:COLLect:CKIT[:SELect]?

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.

command/query

Parameter

<numeric> the number of the calibration kit from 1 to 64

Query Response

<numeric>

Preset Value

1

Equivalent Softkeys

Calibration > Cal Kit > Cal Kit n > Select

Back to SENSe

SENS:CORR:COLL:CKIT:DESC

SCPI Command

SENSe:CORRection:COLLect:CKIT:DESCription <string>
SENSe:CORRection:COLLect:CKIT:DESCription?

Description

Sets or reads out the calibration kit description string.
command/query

Target

Selected calibration kit

Parameter

<string>, up to 254 characters

Query Response

<string>

Equivalent Softkeys

Calibration > Cal Kit > Cal Kit n > Description

Back to SENSe

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>

Equivalent Softkeys

Calibration > Cal Kit > Cal Kit n > Label

Back to SENSe

SENS:CORR:COLL:CKIT:ORD:LOAD

SCPI Command

SENSe:CORRection:COLLect:CKIT:ORDer:LOAD <port>,<numeric>

SENSe:CORRection:COLLect:CKIT:ORDer:LOAD? <port>

Description

Sets or reads out the number of the calibration standard of the load type, used for the measurement of the specified port.

command/query

Target

Selected calibration kit

Parameter

<port>	the number of the port from 1 to 2 (or 4)
<numeric>	the number of the calibration standard

Out of Range

If the specified standard number is greater than the number of standards in the kit, an error occurs. If the specified standard number is not the load standard number, an error occurs.

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Specify CLSs > Load Port x (Row)

Back to SENSe

SENS:CORR:COLL:CKIT:ORD:OPEN

SCPI Command

SENSe:CORRection:COLLect:CKIT:ORDer:OPEN <port>,<numeric>
SENSe:CORRection:COLLect:CKIT:ORDer:OPEN? <port>

Description

Sets or reads out the number of the calibration standard of the open type, used for the measurement of the specified port.
command/query

Target

Selected calibration kit

Parameter

<port>	the number of the port from 1 to 2 (or 4)
<numeric>	the number of the calibration standard

Out of Range

If the specified standard number is greater than the number of standards in the kit, an error occurs. If the specified standard number is not the load standard number, an error occurs.

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Specify CLSs > Open Port x (Row)

Back to SENSe

SENS:CORR:COLL:CKIT:ORD:SEL

SCPI Command

SENSe:CORRection:COLLect:CKIT:ORDer:SELect <numeric>
SENSe:CORRection:COLLect:CKIT:ORDer:SELect?

Description

The subclass used to specify classes of calbration standards by the commands: SENS:CORR:COLL:CKIT:ORD:LOAD

SENS:CORR:COLL:CKIT:ORD:OPEN
SENS:CORR:COLL:CKIT:ORD:SHOR
SENS:CORR:COLL:CKIT:ORD:THRU
SENS:CORR:COLL:CKIT:ORD:TRLL
SENS:CORR:COLL:CKIT:ORD:TRLT
SENS:CORR:COLL:CKIT:ORD:TRLR.

command/query

Target

Selected calibration kit

Parameter

<numeric> the subclass number from 1 to 8

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Specify CLSs > Subclass n (Column)

Back to SENSe

SENS:CORR:COLL:CKIT:ORD:SHOR

SCPI Command

SENSe:CORRection:COLLect:CKIT:ORDer:SHORt <port>,<numeric>
SENSe:CORRection:COLLect:CKIT:ORDer:SHORt? <port>

Description

Sets or reads out the number of the calibration standard of the short type, used for the measurement of the specified port.

command/query

Target

Selected calibration kit

Parameter

<port>	the number of the port from 1 to 2 (or 4)
<numeric>	the number of the calibration standard

Out of Range

If the specified standard number is greater than the number of standards in the kit, an error occurs. If

the specified standard number is not the load standard number, an error occurs.

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Specify CLSs > Short Port x (Row)

Back to SENSe

SENS:CORR:COLL:CKIT:ORD:THRU

SCPI Command

SENSe:CORRection:COLLect:CKIT:ORDer:THRU <port1>,<port2>,<numeric>
SENSe:CORRection:COLLect:CKIT:ORDer:THRU? <port1>,<port2>

Description

Sets or reads out the number of the calibration standard of the thru type, used for the measurement between the <port1> and <port2> ports.
command/query

Target

Selected calibration kit

Parameter

<port1>	the number of the receiver port from 1 to 2 (or 4)
<port2>	the number of the source port from 1 to 2 (or 4)
<numeric>	the number of the calibration standard

Out of Range

If the specified standard number is greater than the number of standards in the kit, an error occurs. If the specified standard number is not the load standard number, an error occurs.

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Specify CLSs > Thru Port x-y (Row)

Back to SENSe

SENS:CORR:COLL:CKIT:ORD:TRLL

SCPI Command

SENSe:CORRection:COLLect:CKIT:ORDer:TRLLine <port1>,<port2>,<numeric>

SENSe:CORRection:COLLect:CKIT:ORDer:TRLLine? <port1>,<port2>

Description

Sets or reads out the number of the calibration standard of the TRL line type, used for the measurement between the <port1> and <port2> ports.
command/query

Target

Selected calibration kit

Parameter

<port1>	the number of the receiver port from 1 to 2 (or 4)
<port2>	the number of the source port from 1 to 2 (or 4)
<numeric>	the number of the calibration standard

Out of Range

If the specified standard number is greater than the number of standards in the kit, an error occurs. If the specified standard number is not the load standard number, an error occurs.

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Specify CLSs > TRL Line Port x-y (Row)

Back to SENSe

SENS:CORR:COLL:CKIT:ORD:TRLT

SCPI Command

SENSe:CORRection:COLLect:CKIT:ORDer:TRLThru <port1>,<port2>,<numeric>

SENSe:CORRection:COLLect:CKIT:ORDer:TRLThru? <port1>,<port2>

Description

Sets or reads out the number of the calibration standard of the TRL thru type, used for the measurement between the <port1> and <port2> ports.
command/query

Target

Selected calibration kit

Parameter

<port1>	the number of the receiver port from 1 to 2 (or 4)
<port2>	the number of the source port from 1 to 2 (or 4)
<numeric>	the number of the calibration standard

Out of Range

If the specified standard number is greater than the number of standards in the kit, an error occurs. If the specified standard number is not the load standard number, an error occurs.

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Specify CLSs > TRL Thru Port x-y (Row)

Back to SENSe

SENS:CORR:COLL:CKIT:ORD:TRLR

SCPI Command

SENSe:CORRection:COLLect:CKIT:ORDer:TRLReflect <port>,<numeric>

SENSe:CORRection:COLLect:CKIT:ORDer:TRLReflect? <port>

Description

Sets or reads out the number of the calibration standard of the TRL Reflect type, used for the measurement of the specified port.
command/query

Target

Selected calibration kit

Parameter

<port1>	the number of the port from 1 to 2 (or 4)
<numeric>	the number of the calibration standard

Out of Range

If the specified standard number is greater than the number of standards in the kit, an error occurs. If the specified standard number is not the load standard number, an error occurs.

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Specify CLSs > TRL Reflect Port x-y (Row)

Back to SENSe

SENS:CORR:COLL:CKIT:RES

SCPI Command

SENSe:CORRection:COLLect:CKIT:RESet

Description

Resets the calibration kit to the factory settings. Restores the predefined calibration kit. Removes the user defined calibration kit.
no query

Target

Selected calibration kit

Equivalent Softkeys

Calibration > Restore Cal Kit

Back to SENSe

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 selected 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

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, depending on the selected calibration kit

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > Terminal Impedance

Back to SENSe

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 selected 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>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > C0 10^{-15} F

Back to SENSe

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 selected 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>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > C1 10^{-27} F/Hz

Back to SENSe

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 selected 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/Hz^2 (Farad/Hertz^2)

Out of Range

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

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > C2 10^{-36} F/Hz^2

Back to SENSe

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 selected 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/Hz^3 (Farad/Hertz^3)

Out of Range

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

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > C3 10^{-45} F/Hz^3

Back to SENSe

SENS:CORR:COLL:CKIT:STAN:DATA

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:DATA <numeric list>
SENSe:CORRection:COLLect:CKIT:STAN<Std>:DATA?

Description

Writes or reads out the data array of the data-based calibration standard. The first element of the array is 1 or 2 and determines the number of ports of the calibration standard. The array format is as follows.

When the first element of the array is 1 :

<1>,<freq1>,<S11.re1>,<S11.im1>,
<freq2>,<S11.re2>,<S11.im2>,
…
<freqN>,<S11.reN>,<S11.imN>

When the first element of the array is 2:

<2>,<freq1>,<S11.re1>,<S11.im1>,<S21.re1>,<S21.im1>,
<S12.re1>,<S12.im1>,<S22.re1>,<S22.im1>,
…
<freqN>,<S11.reN>,<S11.imN>,<S21.reN>,<S21.imN>,
<S12.reN>,<S12.imN>,<S22.reN>,<S22.imN>

command/query

Target

Standard <Std> of the selected calibration kit,

<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Query Response

<numeric 1>, <numeric 2>, …<numeric N>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > Define STD Data

Back to SENSe

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 selected calibration kit,
<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Parameter

<numeric> the offset delay value form –1E18 to 1E18

Unit

s (second)

Out of Range

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

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > Offset Delay

Back to SENSe

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 selected 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>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > F max

Back to SENSe

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 selected 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>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > F min

Back to SENSe

SENS:CORR:COLL:CKIT:STAN:INS

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:INSert

Description

Inserts the calibration standard into the selected calibration kit. The existing standards with indices greater than or equal to <std> are shifted by +1.
no query

Target

Standard <Std> of the selected calibration kit,

<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > Add STD

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 selected calibration kit,
<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Parameter

<numeric> the L0 value from –1E18 to 1E18

Unit

1E–12 H (Henry)

Out of Range

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

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > L0 10^{-12} H

Back to SENSe

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 selected calibration kit,
<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Parameter

<numeric> the L0 value from –1E18 to 1E18

Unit

1E–24 H/Hz (Henry/Hertz)

Out of Range

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

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > L1 10^{-24} H/Hz

Back to SENSe

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 selected calibration kit,
<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Parameter

<numeric> the L2 value from –1E18 to 1E18

Unit

1E–33 H/Hz^2 (Henry/$Hertz^2$)

Out of Range

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

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > L2 10^{-33} H/Hz^2

Back to SENSe

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 selected calibration kit,
<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Parameter

<numeric> the L2 value from –1E18 to 1E18

Unit

1E–42 H/Hz^3 (Henry/$Hertz^3$)

Out of Range

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

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > L3 10^{-42} H/Hz^3

Back to SENSe

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 selected 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>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > Label

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 selected calibration kit,
<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Parameter

<numeric> the offset loss value from –1E18 to 1E18

Unit

Ω/s (Ohm/second)

Out of Range

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

Query Response

<numeric>

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > Offset Loss

Back to SENSe

SENS:CORR:COLL:CKIT:STAN:REM

SCPI Command

SENSe:CORRection:COLLect:CKIT:STAN<Std>:REMove

Description

Deletes the calibration standard into the selected calibration kit. The existing standards with indices greater than the <std> are shifted by –1.
no query

Target

Standard <Std> of the selected calibration kit,

<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > Delete STD

Back to SENSe

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 selected 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}

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > STD Type

Back to SENSe

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 selected calibration kit,
<Std>={[1]|2|...N}, where N – the number of the standards in the calibration kit

Parameter

<numeric> the offset Z0 value from –1E18 to 1E18

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, depending on the selected calibration kit

Equivalent Softkeys

Calibration > Cal Kit > Define STDs > Offset Z0

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}

Equivalent Softkeys

Calibration > Calibrate >
Response (Open) |
Response (Short) |
Response (Thru) |
One Path 2–Port Cal |
Full 1–Port Cal |
Full 2–Port Cal > Cancel > OK

Back to SENSe

SENS:CORR:COLL:DATA:ISOL

SCPI Command

SENSe<Ch>:CORRection:COLLect:DATA:ISOLation <rcvport>,<srcport>,<numeric list>
SENSe<Ch>:CORRection:COLLect:DATA:ISOLation? <rcvport>,<srcport>

Description

Writes or reads out the array of the isolation calibration measurement performed between the receiver port <rcvport> and the source port <srcport>.

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 measurement

<numeric 2n> imaginary part of the measurement

command/query

Target

Channel <Ch>,

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)
<numeric list>	the isolation measurement data array

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N>

Related Commands

SENS:CORR:COLL:ISOL

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COLL:DATA:LOAD

SCPI Command

SENSe<Ch>:CORRection:COLLect:DATA:LOAD <port>,<numeric list>

SENSe<Ch>:CORRection:COLLect:DATA:LOAD? <port>

Description

Writes or reads out the array of the load calibration standard measurement for the port <port>.

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 measurement

<numeric 2n> imaginary part of the measurement

command/query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)
<numeric list>	the data array of the load standard measurement

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N>

Related Commands

SENS:CORR:COLL:LOAD

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COLL:DATA:OPEN

SCPI Command

SENSe<Ch>:CORRection:COLLect:DATA:OPEN <port>,<numeric list>
SENSe<Ch>:CORRection:COLLect:DATA:OPEN? <port>

Description

Writes or reads out the array of the open calibration standard measurement for the port <port>.
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 measurement
<numeric 2n> imaginary part of the measurement

command/query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)
<numeric list>	the data array of the open standard measurement

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N>

Related Commands

SENS:CORR:COLL:OPEN

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COLL:DATA: SHOR

SCPI Command

SENSe<Ch>:CORRection:COLLect:DATA:SHORt <port>,<numeric list>
SENSe<Ch>:CORRection:COLLect:DATA:SHORt? <port>

Description

Writes or reads out the array of the short calibration standard measurement for the port <port>.
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 measurement
<numeric 2n> imaginary part of the measurement

command/query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)
<numeric list>	the data array of the short standard measurement

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N>

Related Commands

SENS:CORR:COLL:SHOR

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COLL:DATA:THRU:MATC

SCPI Command

SENSe<Ch>:CORRection:COLLect:DATA:THRU:MATCh <rcvport>,<srcport>,<numeric list>
SENSe<Ch>:CORRection:COLLect:DATA:THRU:MATCh? <rcvport>,<srcport>

Description

Writes or reads out the array of the reflection measurement of the thru standard connected between the receiver port <rcvport> and the source port <srcport>.

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 measurement

<numeric 2n> imaginary part of the measurement

command/query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)
<numeric list>	the data array of the reflection measurements using the thru standard

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N>

Related Commands

SENS:CORR:COLL:THRU

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COLL:DATA:THRU:TRAN

SCPI Command

SENSe<Ch>:CORRection:COLLect:DATA:THRU:TRANsmission <rcvport>,<srcport>, <numeric list>
SENSe<Ch>:CORRection:COLLect:DATA:THRU:TRANsmission? <rcvport>,<srcport>

Description

Writes or reads out the array of the transmission measurement performed between the receiver port <rcvport> and the source port <srcport> using the thru standard.

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 measurement
<numeric 2n> imaginary part of the measurement

command/query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)
<numeric list>	the data array of the transmission measurements using the thru standard

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N>

Related Commands

SENS:CORR:COLL:THRU

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:COLL:ECAL:CCH

SCPI Command

SENSe<Ch>:CORRection:COLLect:ECAL:CCHeck[:ACQuire]

Description

Executes the confidence check of the calibration coefficients of specified channel using the AutoCal module.
The command sets the AutoCal Module to the special internal state, reads the S-parameters of this state from the AutoCal Module and sets memory traces so that they can be compared with actual measured data. Comparison is carried out visually by the user.

command only

Target

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

Equivalent Softkeys

Calibration > AutoCal > Confidence Check

Back to SENSe

SENS:CORR:COLL:ECAL:ERES

SCPI Command

SENSe<Ch>:CORRection:COLLect:ECAL:ERESponse <rcvport>,<srcport>

Description

Executes one path 2–port calibration between the specified 2 ports of specified channel using the AutoCal module.
command only

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Equivalent Softkeys

Calibration > AutoCal > One Path 2–Port Cal

Back to SENSe

SENS:CORR:COLL:ECAL:INF?

SCPI Command

SENSe:CORRection:COLLect:ECAL:INFormation?

Description

Gets information of the AutoCal Module connected to the Network Analyzer.
query only

Target

AutoCal Module

Query Response

The query returns information in a string with comma separated fields.
Autocal Module Information:
- Model Name,
- Serial Number,
- Current Temperature of AutoCal Module,

Selected Characterization Information:
- Characterization Name,
- Characterization Date and Time,
- Min Frequency,
- Max Frequency,
- Number of Points,
- Characterization Temperature,
- PortA Connector,
- PortB Connector,
- PortA Adapter,
- PortB Adapter,
- Analyzer,
- Location,
- Operator.

Equivalent Softkeys

Calibration > AutoCal > Characterization Info...

Back to SENSe

SENS:CORR:COLL:ECAL:ORI:EXEC

SCPI Command

SENSe:CORRection:COLLect:ECAL:ORIentation:EXECute

Description

Executes the Auto-Orientation procedure of the AutoCal Module. The AutoCal Module must be connected to the ports of Analyzer.
command

Target

AutoCal Module

Equivalent Softkeys

Calibration > AutoCal > Orientation > Execute Auto-Orientation

Back to SENSe

SENS:CORR:COLL:ECAL:ORI:STAT

SCPI Command

SENSe:CORRection:COLLect:ECAL:ORIentation:STATe {OFF|ON|0|1}
SENSe:CORRection:COLLect:ECAL:ORIentation:STATe?

Description

Turns ON/OFF the Auto-Orientation function when the AutoCal Module calibration is executed.

command/query

Target

AutoCal Module

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > AutoCal > Orientation > Auto-Orientation

Back to SENSe

SENS:CORR:COLL:ECAL:PATH

SCPI Command

SENSe:CORRection:COLLect:ECAL:PATH <numeric1>,<numeric2>
SENSe:CORRection:COLLect:ECAL:PATH? <numeric1>

Description

Sets or reads out the AutoCal module port number which is connected to a specified port of Network Analyzer.

command/query

Target

AutoCal Module

Parameter

<numeric1>	Network Analyzer Port Number,
<numeric2>	AutoCal Module Port Number:
	1- Port A of AutoCal Module
	2- Port B of AutoCal Module

Query Response

<numeric>

Equivalent Softkeys

Calibration > AutoCal > Orientation > Port 1 | Port 2

Back to SENSe

SENS:CORR:COLL:ECAL:SOLT1

SCPI Command

SENSe<Ch>:CORRection:COLLect:ECAL:SOLT1 <port>

Description

Executes 1-port calibration of the specified port of specified channel using the AutoCal module.
command only

Target

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

Parameter

<port>	Port Number

Equivalent Softkeys

Calibration > AutoCal > 1-Port AutoCal > Port n

Back to SENSe

SENS:CORR:COLL:ECAL:SOLT2

SCPI Command

SENSe<Ch>:CORRection:COLLect:ECAL:SOLT2 <port1>,<port2>

Description

Executes full 2-port calibration between the specified 2 ports of specified channel using the AutoCal module.

command only

Target

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

Parameter

<port1>	Port Number
<port2>	Port Number

Equivalent Softkeys

Calibration > AutoCal > 2-Port AutoCal

Back to SENSe

SENS:CORR:COLL:ECAL:SOLT3

SCPI Command

SENSe<Ch>:CORRection:COLLect:ECAL:SOLT3 <port1>,<port2>,<port3>

Description

Executes full 3-port calibration between the specified 3 ports of specified channel using the AutoCal module.

command only

Target

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

Parameter

<port1>	Port Number
<port2>	Port Number
<port3>	Port Number

Equivalent Softkeys

Calibration > AutoCal > 3-Port AutoCal

Back to SENSe

SENS:CORR:COLL:ECAL:SOLT4

SCPI Command

SENSe<Ch>:CORRection:COLLect:ECAL:SOLT4 <port1>,<port2>,<port3>,<port4>

Description

Executes full 4-port calibration between the specified 4 ports of specified channel using the AutoCal module
command only

Target

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

Parameter

<port1>	Port Number
<port2>	Port Number
<port3>	Port Number
<port4>	Port Number

Equivalent Softkeys

Calibration > AutoCal > 4-Port AutoCal

Back to SENSe

SENS:CORR:COLL:ECAL:UCH

SCPI Command

SENSe:CORRection:COLLect:ECAL:UCHar <char>
SENSe:CORRection:COLLect:ECAL:UCHar?

