TVNA Vector Network Analyzer

Programmer Guide

V 2.3

March. 2023

Contents

1. Remote control

1.1. LAN remote control system

LAN (local area network) remote control system provides a service, which can control TVNA vector network analyzer.

1.1.1. System Connection

Connect TVNA with PC via USB cable, then run the software for TVNA. PC should be connected to the LAN.

1.2. Related commands

1.2.1. The definition of symbols

This section describes the definition of command reference symbols.

1.2.1.1. Syntax

: :Intervals between the main functional modules and sub-modules.

{} :{1-16} indicates that the digital of one to sixteen can within the symbol of {} in the command instruction, used to set the channel,trace,and mark parameters.

? :Search commands.(When the obtain type is contained in command type,input "?"to query behind the command.)

1.2.2. TVNA commands

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

1.2.2.1. *CLS

*CLS

Description: Clears the Error Queue.

Type:Write

Parameters:None

Example of use: *CLS

1.2.2.2. *IDN?

***IDN?**

Description:Reads out the product information (manufacturer, model number, serial number, and firmware version number)

Type: Read

Parameters: None

Example of use: *IDN?

1.2.2.3. *OPC?

*OPC?

Description: Reads out the OPC bit (bit 0) of the Standard Event Status Register at the completion of all pending operations.

Type: Read

Parameters: None

Example of use: *OPC?

1.2.2.4. *RST

*RST

Description: Presets the VNA to a default setting state.

Type: Write

Parameters: None

Example of use: *RST

1.2.2.5. *WAI

*WAI

Description: Waits for the execution of all commands sent before this command to be completed.

Type: Write

Parameters: None

Example of use: *WAI

1.2.2.6. ABOR

:ABOR

Description: Aborts the measurement and changes the trigger sequence for all channels to idle state. After the change to the idle state, the channels for which the continuous initiation mode is set to ON change into the initiate state. For details about the trigger system, refer to trigger system.

Type: Write

Parameters: None

Example of use: :ABOR

1.2.2.7. CALC{1-16}:FSIM:BAL:CZC:BPOR{1-2}:IMAG

CALC{1-16}:FSIM:BAL:CZC:BPOR{1-2}:IMAG

Description: This command sets/gets the impedance value (imaginary part) for the common port impedance conversion function, for balance ports 1 and 2 of the selected channel.

Type: Read/Write

Parameters: -1E+18 to 1E+18(Unit:ohm)

Example of use: CALC1:FSIM:BAL:CZC:BPOR1:IMAG 50

CALC1:FSIM:BAL:CZC:BPOR1:IMAG?

1.2.2.8. CALC{1-16}:FSIM:BAL:CZC:BPOR{1-2}:REAL

CALC{1-16}:FSIM:BAL:CZC:BPOR{1-2}:REAL

Description: This command sets/gets the impedance value (real part) for the common port impedance conversion function, for balance ports 1 and 2 of the selected channel .

Type: Read/Write

Parameters: 1E-3 to 1E7(Unit:ohm)

Example of use: CALC1:FSIM:BAL:CZC:BPOR1:REAL 50

CALC1:FSIM:BAL:CZC:BPOR1:REAL?

1.2.2.9. CALC{1-16}:FSIM:BAL:CZC:BPOR{1-2}:Z0:R

CALC{1-16}:FSIM:BAL:CZC:BPOR{1-2}:Z0:R

Description: This command sets/gets the impedance value for the common port impedance conversion function, for balance ports 1 and 2 of the selected channel .

Type: Read/Write

Parameter: 1E-3 to 1E7(Unit:ohm)

Example of use: CALC1:FSIM:BAL:CZC:BPOR1:Z0 30

CALC1:FSIM:BAL:CZC:BPOR1:Z0?

1.2.2.10. CALC{1-16}:FSIM:BAL:CZC:STAT

CALC{1-16}:FSIM:BAL:CZC:STAT

Description:This command turns ON/OFF the common port impedance conversion function when the fixture simulator function is ON, for all the balance ports of selected channel.

Type:Read/Write

Parameter:

ON(1)	Turns ON common port impedance conversion function.
OFF(0)	Turns OFF common port impedance conversion function.

Example of use: CALC1:FSIM:BAL:CZC:STAT ON

CALC1:FSIM:BAL:CZC:STAT?

1.2.2.11. CALC{1-16}:FSIM:BAL:DEV

CALC{1-16}:FSIM:BAL:DEV

Description: This command selects the balance device type of the fixture simulator function, for the selected channel .

Type:Read/Write

Parameter:

SBALanced	Specifies the unbalance-balance (3 ports).
BBALanced	Specifies the balance-balance (4 ports).
SSBalanced	Specifies the unbalance-unbalance-balance (4 ports).
BALanced	Specifies the unbalance (2 ports)

Example of use: CALC1:FSIM:BAL:DEV BBAL

CALC1:FSIM:BAL:DEV?

1.2.2.12. CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:PAR:C

CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:PAR:C

Description: This command sets/gets the C value of the differential matching circuit consisting of shunt L and shunt C, for balance port 1 and balance port 2 of the selected channel.

Type:Read/Write

Parameter: -1E18 to 1E18(Unit:F)

Example of use: CALC1:FSIM:BAL:DMC:BPOR1:PAR:C 12.3

CALC1:FSIM:BAL:DMC:BPOR1:PAR:C?

1.2.2.13. CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:PAR:G

CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:PAR:G

Description: This command sets/gets the G value of the differential matching circuit consisting of shunt L and shunt C, for balance port 1 and balance port 2 of the selected channel.

Type:Read/Write

Parameter: -1E18 to 1E18(Unit:S)

Example of use: CALC1:FSIM:BAL:DMC:BPOR1:PAR:G 12.3

CALC1:FSIM:BAL:DMC:BPOR1:PAR:G?