Description

Sets or reads out the characterization number used when executing AutoCal (factory or user characterizations).
command/query

Target

AutoCal

Parameter

<char> Specifies the stimulus type:

CHAR0	factory characterization
CHAR1	user characterization 1

CHAR2	user characterization 2
CHAR3	user characterization 3

Query Response

{CHAR0|CHAR1|CHAR2|CHAR3}

Preset Value

CHAR0

Equivalent Softkeys

Calibration > AutoCal > Characterization

Back to SENSe

SENS:CORR:COLL:ECAL:UTHR:STAT

SCPI Command

SENSe:CORRection:COLLect:ECAL:UTHRu:STATe {OFF|ON|0|1}
SENSe:CORRection:COLLect:ECAL:UTHRu:STATe?

Description

Turns ON/OFF the Unknown Thru feature when the AutoCal Module calibration is executed.

command/query

Target

AutoCal

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > AutoCal > Unkn Thru

Back to SENSe

SENS:CORR:COLL:ISOL

SCPI Command

SENSe<Ch>:CORRection:COLLect[:ACQuire]:ISOLation <rcvport>,<srcport>

Description

Measures the isolation calibration data between the receiver port <rcvport> and the source port <srcport>.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Equivalent Softkeys

Calibration > Calibrate > Response (Thru) > Isolation (Optional)

Calibration > Calibrate > One Path 2–Port Cal > Isolation (Optional)

Calibration > Calibrate > Full 2–Port Cal > Isolation (Optional)

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.

Note: The command starts the measurement immediately if the trigger source for calibration set to

the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Equivalent Softkeys

Calibration > Calibrate > Response (Open) > Load (Optional)

Calibration > Calibrate > Response (Short) > Load (Optional)

Calibration > Calibrate > Full 1–Port Cal > Load

Calibration > Calibrate > One Path 2–Port Cal > Load

Calibration > Calibrate > Full 2–Port Cal > Port n Load

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.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Equivalent Softkeys

Calibration > Calibrate > Response (Open) > Open

Calibration > Calibrate > Full 1–Port Cal > Open

Calibration > Calibrate > One Path 2–Port Cal > Open

Calibration > Calibrate > Full 2–Port Cal > Port n Open

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.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Equivalent Softkeys

Calibration > Calibrate > Response (Short) > Short

Calibration > Calibrate > Full 1–Port Cal > Short

Calibration > Calibrate > One Path 2–Port Cal > Short

Calibration > Calibrate > Full 2–Port Cal > Port n Short

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>.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Equivalent Softkeys

Calibration > Calibrate > Response (Thru) > Thru

Calibration > Calibrate > One Path 2–Port Cal > Thru

Calibration > Calibrate > Full 2–Port Cal > Port 1–2 Thru

Back to SENSe

SENS:CORR:COLL:TRLL

SCPI Command

SENSe<Ch>:CORRection:COLLect[:ACQuire]:TRLLine <port1>,<port2>

Description

Measures the calibration data of the TRL line standard between the <port1> and the <port2>.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Equivalent Softkeys

Calibration > Calibrate > n–Port TRL Cal > Line/Match

Back to SENSe

SENS:CORR:COLL:TRLT

SCPI Command

SENSe<Ch>:CORRection:COLLect[:ACQuire]:TRLThru <port1>,<port2>

Description

Measures the calibration data of the TRL thru standard between the <port1> and the <port2>.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Equivalent Softkeys

Calibration > Calibrate > n–Port TRL Cal > Thru/Line

Back to SENSe

SENS:CORR:COLL:TRLR

SCPI Command

SENSe<Ch>:CORRection:COLLect[:ACQuire]:TRLReflect <port>

Description

Measures the calibration data of the TRL reflect standard for the specified port.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Equivalent Softkeys

Calibration > Calibrate > n–Port TRL Cal > Reflect

Back to SENSe

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. If the calibration kit contains several calibration standards of the same type, say SHORTs, this allows select the particular SHORT. The subclasses must be set in advance by the commands SENS:CORR:COLL:CKIT:ORD:XXXX or in the user interface "Specify Classes".

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

Equivalent Softkeys

None

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 command.
no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > One Path 2–Port Cal > Select Port

Back to SENSe

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 command.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > Response (Open) > Select Port

Back to SENSe

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 command.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > Response (Short) > Select Port

Back to SENSe

SENS:CORR:COLL:METH:SOLT1

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:SOLT1 <port>

Description

Selects the port and sets the full 1–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.

no query

Target

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

Parameter

<port>	the number of the port from 1 to 2 (or 4)

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > Full 1–Port Cal > Select Port

Back to SENSe

SENS:CORR:COLL:METH:SOLT2

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:SOLT2 <port1>,<port2>

Description

Selects the port and sets the full 2–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.

no query

Target

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

Parameter

<port1>	the first port number from 1 to 2 (or 4)
<port2>	the second port number from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > Full 2–Port Cal

Back to SENSe

SENS:CORR:COLL:METH:SOLT3

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:SOLT3 <port1>,<port2>,<port3>

Description

Selects the port and sets the full 3–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.

no query

Target

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

Parameter

<port1>	the first port number from 1 to 4

<port2>	the second port number from 1 to 4
<port3>	the third port number from 1 to 4

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > Full 3–Port Cal

Back to SENSe

SENS:CORR:COLL:METH:SOLT4

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:SOLT4 <port1>,<port2>,<port3>,<port4>

Description

Selects the port and sets the full 4–port calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.

no query

Target

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4
<port3>	the third port number from 1 to 4
<port4>	the fourth port number from 1 to 4

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > Full 4–Port Cal

Back to SENSe

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 command.

no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > Response (Thru) > Select Port

Back to SENSe

SENS:CORR:COLL:METH:TRL2

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:TRL2 <port1>,<port2>

Description

Selects the ports and sets the 2–port TRL calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.

no query

Target

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

Parameter

<port1>	the first port number from 1 to 2 (or 4)
<port2>	the second port number from 1 to 2 (or 4)

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > 2–Port TRL Cal

Back to SENSe

SENS:CORR:COLL:METH:TRL3

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:TRL3 <port1>,<port2>,<port3>

Description

Selects the ports and sets the 3–port TRL calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.

no query

Target

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4
<port3>	the third port number from 1 to 4

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > 3–Port TRL Cal

Back to SENSe

SENS:CORR:COLL:METH:TRL4

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:TRL4 <port1>,<port2>,<port3>,<port4>

Description

Selects the ports and sets the 4–port TRL calibration type for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.
no query

Target

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4
<port3>	the third port number from 1 to 4
<port4>	the fourth port number from 1 to 4

Out of Range

If the same port numbers are specified, an error occurs.

Related Commands

SENS:CORR:COLL:SAVE

Equivalent Softkeys

Calibration > Calibrate > 4–Port TRL Cal

Back to SENSe

SENS:CORR:COLL:METH:TYPE?

SCPI Command

SENSe<Ch>:CORRection:COLLect:METHod:TYPE?

Description

Reads out the calibration type selected for the calculation of the calibration coefficients on completion of the calibration executed by the SENS:CORR:COLL:SAVE command.

no query

Target

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

Query Response

RESPO	Response (Open)
RESPS	Response (Short)
RESPT	Response (Thru)
SOLT1	Full 1–port calibration
SOLT2	Full 2–port calibration
1PATH	One path 2–port calibration
NONE	Not defined

Equivalent Softkeys

None

Back to SENSe

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.

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

Calibration standards measurement:

SENS:CORR:COLL:ISOL
SENS:CORR:COLL:LOAD
SENS:CORR:COLL:OPEN
SENS:CORR:COLL:SHOR
SENS:CORR:COLL:THRU
SENS:CORR:COLL:TRLT
SENS:CORR:COLL:TRLL
SENS:CORR:COLL:TRLR

Equivalent Softkeys

Calibration > Calibrate > ... > Apply

Back to SENSe

SENS:CORR:COLL:SIMP:SAVE

SCPI Command

SENSe<Ch>:CORRection:COLLect:SIMPlified:SAVE

Description

Calculates the calibration coefficients for the simplified 3 or 4 port calibration from the calibration standards measurements when the 3 or 4 port calibration is selected as the calibration type. The calibration type is selected by one of commands SENS:CORR:COLL:METH:SOLT3/SOLT4/TRL3/TRL4.

The simplified 3 port calibration allows omit one THRU measurement. The simplified 4 port calibration allows omit up to three THRU measurements.

If full set of calibration standard measurement is made this command behaves like the SENS:CORR:COLL:SAVE command.

no query

Target

Channel <Ch>,

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

Related Commands

Calibration type selection:

SENS:CORR:COLL:METH:SOLT3
SENS:CORR:COLL:METH:SOLT4
SENS:CORR:COLL:METH:TRL3
SENS:CORR:COLL:METH:TRL4

Calibration standards measurement:

SENS:CORR:COLL:ISOL
SENS:CORR:COLL:LOAD
SENS:CORR:COLL:OPEN
SENS:CORR:COLL:SHOR
SENS:CORR:COLL:THRU
SENS:CORR:COLL:TRLT
SENS:CORR:COLL:TRLL
SENS:CORR:COLL:TRLR

Equivalent Softkeys

Calibration > Calibrate > ... > Apply

Back to SENSe

SENS:CORR:COLL:THRU:ADD:DEL

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:DELay <numeric>
SENSe<Ch>:CORRection:COLLect:THRU:ADDition:DELay?

Description

Sets or reads out the approximate delay value of an unknown thru in the thru addition function. This value is used to eliminate the uncertainty of ± 180 ° when calculating the phase response of the thru.

If this value is set to zero, the analyzer uses an algorithm to automatically determine the delay of the thru. In most cases setting this value to zero is enough. Setting this value to non zero is required when:

$$Frequence\ Step > \frac{1}{2\ Delay}$$

.

Note: The delay and the length of the adapter can be set mutually $Delay = \frac{Length\sqrt{Permittivity}}{C}$.

command/query

Target

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

Parameter

<numeric> the approximate delay value of the thru.

Unit

sec (seconds)

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Delay

Back to SENSe

SENS:CORR:COLL:THRU:ADD:LENG

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:LENGth <numeric>
SENSe<Ch>:CORRection:COLLect:THRU:ADDition:LENGth?

Description

Sets or reads out the approximate value of the mechanical length of an unknown thru in the thru addition function. This value is used to eliminate the uncertainty of ± 180 ° when calculating the phase response of the thru.

If this value is set to zero, the analyzer uses an algorithm to automatically determine the delay of the thru. In most cases setting this value to zero is enough. Setting this value to non zero is required when:

$$Frequence\ Step > \frac{1}{2\ Delay}$$

.

Note: The delay and the length of the adapter can be set mutually .

$$Delay = \frac{Length\sqrt{Permittivity}}{C}$$

command/query

Target

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

Parameter

<numeric> the approximate value of the thru length.

Unit

m (meters)

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Delay

Back to SENSe

SENS:CORR:COLL:THRU:ADD:UNIT

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:UNIT {SEConds|METers}
SENSe<Ch>:CORRection:COLLect:THRU:ADDition:UNIT?

Description

Selects the display units of the thru delay (length) in the thru addition function.
command/query

Target

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

Parameter

SEConds	Selects the seconds
METers	Selects the meters

Query Response

{SEC|MET}

Preset Value

SEConds

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Delay Unit

Back to SENSe

SENS:CORR:COLL:THRU:ADD:MED

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:MEDia {COAXial|WAVeguide}
SENSe<Ch>:CORRection:COLLect:THRU:ADDition:MEDia?

Description

Specifies the media of the thru in the thru addition function.

Note: When the waveguide adapter is used it is recommended to specify the thru length instead of its delay.

command/query

Target

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

Parameter

COAXial	Specifies the coaxial
WAVeguide	Specifies the waveguide

Query Response

{COAX|WAV}

Preset Value

COAXial

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Thru Media

Back to SENSe

SENS:CORR:COLL:THRU:ADD:PERM

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:PERMittivity <numeric>
SENSe<Ch>:CORRection:COLLect:THRU:ADDition:PERMittivity?

Description

Sets or reads out the value of the permittivity of the thru media in the thru addition function.
This parameter is used to calculate the adapter delay when the thru length is setting; therefore this parameter must be set before setting of the thru length.

command/query

Target

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

Parameter

<numeric> the value of the permittivity of the thru

Query Response

<numeric>

Preset Value

1.000649 (air)

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Permittivity

Back to SENSe

SENS:CORR:COLL:THRU:ADD:WAV:CUT

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:WAVeguide:CUToff <numeric>
SENSe<Ch>:CORRection:COLLect:THRU:ADDition:WAVeguide:CUToff?

Description

Sets or reads out the value of the cutoff frequency of the waveguide thru in the thru addition function.
command/query

Target

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

Parameter

<numeric> the value of the cutoff frequency of the waveguide thru.

Query Response

<numeric>

Preset Value

1.0 GHz

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Cutoff Frequency

Back to SENSe

SENS:CORR:COLL:THRU:ADD:FULL2:COMP

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:FULL2:COMPlete <port1>,<port2>

Description

Completes the full 2-port calibration between the specified ports provided that each port was calibrated using full 1-port calibration:

• Measures an arbitrary thru between the ports;

• Calculates the error terms Et and El using the unknown thru algorithm;

• Saves the Et and El error terms to the existing calibration getting the full 2-port calibration from the two 1-port calbrations.

If the full 2-port calibration already existed between the specified ports, updates the Et and El error terms.

no query

Target

Channel <Ch>,

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Comlete 2-Port Calibration

Back to SENSe

SENS:CORR:COLL:THRU:ADD:FULL3:PORT

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:FULL3:PORTs <port1>,<port2>, <port3>

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:FULL3:PORTs?

Description

Selects the pors to comlete the 3–port calibration in the thru addition function.

command/query

Target

Channel <Ch>,

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4
<port3>	the third port number from 1 to 4

Related Commands

SENS:CORR:COLL:THRU:ADD:FULL3:COMP

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Comlete 3-Port Calibration > Select Ports

Back to SENSe

SENS:CORR:COLL:THRU:ADD:FULL3:ACQ

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:FULL3:ACQuire <port1>,<port2>

Description

Measures an arbitrary thru between the specified ports. The measurements are used to complete the 3-port calibration in the thru addition function by the command SENS:CORR:COLL:THRU:ADD:FULL3:COMP.

no query

Target

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Comlete 3-Port Calibration > Thru m-n

Back to SENSe

SENS:CORR:COLL:THRU:ADD:FULL3:COMP

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:FULL3:COMPlete

Description

Completes the full 3-port calibration between the ports specified by the command SENS:CORR:COLL:THRU:ADD:FULL3:PORT. The ports must be calibrated using the full 1-port calibration in advance. The necessary number of the thru measurement must be accomplished by the command SENS:CORR:COLL:THRU:ADD:FULL3:ACQ.

This command calculates the error terms Et and El using the unknown thru algorithm. Then it saves the Et and El error terms to the existing calibration getting the full 3-port calibration from the three 1-port calbrations.

If the full 3-port calibration already existed, updates the Et and El error terms.

no query

Target

Channel <Ch>,

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

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Comlete 3-Port Calibration > Apply

Back to SENSe

SENS:CORR:COLL:THRU:ADD:FULL4:ACQ

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:FULL4:ACQuire <port1>,<port2>

Description

Measures an arbitrary thru between the specified ports. The measurements are used to complete the 4-port thru addition function by the command SENS:CORR:COLL:THRU:ADD:FULL4:COMP.

no query

Target

Channel <Ch>,

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

Parameter

<port1>	the first port number from 1 to 4
<port2>	the second port number from 1 to 4

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Comlete 4-Port Calibration > Thru m-n

Back to SENSe

SENS:CORR:COLL:THRU:ADD:FULL4:COMP

SCPI Command

SENSe<Ch>:CORRection:COLLect:THRU:ADDition:FULL4:COMPlete

Description

Completes the full 4-port calibration. The ports must be calibrated using the full 1-port calibration in advance. The necessary number of the thru measurement must be accomplished by the command SENS:CORR:COLL:THRU:ADD:FULL4:ACQ.

This command calculates the error terms Et and El using the unknown thru algorithm. Then it saves the Et and El error terms to the existing calibration getting the full 4-port calibration from the four 1-port calbrations.

If the full 4-port calibration already existed, updates the Et and El error terms.

no query

Target

Channel <Ch>,

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

Equivalent Softkeys

Calibration > Calibrate > Thru Addition > Comlete 4-Port Calibration > Apply

Back to SENSe

SENS:CORR:EXT

SCPI Command

SENSe<Ch>:CORRection:EXTension[:STATe] {OFF|ON|0|1}

SENSe<Ch>:CORRection:EXTension[:STATe]?

Description

Turns ON/OFF the port extension function.

command/query

Target

Channel <Ch>,

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Port Extensions > Extension

Back to SENSe

SENS:CORR:EXT:AUTO:CONF

SCPI Command

SENSe<Ch>:CORRection:EXTension:AUTO:CONFig {CSPN|AMKR|USPN}
SENSe<Ch>:CORRection:EXTension:AUTO:CONFig?

Description

Specifies the frequency range used for calculation of the results of the Auto Port Extension function.
command/query

Target

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

Parameter

CSPN	Uses current frequency span
AMKR	Uses the frequency of the active marker. This is applied to Loss 1 and Loss 2 is ignored.
USPN	Uses arbitrary frequency range set by user

Query Response

{CSPN|AMKR|USPN}

Preset Value

CSPN

Equivalent Softkeys

Calibration > Port Extension > Auto Port Extension > Method {Current span | Acive Marker | User Span}

Back to SENSe

SENS:CORR:EXT:AUTO:DCOF

SCPI Command

SENSe<Ch>:CORRection:EXTension:AUTO:DCOFfset {OFF|ON|0|1}
SENSe<Ch>:CORRection:EXTension:AUTO:DCOFfset?

Description

Turns ON/OFF the usage of "Loss at DC" value for the results of the auto port extension function.

command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Port Extension > Auto Port Extension > Adjust Mismatch {OFF | ON }

Back to SENSe

SENS:CORR:EXT:AUTO:LOSS

SCPI Command

SENSe<Ch>:CORRection:EXTension:AUTO:LOSS {OFF|ON|0|1}
SENSe<Ch>:CORRection:EXTension:AUTO:LOSS?

Description

Turns ON/OFF the usage of "Loss1"and "Loss2" values for the results of the auto port extension function.

command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Port Extension > Auto Port Extension > Adjust Mismatch {OFF | ON }

Back to SENSe

SENS:CORR:EXT:AUTO:MEAS

SCPI Command

SENSe<Ch>:CORRection:EXTension:AUTO:MEASure {SHORt|OPEN}

Description

Performs measurement of the standard "SHORT" or "OPEN", automatically calculates and sets the parameters of the Port Extension.

The set of ports for which this command is executed is determined by the SENS:CORR:EXT:AUTO:PORT command.

When two consecutive measurements of "SHORT" and "OPEN" are performed the results of these measurements are averaged.

command

Target

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

Parameter

SHORt	Measures "SHORT" standard
OPEN	Measures "OPEN" standard

Equivalent Softkeys

Calibration > Port Extension > Auto Port Extension > Measure Short or Open

Back to SENSe

SENS:CORR:EXT:AUTO:PORT

SCPI Command

SENSe<Ch>:CORRection:EXTension:AUTO:PORT<Pt> {OFF|ON|0|1}
SENSe<Ch>:CORRection:EXTension:AUTO:PORT<Pt>?

Description

Turns ON/OFF the status of the auto port extension for the Port number <Pt>.

command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

Calibration > Port Extension > Auto Port Extension > Select Port(s)

Back to SENSe

SENS:CORR:EXT:AUTO:RES

SCPI Command

SENSe<Ch>:CORRection:EXTension:AUTO:RESet

Description

Deletes the finished measurement data of OPEN and SHORT standards of the auto port extension function. Allows to start averaging again between the SHORT and OPEN standards.

command/query

Target

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

Equivalent Softkeys

Enter to the Auto Port Extension menu

Back to SENSe

SENS:CORR:EXT:AUTO:STAR

SCPI Command

SENSe<Ch>:CORRection:EXTension:AUTO:STARt <frequency>
SENSe<Ch>:CORRection:EXTension:AUTO:STARt?

Description

Sets or reads out the start value of the user span of the auto port extension function.
command/query

Target

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

Parameter

<frequency> the user span start

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 analyzer's lowest frequency

Equivalent Softkeys

Calibration > Port Extension > Auto Port Extension > User Span Start

Back to SENSe

SENS:CORR:EXT:AUTO:STOP

SCPI Command

SENSe<Ch>:CORRection:EXTension:AUTO:STOP <frequency>
SENSe<Ch>:CORRection:EXTension:AUTO:STOP?