1.2.2.14. CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:PAR:L

CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:PAR:L

Description: This command sets/gets the L value of the differential matching circuit consisting of shunt L and shunt C, for balance port 1 and balance port 2 of the selected channel.

Type:Read/Write

Parameter: -1E18 to 1E18(Unit:H)

Example of use: CALC1:FSIM:BAL:DMC:BPOR1:PAR:L 12.3

CALC1:FSIM:BAL:DMC:BPOR1:PAR:L?

1.2.2.15. CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:PAR:R

CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:PAR:R

Description: This command sets/gets the R value of the differential matching circuit consisting of shunt L and shunt C, for balance port 1 and balance port 2 of the selected channel.

Type:Read/Write

Parameter: -1E18 to 1E18(Unit:ohm)

Example of use: CALC1:FSIM:BAL:DMC:BPOR1:PAR:R 12.3

CALC1:FSIM:BAL:DMC:BPOR1:PAR:R?

1.2.2.16. CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}

CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}

Description:For balance ports 1 and 2 of selected channel, selects the type of the differential matching circuit.

Type:Read/Write

Parameter:

NONE	Specifies no-circuit
PLPC	Specifies the circuit that consists of shunt L and shunt C.
USER	Specifies the user-defined circuit.

Example of use: CALC1:FSIM:BAL:DMC:BPOR1 PLPC

CALC1:FSIM:BAL:DMC:BPOR1?

1.2.2.17. CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:USER:FIL

CALC{1-16}:FSIM:BAL:DMC:BPOR{1-2}:USER:FIL

Description:This command specifies the file in which the information on the user-defined differential matching circuit is saved (2-port touchstone file with the .s2p extension), for the balance ports 1 and 2 of the selected channel. Specify the file name with the extension. When you use directory names (folder names) and file name, separate them with "\ " (back slash).

Type:Read/Write

Parameters:File(254 characters or less)

Example of use: CALC1:FSIM:BAL:DMC:BPOR1:USER:FIL data.s2p

CALC1:FSIM:BAL:DMC:BPOR1:USER:FIL?

1.2.2.18. CALC{1-16}:FSIM:BAL:DMC:STAT

CALC{1-16}:FSIM:BAL:DMC:STAT

Description: This command turns ON/OFF the differential matching circuit embedding function when the fixture simulator function is ON, for all the balance ports of selected channel.

Type:Read/Write

Parameters:

1 or ON	Turns ON the differential matching circuit embedding function.
0 or OFF	Turns OFF the differential matching circuit embedding function.

Example of use: CALC1:FSIM:BAL:DMC:STAT ON

CALC1:FSIM:BAL:DMC:STAT?

1.2.2.19. CALC{1-16}:FSIM:BAL:DZC:BPOR{1-2}:IMAG

CALC{1-16}:FSIM:BAL:DZC:BPOR{1-2}:IMAG

Description: This command sets/gets the impedance value (imaginary part) for the differential port impedance conversion function, for the balance ports 1 and 2 of selected channel

Type: Read/Write

Parameters: -1E+18 to 1E+18(Unit: ohm)

Example of use: :CALC1:FSIM:BAL:DZC:BPOR1:IMAG 50

:CALC1:FSIM:BAL:DZC:BPOR1:IMAG?

1.2.2.20. CALC{1-16}:FSIM:BAL:DZC:BPOR{1-2}:REAL

CALC{1-16}:FSIM:BAL:DZC:BPOR{1-2}:REAL

Description: This command sets/gets the impedance value (real part) for the differential port impedance conversion function, for the balance ports 1 and 2 of selected channel

Type :Read/Write

Parameters: 1E-3 to 1E+7(Unit: ohm)

Example of use: :CALC1:FSIM:BAL:DZC:BPOR1:REAL 50

:CALC1:FSIM:BAL:DZC:BPOR1:REAL?

1.2.2.21. CALC{1-16}:FSIM:BAL:DZC:BPOR{1-2}:Z0

CALC{1-16}:FSIM:BAL:DZC:BPOR{1-2}:Z0

Description: This command sets/gets the impedance value for the differential port impedance conversion function, for the balance ports 1 and 2 of selected channel.

Type :Read/Write

Parameters: 1E-3 to 1E+7(Unit: ohm)

Example of use: CALC1:FSIM:BAL:DZC:BPOR1:Z0 50

CALC1:FSIM:BAL:DZC:BPOR1:Z0?

1.2.2.22. CALC{1-16}:FSIM:BAL:DZC:STAT

CALC{1-16}:FSIM:BAL:DZC:STAT

Description: This command turns ON/OFF the differential port impedance conversion function when the fixture simulator function is ON, for all the balance ports of selected channel.

Type :Read/Write

Parameters:

1 or ON	Turns ON the differential port impedance conversion function..
0 or OFF	Turns OFF the differential port impedance conversion function.

Example of use: CALC1:FSIM:BAL:DZC:STAT ON

CALC1:FSIM:BAL:DZC:STAT?

1.2.2.23. CALC{1-16}:FSIM:BAL:PAR{1-16}:BAL

CALC{1-16}:FSIM:BAL:PAR{1-16}:BAL

Description: This command sets/gets the measurement parameter when the balance device type is "balance", for the selected trace of the selected channel.

Type: Read/Write

Parameters:

Select from the following: "SDD11": Specifies Sdd11. "SCD11": Specifies Scd11. "SDC11": Specifies Sdc11. "SCC11": Specifies Scc11.

Example of use: CALC1:FSIM:BAL:PAR1:BAL Sdd11

CALC1:FSIM:BAL:PAR1:BAL?

1.2.2.24. CALC{1-16}:FSIM:BAL:PAR{1-16}:BBAL

CALC{1-16}:FSIM:BAL:PAR{1-16}:BBAL

Description: This command sets/gets the measurement parameter when the balance device type is "balance-balance", for the selected channel

Type: Read/Write

Parameters:

Select from the following:
"SDD11": Specifies Sdd11.
"SDD21": Specifies Sdd21.
"SDD12": Specifies Sdd12.
"SDD22": Specifies Sdd22.
"SCD11": Specifies Scd11.
"SCD21": Specifies Scd21.
"SCD12": Specifies Scd12.
"SCD22": Specifies Scd22.
"SDC11": Specifies Sdc11.
"SDC21": Specifies Sdc21.
"SDC12": Specifies Sdc12.
"SDC22": Specifies Sdc22.
"SCC11": Specifies Scc11.
"SCC21": Specifies Scc21.
"SCC12": Specifies Scc12.
"SCC22": Specifies Scc22.
"IMB1":Specifies Imbalance1.
"IMB2":Specifies Imbalance2.

"CMRR": Specifies CMRR (Sdd21/Scc21).

Example of use: CALC1:FSIM:BAL:PAR1:BBAL Sdd11

CALC1:FSIM:BAL:PAR1:BBAL Sdd11

1.2.2.25. CALC{1-16}:FSIM:BAL:PAR{1-16}:SBAL

CALC{1-16}:FSIM:BAL:PAR{1-16}:SBAL

Description: This command sets/gets the measurement parameter when the balance device type is "unbalance-balance", for the selected channel

Type: Read/Write

Parameters:

Select from the following.
"SSS11": Specifies Sss11.
"SDS21": Specifies Sds21.
"SSD12": Specifies Ssd12.
"SCS21": Specifies Scs21.
"SSC12": Specifies Ssc12.
"SDD22": Specifies Sdd22.
"SCD22": Specifies Scd22.
"SDC22": Specifies Sdc22.
"SCC22": Specifies Scc22.
"IMB": Specifies Imbalance.
"CMRR": Specifies CMRR (Sds21/Scs21).
"CMRR2": Specifies CMRR2 (Ssd12/Ssc12).

Example of use: CALC1:FSIM:BAL:PAR1:SBAL Sss11

CALC1:FSIM:BAL:PAR1:SBAL Sss11

1.2.2.26. CALC{1-16}:FSIM:BAL:PAR{1-16}:SSB

CALC{1-16}:FSIM:BAL:PAR{1-16}:SSB

Description: This command sets/gets the measurement parameter when the balance device type is "unbalance-unbalance-balance", for the selected trace of the selected channel.

Type: Read/Write

Parameters:

Select from the following:
"SSS11": Specifies Sss11.
"SSS21": Specifies Sss21.
"SSS12": Specifies Sss12.
"SSS22": Specifies Sss22.
"SDS31": Specifies Sds31.
"SDS32": Specifies Sds32.
"SSD13": Specifies Ssd13.
"SSD23": Specifies Ssd23.
"SCS31": Specifies Scs31.
"SCS32": Specifies Scs32.
"SSC13": Specifies Ssc13.
"SSC23": Specifies Ssc23.
"SDD33": Specifies Sdd33.
"SCD33": Specifies Scd33.
"SDC33": Specifies Sdc33.
"SCC33": Specifies Scc33.
"IMB1": Specifies Imbalance1.
"IMB2": Specifies Imbalance2.
"IMB3": Specifies Imbalance3.
"IMB4": Specifies Imbalance4.
"CMRR1": Specifies CMRR (Sds31/Scs31).

"CMRR2": Specifies CMRR (Sds32/Scs32).

Example of use: CALC1:FSIM:BAL:PAR1:SBAL SSS11

CALC1:FSIM:BAL:PAR1:SBAL SSS11

1.2.2.27. CALC{1-16}:FSIM:BAL:PAR{1-16}:STAT

CALC{1-16}:FSIM:BAL:PAR{1-16}:STAT

Description: This command turns ON/OFF the balance-unbalance conversion function when the fixture simulator function is ON, for the selected trace of selected channel.

Type: Read/Write

Parameter:

1 or ON	Turns ON the balance-unbalance conversion function.
0 or OFF	Turns OFF the balance-unbalance conversion function.

Example of use: CALC1:FSIM:BAL:PAR1:STAT ON

CALC1:FSIM:BAL:PAR1:STAT?

1.2.2.28. CALC{1-16}:FSIM:BAL:TOP:BAL

CALC{1-16}:FSIM:BAL:TOP:BAL

Description: This command assigns each port when the balance device type is "balance", for the selected channel.

Type: Read/Write

Parameter: Ports Indicates 2-element array data (port number).

Example of use: CALC1:FSIM:BAL:TOP:BAL 1,4

CALC1:FSIM:BAL:TOP:BAL?

1.2.2.29. CALC{1-16}:FSIM:BAL:TOP:BBAL

CALC{1-16}:FSIM:BAL:TOP:BBAL

Description: This command assigns each port when the balance device type is "balance-balance", for the selected channel.

Type: Read/Write

Parameter: Ports Indicates 4-element array data (port number).

Example of use: CALC1:FSIM:BAL:TOP:BBAL 1,4,2,3

CALC1:FSIM:BAL:TOP:BBAL?

1.2.2.30. CALC{1-16}:FSIM:BAL:TOP:PROP:STAT

CALC{1-16}:FSIM:BAL:TOP:PROP:STAT

Description: This command turns on/off the property display for the topology setting when using the balance-unbalance conversion, for the selected channel

Type: Read/Write

Parameter:

1 or ON	Turns ON the property display.
0 or OFF	Turns OFF the property display.