Description

Sets or reads out the stop value of the user span of the auto port extension function.
command/query

Target

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

Parameter

<frequency> the user span stop

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 analyzer's lowest frequency

Equivalent Softkeys

Calibration > Port Extension > Auto Port Extension > User Span Stop

Back to SENSe

SENS:CORR:EXT:PORT:FREQ

SCPI Command

SENSe<Ch>:CORRection:EXTension:PORT<Pt>:FREQuency{[1]|2} <frequency>
SENSe<Ch>:CORRection:EXTension:PORT<Pt>:FREQuency{[1]|2}?

Description

Sets or reads out the values of the frequency 1 and frequency 2 to calculate the loss for the port extension function.
command/query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

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

1E9

Equivalent Softkeys

Calibration > Port Extensions > Loss > { Freq1 | Freq2 }

Back to SENSe

SENS:CORR:EXT:PORT:INCL

SCPI Command

SENSe<Ch>:CORRection:EXTension:PORT<Pt>:INCLude{[1]|2}[:STATe] {OFF|ON|0|1}

SENSe<Ch>:CORRection:EXTension:PORT<Pt>:INCLude{[1]|2}[:STATe]?

Description

Turns ON/OFF the loss compensation of the loss 1 and loss 2 for the port extension function.
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Port Extensions > Loss > { Loss1 | Loss2 }

Back to SENSe

SENS:CORR:EXT:PORT:LDC

SCPI Command

SENSe<Ch>:CORRection:EXTension:PORT<Pt>:LDC <numeric>
SENSe<Ch>:CORRection:EXTension:PORT<Pt>:LDC?

Description

Sets or reads out the loss value at DC for the port extension function.
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<numeric> the loss value from –200 to 200

Unit

dB (decibel)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Calibration > Port Extensions > Loss > Loss at DC

Back to SENSe

SENS:CORR:EXT:PORT:LOSS

SCPI Command

SENSe<Ch>:CORRection:EXTension:PORT<Pt>:LOSS{[1]|2} <numeric>
SENSe<Ch>:CORRection:EXTension:PORT<Pt>:LOSS{[1]|2}?

Description

Sets or reads out the values of the loss 1 and loss 2 for the port extension function.
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<numeric> the loss value from –200 to 200

Unit

dB (decibel)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Calibration > Port Extensions > Loss > { Loss1 | Loss2 }

Back to SENSe

SENS:CORR:EXT:PORT:TIME

SCPI Command

SENSe<Ch>:CORRection:EXTension:PORT<Pt>:TIME <time>
SENSe<Ch>:CORRection:EXTension:PORT<Pt>:TIME?

Description

Sets or reads out the electrical delay value for the port extension function.
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

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

Equivalent Softkeys

Calibration > Port Extensions > { Extension Port1 | Extension Port2 }

Back to SENSe

SENS:CORR:INF?

SCPI Command

SENSe<Ch>:CORRection:INFormation? <rcvport>,<srcport>

Description

Reads out the information string of the calibration acting between the <rcvport> and <srcport>.
no query

Target

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

Parameter

<rcvport>	the number of the receiver port from 1 to 2 (or 4)
<srcport>	the number of the source port from 1 to 2 (or 4)

Out of Range

<YYYY/MM/DD> <HH:MM:SS>, <Type>, <TypeEx>, <IFBW>, <Power>, <Temperature>, <CalKit>

<Type>: {RT|RO|RS|F1|OP|F2|F3|F4}
<TypeEx>: {SOLT|SOLR|TRL|COPY}
<CalKit>: Calibration Kit Label and Description

Equivalent Softkeys

None

Back to SENSe

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.
command/query

Target

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

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

Equivalent Softkeys

Calibration > System Z0

Back to SENSe

SENS:CORR:IMP:SEL:AUTO

SCPI Command

SENSe:CORRection:IMPedance[:INPut]:SELect:AUTO {OFF|ON|0|1}

SENSe:CORRection:IMPedance[:INPut]:SELect:AUTO?

Description

Turns ON/OFF the auto-select Z0 function. 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

Equivalent Softkeys

Calibration > System Z0> Auto Select Z0

Back to SENSe

SENS:CORR:OFFS:CLE

SCPI Command

SENSe<Ch>:CORRection:OFFSet:CLEar

Description

Clears the scalar mixer calibration coefficient table.
no query

Target

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

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:OFFS:COLL:CLE

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect:CLEar

Description

Clears the calibration measurement data of scalar mixer calibration when the frequency offset feature is ON.
no query

Target

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

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Scalar Mixer Calibration > Cancel

Back to SENSe

SENS:CORR:OFFS:COLL:LOAD

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect[:ACQuire]:LOAD <numeric1>,<numeric2>

Description

Measures the calibration data of the load standard of the specified port when the frequency offset feature is on for scalar mixer calibration.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

Channel <Ch>,

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

Parameter

<numeric1>	Measurement port number
<numeric2>	Frequency port number

Out of Range

If an incorrect port number is specified, an error occurs.

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Scalar Mixer Calibration > Reflection Port n > Port n @Freq m Load

Back to SENSe

SENS:CORR:OFFS:COLL:METH:SMIX2

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect:METHod:SMIX2 <numeric1>,<numeric2>

Description

Measures the calibration data of the load standard of the specified port when the frequency offset feature is on for scalar mixer calibration.

no query

Target

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

Parameter

<numeric1>	First port
<numeric2>	Second port

Out of Range

If an incorrect port number is specified, an error occurs.

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Scalar Mixer Calibration

Back to SENSe

SENS:CORR:OFFS:COLL:OPEN

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect[:ACQuire]:OPEN <numeric1>,<numeric2>

Description

Measures the calibration data of the open standard of the specified port when the frequency offset feature is on for scalar mixer calibration.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<numeric1>	Measurement port number
<numeric2>	Frequency port number

Out of Range

If an incorrect port number is specified, an error occurs.

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Scalar Mixer Calibration > Reflection Port n > Port n @Freq m Open

Back to SENSe

SENS:CORR:OFFS:COLL:PMETer

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect[:ACQuire]:PMETer <numeric1>,<numeric2>, <numeric3>

Description

Measures the scalar-mixer calibration data using the power meter when the frequency offset feature is ON.

Note: The command starts the measurement of the calibration data immediately regardless the trigger settings. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<numeric1>	Measurement port number
<numeric2>	Frequency port number
<numeric3>	Always 0 (reserved)

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Scalar Mixer Calibration > Power > Port n @Freq m

Back to SENSe

SENS:CORR:OFFS:COLL:SHOR

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect[:ACQuire]:SHORt <numeric1>,<numeric2>

Description

Measures the calibration data of the short standard of the specified port when the frequency offset feature is on for scalar mixer calibration.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<numeric1>	Measurement port number
<numeric2>	Frequency port number

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Scalar Mixer Calibration > Reflection Port n > Port n @Freq m Short

Back to SENSe

SENS:CORR:OFFS:COLL:THRU

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect[:ACQuire]:THRU <numeric1>,<numeric2>

Description

Measures the calibration data of the thru standard of the specified port when the frequency offset feature is on for scalar mixer calibration.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Parameter

<numeric1>	Response port number
<numeric2>	Stimulus port number

Out of Range

If an incorrect port number is specified, an error occurs.

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Scalar Mixer Calibration > Reflection Port n > Port n @Freq m Thru

Back to SENSe

SENS:CORR:OFFS:COLL:SAVE

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect:SAVE

Description

Calculates the calibration coefficient for the selected calibration type (scalar mixer calibration only) from the calibration data measured with the frequency offset feature is ON.

If this command is executed before all necessary calibration data for calculating the calibration coefficient is measured, an error occurs when executed.

no query

Target

Channel <Ch>,

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

Related Commands

SENS:CORR:OFFS:COLL:METH:SMIX2
SENS:CORR:OFFS:COLL:LOAD
SENS:CORR:OFFS:COLL:OPEN
SENS:CORR:OFFS:COLL:SHOR
SENS:CORR:OFFS:COLL:THRU
SENS:CORR:OFFS:COLL:PMETer

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Scalar Mixer Calibration > Apply

Back to SENSe

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} for S2VNA or {[1]|2|3|4} for S4VNA

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

Equivalent Softkeys

Calibration > System Z0 > Port n Z0

Back to SENSe

SENS:CORR:REC

SCPI Command

SENSe<Ch>:CORRection:RECeiver<Pt>[:STATe] {OFF|ON|0|1}
SENSe<Ch>:CORRection:RECeiver<Pt>[:STATe]?

Description

Turns ON/OFF the receiver correction of the specified port.
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Receiver Calibration > Correction

Back to SENSe

SENS:CORR:REC:COLL:ACQ

SCPI Command

SENSe<Ch>:CORRection:RECeiver<Pt>:COLLect:ACQuire <srcport>

Description

Executes receiver calibration of both the test receiver and the reference receiver of the specified port <Pt>.The test receiver calibration uses port number <srcport> as the source port. The reference receiver calibration uses its own port <Pt> as the source port.

Note: The command starts the measurement of the calibration data immediately regardless the trigger settings. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<srcport>	the number of the source port from 1 to 2 (or 4)

Equivalent Softkeys

Calibration > Receiver Calibration > Calibrate Both

Back to SENSe

SENS:CORR:REC:COLL:RCH:ACQ

SCPI Command

SENSe<Ch>:CORRection:RECeiver<Pt>:COLLect:RCHannel:ACQuire

Description

Executes receiver calibration of the reference receiver of the specified port <Pt>.The reference receiver calibration uses its own port <Pt> as the source port.

Note: The command starts the measurement of the calibration data immediately regardless the trigger settings. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Equivalent Softkeys

Calibration > Receiver Calibration > Take Cal Sweep

Back to SENSe

SENS:CORR:REC:COLL:TCH:ACQ

SCPI Command

SENSe<Ch>:CORRection:RECeiver<Pt>:COLLect:TCHannel:ACQuire <srcport>

Description

Executes receiver calibration of the test receiver of the specified port <Pt>.The test receiver calibration uses port number <srcport> as the source port.

Note: The command starts the measurement of the calibration data immediately regardless the trigger settings. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<srcport>	the number of the source port from 1 to 2 (or 4)

Equivalent Softkeys

Calibration > Receiver Calibration > Calibrate Both

Back to SENSe

SENS:CORR:REC:OFFS:AMPL

SCPI Command

SENSe<Ch>:CORRection:RECeiver<Pt>:OFFSET:AMPLitude <numeric>
SENSe<Ch>:CORRection:RECeiver<Pt>:OFFSET:AMPLitude?

Description

Sets or reads out the power offset value when the Receiver Calibration is performed. Receiver calibration is done at the condition of <source power> + < power offset>.
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<numeric> the power offset value when the Receiver Calibration is performed from -100 to 100.

Unit

dBm (decibels above 1 milliwatt)

Out of Range

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

Query Response

<numeric>

Preset Value

0.0

Equivalent Softkeys

Calibration > Receiver Calibration > Power Offset

Back to SENSe

SENS:CORR:STAT

SCPI Command

SENSe<Ch>:CORRection:STATe {OFF|ON|0|1}

SENSe<Ch>:CORRection:STATe?

Description

Turns ON/OFF the S-parameter error correction.

command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Correction

Back to SENSe

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 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 stop

Unit

Hz (Hertz)

Query Response

<numeric>

Preset Value

1 GHz

Equivalent Softkeys

Analysis > Time Domain > Cable Correction > Frequency

Back to SENSe

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

Equivalent Softkeys

Analysis > Time Domain > Cable Correction > Cable Loss

Back to SENSe

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

Equivalent Softkeys

Analysis > Time Domain > Cable Correction > Velocity Factor

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 ON/OFF the cable correction 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

Equivalent Softkeys

Analysis > Time Domain > Cable Correction > Cable Correction

Back to SENSe

SENS:CORR:TRIG:FREE

SCPI Command

SENSe<Ch>:CORRection:TRIGger:FREE[:STATe] {OFF|ON|0|1}
SENSe<Ch>:CORRection:TRIGger:FREE[:STATe]?

Description

Enables/disables the internal trigger source for calibration. If the internal trigger source for calibration is enabled then a command of the calibration standard measurement starts the measurement immediately. If the internal trigger source for calibration is disabled then the system trigger source is used (which is set for regular measurement with the command TRIG:SOUR) to start the calibration standard measurement.

The system trigger source also enables the averaging trigger function (TRIG:AVER) and the point trigger function (TRIG:POIN) for calibration.

Note: When the system trigger source is selected you should avoid the program trigger source (BUS), otherwise the program deadlock is possible.

Note: The command does not apply to the electronic calibration, the power calibration and the receiver calibration. The internal trigger always used in these cases.

command/query

Target

Channel <Ch>,

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

Parameter

Specifies the trigger source for calibration:

{ON|1}	Internal
{OFF|0}	System

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

Calibration > Cal Trig Source { Internal | System }

Back to SENSe

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 1–port calibration
SOLT2	Full 2–port calibration
SOLT3	Full 2–port calibration

SOLT4	Full 2–port calibration
1PATH	One path 2–port calibration
NONE	Not defined

Equivalent Softkeys

None

Back to SENSe

SENS:CORR:VMC:COLL:PORT

SCPI Command

SENSe<Ch>:CORRection:VMC:COLLect:PORT <numeric>
SENSe<Ch>:CORRection:VMC:COLLect:PORT?

Description

Sets or reads out the number of the port used in the vector mixer calibration. To this port the calibration mixer with IF filter is connected.

command/query

Target

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

Parameter

<numeric> port number from 1 to 2 (S2VNA) or 4 (S4VNA)

Query Response

<numeric>

Preset Value

1

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Vector Mixer Calibration > Select Port

Back to SENSe

SENS:CORR:VMC:COLL:LO:FREQ

SCPI Command

SENSe<Ch>:CORRection:VMC:COLLect:LO:FREQuency <numeric>
SENSe<Ch>:CORRection:VMC:COLLect:LO:FREQuency?

Description

Sets or reads out the LO frequency value used in the vector mixer calibration. The LO source is an external signal generator. The LO frequency is common for both the calibration and the mixer under test.

command/query

Target

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

Parameter

<numeric> LO frequency from 0 to 1000 THz

Query Response

<numeric>

Unit

Hz (Hertz)

Preset Value

0

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Vector Mixer Calibration > LO Frequency

Back to SENSe

SENS:CORR:VMC:COLL:IF:SEL

SCPI Command

SENSe<Ch>:CORRection:VMC:COLLect:IF:SELect <char>
SENSe<Ch>:CORRection:VMC:COLLect:IF:SELect?

Description

Selects the IF frequency from RF+LO, RF-LO and LO-RF, depending on the IF frequency of the calibration mixer in the vector mixer calibration.

command/query

Target

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

Parameter

<char> Select from following:

RFPLO	RF + LO
RFMLO	RF - LO
LOMRF	LO - RF

Query Response

{RFPLO|RFMLO|LOMRF}

Preset Value

RFPLO

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Vector Mixer Calibration > IF Frequency > { RF+LO | RF - LO | LO - RF }

Back to SENSe

SENS:CORR:VMC:COLL:LOAD

SCPI Command

SENSe<Ch>:CORRection:VMC:COLLect[:ACQuire]:LOAD

Description

Measures the load standard in order to characterize the calibration mixer + filter in the vector mixer calibration.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

Channel <Ch>,

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

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Vector Mixer Calibration > Load

Back to SENSe

SENS:CORR:VMC:COLL:OPEN

SCPI Command

SENSe<Ch>:CORRection:VMC:COLLect[:ACQuire]:OPEN

Description

Measures the open standard in order to characterize the calibration mixer + filter in the vector mixer calibration.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Vector Mixer Calibration > Open

Back to SENSe

SENS:CORR:VMC:COLL:SHOR

SCPI Command

SENSe<Ch>:CORRection:VMC:COLLect[:ACQuire]:SHORt

Description

Measures the short standard in order to characterize the calibration mixer + filter in the vector mixer calibration.

Note: The command starts the measurement immediately if the trigger source for calibration set to the "Internal" by the command SENS:CORR:TRIG:FREE, otherwise waits for the trigger signal. The command blocks the execution of the subsequent commands until the completion of the measurement.

no query

Target

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

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Vector Mixer Calibration > Short

Back to SENSe

SENS:CORR:VMC:COLL:OPT

SCPI Command

SENSe<Ch>:CORRection:VMC:COLLect[:SETup]:OPTion {OFF|ON|0|1}
SENSe<Ch>:CORRection:VMC:COLLect[:SETup]:OPTion?

Description

Turns ON/OFF the setup option in the vector mixer calibration. This option forces the de-embedding S-parameters of the calibration mixer + filter when the S-parameters have been calculated and written to the touchstone file.

command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Vector Mixer Calibration > Setup Option

Back to SENSe

SENS:CORR:VMC:COLL:SAVE

SCPI Command

SENSe<Ch>:CORRection:OFFSet:COLLect:SAVE <string>

Description

Completes the vector mixer calibration procedure. Calculates S-parameters of the calibration mixer + filter and writes them to a touchstone file. Optionally turns on the de-embedding S-parameters of the calibration mixer + filter.

no query

Target

Channel <Ch>,

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

Related Commands

SENS:CORR:VMC:COLL:OPT

Equivalent Softkeys

Calibration > Mixer/Converter Calibration > Vector Mixer Calibration > Save to Touchstone File

Back to SENSe

SENS:DATA:CORR?

SCPI Command

SENSe<Ch>:DATA:CORRdata? <char>

Description

Reads out the corrected S-parameter data array or the corrected receiver data array. The type of the array entries is a complex number.

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: To ensure the update of the data, the corresponding stimulus port must be active. For example, when reading the S12 parameter at least one trace with the stimulus port 2 must present or SOLT2 calibration must be active.

query only

Target

Channel <Ch>,

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

Parameter

<char> Specifies the S-parameter: **S11, S12, S13, S14, S21, … S44**

<char> Specifies the Test Receiver: Where the first index is the receiver port number, and the second index is the source port number; The following notations are also available:	**T11, T12, T13, T14, T21, … T44** **T1(1), T1(2), T1(3), T1(4), T2(1), … T4(4) or A(1), A(2), A(3), A(4), B(1), … D(4)**
<char> Specifies the Test Receiver: Where the first index is the receiver port number, and the second index is the source port number; The following notations are also available:	**R11, R12, R13, R14, R21, … R44** **R1(1), R1(2), R1(3), R1(3), R2(1), … R4(4)**

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N>

Equivalent Softkeys

None

Back to SENSe

SENS:DATA:RAWD?

SCPI Command

SENSe<Ch>:DATA:RAWData? <char>

Description

Reads out the raw S-parameter data array or the raw receiver data array. The type of the array entries is a complex number.

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 raw measurement;

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

Note: To ensure the update of the data, the corresponding stimulus port must be active. For example, when reading the S12 parameter at least one trace with the stimulus port 2 must present or SOLT2 calibration must be active.

query only

Target

Channel <Ch>,

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

Parameter

<char> Specifies the S-parameter:	**S11, S12, S13, S14, S21, … S44**
<char> Specifies the Test Receiver: Where the first index is the receiver port number, and the second index is the source port number;	**T11, T12, T13, T14, T21, … T44**

The following notations are also available:	**T1(1), T1(2), T1(3), T1(4), T2(1), … T4(4) or A(1), A(2), A(3), A(4), B(1), … D(4)**
<char> Specifies the Test Receiver:	**R11, R12, R13, R14, R21, … R44**
Where the first index is the receiver port number, and the second index is the source port number; The following notations are also available:	**R1(1), R1(2), R1(3), R1(3), R2(1), … R4(4)**

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N>

Equivalent Softkeys

None

Back to SENSe

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 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.

Equivalent Softkeys

Stimulus > Power > CW Freq

Back to SENSe

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>

Equivalent Softkeys

None

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

Equivalent Softkeys

Stimulus > Center

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

Equivalent Softkeys

Stimulus > Span

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

Equivalent Softkeys

Stimulus > Start

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.

Equivalent Softkeys

Stimulus > Stop

Back to SENSe

SENS:OFFS

SCPI Command

SENSe<Ch>:OFFSet[:STATe] {OFF|ON|0|1}
SENSe<Ch>:OFFSet[:STATe]?

Description

Turns ON/OFF the frequency offset feature.

command/query

Target

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

Parameter

Specifies the trigger source for calibration:

{ON|1}	Internal
{OFF|0}	System

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Stimulus > Frequency Offset > Frequency Offset

Back to SENSe

SENS:OFFS:PORT:DATA?

SCPI Command

SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:DATA?

Description

Reads out the array of the frequency points of port <Pt> when the frequency offset feature is ON and offset type is "PORT".

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 point

query only

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Query Response

<numeric 1>, <numeric 2>, …<numeric N>

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

None

Back to SENSe

SENS:OFFS:PORT:DIV

SCPI Command

SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:MULTiplier <numeric>
SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:MULTiplier?

Description

Sets or reads out the basic frequency range multiplier of port <Pt> when the frequency offset feature is ON and offset type is "PORT".

command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<numeric> divisor from 1 to 1000

Out of Range

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

Query Response

<numeric>

Preset Value

1

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Port n > Multiplier

Back to SENSe

SENS:OFFS:PORT:MULT

SCPI Command

SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:MULTiplier <numeric>
SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:MULTiplier?

Description

Sets or reads out the basic frequency range multiplier of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<numeric> multiplier from –1000 to 1000

Out of Range

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

Query Response

<numeric>

Preset Value

1

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Port n > Multiplier

Back to SENSe

SENS:OFFS:PORT:OFFS

SCPI Command

SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:OFFSet <frequency>
SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:OFFSet?

Description

Sets or reads out the basic frequency range offset of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<frequency> offset from –1e12 to 1e12

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

Related Commands

SENS:OFFS

SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Port n > Offset

Back to SENSe

SENS:OFFS:PORT:STAR

SCPI Command

SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:STARt <frequency>
SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:STARt?

Description

Sets or reads out the frequency sweep start of port <Pt> when the frequency offset feature is ON and offset type is "PORT".
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<frequency> frequency sweep start of port <Pt>

Unit

Hz (Hertz)

Query Response

<numeric>

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Port n > Start

Back to SENSe

SENS:OFFS:PORT:STOP

SCPI Command

SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:STOP <frequency>

SENSe<Ch>:OFFSet:PORT<Pt>[:FREQuency]:STOP?

Description

Sets or reads out the frequency sweep stop of port <Pt> when the frequency offset feature is ON and offset type is "PORT".

command/query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

<frequency> frequency sweep stop of port <Pt>

Unit

Hz (Hertz)

Query Response

<numeric>

Related Commands

SENS:OFFS

SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Port n > Stop

Back to SENSe

SENS:OFFS:REC:DATA?

SCPI Command

SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:DATA?

Description

Reads out the array of the receiver frequency points when the frequency offset feature is ON and offset type is "SRCRcv".

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 point

query only

Target

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

Query Response

<numeric 1>, <numeric 2>, …<numeric N>

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

None

Back to SENSe

SENS:OFFS:REC:DIV

SCPI Command

SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:DIVisor <numeric>
SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:DIVisor?

Description

Sets or reads out the basic frequency range divisor to get the receiver frequency when the frequency offset feature is ON and offset type is "SRCRcv".

command/query

Target

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

Parameter

<numeric> divisor from 1 to 1000

Out of Range

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

Query Response

<numeric>

Preset Value

1

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Receivers > Divider

Back to SENSe

SENS:OFFS:REC:MULT

SCPI Command

SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:MULTiplier <numeric>
SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:MULTiplier?

Description

Sets or reads out the basic frequency range multiplier to get the receiver frequency when the frequency offset feature is ON and offset type is "SRCRcv".
command/query

Target

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

Parameter

<numeric> multiplier from –1000 to 1000

Out of Range

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

Query Response

<numeric>

Preset Value

1

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Receivers > Multiplier

Back to SENSe

SENS:OFFS:REC:OFFS

SCPI Command

SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:OFFSet <frequency>
SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:OFFSet?

Description

Sets or reads out the basic frequency range offset to get the receiver frequency when the frequency offset feature is ON and offset type is "SRCRcv".
command/query

Target

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

Parameter

<frequency> offset from –1e12 to 1e12

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

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Receivers > Offset

Back to SENSe

SENS:OFFS:REC:STAR

SCPI Command

SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:STARt <frequency>
SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:STARt?

Description

Sets or reads out the frequency sweep start of the receivers when the frequency offset feature is ON and offset type is "SRCRcv".
command/query

Target

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

Parameter

<frequency> frequency sweep start of receivers

Unit

Hz (Hertz)

Query Response

<numeric>

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Receivers > Start

Back to SENSe

SENS:OFFS:REC:STOP

SCPI Command

SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:STOP <frequency>
SENSe<Ch>:OFFSet:RECeiver[:FREQuency]:STOP?

Description

Sets or reads out the frequency sweep stop of the receivers when the frequency offset feature is ON and offset type is "SRCRcv".

command/query

Target

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

Parameter

<frequency> frequency sweep stop of receivers

Unit

Hz (Hertz)

Query Response

<numeric>

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Receivers > Stop

Back to SENSe

SENS:OFFS:SOUR:DATA?

SCPI Command

SENSe<Ch>:OFFSet:SOURce[:FREQuency]:DATA?

Description

Reads out the array of the frequency points of the source when the frequency offset feature is ON and offset type is "SRCRcv".

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 point

query only

Target

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

Query Response

<numeric 1>, <numeric 2>, …<numeric N>

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

None

Back to SENSe

SENS:OFFS:SOUR:DIV

SCPI Command

SENSe<Ch>:OFFSet:SOURce[:FREQuency]:DIVisor <numeric>
SENSe<Ch>:OFFSet:SOURce[:FREQuency]:DIVisor?

Description

Sets or reads out the basic frequency range divisor to get the source frequency when the frequency offset feature is ON and offset type is "SRCRcv".

command/query

Target

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

Parameter

<numeric> divisor from 1 to 1000

Out of Range

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

Query Response

<numeric>

Preset Value

1

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Source > Divider

Back to SENSe

SENS:OFFS:SOUR:MULT

SCPI Command

SENSe<Ch>:OFFSet:SOURce[:FREQuency]:MULTiplier <numeric>
SENSe<Ch>:OFFSet:SOURce[:FREQuency]:MULTiplier?

Description

Sets or reads out the basic frequency range multiplier to get the source frequency when the frequency offset feature is ON and offset type is "SRCRcv".
command/query

Target

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

Parameter

<numeric> multiplier from –1000 to 1000

Out of Range

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

Query Response

<numeric>

Preset Value

1

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Source > Multiplier

Back to SENSe

SENS:OFFS:SOUR:OFFS

SCPI Command

SENSe<Ch>:OFFSet:SOURce[:FREQuency]:OFFSet <frequency>
SENSe<Ch>:OFFSet:SOURce[:FREQuency]:OFFSet?

Description

Sets or reads out the basic frequency range offset to get the source frequency when the frequency offset feature is ON and offset type is "SRCRcv".
command/query

Target

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

Parameter

<frequency> offset from –1e12 to 1e12

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

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Source > Offset

Back to SENSe

SENS:OFFS:SOUR:STAR

SCPI Command

SENSe<Ch>:OFFSet:SOURce[:FREQuency]:STARt <frequency>
SENSe<Ch>:OFFSet:SOURce[:FREQuency]:STARt?

Description

Sets or reads out the frequency sweep start of the source when the frequency offset feature is ON and offset type is "SRCRcv".

command/query

Target

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

Parameter

<frequency> frequency sweep start of the source

Unit

Hz (Hertz)

Query Response

<numeric>

Preset Value

0

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Source > Start

Back to SENSe

SENS:OFFS:SOUR:STOP

SCPI Command

SENSe<Ch>:OFFSet:SOURce[:FREQuency]:STOP <frequency>
SENSe<Ch>:OFFSet:SOURce[:FREQuency]:STOP?

Description

Sets or reads out the frequency sweep stop of the source when the frequency offset feature is ON and offset type is "SRCRcv".

command/query

Target

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

Parameter

<frequency> frequency sweep stop of the source

Unit

Hz (Hertz)

Query Response

<numeric>

Related Commands

SENS:OFFS
SENS:OFFS:TYPE

Equivalent Softkeys

Stimulus > Frequency Offset > Source > Stop

Back to SENSe

SENS:OFFS:TYPE

SCPI Command

SENSe<Ch>:OFFSet:TYPE <char>
SENSe<Ch>:OFFSet:TYPE?

Description

Sets or reads out the frequency offset type when the frequency offset feature is ON. There are two frequency offset types: "Port1/Port2" and "Source/Receivers". First offset type offsets ports against each other. Second offset type offsets source against receivers.

command/query

Target

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

Parameter

<char> Specifies the offset type:

PORT	Port1/Port2 offset
SRCRcv	Source/Receivers offset

Query Response

{PORT|SRCR}

Preset Value

PORT

Equivalent Softkeys

Stimulus > Frequency Offset > Offset Type

Back to SENSe

SENS:ROSC:SOUR

SCPI Command

SENSe:ROSCillator:SOURce <char>
SENSe:ROSCillator:SOURce?

Description

Sets or reads out an internal or external source of the 10 MHz reference frequency.
command/query

Target

Instrument

Parameter

<char> Choose from:

INTernal	Internal source of the reference frequency
EXTernal	External source of the reference frequency

Query Response

{INT|EXT}

Preset Value

INT

Equivalent Softkeys

System > Misc Setup > Ref Source

Back to SENSe

SENS:ROSC:EXT:ROUT

SCPI Command

SENSe:ROSCillator:EXTernal:ROUTe <char>
SENSe:ROSCillator:EXTernal:ROUTe?

Description

Sets or reads out the route of the external 10 MHz reference frequency. (PXIe-S5090 model only)

command/query

Target

Instrument

Parameter

<char> Choose from:

REAR	Rear panel
FRONt	Front panel

Query Response

{REAR|FRON}

Preset Value

REAR

Equivalent Softkeys

System > Misc Setup > Ref Source > Ext Ref Route

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 <Del> 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 + <Flag2> + <Flag3> + <Flag4> + <Flag5>

Equivalent Softkeys

Stimulus / Segment Table

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

Equivalent Softkeys

Stimulus > Points

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

Equivalent Softkeys

Stimulus > Meas Delay

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

Equivalent Softkeys

Stimulus > Sweep Type

Back to SENSe

SENS:VOLT:DC:RANG:UPP

SCPI Command

SENSe<Ch>:VOLTage{[1]|2}:DC:RANGe:UPPer <numeric>
SENSe<Ch>:VOLTage{[1]|2}:DC:RANGe:UPPer?

Description

Sets or reads out the DC voltage range at the connector AUX1 or AUX2.
command/query

Target

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

Parameter

<numeric> the DC voltage range 10V or 1V

Unit

V (Volt)

Out of Range

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

Query Response

<numeric>

Preset Value

10

Equivalent Softkeys

Measurement > DC Voltage > Range

Back to SENSe

SERVice

Command	Description

SERV:CHAN:ACT?	Reads out the active channel number.
SERV:CHAN:COUN?	Reads out the maximum number of the channels.
SERV:CHAN:TRAC:ACT?	Read out the active trace number of the channel.
SERV:CHAN:TRAC:COUN?	Reads out the maximum number of the traces in the channel.
SERV:PORT:COUN?	Reads out the number of the ports.
SERV:SWE:FREQ:MAX?	Reads out the upper limit of the measurement frequency.
SERV:SWE:FREQ:MIN?	Reads out the lower limit of the measurement frequency.
SERV:SWE:POIN?	Reads out the maximum number of the measurement points.

SERV:CHAN:ACT?

SCPI Command

SERVice:CHANnel:ACTive?

Description

Reads out the active channel number.
query only

Query Response

<numeric> from 1 to 16

Equivalent Softkeys

None

Back to SERVice

SERV:CHAN:COUN?

SCPI Command

SERVice:CHANnel:COUNt?

Description

Reads out the maximum number of the channels.
query only

Query Response

<numeric>

Equivalent Softkeys

None

Back to SERVice

SERV:CHAN:TRAC:ACT?

SCPI Command

SERVice:CHANnel<Ch>:TRACe:ACTive?

Description

Read out the active trace number of the channel.

query only

Target

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

Query Response

<numeric> from 1 to 16

Equivalent Softkeys

None

Back to SERVice

SERV:CHAN:TRAC:COUN?

SCPI Command

SERVice:CHANnel:TRACe:COUNt?

Description

Reads out the maximum number of the traces in the channel.

query only

Query Response

<numeric>

Equivalent Softkeys

None

Back to SERVice

SERV:PORT:COUN?

SCPI Command

SERVice:PORT:COUNt?

Description

Reads out the number of the ports.
query only

Query Response

<numeric>

Equivalent Softkeys

None

Back to SERVice

SERV:SWE:FREQ:MAX?

SCPI Command

SERVice:SWEep:FREQuency:MAXimum?

Description

Reads out the upper limit of the measurement frequency.
query only

Query Response

<numeric>

Unit

Hz (Hertz)

Equivalent Softkeys

None

Back to SERVice

SERV:SWE:FREQ:MIN?

SCPI Command

SERVice:SWEep:FREQuency:MINimum?

Description

Reads out the lower limit of the measurement frequency.
query only

Query Response

<numeric>

Unit

Hz (Hertz)

Equivalent Softkeys

None

Back to SERVice

SERV:SWE:POIN?

SCPI Command

SERVice:SWEep:POINts?

Description

Reads out the maximum number of the measurement points.
query only

Query Response

<numeric>

Equivalent Softkeys

None

Back to SERVice

SOURce

Command	Description
SOUR:AUX	Turns ON/OFF an auxiliary RF source.
SOUR:AUX:FREQ:DIV	Sets or reads out the basic frequency range divisor to derive the frequency of the auxiliary RF

	source (4-port VNA only).
SOUR:AUX:FREQ:MULT	Sets or reads out the basic frequency range multiplier to derive the frequency of the auxiliary RF source (4-port VNA only).
SOUR:AUX:FREQ:OFFS	Sets or reads out the basic frequency range offset to derive the frequency of the auxiliary RF source (4-port VNA only).
SOUR:AUX:FREQ:STAR	Sets or reads out the start of the frequency range of the auxiliary RF source (4-port VNA only). When set the multiplier and offset values are automatically corrected.
SOUR:AUX:FREQ:STOP	Sets or reads out the stop of the frequency range of the auxiliary RF source (4-port VNA only). When set the multiplier and offset values are automatically corrected.
SOUR:AUX:PORT	Sets or reads out the port number assigned to the auxiliary RF source when it is turned on (4-port VNA only).
SOUR:AUX:POW	Sets or reads out the power of the auxiliary RF source (4-port VNA only).
SOUR:POW	Sets or reads out the power level for the frequency sweep type.
SOUR:POW:CENT	Sets or reads out the center value of the power sweep type.
SOUR:POW:PORT	Sets or reads out the power level of each port for the frequency sweep type when the port couple feature is set to OFF by the SOUR:POW:PORT:COUP command.
SOUR:POW:PORT:CORR	Turns ON/OFF the power correction.
SOUR:POW:PORT:CORR:COLL	Measures the power calibration data for the port <Pt> using the power meter controlled via USB or USB/GPIB.
SOUR:POW:PORT:CORR:COLL:TABL:LOSS:DATA	Sets/gets the loss compensation table used when the power calibration is executed by the SOUR:POW:PORT:CORR:COLL command.
SOUR:POW:PORT:CORR:COLL:TABL:LOSS	Turns ON/OFF the state of the loss compensation used when the power calibration is executed by the SOUR:POW:PORT:CORR:COLL command.
SOUR:POW:PORT:CORR:DATA	Sets or reads out the power correction array (result of power calibration executed by the SOUR:POW:PORT:CORR:COLL command).
SOUR:POW:PORT:COUP	Turns ON/OFF the port power couple. Setting the port power couple to OFF allows independent power level setting for each port.
SOUR:POW:SLOP	Sets or reads out the power slope value for the frequency sweep type.
SOUR:POW:SLOP:STAT	Turns ON/OFF the power slope. The power slope is valid for the frequency sweep type: Linear, Logarithimic, Segment.
SOUR:POW:SPAN	Sets or reads out the power span when the power sweep type is active.
SOUR:POW:STAR	Sets or reads out the power sweep start value when the power sweep type is active.
SOUR:POW:STOP	Sets or reads out the power sweep stop value when the power sweep type is active.

SOUR:AUX

SCPI Command

SOURce<Ch>:AUXiliary[:STATe] {OFF|ON|0|1}
SOURce<Ch>:AUXiliary[:STATe]?

Description

Turns ON/OFF an auxiliary RF source. The auxiliary RF source takes one port of the 4 port VNA to output the second RF source with programmable frequency and power (4-port VNA only).

The second RF source can be used, for example, as a LO in mixer measurements.

The auxiliary port can not be used for measurements. Ports are divided into two groups: 1, 2 and 3, 4. The second port of the group that comprises the auxiliary port can not be used as a stimulus.

command/query

Target

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

Parameter

Specifies the trigger source for calibration:

{ON|1}	Internal
{OFF|0}	System

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Stimulus > Auxiliary Source > Auxiliary Source [ON| OFF]

Back to SOURce

SOUR:AUX:FREQ:DIV

SCPI Command

SOURce<Ch>:AUXiliary:FREQuency:DIVisor <numeric>
SOURce<Ch>:AUXiliary:FREQuency:DIVisor?

Description

Sets or reads out the basic frequency range divisor to derive the frequency of the auxiliary RF source

(4-port VNA only).

command/query

Target

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

Parameter

<numeric> the integer divisor from 1 to 1000

Out of Range

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

Query Response

<numeric>

Preset Value

1

Related Commands

SOUR:AUX:FREQ:MULT
SOUR:AUX:FREQ:OFFS

Equivalent Softkeys

Stimulus > Auxiliary Source > Divider

Back to SOURce

SOUR:AUX:FREQ:MULT

SCPI Command

SOURce<Ch>:AUXiliary:FREQuency:MULTiplier <numeric>
SOURce<Ch>:AUXiliary:FREQuency:MULTiplier?

Description

Sets or reads out the basic frequency range multiplier to derive the frequency of the auxiliary RF source (4-port VNA only).

command/query

Target

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

Parameter

<numeric> the floating point multiplier from –1000 to 1000

Out of Range

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

Query Response

<numeric>

Preset Value

0

Related Commands

SOUR:AUX:FREQ:DIV
SOUR:AUX:FREQ:OFFS

Equivalent Softkeys

Stimulus > Auxiliary Source > Multiplier

Back to SOURce

SOUR:AUX:FREQ:OFFS

SCPI Command

SOURce<Ch>:AUXiliary:FREQuency:MULTiplier <numeric>
SOURce<Ch>:AUXiliary:FREQuency:MULTiplier?

Description

Sets or reads out the basic frequency range offset to derive the frequency of the auxiliary RF source (4-port VNA only).
command/query

Target

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

Parameter

<numeric> the frequency offset from –1e12 to 1e12

Unit

Hz (Hertz)

Out of Range

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

Query Response

<numeric>

Preset Value

1 GHz

Related Commands

SOUR:AUX:FREQ:DIV
SOUR:AUX:FREQ:MULT

Equivalent Softkeys

Stimulus > Auxiliary Source > Offset

Back to SOURce

SOUR:AUX:FREQ:STAR

SCPI Command

SOURce<Ch>:AUXiliary:FREQuency:STARt <numeric>
SOURce<Ch>:AUXiliary:FREQuency:STARt?

Description

Sets or reads out the start of the frequency range of the auxiliary RF source (4-port VNA only). When set the multiplier and offset values are automatically corrected.
command/query

Target

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

Parameter

<numeric> start of the frequency range of the auxiliary RF source within the VNA frequency range

Unit

Hz (Hertz)

Out of Range

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

Query Response

<numeric>

Preset Value

1 GHz

Related Commands

SOUR:AUX:FREQ:STOP

Equivalent Softkeys

Stimulus > Auxiliary Source > Start

Back to SOURce

SOUR:AUX:FREQ:STOP

SCPI Command

SOURce<Ch>:AUXiliary:FREQuency:STOP <numeric>
SOURce<Ch>:AUXiliary:FREQuency:STOP?

Description

Sets or reads out the stop of the frequency range of the auxiliary RF source (4-port VNA only). When set the multiplier and offset values are automatically corrected.
command/query

Target

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

Parameter

<numeric> stop of the frequency range of the auxiliary RF source within the VNA frequency range

Unit

Hz (Hertz)

Out of Range

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

Query Response

<numeric>

Preset Value

1 GHz

Related Commands

SOUR:AUX:FREQ:STAR

Equivalent Softkeys

Stimulus > Auxiliary Source > Stop

Back to SOURce

SOUR:AUX:PORT

SCPI Command

SOURce<Ch>:AUXiliary:PORT <numeric>
SOURce<Ch>:AUXiliary:PORT?

Description

Sets or reads out the port number assigned to the auxiliary RF source when it is turned on (4-port VNA only). The auxiliary port can not be used for measurements. Ports are divided into two groups: 1, 2 and 3, 4 ports. The second port of the group that comprises the auxiliary port can not be used as a stimulus.
command/query

Target

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

Parameter

<numeric> port number assigned to the auxiliary RF source from 1 to 4

Out of Range

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

Query Response

<numeric>

Preset Value

4

Equivalent Softkeys

Stimulus > Auxiliary Source > Select Port

Back to SOURce

SOUR:AUX:POW

SCPI Command

SOURce<Ch>:AUXiliary:POWer[:AMPLitude] <numeric>
SOURce<Ch>:AUXiliary:POWer[:AMPLitude]?