Example of use: CALC1:FSIM:BAL:TOP:PROP:STAT ON

CALC1:FSIM:BAL:TOP:PROP:STAT?

1.2.2.31. CALC{1-16}:FSIM:BAL:TOP:SBAL

CALC{1-16}:FSIM:BAL:TOP:SBAL

Description: This command assigns each port when the balance device type is "unbalance-balance", for the selected channel.

Type: Read/Write

Parameter: Ports Indicates 3-element array data (port number).

Example of use: CALC1:FSIM:BAL:TOP:SBAL 1,2,3

CALC1:FSIM:BAL:TOP:SBAL?

1.2.2.32. CALC{1-16}:FSIM:BAL:TOP:SSB

CALC{1-16}:FSIM:BAL:TOP:SSB

Description: This command assigns each port when the balance device type is "unbalance-unbalance-balance", for the selected channel.

Type: Read/Write

Parameter: Ports Indicates 4-element array data (port number).

Example of use: CALC1:FSIM:BAL:TOP:SSBAL 1,2,3,4

CALC1:FSIM:BAL:TOP:SSBAL?

1.2.2.33. CALC{1-16}:FSIM:EMB:NETW{1-4}:FIL

CALC{1-16}:FSIM:EMB:NETW{1-4}:FIL

Description: This command specifies a file in which the information of network (which you want to embed/de-embed using the 4-port network embedding/de-embedding feature) is saved for the selected channel. The file is saved as a 4-port touchstone file with the ".s4p" extension.

Type: Read/Write

Parameter: 4-port touchstone file name (extension: .s4p) for the 4-port network embedding/de-embedding feature

Example of use: CALC1:FSIM:EMB:NETW1:FIL "Network.s4p"

CALC1:FSIM:EMB:NETW1:FIL?

1.2.2.34. CALC{1-16}:FSIM:EMB:NETW{1-4}:TYPE

CALC{1-16}:FSIM:EMB:NETW{1-4}:TYPE

Description: This command sets/gets the processing type for networks. for the 4-port network embedding/de-embedding feature for the selected channel.

Type: Read/Write

Parameter:

NONE	Specifies no-processing

EMBed	Specifies embedding
DEEMbed	Specifies de-embedding

Example of use: CALC1:FSIM:EMB:NETW1:TYPE DEEM

CALC1:FSIM:EMB:NETW1:TYPE?

1.2.2.35. CALC{1-16}:FSIM:EMB:STAT

CALC{1-16}:FSIM:EMB:STAT

Description: This command turns ON/OFF the 4-port network embedding/de-embedding feature when the fixture simulator feature is ON, for the selected channel.

Type: Read/Write

Parameter:

1 or ON	Turns ON the 4-port network embedding/de-embedding feature
0 or OFF	Turns OFF the 4-port network embedding/de-embedding feature

Example of use: CALC1:FSIM:EMB:STAT ON

CALC1:FSIM:EMB:STAT?

1.2.2.36. CALC{1-16}:FSIM:EMB:TOP:A:PORT

CALC{1-16}:FSIM:EMB:TOP:A:PORT

Description: This command sets/gets the test port assignment when the connection type (Topology) is set to A, for the 4-port network embedding/de-embedding feature for selected channel

Type: Read/Write

Parameter: Ports Indicates 2-element array data (port number).

Example of use: CALC1:FSIM:EMB:TOP:A:PORT 1,2

CALC1:FSIM:EMB:TOP:A:PORT?

1.2.2.37. CALC{1-16}:FSIM:EMB:TOP:B:PORT

CALC{1-16}:FSIM:EMB:TOP:B:PORT

Description: This command sets/gets test port assignment when the connection type (Topology) is set to B, for the 4-port network embedding/de-embedding feature for selected channel

Type: Read/Write

Parameter: Ports Indicates 3-element array data (port number)

Example of use: CALC1:FSIM:EMB:TOP:B:PORT 1,2,3

CALC1:FSIM:EMB:TOP:B:PORT?

1.2.2.38. CALC{1-16}:FSIM:EMB:TOP:C:PORT

CALC{1-16}:FSIM:EMB:TOP:C:PORT

Description: This command sets/gets test port assignment when the connection type (Topology) is set to C, for the 4-port network embedding/de-embedding feature for selected channel

Type: Read/Write

Parameter: Ports Indicates 4-element array data (port number)

Example of use: CALC1:FSIM:EMB:TOP:C:PORT 1,2,3,4

CALC1:FSIM:EMB:TOP:C:PORT?

1.2.2.39. CALC{1-16}:FSIM:EMB:TYPE

CALC{1-16}:FSIM:EMB:TYPE

Description: This command selects a connection type (Topology), for the 4-port network embedding/de-embedding feature for channel

Type: Read/Write

Parameter:

A	Specifies connection type A
B	Specifies connection type B
C	Specifies connection type C

Example of use: CALC1:FSIM:EMB:TYPE A

CALC1:FSIM:EMB:TYPE?

1.2.2.40. CALC{1-16}:FSIM:SEND:DEEM:PORT{1-4}

CALC{1-16}:FSIM:SEND:DEEM:PORT{1-4}

Description: This command sets/gets the type of the network de-embedding, for ports 1 and 4 of selected channel

Type: Read/Write

Parameter:

NONE	Specifies no network de-embedding
USER	Specifies the user-defined network de-embedding

Example of use: CALC1:FSIM:SEND:DEEM:PORT1 USER

CALC1:FSIM:SEND:DEEM:PORT1?

1.2.2.41. CALC{1-16}:FSIM:SEND:DEEM:PORT{1-4}:USER:FIL

CALC{1-16}:FSIM:SEND:DEEM:PORT{1-4}:USER:FIL

Description: This command specifies the file in which the information on the user-defined network for the network de-embedding function is saved for ports 1 and 4 of selected channel. This file is saved as a 2-port touchstone file with the .s2p extension.

Type: Read/Write

Parameter: 2-port touchstone file name (extension: .s2p) for the network de-embedding function

Example of use: CALC1:FSIM:SEND:DEEM:PORT1:USER:FIL "D:\Network.s2p"

CALC1:FSIM:SEND:DEEM:PORT1:USER:FIL?

1.2.2.42. CALC{1-16}:FSIM:SEND:DEEM:STAT

CALC{1-16}:FSIM:SEND:DEEM:STAT

Description: This command turns ON/OFF the network de-embedding function when the fixture simulator function is ON, for all the ports of selected channel.

Type: Read/Write

Parameter:

1 or ON	Turns ON the network de-embedding function
0 or OFF	Turns OFF the network de-embedding function

Example of use: CALC1:FSIM:SEND:DEEM:STAT ON

CALC1:FSIM:SEND:DEEM:STAT?

1.2.2.43. CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:PAR:C{1-2}

CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:PAR:C{1-2}

Description: This command sets the C value of the matching circuit, for ports 1 and 4 of selected channel.

Type: Read/Write

Parameter: -1E18 to 1E18(Unit: F)

Example of use: CALC1:FSIM:SEND:PMC:PORT1:PAR:C1 12.3

CALC1:FSIM:SEND:PMC:PORT1:PAR:C1?

1.2.2.44. CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:PAR:G{1-2}

CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:PAR:G{1-2}

Description: This command sets the G value of the matching circuit, for ports 1 and 4 of selected channel.

Type: Read/Write

Parameter: -1E18 to 1E18(Unit: S)

Example of use: CALC1:FSIM:SEND:PMC:PORT1:PAR:G1 1.0

CALC1:FSIM:SEND:PMC:PORT1:PAR:G1?

1.2.2.45. CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:PAR:L{1-2}

CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:PAR:L{1-2}

Description: This command sets the L value of the matching circuit, for ports 1 and 4 of selected channel.

Type: Read/Write

Parameter: -1E18 to 1E18(Unit: H)

Example of use: CALC1:FSIM:SEND:PMC:PORT1:PAR:L1 1.0

CALC1:FSIM:SEND:PMC:PORT1:PAR:L1?

1.2.2.46. CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:PAR:R{1-2}

CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:PAR:R{1-2}

Description: This command sets the R value of the matching circuit, for ports 1 and 4 of selected channel.

Type: Read/Write

Parameter: -1E18 to 1E18(Unit: ohm)

Example of use: CALC1:FSIM:SEND:PMC:PORT1:PAR:R1 50.0

CALC1:FSIM:SEND:PMC:PORT1:PAR:R1?

1.2.2.47. CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}

CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}

Description: This command selects the type of the matching circuit, for ports 1 and 4 of selected channel.

Type: Read/Write

Parameter:

NONE	Specifies no-circuit
SLPC	Specifies the circuit that consists of series L and shunt C

PCSL	Specifies the circuit that consists of shunt C and series L
PLSC	Specifies the circuit that consists of shunt L and series C
SCPL	Specifies the circuit that consists of series C and shunt L
PLPC	Specifies the circuit that consists of shunt L and shunt C
SCPC	Specifies the circuit that consists of series C and shunt C
PCSC	Specifies the circuit that consists of shunt C and series C
SLPL	Specifies the circuit that consists of series L and shunt L
PLSL	Specifies the circuit that consists of shunt L and series L
USER	Specifies the user-defined circuit

Example of use: CALC1:FSIM:SEND:PMC:PORT1 SLPC

CALC1:FSIM:SEND:PMC:PORT1?

1.2.2.48. CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:USER:FIL

CALC{1-16}:FSIM:SEND:PMC:PORT{1-4}:USER:FIL

Description: This command specifies the file in which the information on the user-defined matching circuit is saved (2-port touchstone file), for the port 1 and 4 of selected channel.

Type: Read/Write

Parameter: 2-port touchstone file name (extension: .s2p) for the matching circuit

Example of use: CALC1:FSIM:SEND:PMC:PORT1:USER:FIL Match.s2p

CALC1:FSIM:SEND:PMC:PORT1:USER:FIL?

1.2.2.49. CALC{1-16}:FSIM:SEND:PMC:STAT

CALC{1-16}:FSIM:SEND:PMC:STAT

Description: This command turns ON/OFF the matching circuit embedding function when the fixture simulator function is ON, for all the ports of selected channel

Type: Read/Write

Parameter:

1 or ON	Turns ON the matching circuit embedding function
0 or OFF	Turns OFF the matching circuit embedding function

Example of use: CALC1:FSIM:SEND:PMC:STAT ON

CALC1:FSIM:SEND:PMC:STAT?

1.2.2.50. CALC{1-16}:FSIM:SEND:ZCON:PORT{1-4}:IMAG

CALC{1-16}:FSIM:SEND:ZCON:PORT{1-4}:IMAG

Description: This command sets/gets the impedance value (imaginary part) for the port impedance conversion function, for the ports 1 and 4 of selected channel.

Type: Read/Write

Parameter: -1E+18 to 1E+18(Unit: ohm)

Example of use: CALC1:FSIM:SEND:ZCON:PORT1:IMAG 50

CALC1:FSIM:SEND:ZCON:PORT1:IMAG?

1.2.2.51. CALC{1-16}:FSIM:SEND:ZCON:PORT{1-4}:REAL

CALC{1-16}:FSIM:SEND:ZCON:PORT{1-4}:REAL

Description: This command sets/gets the impedance value (real part) for the port impedance conversion function, for the ports 1 and 4 of selected channel.