Description

Sets or reads out the power of the auxiliary RF source (4-port VNA only).
command/query

Target

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

Parameter

<numeric> the power level of the auxiliary RF source 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

Equivalent Softkeys

Stimulus > Auxiliary Source > Power

Back to SOURce

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

Equivalent Softkeys

Stimulus > Power > Power

Back to SOURce

SOUR:POW:CENT

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

Equivalent Softkeys

Stimulus > Center

Back to SOURce

SOUR:POW:PORT

SCPI Command

SOURce<Ch>:POWer:PORT<Pt>[:LEVel][:IMMediate][:AMPLitude] <power>
SOURce<Ch>:POWer:PORT<Pt>[:LEVel][:IMMediate][:AMPLitude]?

Description

Sets or reads out the power level of each port for the frequency sweep type when the port couple feature is set to OFF by the SOUR:POW:PORT:COUP command.

command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

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

Equivalent Softkeys

Stimulus > Power > Port Power > Port n

Back to SOURce

SOUR:POW:PORT:CORR

SCPI Command

SOURce<Ch>:POWer:PORT<Pt>:CORRection[:STATe] {OFF|ON|0|1}
SOURce<Ch>:POWer:PORT<Pt>:CORRection[:STATe]?

Description

Turns ON/OFF the power correction.
command/query

Target

Port <Pt> of channel <Ch>,
<Ch>={[1]|2|...16}
<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Power Calibration > Correction

Back to SOURce

SOUR:POW:PORT:CORR:COLL

SCPI Command

SOURce<Ch>:POWer:PORT<Pt>:CORRection:COLLect[:ACQuire]

Description

Measures the power calibration data for the port <Pt> using the power meter controlled via USB or USB/GPIB. Calculates calibration coefficients on completion of the measurement, and turns ON the power correction for the port.

no query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Equivalent Softkeys

Calibration > Power Calibration > Calibrate

Back to SOURce

SOUR:POW:PORT:CORR:COLL:TABL:LOSS:DATA

SCPI Command

SOURce<Ch>:POWer:PORT<Pt>:CORRection:COLLect:TABLe:LOSS:DATA <numeric list>

SOURce<Ch>:POWer:PORT<Pt>:CORRection:COLLect:TABLe:LOSS:DATA?

Description

Sets/gets the loss compensation table used when the power calibration is executed by the SOUR:POW:PORT:CORR:COLL command.

Note: If the array size is not 1 + 2N, where N is equal to <numeric 1>, an error occurs. If the <numeric 2n> and <numeric 2n+1> values are out of the allowable range, the value of the limit, which is closer to the specified value will be set.

command/query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

The array size is 1+2N, where N is the number of measurement points.

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

<numeric 1> the number of the table rows N integer from 0 to 10001;

<numeric 2n> the frequency of the n–th row of the table;

<numeric 2n+1> the loss compensation value of the n–th row of the table from –100 to +100 dB.

Query Response

<numeric 1>, <numeric 2>, …<numeric 2N+1>

Related Commands

SOUR:POW:PORT:CORR:COLL

Equivalent Softkeys

Stimulus > Auxiliary Source > Power

Back to SOURce

SOUR:POW:PORT:CORR:COLL:TABL:LOSS

SCPI Command

SOURce<Ch>:POWer:PORT<Pt>:CORRection:COLLect:TABLe:LOSS[:STATe] {OFF|ON|0|1}

SOURce<Ch>:POWer:PORT<Pt>:CORRection:COLLect:TABLe:LOSS[:STATe]?

Description

Turns ON/OFF the state of the loss compensation used when the power calibration is executed by the SOUR:POW:PORT:CORR:COLL command.

command/query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Calibration > Power Calibration > Loss Compen > Compensation

Back to SOURce

SOUR:POW:PORT:CORR:DATA

SCPI Command

SOURce<Ch>:POWer:PORT<Pt>:CORRection:DATA <numeric list>

SOURce<Ch>:POWer:PORT<Pt>:CORRection:DATA?

Description

Sets or reads out the power correction array (result of power calibration executed by the SOUR:POW:PORT:CORR:COLL command).

Note: If the array size is not 1 + 2N, where N is equal to <numeric 1>, an error occurs. If the <numeric 2n> and <numeric 2n+1> values are out of the allowable range, the value of the limit, which is closer to the specified value will be set.

command/query

Target

Port <Pt> of channel <Ch>,

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

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Parameter

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

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

<numeric n> power correction value of the n–th point

Query Response

<numeric 1>, <numeric 2>, …<numeric 4N+1>

Related Commands

SOUR:POW:PORT:CORR:COLL

Equivalent Softkeys

None

Back to SOURce

SOUR:POW:PORT:COUP

SCPI Command

SOURce<Ch>:POWer:PORT:COUPle {OFF|ON|0|1}
SOURce<Ch>:POWer:PORT:COUPle?

Description

Turns ON/OFF the port power couple. Setting the port power couple to OFF allows independent power level setting for each port.
command/query

Target

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

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

Stimulus > Power > Port Couple [ON| OFF]

Back to SOURce

SOUR:POW:SLOP

SCPI Command

SOURce<Ch>:POWer[:LEVel]:SLOPe[:DATA] <numeric>
SOURce<Ch>:POWer[:LEVel]:SLOPe[:DATA]?

Description

Sets or reads out the power slope value for the frequency sweep type.
command/query

Target

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

Parameter

<numeric> the power slope value from –2 to +2

Unit

dB/GHz (decibel/gigahertz)

Resolution

0.1

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

Stimulus > Power > Slope

Back to SOURce

SOUR:POW:SLOP:STAT

SCPI Command

SOURce<Ch>:POWer[:LEVel]:SLOPe:STATe {OFF|ON|0|1}
SOURce<Ch>:POWer[:LEVel]:SLOPe:STATe?

Description

Turns ON/OFF the power slope. The power slope is valid for the frequency sweep type: Linear, Logarithimic, Segment.

command/query

Target

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

Parameter

<numeric> the power slope value from –2 to +2

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

Stimulus > Power > Slope [ON| OFF]

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

Equivalent Softkeys

Stimulus > Span

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

Equivalent Softkeys

Stimulus > Start

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

Equivalent Softkeys

Stimulus > Stop

Back to SOURce

STATus

Command	Description
STAT:OPER?	Reads out the value of the Operation Status Event Register.
STAT:OPER:COND?	Reads out the value of the Operation Status Condition Register.
STAT:OPER:ENAB	Sets or reads out the value of the Operation Status Enable Register.
STAT:OPER:NTR	Sets or reads out the value of the Negative transition filter of the Operation Status Register.
STAT:OPER:PTR	Sets or reads out the value of the Positive transition filter of the Operation Status Register.
STAT:PRES	Resets all the status registers to the factory settings.
STAT:QUES:COND?	Reads out the value of the Questionable Status Condition Register.
STAT:QUES:ENAB	Sets or reads out the value of the Questionable Status Enable Register.
STAT:QUES:LIM:CHAN:COND?	Reads out the value of the Questionable Limit Channel Status Condition Register.
STAT:QUES:LIM:CHAN:ENAB	Sets or reads out the value of the Questionable Limit Channel Status Enable Register.
STAT:QUES:LIM:CHAN:NTR	Sets or reads out the value of the Negative transition filter of the Questionable Limit Channel Status Register.
STAT:QUES:LIM:CHAN:PTR	Sets or reads out the value of the Positive transition filter of the Questionable Limit Channel Status Register.
STAT:QUES:LIM:CHAN?	Reads out the value of the Questionable Limit Channel Status Event Register.
STAT:QUES:LIM:COND?	Reads out the value of the Questionable Limit Status Condition Register.
STAT:QUES:LIM:ENAB	Sets or reads out the value of the Questionable Limit Status Enable Register.

STAT:QUES:LIM:NTR	Sets or reads out the value of the Negative transition filter of the Questionable Limit Status Register.
STAT:QUES:LIM:PTR	Sets or reads out the value of the Positive transition filter of the Questionable Limit Status Register.
STAT:QUES:LIM?	Reads out the value of the Questionable Limit Status Event Register.
STAT:QUES:NTR	Sets or reads out the value of the Negative transition filter of the Questionable Status Register.
STAT:QUES:PTR	Sets or reads out the value of the Negative transition filter of the Questionable Status Register.
STAT:QUES:RLIM:CHAN:COND?	Reads out the value of the Questionable Ripple Limit Channel Status Condition Register.
STAT:QUES:RLIM:CHAN:ENAB	Sets or reads out the value of the Questionable Ripple Limit Channel Status Enable Register.
STAT:QUES:RLIM:CHAN:NTR	Sets or reads out the value of the Negative transition filter of the Questionable Ripple Limit Channel Status Register.
STAT:QUES:RLIM:CHAN:PTR	Sets or reads out the value of the Positive transition filter of the Questionable Ripple Limit Channel Status Register.
STAT:QUES:RLIM:CHAN?	Reads out the value of the Questionable Ripple Limit Channel Status Event Register.
STAT:QUES:RLIM:COND?	Reads out the value of the Questionable Ripple Limit Status Condition Register.
STAT:QUES:RLIM:ENAB	Sets or reads out the value of the Questionable Ripple Limit Status Enable Register.
STAT:QUES:RLIM:NTR	Sets or reads out the value of the Negative transition filter of the Questionable Ripple Limit Status Register.
STAT:QUES:RLIM:PTR	Sets or reads out the value of the Positive transition filter of the Questionable Ripple Limit Status Register.
STAT:QUES:RLIM?	Reads out the value of the Questionable Ripple Limit Status Event Register.
STAT:QUES?	Reads out the value of the Questionable Status Event Register.

STAT:OPER?

SCPI Command

STATus:OPERation[:EVENt]?

Description

Reads out the value of the Operation Status Event Register.
query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:OPER:COND?

SCPI Command

STATus:OPERation:CONDition?

Description

Reads out the value of the Operation Status Condition Register.
query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:OPER:ENAB

SCPI Command

STATus:OPERation:ENABle <numeric>
STATus:OPERation:ENABle?

Description

Sets or reads out the value of the Operation Status Enable Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:OPER:NTR

SCPI Command

STATus:OPERation:NTRansition <numeric>
STATus:OPERation:NTRansition?

Description

Sets or reads out the value of the Negative transition filter of the Operation Status Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:OPER:PTR

SCPI Command

STATus:OPERation:PTRansition <numeric>
STATus:OPERation:PTRansition?

Description

Sets or reads out the value of the Positive transition filter of the Operation Status Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

65535

Equivalent Softkeys

None

Back to STATus

STAT:PRES

SCPI Command

STATus:PRESet

Description

Resets all the status registers to the factory settings.
no query

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:COND?

SCPI Command

STATus:QUEStionable:CONDition?

Description

Reads out the value of the Questionable Status Condition Register.
query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:ENAB

SCPI Command

STATus:QUEStionable:ENABle <numeric>
STATus:QUEStionable:ENABle?

Description

Sets or reads out the value of the Questionable Status Enable Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:CHAN:COND?

SCPI Command

STATus:QUEStionable:LIMit:CHANnel<Ch>:CONDition?

Description

Reads out the value of the Questionable Limit Channel Status Condition Register.

query only

Target

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

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:CHAN:ENAB

SCPI Command

STATus:QUEStionable:LIMit:CHANnel<Ch>:ENABle <numeric>
STATus:QUEStionable:LIMit:CHANnel<Ch>:ENABle?

Description

Sets or reads out the value of the Questionable Limit Channel Status Enable Register.

command/query

Target

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

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:CHAN:NTR

SCPI Command

STATus:QUEStionable:LIMit:CHANnel<Ch>:NTRansition <numeric>
STATus:QUEStionable:LIMit:CHANnel<Ch>:NTRansition?

Description

Sets or reads out the value of the Negative transition filter of the Questionable Limit Channel Status Register.

command/query

Target

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

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:CHAN:PTR

SCPI Command

STATus:QUEStionable:LIMit:CHANnel<Ch>:PTRansition <numeric>
STATus:QUEStionable:LIMit:CHANnel<Ch>:PTRansition?

Description

Sets or reads out the value of the Positive transition filter of the Questionable Limit Channel Status Register.
command/query

Target

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

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

65535

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:CHAN?

SCPI Command

STATus:QUEStionable:LIMit:CHANnel<Ch>[:EVENt]?

Description

Reads out the value of the Questionable Limit Channel Status Event Register.

query only

Target

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

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:COND?

SCPI Command

STATus:QUEStionable:LIMit:CONDition?

Description

Reads out the value of the Questionable Limit Status Condition Register.

query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:ENAB

SCPI Command

STATus:QUEStionable:LIMit:ENABle <numeric>
STATus:QUEStionable:LIMit:ENABle?

Description

Sets or reads out the value of the Questionable Limit Status Enable Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:NTR

SCPI Command

STATus:QUEStionable:LIMit:NTRansition <numeric>
STATus:QUEStionable:LIMit:NTRansition?

Description

Sets or reads out the value of the Negative transition filter of the Questionable Limit Status Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM:PTR

SCPI Command

STATus:QUEStionable:LIMit:PTRansition <numeric>
STATus:QUEStionable:LIMit:PTRansition?

Description

Sets or reads out the value of the Positive transition filter of the Questionable Limit Status Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

65535

Equivalent Softkeys

None

Back to STATus

STAT:QUES:LIM?

SCPI Command

STATus:QUEStionable:LIMit[:EVENt]?

Description

Reads out the value of the Questionable Limit Status Event Register.
query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:NTR

SCPI Command

STATus:QUEStionable:NTRansition <numeric>
STATus:QUEStionable:NTRansition?

Description

Sets or reads out the value of the Negative transition filter of the Questionable Status Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:PTR

SCPI Command

STATus:QUEStionable:PTRansition <numeric>
STATus:QUEStionable:PTRansition?

Description

Sets or reads out the value of the Positive transition filter of the Questionable Status Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

65535

Equivalent Softkeys

None**Back to** STATus

STAT:QUES:RLIM:CHAN:COND?

SCPI Command

STATus:QUEStionable:RLIMit:CHANnel<Ch>:CONDition?

Description

Reads out the value of the Questionable Ripple Limit Channel Status Condition Register.
query only

Target

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

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM:CHAN:ENAB

SCPI Command

STATus:QUEStionable:RLIMit:CHANnel<Ch>:ENABle <numeric>
STATus:QUEStionable:RLIMit:CHANnel<Ch>:ENABle?

Description

Sets or reads out the value of the Questionable Ripple Limit Channel Status Enable Register.

command/query

Target

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

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM:CHAN:NTR

SCPI Command

STATus:QUEStionable:RLIMit:CHANnel<Ch>:NTRansition <numeric>
STATus:QUEStionable:RLIMit:CHANnel<Ch>:NTRansition?

Description

Sets or reads out the value of the Negative transition filter of the Questionable Ripple Limit Channel

Status Register.
command/query

Target

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

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM:CHAN:PTR

SCPI Command

STATus:QUEStionable:RLIMit:CHANnel<Ch>:PTRansition <numeric>
STATus:QUEStionable:RLIMit:CHANnel<Ch>:PTRansition?

Description

Sets or reads out the value of the Positive transition filter of the Questionable Ripple Limit Channel Status Register.
command/query

Target

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

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

65535

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM:CHAN?

SCPI Command

STATus:QUEStionable:RLIMit:CHANnel<Ch>[:EVENt]?

Description

Reads out the value of the Questionable Ripple Limit Channel Status Event Register.

query only

Target

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

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM:COND?

SCPI Command

STATus:QUEStionable:RLIMit:CONDition?

Description

Reads out the value of the Questionable Ripple Limit Status Condition Register.

query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM:ENAB

SCPI Command

STATus:QUEStionable:RLIMit:ENABle <numeric>
STATus:QUEStionable:RLIMit:ENABle?

Description

Sets or reads out the value of the Questionable Ripple Limit Status Enable Register.
command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

65535

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM:NTR

SCPI Command

STATus:QUEStionable:RLIMit:NTRansition <numeric>
STATus:QUEStionable:RLIMit:NTRansition?

Description

Sets or reads out the value of the Negative transition filter of the Questionable Ripple Limit Status Register.

command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM:PTR

SCPI Command

STATus:QUEStionable:RLIMit:PTRansition <numeric>
STATus:QUEStionable:RLIMit:PTRansition?

Description

Sets or reads out the value of the Positive transition filter of the Questionable Ripple Limit Status Register.

command/query

Target

Status Reporting System

Parameter

<numeric> from 0 to 65535

Query Response

<numeric>

Preset Value

65535

Equivalent Softkeys

None

Back to STATus

STAT:QUES:RLIM?

SCPI Command

STATus:QUEStionable:RLIMit[:EVENt]?

Description

Reads out the value of the Questionable Ripple Limit Status Event Register.
query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

STAT:QUES?

SCPI Command

STATus:QUEStionable[:EVENt]?

Description

Reads out the value of the Questionable Status Event Register.
query only

Target

Status Reporting System

Query Response

<numeric>

Equivalent Softkeys

None

Back to STATus

SYSTem

Command	Description
SYST:BEEP:COMP:IMM	Generates a beep to notify of the completion of the operation.
SYST:BEEP:COMP:STAT	Turns ON/OFF the beeper notifying of the completion of the operation.
SYST:BEEP:WARN:IMM	Generates a beep to notify of warning.
SYST:BEEP:WARN:STAT	Turns ON/OFF the beeper notifying of warning.
SYST:COMM:ECAL:CHEC	Sets the CHECK state of AutoCal module.
SYST:COMM:ECAL:IMP	Sets or reads out the impedance state of the specified port of AutoCal module.
SYST:COMM:ECAL:READy?	Reads out the readiness status of the AutoCal Module
SYST:COMM:ECAL:TEMP:SENS?	Reads out the temperature of the AutoCal module connected to the Analyzer.
SYST:COMM:ECAL:THRU	Sets the THRU state between the specified 2 ports of AutoCal module.
SYST:COMM:PSEN:READy?	Reads out the readiness status of the Power Sensor
SYST:COMM:PSEN:TYPE	Selects the power sensor type to be used in a source power calibration.
SYST:COMM:PSEN:ZERO	Executes zeroing procedure of the power sensor.
SYST:CORR	Turns ON/OFF the system correction. The system correction is the factory full 1-port calibration performed at the port connectors.
SYST:CYCL:TIME:MEAS?	Reads out the measured cycle time.
SYST:DATE	Sets or reads out the current date.
SYST:ERR?	Reads out the error message of the error occurred when executing the SCPI commands, from the FIFO (First In First Out) error queue stored in the Analyzer.
SYST:FREQ:EXT:LOP:POW	Sets or reads out the LO Port Power when analyzer is configured to work with a frequency extender.
SYST:FREQ:EXT:LOP:PSL	Sets or reads out the LO Port Power Slope when analyzer is configured to work with a frequency extender.
SYST:FREQ:EXT:PORT:CONN?	Reads out whether the frequency extender is connected to the port number <Pt>.

SYST:FREQ:EXT:PORT:SER?	Reads out whether the serial number of the frequency extender connected to the port number <Pt>.
SYST:FREQ:EXT:RFP:POW	Sets or reads out the RF Port Power when analyzer is configured to work with a frequency extender.
SYST:FREQ:EXT:RFP:PSL	Sets or reads out the RF Port Power Slope when analyzer is configured to work with a frequency extender.
SYST:FREQ:EXT:TYPE	Selects or reads the frequency extender type.
SYST:HIDE	Minimizes the analyzer main window removing it from desktop.
SYST:LOC	Sets the Analyzer to the local operation mode, when all the keys on the front panel, mouse and the touch screen are active.
SYST:PORT:SWIT:DEL	Turns ON/OFF the port switchover delay.
SYST:PRES	Resets the Analyzer to the factory settings.
SYST:READy?	Reads out the analyzer readiness status.
SYST:REC:DIR:ACC	Turns ON/OFF the direct access to receiver function. C2220 and C2420 models only.
SYST:REC:OVER:POW	Turns ON/OFF the Power Trip at Overload function. Except for Planar-804/808/304 Models.
SYST:REM	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.
SYST:RWL	Sets the Analyzer to the remote operation mode, when all the keys on the front panel, mouse and the touch screen are not active.
SYST:SERV:PVER:INT	Sets or reads out the interval between Instrument Performance Verifications. One year (365 days) is recommended.
SYST:SERV:PVER:LAST	Sets or reads out the date of the last Instrument Performance Verification.
SYST:SERV:PVER:NEXT	Reads out the date of the next Instrument Performance Verification.
SYST:SHOW	Restores the analyzer main window hidden by the SYST:HIDE.
SYST:TEMP:SENS?	Reads out the specified sensor temperature inside the Analyzer.
SYST:TERM	Terminates the analyzer software.
SYST:TEST?	Reads out a textual description of the analyzer self-test.
SYST:TIME	Sets or reads out the current time.