Type: Read/Write

Parameter: 0.001 to 1E7 (Unit: ohm)

Example of use: CALC1:FSIM:SEND:ZCON:PORT1:REAL 50

CALC1:FSIM:SEND:ZCON:PORT1:REAL?

1.2.2.52. CALC{1-16}:FSIM:SEND:ZCON:PORT{1-4}:Z0

CALC{1-16}:FSIM:SEND:ZCON:PORT{1-4}:Z0

Description: This command sets/gets the impedance value for the port impedance

conversion function, for the ports 1 and 4 of selected channel.

Type: Read/Write

Parameter: 0.001 to 1E7 (Unit: ohm)

Example of use: CALC1:FSIM:SEND:ZCON:PORT1:Z0 50

CALC1:FSIM:SEND:ZCON:PORT1:Z0?

1.2.2.53. CALC{1-16}:FSIM:SEND:ZCON:STAT

CALC{1-16}:FSIM:SEND:ZCON:STAT

Description: This command turns ON/OFF the port impedance conversion function when the fixture simulator function is ON, for all the ports of the selected channel.

Type: Read/Write

Parameter:

1 or ON	Turns ON the port impedance conversion function.
0 or OFF	Turns OFF the port impedance conversion function.

Example of use: CALC1:FSIM:SEND:ZCON:STAT ON

CALC1:FSIM:SEND:ZCON:STAT?

1.2.2.54. CALC{1-16}:FSIM:STAT

CALC{1-16}:FSIM:STAT

Description: This command turns ON/OFF the fixture simulator function of selected channel

Type: Read/Write

Parameter:

1 or ON	Turns ON the fixture simulator function.
0 or OFF	Turns OFF the fixture simulator function.

Example of use: CALC1:FSIM:STAT ON

CALC1:FSIM:STAT?

1.2.2.55. CALC{1-16}:CORR:EDEL:TIME

:CALC{1-16}:CORR:EDEL:TIME

Description: Gets/Sets the electrical delay time of the active trace of channel 1 to channel 16.

Type: Read/ Write

Parameters: -10 to 10(Unite second)

Example of use: :CALC1:CORR:EDEL:TIME 0.2

:CALC1:CORR:EDEL:TIME?

1.2.2.56. CALC{1-16}:CORR:OFFS:PHAS

:CALC{1-16}:CORR:OFFS:PHAS

Description: Sets /Gets the phase offset of the active trace of a select channel.

Type: Read/ Write

Parameters: -360 to 360(Unit：degree)

Example of use: :CALC1:CORR:OFFS:PHAS 2.5

:CALC1:CORR:OFFS:PHAS?

1.2.2.57. CALC{1-16}:CONV

CALC{1-16}:CONV

Description: This command turns ON/OFF the parameter conversion function, for the active trace of selected channel .

Type:Read/Write

Parameters:

ON(1)	Turns ON the parameter conversion function
OFF(0)	Turns OFF the parameter conversion function

Example of use: :CALC1:CONV ON

:CALC1:CONV?

1.2.2.58. CALC{1-16}:CONV:FUNC

CALC{1-16}:CONV:FUNC

Description: This command sets/gets the parameter after conversion using the parameter conversion function, for the active trace of selected channel

Type: Read/Write

Parameters:

ZREF	Specifies the equivalent impedance in reflection measurement
ZTR	Specifies the equivalent impedance(series) in transmission measurement
YREF	Specifies the equivalent admittance in reflection measurement
YTR	Specifies the equivalent admittance(series) in transmission measurement
INV	Specifies the inverse S-parameter

Example of use: CALC1:CONV:FUNC ZTR

CALC1:CONV:FUNC?

1.2.2.59. CALC{1-16}:DATA:FDAT

CALC{1-16}:DATA:FDAT

Description: For the active trace of a select channel,read out the formatted data array.

Type: Read

Parameters: NOP(the number of measurement points)*2 data array(formatted data array.)

Example of use: :CALC1:DATA:FDAT?

1.2.2.60. CALC{1-16}:DATA:FMEM

: CALC{1-16}:DATA:FMEM

Description: For the active trace of a select channel, read out the formatted memory array.

Type: Read

Parameters: NOP(the number of measurement points)*2 data array(formatted data array)

Example of use: :CALC1:DATA:FMEM?

1.2.2.61. CALC{1-16}:DATA:SDAT

CALC{1-16}:DATA:SDAT

Description: This command sets/gets the corrected data array, for the active trace of the specified channel

Type: Read

Parameters: Indicates the array data (corrected data array) of NOP (number of measurement points)×2. Where n is an integer between 1 and NOP.

Data(n×2-2) :Real part of the data (complex number) at the n-th measurement point.

Data(n×2-1) :Imaginary part of the data (complex number) at the n-th measurement point.

Example of use: :CALC1:DATA:SDAT?

1.2.2.62. CALC{1-16}:DATA:MFD

CALC{1-16}:DATA:MFD

Description: This command gets the formatted data array of multiple traces (traces-n, m, ... to l) of the selected channel.

Type:Read

Parameters:

Trace Number	"n, m, l, ..." where n, m, l are 1 to the maximum trace number

Data	Indicates the array data (formatted data array) of NOP (number of measurement points)×2×(number of specified traces). Where n is an integer between 1 and NOP. Data(n×2-2) :Data (primary value) at the n-th measurement point. Data(n×2-1) :Data (secondary value) at the n-th measurement point. Always 0 when the data format is not the Smith chart format or the polar format. The output trace data is listed according to the order of the specified trace number. The index of the array starts from 0.