SYST:BEEP:COMP:IMM

SCPI Command

SYSTem:BEEPer:COMPlete:IMMediate

Description

Generates a beep to notify of the completion of the operation.
no query

Equivalent Softkeys

System > Misc Setup > Beeper > Test Beep Complete

Back to SYSTem

SYST:BEEP:COMP:STAT

SCPI Command

SYSTem:BEEPer:COMPlete:STATe {OFF|ON|0|1}
SYSTem:BEEPer:COMPlete:STATe?

Description

Turns ON/OFF the beeper notifying of the completion of the operation.
command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

System > Misc Setup > Beeper > Beep complete

Back to SYSTem

SYST:BEEP:WARN:IMM

SCPI Command

SYSTem:BEEPer:WARNing:IMMediate

Description

Generates a beep to notify of warning.

no query

Equivalent Softkeys

System > Misc Setup > Beeper > Test Beep Warning

Back to SYSTem

SYST:BEEP:WARN:STAT

SCPI Command

SYSTem:BEEPer:WARNing:STATe {OFF|ON|0|1}
SYSTem:BEEPer:WARNing:STATe?

Description

Turns ON/OFF the beeper notifying of warning.
command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

System > Misc Setup > Beeper > Beep Warning

Back to SYSTem

SYST:COMM:ECAL:CHEC

SCPI Command

SYSTem:COMMunicate:ECAL:CHECk

Description

Sets the CHECK state of AutoCal module.
command only

Equivalent Softkeys

None

Back to SYSTem

SYST:COMM:ECAL:IMP

SCPI Command

SYSTem:COMMunicate:ECAL:IMPedance <port>,<char>
SYSTem:COMMunicate:ECAL:IMPedance? <port>

Description

Sets or reads out the impedance state of the specified port of AutoCal module.
command/query

Parameter

<port> : Port number of the AutoCal module
<char> Specifies the math operation:

OPEN	OPEN impedance state
SHORt	SHORT impedance state
LOAD	LOAD impedance state
LOAD2	LOAD2 impedance state
OPEN2	OPEN2 impedance state

Query Response

{OPEN|SHOR|LOAD|THRU|LOAD2|OPEN2}

Preset Value

LOAD

Equivalent Softkeys

None

Back to SYSTem

SYST:COMM:ECAL:READy?

SCPI Command

SYSTem:COMMunicate:ECAL:READy?

Description

Reads out the readiness status of the AutoCal Module. 1 indicates that the AutoCal Module is ready.
command/query

Query Response

{0|1}

Equivalent Softkeys

None

Back to SYSTem

SYST:COMM:ECAL:TEMP:SENS?

SCPI Command

SYSTem:COMMunicate:ECAL:TEMPerature:SENSor?

Description

Reads out the temperature of the AutoCal module connected to the Analyzer.
query only

Target

AutoCal module

Unit

°C (degrees Celsius)

Query Response

<numeric>

Equivalent Softkeys

None

Back to SYSTem

SYST:COMM:ECAL:THRU

SCPI Command

SYSTem:COMMunicate:ECAL:THRU <port1>,<port2>

Description

Sets the THRU state between the specified 2 ports of AutoCal module.

command only

Parameter

<port1>	The first port number of the AutoCal module
<port2>	The second port number of the AutoCal module

Equivalent Softkeys

None

Back to SYSTem

SYST:COMM:PSEN:READy?

SCPI Command

SYSTem:COMMunicate:PSENsor:READy?

Description

Reads out the readiness status of the Power Sensor. 1 indicates that the Power Sensor is ready.

command/query

Query Response

{0|1}

Equivalent Softkeys

None

Back to SYSTem

SYST:COMM:PSEN:TYPE

SCPI Command

SYSTem:COMMunicate:PSENsor:TYPE <char>
SYSTem:COMMunicate:PSENsor:TYPE?

Description

Selects the power sensor type to be used in a source power calibration.

command/query

Parameter

<char> Choose from:

NRPZ	Rohde&Schwarz NRP-Z series Sensors
NRPxT	Rohde&Schwarz NRPxT series Sensors
NRVS	Rohde&Schwarz NRVS power meter
U848x	Keysight U848x series Sensors
U200x	Keysight U200x series Sensors

Query Response

{NRPZ|NRPxT|NRVS|U848x|U200x}

Preset Value

NRPZ

Equivalent Softkeys

System > Misc Setup > Power Meter Settings > Power Metewr { NRPZ | NRPxT | NRVS | U848x | U200x }

Back to SYSTem

SYST:COMM:PSEN:ZERO

SCPI Command

SYSTem:COMMunicate:PSENsor:ZEROing

Description

Executes zeroing procedure of the power sensor. Although the Analyzer automatically turns off the RF power during this procedure, it is recommended to disconnect the power sensor from the analyzer port.

command only

Equivalent Softkeys

Calibration > Power Calibration > Power Sensor Zero Correction

Back to SYSTem

SYST:CORR

SCPI Command

SYSTem:CORRection[:STATe] {OFF|ON|0|1}

SYSTem:CORRection[:STATe]?

Description

Turns ON/OFF the system correction. The system correction is the factory full 1-port calibration performed at the port connectors.

command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

System > Misc Setup > System Correction

Back to SYSTem

SYST:CYCL:TIME:MEAS?

SCPI Command

SYSTem:CYCLe:TIME:MEASurement?

Description

Reads out the measured cycle time. The cycle time is the interval between the start of two adjacent sweeps. The cycle time is averaged by an exponential window with a time constant of about 0.5 sec. If the cycle time is changed more than 100 usec in comparison with the averaged time, the averaging starts anew.

query only

Target

Analyzer

Unit

sec (second)

Query Response

<numeric>

Equivalent Softkeys

Display > Properies > Cycle Time

Back to SYSTem

SYST:DATE

SCPI Command

SYSTem:DATE <numeric 1>,<numeric 2>,<numeric 3>
SYSTem:DATE?

Description

Sets or reads out the current date.
command/query

Parameter

<numeric 1>	year from 1900 to 2100
<numeric 2>	month from 1 to 12
<numeric 3>	day from 1 to 31

Query Response

<numeric 1>, <numeric 2>, <numeric 3>

Equivalent Softkeys

None

Back to SYSTem

SYST:ERR?

SCPI Command

SYSTem:ERRor[:NEXT]?

Description

Reads out the error message of the error occurred when executing the 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 command clears the error queue. The maximum size of the queue is 100 messages.
query only

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.

Equivalent Softkeys

None

Back to SYSTem

SYST:FREQ:EXT:RFP:POW

SCPI Command

SYSTem:FREQuency:EXTender:RFPort:POWer <numeric>
SYSTem:FREQuency:EXTender:RFPort:POWer?

Description

Sets or reads out the RF Port Power when analyzer is configured to work with a frequency extender.
command/query

Parameter

<numeric> the power value.

Unit

dBm (decibel relative to 1 milliwatt)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

System > Misc Setup > Frequency Extender > RF Port Power

Back to SYSTem

SYST:FREQ:EXT:RFP:PSL

SCPI Command

SYSTem:FREQuency:EXTender:RFPort:PSLope <numeric>
SYSTem:FREQuency:EXTender:RFPort:PSLope?

Description

Sets or reads out the RF Port Power Slope when analyzer is configured to work with a frequency extender.
command/query

Parameter

<numeric> the slope value.

Unit

dB/GHz (decibel / gigahertz)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

System > Misc Setup > Frequency Extender > RF Power Slope

Back to SYSTem

SYST:FREQ:EXT:LOP:POW

SCPI Command

SYSTem:FREQuency:EXTender:LOPort:POWer <numeric>
SYSTem:FREQuency:EXTender:LOPort:POWer?

Description

Sets or reads out the LO Port Power when analyzer is configured to work with a frequency extender.
command/query

Parameter

<numeric> the power value.

Unit

dBm (decibel relative to 1 milliwatt)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

System > Misc Setup > Frequency Extender > LO Port Power

Back to SYSTem

SYST:FREQ:EXT:LOP:PSL

SCPI Command

SYSTem:FREQuency:EXTender:LOPort:PSLope <numeric>
SYSTem:FREQuency:EXTender:LOPort:PSLope?

Description

Sets or reads out the LO Port Power Slope when analyzer is configured to work with a frequency extender.
command/query

Parameter

<numeric> the slope value.

Unit

dB/GHz (decibel / gigahertz)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Equivalent Softkeys

System > Misc Setup > Frequency Extender > LO Power Slope

Back to SYSTem

SYST:FREQ:EXT:TYPE

SCPI Command

SYSTem:FREQuency:EXTender:TYPE <char>
SYSTem:FREQuency:EXTender:TYPE?

Description

Selects or reads the frequency extender type. When the new type is selected the connection has been closed because of the program restart.

command/query

Parameter

<char> Choose from:

NONE	None
FEV15	FEV-15 50 – 75 GHz
FEV12	FEV-15 60 – 90 GHz
FEV10	FEV-15 75 – 110 GHz
FET1854	FET-1854 18 – 54 GHz
CUSTom	Custom

Query Response

{NONE|FEV15|FEV12|FEV10|FET1854|CUST}

Preset Value

NONE

Equivalent Softkeys

System > Misc Setup > Frequency Extender > { None | FEV15 | FEV12 | FEV10 | FET1854 | Custom }

Back to SYSTem

SYST:FREQ:EXT:PORT:CONN?

SCPI Command

SYSTem:FREQuency:EXTender:PORT<Pt>:CONNect?

Description

Reads out whether the frequency extender is connected to the port number <Pt>. The actual state is read out when the FET-1854 is configured. Always reads 1 when other type of frequency extender is configured.

query only

Target

Port <Pt>,

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Query Response

1	Connected
0	Not connected

Equivalent Softkeys

None

Back to SYSTem

SYST:FREQ:EXT:PORT:SER?

SCPI Command

SYSTem:FREQuency:EXTender:PORT<Pt>:SERial?

Description

Reads out whether the serial number of the frequency extender connected to the port number <Pt>. The actual serial number is read out when the FET-1854 is configured. Always reads "00000000" when other type of frequency extender is configured.

query only

Target

Port <Pt>,

<Pt>={[1]|2} for S2VNA or {[1]|2|3|4} for S4VNA

Query Response

<String> of 8 symbols

Equivalent Softkeys

None

Back to SYSTem

SYST:HIDE

SCPI Command

SYSTem:HIDE

Description

Minimizes the analyzer main window removing it from desktop.
query only

Related Commands

SYST:SHOW

Equivalent Softkeys

None

Back to SYSTem

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 the touch screen are active.
query only

Related Commands

SYST:REM
SYST:RWL

Equivalent Softkeys

None

Back to SYSTem

SYST:PORT:SWIT:DEL

SCPI Command

SYSTem:PORT:SWITchover:DELay[:STATe] {OFF|ON|0|1}
SYSTem:PORT:SWITchover:DELay[:STATe]?

Description

Turns ON/OFF the port switchover delay. The port switchover delay from 0 to 10 ms (depending on the analyzer model) occurs when the stimulus port number is changing.

command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

1

Equivalent Softkeys

System > Misc Setup > Port Switchover Delay { On | OFF }

Back to SYSTem

SYST:PRES

SCPI Command

SYSTem:PRESet

Description

Resets the Analyzer to the factory settings.

Note: The difference from the*RST: command is that the trigger is set to the Continuous trigger mode.

no query

Related Commands

*RST

Equivalent Softkeys

System > Preset > OK

Back to SYSTem

SYST:REC:DIR:ACC

SCPI Command

SYSTem:RECeiver:DIRect:ACCess[:STATe] {OFF|ON|0|1}
SYSTem:RECeiver:DIRect:ACCess[:STATe]?

Description

Turns ON/OFF the direct access to receiver function. C2220 and C2420 models only.

command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

System > Misc Setup > Direct Access to Receivers

Back to SYSTem

SYST:REC:OVER:POW

SCPI Command

SYSTem:RECeiver:OVERload:POWer[:STATe] {OFF|ON|0|1}
SYSTem:RECeiver:OVERload:POWer[:STATe]?

Description

Turns ON/OFF the Power Trip at Overload function. Except for Planar-804/808/304 Models.

command/query

Parameter

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Equivalent Softkeys

System > Misc Setup > Power Trip at Overload

Back to SYSTem

SYST:READy?

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}

Equivalent Softkeys

None

Back to SYSTem

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
SYST:RWL

Equivalent Softkeys

None

Back to SYSTem

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 the touch screen are not active. Only SYST:LOC or SYST:REM command can release this remote operation mode.

no query

Related Commands

SYST:LOC
SYST:REM

Equivalent Softkeys

None

Back to SYSTem

SYST:SERV:PVER:INT

SCPI Command

SYSTem:SERVice:PVERify:INTerval <numeric>
SYSTem:SERVice:PVERify:INTerval?

Description

Sets or reads out the interval between Instrument Performance Verifications. One year (365 days) is recommended.

command/query

Parameter

<numeric> interval in days

Query Response

<numeric>

Preset Value

0 (not set)

Equivalent Softkeys

None

Back to SYSTem

SYST:SERV:PVER:LAST

SCPI Command

SYSTem:SERVice:PVERify:LAST <numeric 1>,<numeric 2>,<numeric 3>
SYSTem:SERVice:PVERify:LAST?

Description

Sets or reads out the date of the last Instrument Performance Verification.
command/query

Parameter

<numeric 1>	year
<numeric 2>	month
<numeric 3>	day

Query Response

<year>, <month>, <day>

Preset Value

0,0,0 (not set)

Equivalent Softkeys

None

Back to SYSTem

SYST:SERV:PVER:NEXT

SCPI Command

SYSTem:SERVice:PVERify:NEXT?

Description

Reads out the date of the next Instrument Performance Verification.
query

Query Response

<year>, <month>, <day>

Preset Value

0,0,0 (not set)

Equivalent Softkeys

None

Back to SYSTem

SYST:SHOW

SCPI Command

SYSTem:SHOW

Description

Restores the analyzer main window hidden by the SYST:HIDE.
no query

Related Commands

SYST:HIDE

Equivalent Softkeys

None

Back to SYSTem

SYST:TEMP:SENS?

SCPI Command

SYSTem:TEMPerature:SENSor?

Description

Reads out the specified sensor temperature inside the Analyzer.
query only

Target

Analyzer

Unit

°C (degrees Celsius)

Query Response

<numeric>

Equivalent Softkeys

None

Back to SYSTem

SYST:TEST?

SCPI Command

SYSTem:TEST?

Description

Reads out a textual description of the analyzer self-test. If no failure conditions exist, "No failures" is read, otherwise the failures description string is read. The string contains substrings separated with semicolon.

Note: the query returns "Not ready" when it is issued until the analyzer is ready.

query only

Target

Instrument

Query Response

<string>

Related Commands

*TST?
SYST:READy?

Equivalent Softkeys

None

Back to SYSTem

SYST:TERM

SCPI Command

SYSTem:TERMinate

Description

Terminates the analyzer software.
no query

Equivalent Softkeys

None

Back to SYSTem

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>

Equivalent Softkeys

None

Back to SYSTem

TRIGger

Command	Description

TRIG	Generates a trigger signal and initiates a sweep
TRIG:AVER	Turns ON/OFF the averaging trigger function.
TRIG:EXT:DEL	Sets or reads out the response delay with respect to the external trigger signal.
TRIG:EXT:SLOP	Sets or reads out the polarity of the external trigger.
TRIG:EXT:POS	Selects the position of the external trigger.
TRIG:EXT:ROUT	Selects the connector to use for the external trigger input in a PXI system (command valid for PXIe-5090 model only).
TRIG:OUTP:FUNC	Selects the trigger output function.
TRIG:OUTP:POL	Sets or reads out the polarity of the trigger output.
TRIG:OUTP:ROUT	Selects the connector to use for the trigger output in a PXI system (command valid for PXIe-5090 model only).
TRIG:OUTP:STAT	Turns ON/OFF the trigger output.
TRIG:POIN	Turns ON/OFF the point trigger feature.
TRIG:SING	Generates a trigger signal and initiates a sweep.
TRIG:SCOP	Sets or reads out the trigger scope.
TRIG:SOUR	Selects the trigger source.
TRIG:STAT?	Reads out the the current state of the analyzer trigger system.
TRIG:WAIT	Delays the execution of the next command untill the specified state of the analyzer trigger system is reached

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 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 BUS

Equivalent Softkeys

None

Back to TRIGger

TRIG:AVER

SCPI Command

TRIGger[:SEQuence]:AVERage {OFF|ON|0|1}
TRIGger[:SEQuence]:AVERage?

Description

Turns ON/OFF the averaging trigger function. The function executes a sweep the number of times specified by the averaging factor with a single trigger for the channels with the averaging enabled.

The averaging process begins again with each trigger.

Note: The point trigger function has priority against this command. When the point trigger is enabled the number of pulses equal to (number of points) x (averaging factor) is needed to complete the averaging.

command/query

Parameter

Specifies the averaging trigger function state:

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Related Commands

SENS:AVER

Equivalent Softkeys

Average > Avg Trigger { ON | OFF }

Back to TRIGger

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)

Out of Range

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

Query Response

<numeric>

Preset Value

0

Related Commands

TRIG:SOUR EXT

Equivalent Softkeys

Stimulus > Trigger > Ext Trig > Delay

Back to TRIGger

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

Equivalent Softkeys

Stimulus > Trigger > Ext Trig Polarity > { Negative edge | Positive edge }

Back to TRIGger

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 have 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

Equivalent Softkeys

Stimulus > Trigger > Ext Trig > Position > { Before sampling | Before setup }

Back to TRIGger

TRIG:EXT:ROUT

SCPI Command

TRIGger[:SEQuence]:EXTernal:ROUTe <char>
TRIGger[:SEQuence]:EXTernal:ROUte?

Description

Selects the connector to use for the external trigger input in a PXI system (command valid for PXIe-5090 model only). The trigger source must be set to the EXTernal. One of the 10 routes can be selected.

The same line cannot be selected as input and output trigger route.

command/query

Parameter

<char> Choose from:

SMB	Front panel connector "Ext Trig In"
STAR	Backplane Trigger Line (PXI STAR)
TRIG0	Backplane Trigger Line (PXI TRIG0)
TRIG1	Backplane Trigger Line (PXI TRIG1)
TRIG2	Backplane Trigger Line (PXI TRIG2)
TRIG3	Backplane Trigger Line (PXI TRIG3)
TRIG4	Backplane Trigger Line (PXI TRIG4)
TRIG5	Backplane Trigger Line (PXI TRIG5)
TRIG6	Backplane Trigger Line (PXI TRIG6)
TRIG7	Backplane Trigger Line (PXI TRIG7)

Query Response

{SMB|STAR|TRIG0|TRIG1|TRIG2|TRIG3|TRIG4|TRIG5|TRIG6|TRIG7}

Preset Value

SMB

Related Commands

TRIG:SOUR

Equivalent Softkeys

Stimulus > Trigger > Ext Trig > Route > { SMB | STAR | TRIG0 | ...TRIG7 }

Back to TRIGger

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 operating manual).

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

Query Response

{BSET|BSAM|ASAM|RTGR|ESWP|MEAS}

Preset Value

RTRG

Related Commands

TRIG:OUTP:STAT

Equivalent Softkeys

Stimulus > Trigger > Trigger Output > Function > { Before setup | Before sampling | After sampling | Ready for trigger | Sweep End | Measurement }

Back to TRIGger

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

Equivalent Softkeys

Stimulus > Trigger > Trigger Output > Polarity > { Negative edge | Positive edge }

Back to TRIGger

TRIG:OUTP:ROUT

SCPI Command

TRIGger:OUTPut:ROUTe <char>
TRIGger:OUTPut:ROUte?

Description

Selects the connector to use for the trigger output in a PXI system (command valid for PXIe-5090 model only). The trigger output must be activated and configured by the TRIG:OUTP:XXX commands. One of the 9 routes can be selected.