Example of use: CALC1:DATA:MFD? "1,2"

1.2.2.63. CALC{1-16}:DATA:MSD

CALC{1-16}:DATA:MSD

Description: This command gets the corrected data array of multiple traces (traces-n, m, ... to l) of the selected channel.

Type: Read

Parameters:

Trace Number	"n, m, l, ..." where n, m, l are 1 to the maximum trace number
Data	Indicates the array data (formatted data array) of NOP (number of measurement points)×2×(number of specified traces). Where n is an integer between 1 and NOP. Data(n×2-2) :Data (primary value) at the n-th measurement point. Data(n×2-1) :Data (secondary value) at the n-th measurement point. Always 0 when the data format is not the Smith chart format or the polar format.

	The output trace data is listed according to the order of the specified trace number. The index of the array starts from 0.

Example of use: CALC1:DATA:MSD? "1,2"

1.2.2.64. CALC{1-16}:DATA:SMEM

: CALC{1-16}:DATA:SMEM

Description: For the active trace of a select channel, read out the corrected memory array.

Type: Read

Parameters: NOP(the number of measurement points)*2 data array(formatted data array)

Example of use: :CALC1:DATA:SMEM?

1.2.2.65. CALC{1-16}:DATA:XAX

: CALC{1-16}:DATA:XAX

Description: This command reads the data of measurement points of X axis, for the active trace of selected channel.

Type: Read

Parameters: Indicates the array data (measurement points) of X axis

Example of use: :CALC1:DATA:XAX?

1.2.2.66. CALC{1-16}:FORM

: CALC{1-16}:FORM

Description: Selects the data format of the active trace of a select channel

Type: Read/ Write

Parameters:

MLOGarithmic	Specifies the logarithmic magnitude format.
PHASe	Specifies the phase format.
GDELay	Specifies the group delay format.
SLINear	Specifies the Smith chart format (Lin/Phase).
SLOGarithmic	Specifies the Smith chart format (Log/Phase).
SCOMplex	Specifies the Smith chart format (Log/Phase).
SMITh	Specifies the Smith chart format (R+jX).
SADMittance	Specifies the Smith chart format (G+jB).
PLINear	Specifies the polar format (Lin/Phase).
PLOGarithmic	Specifies the polar format (Log/Phase).
POLar	Specifies the polar format (Re/Im).
MLINear	Specifies the linear magnitude format.
SWR	Specifies the SWR format.
REAL	Specifies the real format.
IMAGinary	Specifies the imaginary format.
UPHase	Specifies the expanded phase format.

Example of use: :CALC1:FORM PHAS

:CALC1:FORM?

1.2.2.67. CALC{1-16}:LIM

:CALC{1-16}:LIM

Description: For the active trace of a active channel, turns ON/OFF the limit test function.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:LIM ON

:CALC1:LIM?

1.2.2.68. CALC{1-16}:LIM:DATA

:CALC{1-16}:LIM:DATA

Syntax: :CALC{[1]|2|…|16}:LIM:DATA <numeric 1>,…,<numeric 1+(N×5)>

:CALC{[1]|2|…|16}:LIM:DATA?

Description: For the active trace of the select channel, sets/gets the limit table for the limit test.

Type: Read/ Write

Parameters:

	Description
Data(0)	The number of the lines(0 to 100), 0 (clear the limit table)
Data(n*5-4)	The type of the n-th line. Specify an integer 0 to 2: 0: Off ,1: Upper limit line,2: Lower limit line
Data(n*5-3)	The value on the horizontal axis of the start point of the n-th line.
Data(n*5-2)	The value on the horizontal axis (frequency/ power / time) of the end point of the n-th line.
Data(n*5-1)	The value on the vertical axis of the start point of the n-th line.
Data(n*5)	The value on the vertical axis of the end point of the n-th line.

Example of use: :CALC1:LIM:DATA 2,1,1E9,3E9,0,0,2,1E9,3E9,-3,-3

:CALC1:LIM:DATA?

:CALC1:LIM:DATA 0 <Clear Limit Table>

1.2.2.69. CALC{1-16}:LIM:DISP

:CALC{1-16}:LIM:DISP

Description: For the active trace of a select channel, turns ON/OFF the limit line display.

Type: Read/ Write

Parameters:

OFF or 0	Turns OFF the limit line display.
ON or 1	Turns ON the limit line display.

Example of use: :CALC1:LIM:DISP ON

:CALC1:LIM:DISP?

1.2.2.70. CALC{1-16}:LIM:FAIL?

:CALC{1-16}:LIM:FAIL?

Description: For the active trace of a select channel, reads out the limit test result.

Type: Read

Parameters:

0	The limit test result is fail.
1	The limit test result is pass.

Example of use: :CALC1:LIM:FAIL?

1.2.2.71. CALC{1-16}:LIM:REP?

:CALC{1-16}:LIM:REP?

Description:For the active trace of channel 1 to channel 16,read out the frequency values at all the measurement point that failed the limit test.

Type: Read

Parameters: {numeric 1},…,{numeric N}(Where N is the number of the measurement points that failed)

Example of use: :CALC1:LIM:REP?

1.2.2.72. CALC{1-16}:LIM:REP:POIN?

:CALC{1-16}:LIM:REP:POIN?

Description: For the active trace of channel 1 to channel 16,reads out the number of the measurement points that failed the limit test

Type: Read

Parameters: {numeric}

Example of use: :CALC1:LIM:REP:POIN?

1.2.2.73. CALC{1-16}:LIM:OFFS:AMPL

CALC{1-16}:LIM:OFFS:AMPL

Description: This command sets/gets the limit line offset of response for the selected active trace of the selected channel

Type: Read/Write

Parameters: { -5E8 to 5E8}

Example of use: :CALC1:LIM:OFFS:AMPL 0

:CALC1:LIM:OFFS:AMPL?