The same line cannot be selected as input and output trigger route.

command/query

Parameter

<char> Choose from:

SMB	Front panel connector "Ext Trig Out"
TRIG0	Backplane Trigger Line (PXI TRIG0)

TRIG1	Backplane Trigger Line (PXI TRIG1)
TRIG2	Backplane Trigger Line (PXI TRIG2)
TRIG3	Backplane Trigger Line (PXI TRIG3)
TRIG4	Backplane Trigger Line (PXI TRIG4)
TRIG5	Backplane Trigger Line (PXI TRIG5)
TRIG6	Backplane Trigger Line (PXI TRIG6)
TRIG7	Backplane Trigger Line (PXI TRIG7)

Query Response

{SMB|TRIG0|TRIG1|TRIG2|TRIG3|TRIG4|TRIG5|TRIG6|TRIG7}

Preset Value

SMB

Related Commands

TRIG:OUTP:STAT

Equivalent Softkeys

Stimulus > Trigger > Trigger Output > Route > { SMB | TRIG0 | ...TRIG7 }

Back to TRIGger

TRIG:OUTP:STAT

SCPI Command

TRIGger:OUTPut:STATe {OFF|ON|0|1}
TRIGger:OUTPut:STATe?

Description

Turns ON/OFF the trigger output.
command/query

Parameter

Specifies the averaging trigger function state:

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Related Commands

TRIG:OUTP:FUNC

Equivalent Softkeys

Stimulus > Trigger > Trigger Output > Trigger Output { ON | OFF }

Back to TRIGger

TRIG:POIN

SCPI Command

TRIGger[:SEQuence]:POINt {OFF|ON|0|1}
TRIGger[:SEQuence]:POINt?

Description

Turns ON/OFF the point trigger feature. 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 averaging trigger function state:

{ON|1}	ON
{OFF|0}	OFF

Query Response

{0|1}

Preset Value

0

Related Commands

TRIG:SOUR

Equivalent Softkeys

Stimulus > Trigger > Ext Trig Event > { On Sweep | On Point }

Back to TRIGger

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 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 command this command is pending till the end of the sweep. The end of the sweep initiated by the TRIG:SING command can be waited using the *OPC? query.

no query

Related Commands

TRIG:SOUR

*OPC?

Equivalent Softkeys

None

Back to TRIGger

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
TRIG:SING
*TRG

Equivalent Softkeys

Stimulus > Trigger > Trigger Scope > { All Channels | Active Channel }

Back to TRIGger

TRIG:SOUR

SCPI Command

TRIGger[:SEQuence]:SOURce <char>
TRIGger[:SEQuence]:SOURce?

Description

Selects the trigger source (see options below).

If the the continuous trigger initiation mode is enabled with the command INIT:CONT 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 the continuous trigger initiation mode is disabled with the command INIT:CONT OFF, the reaction to INIT command is different. Selecting INTernal leads to a single sweep in response to the command INIT, selection another option puts the analyzer in a single trigger waiting state in response to the INIT 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:CONT

Equivalent Softkeys

Stimulus > Trigger > Trigger Source > { Internal | External | Manual | Bus }

Back to TRIGger

TRIG:STAT?

SCPI Command

TRIGger[:SEQuence]:STATus?

Description

Reads out the the current state of the analyzer trigger system.

query only

Parameter

HOLD	Hold
MEAS	Measure (sweep in progress)
WAIT	Waiting for trigger

Equivalent Softkeys

None

Back to TRIGger

TRIG:WAIT

SCPI Command

TRIGger[:SEQuence]:WAIT <char>

Description

Delays the execution of the next command untill the specified state of the analyzer trigger system is reached (see options below).

The analyzer trigger system can be "Hold", "Waiting for Trigger", or "Measurement". When the continuous initiation mode is turned OFF (INIT:CONT OFF), the trigger system transits between all three states. When the continuous initiation mode is turned ON (INIT:CONT ON), the trigger system transits between the "Waiting for Trigger" and "Measurement" states.

This command is useful for waiting for a sweep end initianed by the TRIG, *TRG commands or initiated by the external trigger signal, because the *OPC? command cannot be used. (The *OPC? command can wait the sweep end initianed by the TRIG:SING command only).

Note: Despite the next command execution is guaranted after the wait is completed, the TRIG:WAIT command does not block the user program execution. To block the user program execution a query must follow the TRIG:WAIT command.

no query

Parameter

<char> Choose from:

HOLD	Waits for the "Hold" state
MEASure	Waits for the "Measure" 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 "Measure" state to any other state

Related Commands

TRIG

*TRG

TRIG:SOUR EXT

Equivalent Softkeys

None

Back to TRIGger

Programming Tips

This section gives recommendations for programming in certain specific situations.

Program Sweep Initiation and Waiting

The most simple method of the program sweep initiation and waiting for the sweep completion can be implemented by using commands TRIG:SING and *OPC?.

The command TRIG:SING gerates a trigger signal and starts sweeping under the following conditions:

- The program trigger source is selected by command TRIG:SOUR BUS;
- The analyzer should be in the trigger waiting state, otherwise (analyzer is sweeping or analyzer is in the Hold state) an error occurs and the command is ignored.

The transition of the analyzer to the trigger waiting state depends on the state of the continuous initiation mode, which is set by command INIT:CONT. Provided that the continuous initiation mode is ON, the analyzer automatically transits to the trigger waiting state when the program trigger source have been selected, and then each time at the end of a sweep. Provided that the continuous initiation mode is OFF, the analyzer transits to the trigger waiting state for single time upon receiving the command INIT.

The command TRIG:SING remains pending until the end of sweep. This allows use the *OPC? query for the waiting the end of sweep.

Example 1. Program starts sweeping in all channels and waits for completion. The channels are swept one by one in turn. The continuous initiation mode must be enabled (after PRESET, for example).

TRIG:SOUR BUS	Selects the program trigger source and transits the analyzer to the trigger waiting state
<loop>:	
TRIG:SING	Starts sweep
*OPC?	Waits for the end of the sweep
...	

After the sweep completion the analyser returns to the trigger waiting state, and then the next trig:sing command can be sended.

Example 2. Program starts sweep in one channel and waits for completion, then starts sweep in another channel and waits for completion. The number of channels must be set to 2.

TRIG:SOUR BUS	Selects the program trigger source
INIT1:CONT OFF	Puts channel 1 to the hold state
INIT2:CONT OFF	Puts channel 2 to the hold state
<loop>:	
INIT1	Puts channel 1 to the trigger waiting state
TRIG:SING	Starts sweep in channel 1
*OPC?	Waits for the end of the sweep
...	
INIT2	Puts channel 2 to the trigger waiting state
TRIG:SING	Starts sweep in channel 2
*OPC?	Waits for the end of the sweep
...	

After completion of sweeping on one channel the analyser returns to the hold state, then the sweep initiation for another channel is available.

Using External Trigger

If trigger source is set to the External by the command TRIG:SOUR EXT, the sweep starts at signal arrival on the external trigger input.

At the moment of a trigger signal arrival the Analyzer must be in the trigger waiting state, otherwise the signal is ignored but no error is detected.

When using the external trigger input, the hardware trigger output can also be used to determine the end of the sweep. In case if there is a need to determine programmatically the end of the sweep, the TRIG:WAIT command can be used.

Example 3. Program puts the analyzer to the external trigger waiting. Then program waits for the sweep completion. The continuous initiation mode must be enabled (after PRESET, for example).

TRIG:SOUR EXT	Selects the external trigger source and transits the analyzer to the trigger waiting state
<loop>:	
TRIG:WAIT ENDM	Waits for the end of the sweep Any query is required to block program
*OPC?	
...	

After the sweep completion the analyser returns to the trigger waiting state, and then the next external trigger signal starts new sweep.

Waiting for Calibration Commands

Depending on the sweep settings the calibration commands may have long execution time, as they start sweep and wait it completion. These commands are:

SENS:CORR:COLL:XXXX
SENS:CORR:OFFS:COLL:XXXX
SENS:CORR:REC:COLL:XXXX
SENS:CORR:COLL:ECAL:XXXX
SENS:CORR:COLL:ECAL:ORI:EXEC

The user program can stop execution until the end of these commands using any query, the *OPC? for example.

VISA Timeout Considerations

Using the *OPC? or any other query for waiting an operation complete can lead to VISA timeout. The program must set the timeout to the value no less than the expected sweep time. For example:

```
viSetAttribute(instr, VI_ATTR_TMO_VALUE, 5000);
```

If the timeout has occurred, the analyzer remains in the waiting state and does not respond to the next commands. The program must check the timeout condition, and recover the analyzer in case of the timeout. The recover code must include the Device Clear operation (viClear). The viClear function clears the device input and output buffers. Optionally the recover code can include other operations, for example, abort current sweep, clear reporting status system.

```
status = viQueryf(instr, "TRIG:SING;*OPC?\n", "%*t");
if (status == VI_ERROR_TMO)
{
   viClear(instr);
   viPrintf(instr, "ABORt\n");
   viPrintf(instr, "*CLS\n");
}
```

Note The timeout recover using viClear function is possible with the HiSLIP protocol.

Receiving Data Arrays in Text Format

By default the data from the analyzer is transmitted in a text form. The VISA library has built-in facilities for receiving an array of data from the analyzer. The example assumes that the size of the array is sufficient to receive a number of elements equal to twice the number of points.

Example of receiving a data array in text format:

```
double data[NOP * 2];
ViUInt32 retCount;
...
retCount = sizeof(data) / sizeof(double);
viQueryf(instr, "CALC:DATA:SDAT?\n", "%,#lf", &retCount, data);
// retCount now contains the actual number of elements
```

Receiving Data Arrays in Binary Format

The binary transfer format reduces the amount of bytes transmitted and therefore reduces the transmission time. The binary transfer format is supported by HiSLIP protocol only. To enable the binary transfer format use the FORM:DATA command. Also use the FORM:BORD command to determine the byte order in the 32 bit word or in the 64 bit word. The x86 architecture uses the little endian byte order. When using the x86 architecture, setting the little endian byte order with the command FORM:BORD SWAP further improves throughput. The list of commands that support the binary transfer format is given in the description of the FORM:DATA command.

Binary data is transmitted as a block having a header followed by data. Block format:

#	8	<Data Size>	<Binary Data>

Where:

– the character '#';

8 – the character '8';

<Data Size> – 8 bytes, the symbolic representation of the number of bytes in binary data.

For example:

#800003216<Binary Data>

The VISA library has built-in tools for receiving binary data from the analyzer. The example assumes that the size of the array is sufficient to receive a number of elements equal to twice the number of points.

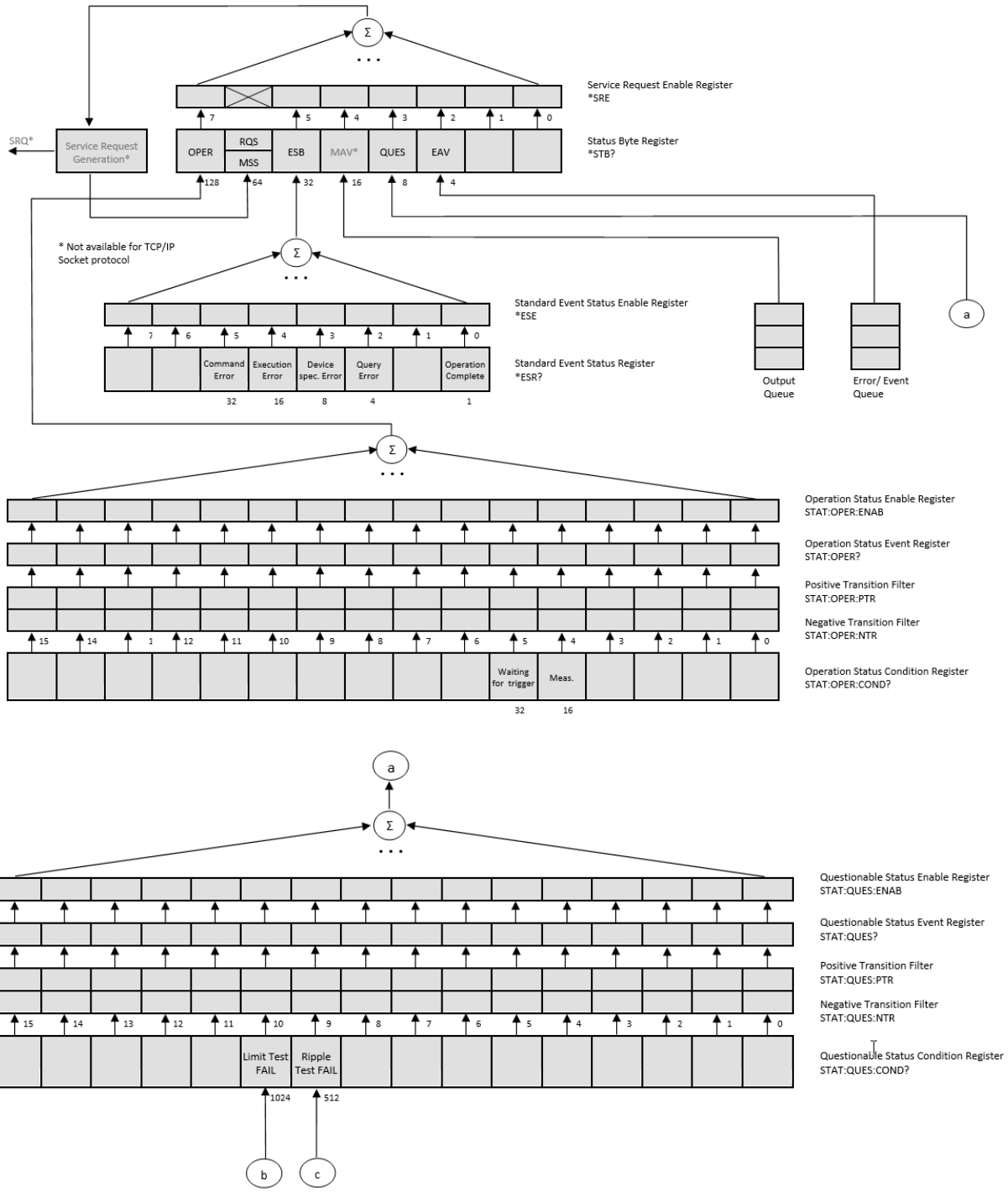
Example. Receiving array of doubles (x86 architecture):

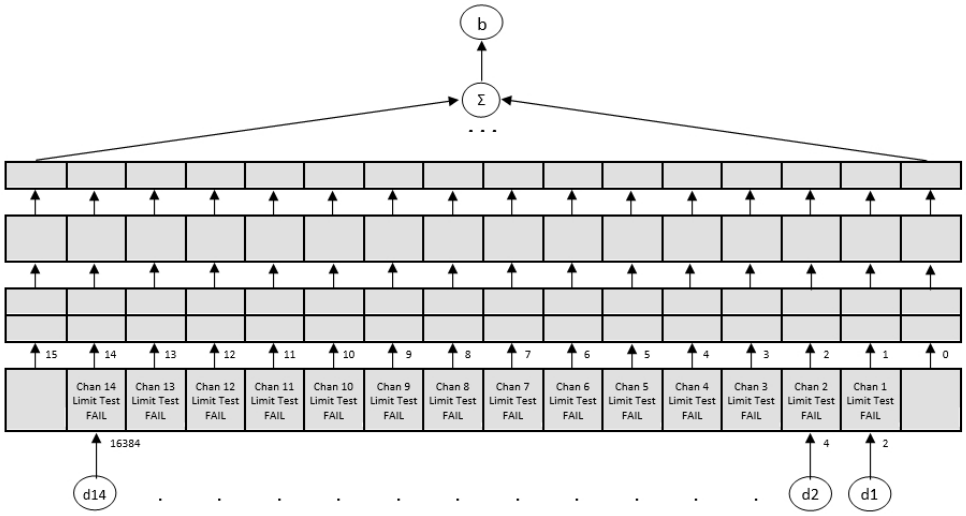
```
double data[NOP * 2];
ViUInt32 retCount;
...
viPrintf(instr, "FORM:DATA REAL\n");
viPrintf(instr, "FORM:BORD SWAP\n");
retCount = sizeof(data);
viQueryf(instr, "SENS:DATA:CORR? S11\n", "%#b", &retCount, data);
// retCount now contains the actual number of bytes
```

Example. Receiving array of doubles (architecture independent):

```
double data[NOP * 2];
ViUInt32 retCount;
...
viPrintf(instr, "FORM:DATA REAL\n");
viPrintf(instr, "FORM:BORD NORM\n");
retCount = sizeof(data)/sizeof(double);
viQueryf(instr, "SENS:DATA:CORR? S11\n", "%#Zb", &retCount, data);
// retCount now contains the actual number of elements
```

IEE488.2 Status Reporting System


Σ
Service Request Enable Register
*SRE
7 5 4 3 2 1 0
SRQ*
Service Request Generation*
OPER
RQS
MSS
ESB
MAV*
QUES
EAV
Status Byte Register
*STB?
128 64 32 16 8 4
* Not available for TCP/IP Socket protocol
Standard Event Status Enable Register
*ESE
7 6 5 4 3 2 1 0
Command Error
Execution Error
Device spec. Error
Query Error
Operation Complete
Standard Event Status Register
*ESR?
32 16 8 4 1
Output Queue
Error/ Event Queue
a
Operation Status Enable Register
STAT:OPER:ENAB
Operation Status Event Register
STAT:OPER?
Positive Transition Filter
STAT:OPER:PTR
Negative Transition Filter
STAT:OPER:NTR
15 14 1 12 11 10 9 8 7 6 5 4 3 2 1 0
Waiting for trigger
Meas.
32 16
Operation Status Condition Register
STAT:OPER:COND?
a
Questionable Status Enable Register
STAT:QUES:ENAB
Questionable Status Event Register
STAT:QUES?
Positive Transition Filter
STAT:QUES:PTR
Negative Transition Filter
STAT:QUES:NTR
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
Limit Test FAIL
Ripple Test FAIL
1024 512
Questionable Status Condition Register
STAT:QUES:COND?
b
c



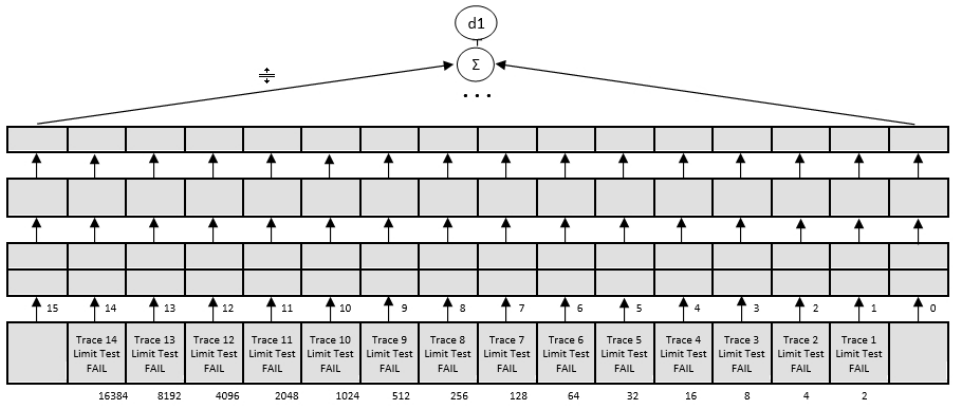
Questionable Limit Status Enable Register
STAT:QUES:LIM:ENAB

Questionable Limit Status Event Register
STAT:QUES:LIM?

Positive Transition Filter
STAT:QUES:LIM:PTR

Negative Transition Filter
STAT:QUES:LIM:NTR

Questionable Limit Status Condition Register
STAT:QUES:LIM:COND?



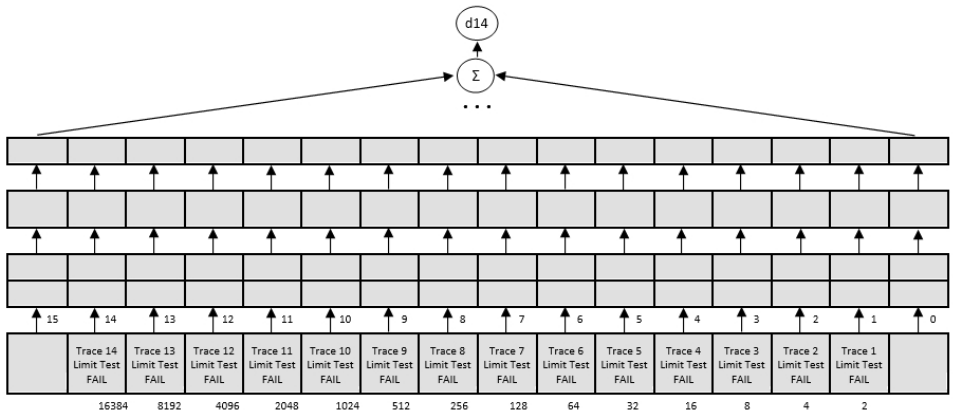
Questionable Limit Channel 1 Status Enable Register
STAT:QUES:LIM:CHAN1:ENAB

Questionable Limit Channel 1 Status Event Register
STAT:QUES:CHAN1:LIM?

Positive Transition Filter
STAT:QUES:LIM:CHAN1:PTR

Negative Transition Filter
STAT:QUES:LIM:CHAN1:NTR

Questionable Limit Channel 1 Status Condition Register
STAT:QUES:LIM:CHAN1:COND?



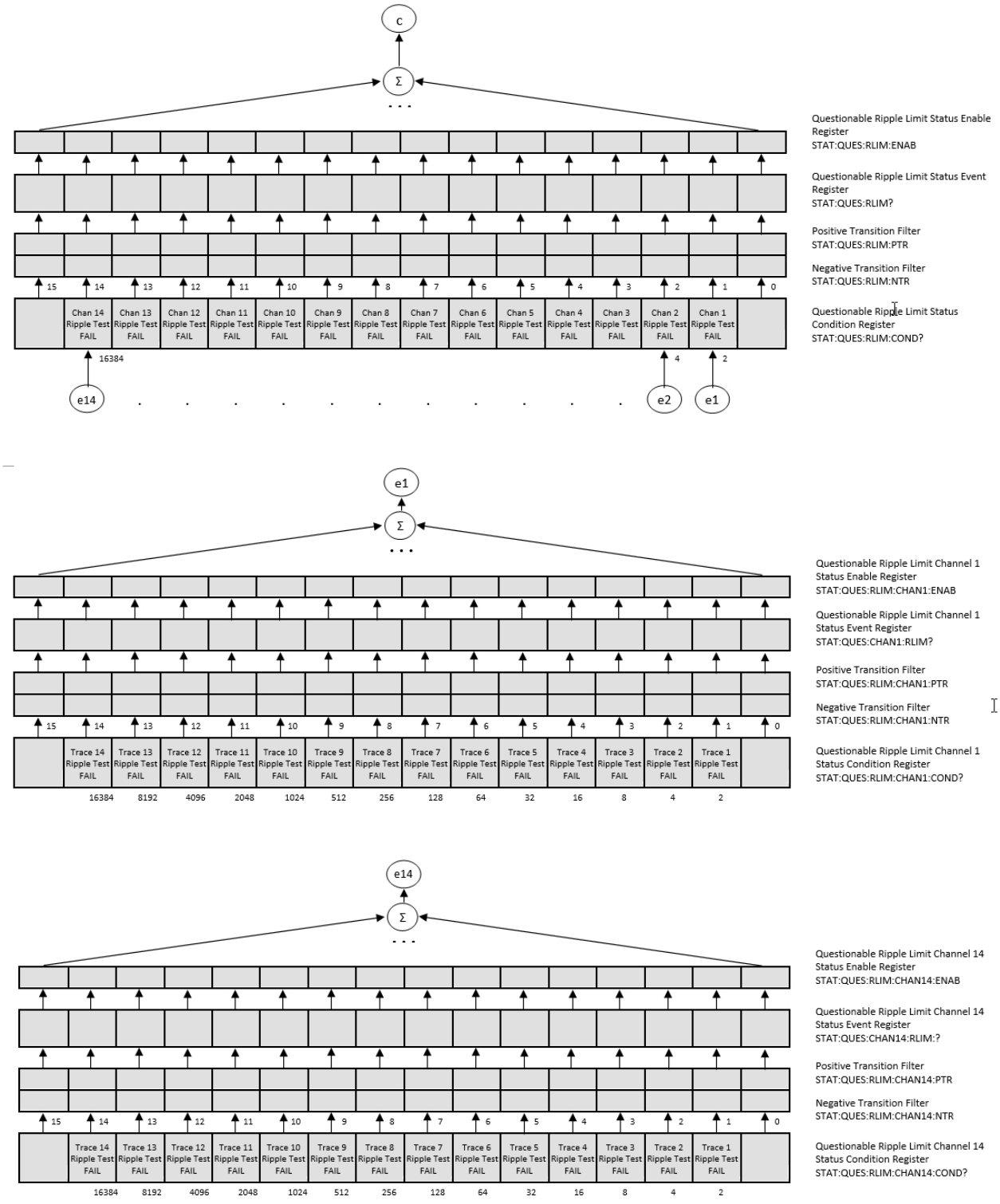
Questionable Limit Channel 14 Status Enable Register
STAT:QUES:LIM:CHAN14:ENAB

Questionable Limit Channel 14 Status Event Register
STAT:QUES:CHAN14:LIM:?

Positive Transition Filter
STAT:QUES:LIM:CHAN14:PTR

Negative Transition Filter
STAT:QUES:LIM:CHAN14:NTR

Questionable Limit Channel 14 Status Condition Register
STAT:QUES:LIM:CHAN14:COND?



Error Codes

Name	Description
100	Command error
101	Unmatched quote

102	Unmatched bracket
103	Invalid value in numeric list
104	Data type error
106	Numeric parameter overflow
107	Wrong units in numeric data
108	Parameter not allowed
109	Missing parameter
110	Command header error
114	Header suffix out of range
115	Input buffer is full
130	Suffix eror
200	Execution error
201	Invalid channel index
202	Invalid trace index
203	Invalid marker index
204	Marker is not enabled
205	Invalid save type specifier
206	Invalid sweep type specifier
207	Invalid trigger source specifier
208	Invalid measurement parameter specifier
209	Invalid format specifier
210	Invalid data math specifier
211	Trigger ignored
212	Invalid trigger source
213	Init ignored
214	Invalid limit data
215	Invalid segment data
216	Invalid standard type specifier
217	Invalid conversion specifier
218	Invalid gating shape specifier
219	Invalid gating type specifier
220	Parameter Error

221	Invalid port index
222	Data out of range
223	No Calibration Measurement Data
224	Illegal parameter value
225	Cal Kit Definition Error
226	Differ Forward and Reverse Thru
227	Differ Forward and Reverse TRL Thru
228	Differ Forward and Reverse Line
229	TRL Match Standard is not Load Type Standard
230	ACM Auto-Orientation Error
231	ACM Orientation Settings Error
232	AutoCal Execution Error
233	ACM Frequncy Settings Error
234	ACM Characterization Error
235	Frequency Range Exceeds ACM Characterization Frequency Range
236	AutoCal Module Reading Error
237	Incorrect set of measured parameters
238	Calibration Execution Error
239	TRIG:SING interrupted
240	Analyzer not ready
241	AutoCal Module not ready
251	Invalid trigger scope specifier
252	Invalid trigger polarity specifier
253	Invalid trigger position specifier
256	File not found
300	Device–specific error
302	Status reporting system error
400	Query error
403	Query error: no data
404	Query truncated
410	Query Interrupted

Programming Examples

Example. Program Written in C

The following program shows the control over the Analyzer using the C language with the VISA library.

The Analyzer address is passed as parameter in the command line at the start of the program. For more detail on VISA Resource Name see the VISA library documentation.

Program description:

1. Sets up the communication with the Analyzer.
2. Reads out and displays the Analyzer information string.
3. Sets some parameters of the Analyzer.
4. Triggers the measurement and waits for the sweep completion.
5. Reads out the measurement data and the frequency values at the measurement points.
6. Displays the measurement data

```
// Example.cpp
//
// VISA Header: visa.h (must be included)
// VISA Library: visa32.lib (must be linked with)

#include "stdafx.h"
#include "visa.h"

int main(int argc, char* argv[])
{
        ViStatus status;                        // Error checking
        ViSession defaultRM, instr;             // Communication channels
        ViUInt32 retCount;                      // Return count from string I/O
        ViByte buffer[255];                     // Buffer for string I/O
        ViUInt32 temp;
        int NOP = 21;                           // Number of measurement points
        const int maxCnt = 100;                 // Maximum reading count
        double Data[maxCnt*2];                  // Measurement data array
        double Freq[maxCnt];                    // Frequency array

        if (argc < 2)
            {
                printf("\nUsage: Example <VISA address>\n\n");
                printf("VISA address examples:\n");
                printf("      TCPIP::nnn.nnn.nnn.nnn::5025::SOCKET\n");
                printf("      TCPIP::hostname::5025::SOCKET\n");
                return -1;
            }

        status = viOpenDefaultRM(&defaultRM);

        if (status < VI_SUCCESS)
            {
                printf("Can't initialize VISA\n");
                return -1;
            }
```

```
            status = viOpen(defaultRM, argv[1], VI_NULL, VI_NULL, &instr);

        if (status < VI_SUCCESS)
            {
                printf("Can't open VISA address: %s\n", argv[1]);
                return -1;
            }
        //
        // Set the answer timeout
        //
        viSetAttribute(instr, VI_ATTR_TMO_VALUE, 5000);
        //
        // Enable the terminal character
        //
        viSetAttribute(instr, VI_ATTR_TERMCHAR_EN, VI_TRUE);       viSetAttribute(instr,
VI_ATTR_TERMCHAR, '\n');
        //
        // Read ID string from Analyzer
        //
        viPrintf(instr, "*IDN?\n");
        viRead(instr, buffer, sizeof(buffer), &retCount);
        printf("*IDN? Returned %d bytes: %.*s\n\n", retCount, retCount, buffer);
        //
        // Set up the Analyzer
        //
        viPrintf(instr, "SYST:PRES\n");
        viPrintf(instr, "SENS:SWE:POIN %d\n", NOP);
        viPrintf(instr, "CALC:PAR1:DEF S21\n");
        viPrintf(instr, "CALC:PAR1:SEL\n");
        viPrintf(instr, "CALC:FORM MLOG\n");
        viPrintf(instr, "SENS:BAND 10\n");
        //
        // Trigger measurement and wait for completion
        //
        viPrintf(instr, ":TRIG:SOUR BUS\n");
        viPrintf(instr, ":TRIG:SING\n");
        viQueryf(instr, "*OPC?\n", "%d", &temp);
        //
        // Read out measurement data
        //
        retCount = maxCnt * 2;
        viQueryf(instr, "CALC:DATA:FDAT?\n", "%,#lf", &retCount, Data);
        retCount = maxCnt;
        viQueryf(instr, "SENS:FREQ:DATA?\n", "%,#lf", &retCount, Freq);
        //
        // Display measurement data
        //
        printf("%20s %20s %20s\n", "Frequency", "Data1", "Data2");
        for (int i = 0; i < NOP; i++)
        {
```

```
            printf("%20f %20f %20f\n", Freq[i], Data[i*2], Data[i*2+1]);
        }

        status = viClose(instr);
        status = viClose(defaultRM);
        return 0;
}
```

Example. Program Written in LabView

The following program shows the control over the Analyzer using the LabView language with the VISA library.

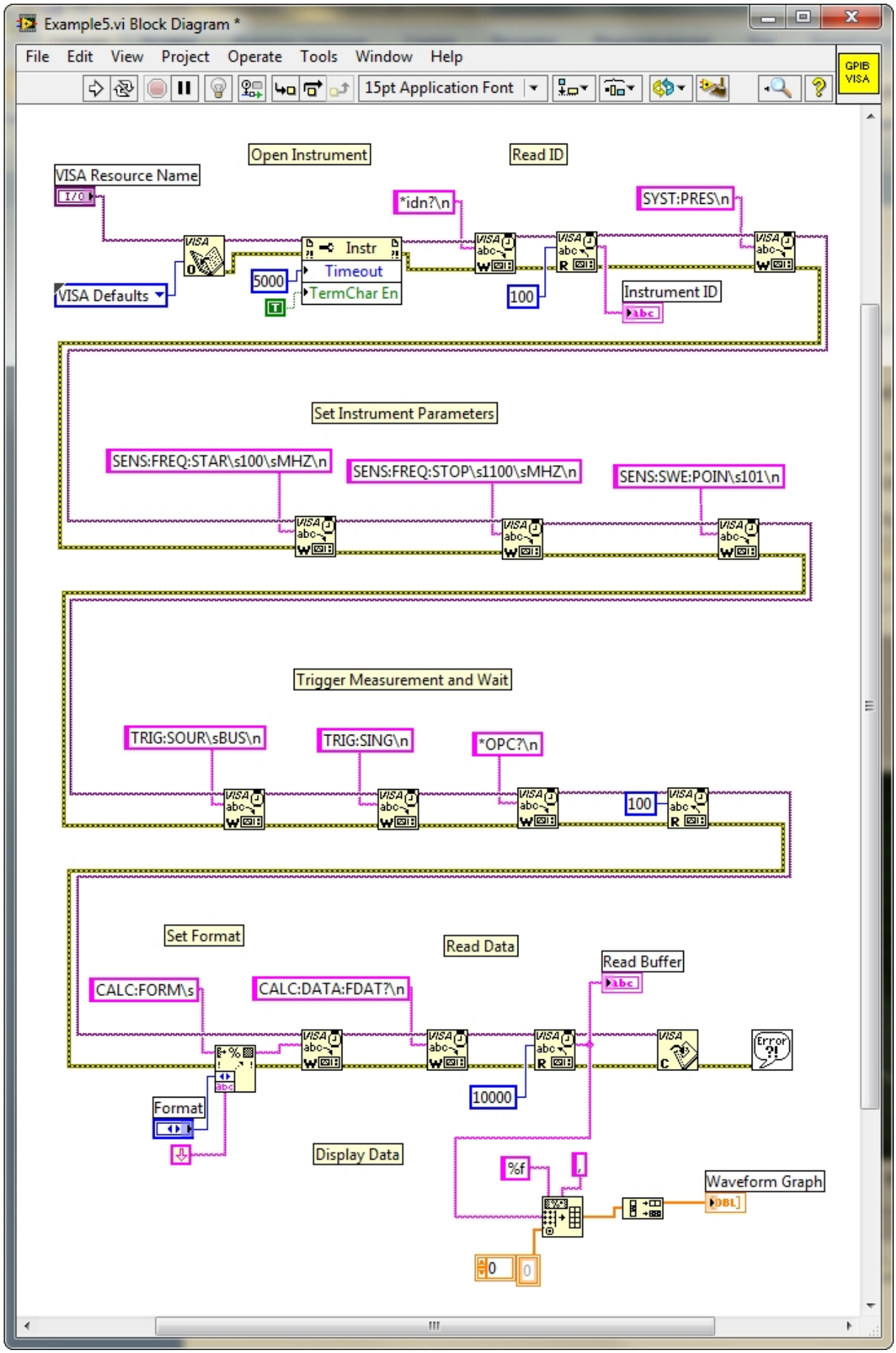
Below see the block diagram of the program and front panel of the program with the program execution result.

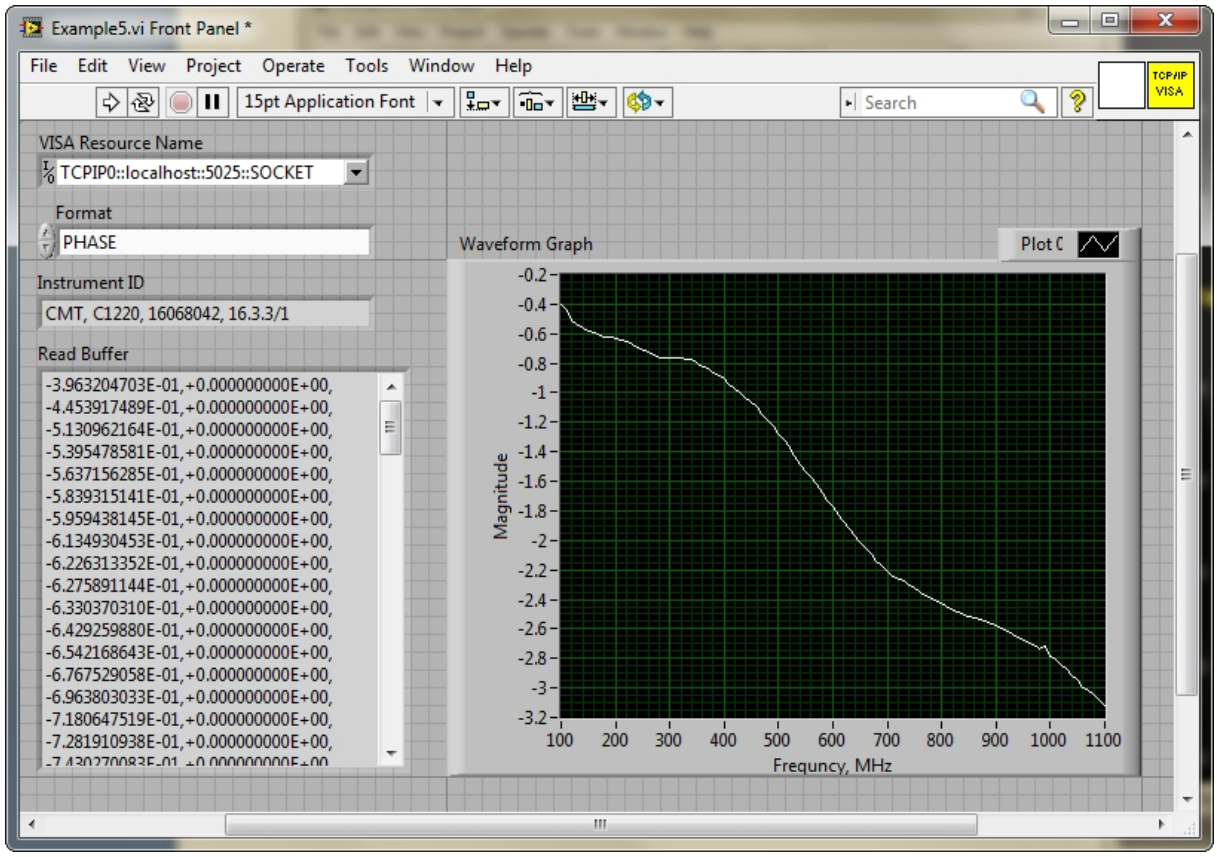
The front panel contains the entry field for the Analyzer name "VISA Resource Name". For more detail on VISA Resource Name see the VISA library documentation.

The user must enter the Analyzer address, select the trace format in the "Format" field, and click the "Run" button. As the result of the program, the Analyzer information string will be displayed and the measurement trace will be plotted.

Program description:

1. Sets up the communication with the Analyzer.
2. Reads out and displays the Analyzer information string.
3. Sets some parameters of the Analyzer.
4. Generates the trigger and waits for the sweep completion.
5. Sets the trace format to the format entered by the user in the "Format" field.
6. Reads out the measurement data.
7. Displays the measurement data.


Example5.vi Block Diagram *
File Edit View Project Operate Tools Window Help
15pt Application Font
GPIB VISA
Open Instrument
Read ID
VISA Resource Name
*idn?\n
SYST:PRES\n
Instr
Timeout
TermChar En
5000
VISA Defaults
100
Instrument ID
Set Instrument Parameters
SENS:FREQ:STAR\s100\sMHZ\n
SENS:FREQ:STOP\s1100\sMHZ\n
SENS:SWE:POIN\s101\n
Trigger Measurement and Wait
TRIG:SOUR\sBUS\n
TRIG:SING\n
*OPC?\n
100
Set Format
Read Data
Read Buffer
CALC:FORM\s
CALC:DATA:FDAT?\n
Format
10000
Display Data
%f
Waveform Graph
0


Example5.vi Front Panel *
File Edit View Project Operate Tools Window Help
15pt Application Font
Search
TCP/IP VISA
VISA Resource Name
TCPIP0::localhost::5025::SOCKET
Format
PHASE
Instrument ID
CMT, C1220, 16068042, 16.3.3/1
Read Buffer
-3.963204703E-01,+0.000000000E+00,
-4.453917489E-01,+0.000000000E+00,
-5.130962164E-01,+0.000000000E+00,
-5.395478581E-01,+0.000000000E+00,
-5.637156285E-01,+0.000000000E+00,
-5.839315141E-01,+0.000000000E+00,
-5.959438145E-01,+0.000000000E+00,
-6.134930453E-01,+0.000000000E+00,
-6.226313352E-01,+0.000000000E+00,
-6.275891144E-01,+0.000000000E+00,
-6.330370310E-01,+0.000000000E+00,
-6.429259880E-01,+0.000000000E+00,
-6.542168643E-01,+0.000000000E+00,
-6.767529058E-01,+0.000000000E+00,
-6.963803033E-01,+0.000000000E+00,
-7.180647519E-01,+0.000000000E+00,
-7.281910938E-01,+0.000000000E+00,
Waveform Graph
Plot 0
Magnitude
-0.2
-0.4
-0.6
-0.8
-1
-1.2
-1.4
-1.6
-1.8
-2
-2.2
-2.4
-2.6
-2.8
-3
-3.2
100 200 300 400 500 600 700 800 900 1000 1100
Frequncy, MHz