1.2.2.74. CALC{1-16}:LIM:OFFS:MARK

CALC{1-16}:LIM:OFFS:MARK

Description: This command sets the active marker value to amplitude offset using the limit line, for the selected channel

Type: Write

Parameters: none

Example of use: :CALC1:LIM:OFFS:MARK

1.2.2.75. CALC{1-16}:LIM:OFFS:STIM

CALC{1-16}:LIM:OFFS:STIM

Description: This command sets/gets the stimulus offset of the limit line, for the selected channel

Type: Read/Write

Parameters: { -1E12 to 1E12}

Example of use: :CALC1:LIM:OFFS:STIM 0

:CALC1:LIM:OFFS:STIM?

1.2.2.76. CALC{1-16}:RLIM

:CALC{1-16}:RLIM

Description: For the active trace of a active channel, turns ON/OFF the ripple test function.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:RLIM ON

:CALC1:RLIM?

1.2.2.77. CALC{1-16}:RLIM:DATA

:CALC{1-16}:RLIM:DATA

Syntax: :CALC{[1]|2|…|16}:RLIM:DATA <numeric 1>,…,<numeric 1+(N×5)>

:CALC{[1]|2|…|16}:RLIM:DATA?

Description: For the active trace of the select channel, sets/gets the limit table for the limit test.

Type: Read/ Write

Parameters:

	Description
Data(0)	The number of the lines(0 to 12), 0 (clear the limit table)
Data(n*4-3)	The type of the n-th line. Specify an integer 0 to 1: 0: Off ,1: ON
Data(n*4-2)	The value on the horizontal axis of the start point of the n-th line.
Data(n*4-1)	The value on the horizontal axis (frequency/ power / time) of the end point of the n-th line.
Data(n*4)	The ripple line value (dB) of the n-th line.

Example of use: :CALC1:RLIM:DATA 2,1,1E9,3E9,3,1,5E9,7E9,3

:CALC1:RLIM:DATA?

:CALC1:RLIM:DATA 0 <Clear Limit Table>

1.2.2.78. CALC{1-16}:RLIM:DISP:LINE

:CALC{1-16}:RLIM:DISP:LINE

Description: For the active trace of a select channel, turns ON/OFF the ripple limit line display.

Type: Read/ Write

Parameters:

OFF or 0	Turns OFF the ripple limit line display.
ON or 1	Turns ON the ripple limit line display.

Example of use: :CALC1:RLIM:DISP:LINE ON

:CALC1:RLIM:DISP:LINE?

1.2.2.79. CALC{1-16}:RLIM:DISP:SEL

:CALC{1-16}:RLIM:DISP:SEL

Description: This command sets/gets the ripple limit band for ripple value display for selected channel.

Type: Read/ Write

Parameters: 1-12

Example of use: :CALC1:RLIM:DISP:SEL 1

:CALC1:RLIM:DISP:SEL?

1.2.2.80. CALC{1-16}:RLIM:DISP:VAL

:CALC{1-16}:RLIM:DISP:VAL

Description: This command sets/gets the display type of ripple value for the active trace

Type: Read/ Write

Parameters:

OFF	Specifies the display off
ABSolute	Specifies the absolute value for display type.
MARgin	Specifies the margin for display type

Example of use: :CALC1:RLIM:DISP:VAL OFF

:CALC1:RLIM:DISP:VAL?

1.2.2.81. CALC{1-16}:RLIM:FAIL?

:CALC{1-16}:RLIM:FAIL?

Description: For the active trace of a select channel, reads out the ripple limit test result.

Type: Read

Parameters:

OFF or 0	The ripple limit test result is fail.
ON or 1	The ripple limit test result is pass.

Example of use: :CALC1:RLIM:FAIL?

1.2.2.82. CALC{1-16}:RLIM:REP?

:CALC{1-16}:RLIM:REP?

Description: This command reads the ripple value of the ripple test for the active trace.

Type: Read

Parameters:

	Description
Data(0)	The number of the lines(0 to 12)
Data(n*3-2)	Number of ripple limit bands
Data(n*3-1)	Ripple value
Data(n*3)	Results of ripple test.Select from the following. 0:PASS,1:FAIL.

Example of use: :CALC1:RLIM:REP?

1.2.2.83. CALC{1-16}:MARK:BWID

:CALC{1-16}:MARK:BWID

Description： For the active trace of a select channel, turns ON/OFF the bandwidth search result display.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:MARK:BWID ON

:CALC1:MARK:BWID?

1.2.2.84. CALC{1-16}:MARK:BWID:REF

CALC{1-16}:MARK:BWID:REF

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

Type: Write/Read

Parameters:

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

Example of use: CALC1:MARK:BWID:REF MAX

CALC1:MARK:BWID:REF?

1.2.2.85. CALC{1-16}:MARK:COUP

:CALC{1-16}:MARK:COUP

Description: For a select channel, turns ON/OFF the marker coupling between traces.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:MARK:COUP ON

:CALC1:MARK:COUP?

1.2.2.86. CALC{1-16}:MARK:FUNC:DOM

:CALC{1-16}:MARK:FUNC:DOM

Description: For a select channel , sets whether to use an arbitrary range when executing the marker search.

Type: Read/ Write

Parameters:

OFF or 0	Turns off Specifies the entire sweep range)
ON or 1	Turns on(Specifies an arbitrary range)

Example of use: :CALC1:MARK:FUNC:DOM OFF

:CALC1:MARK:FUNC:DOM?

1.2.2.87. CALC{1-16}:MARK:FUNC:DOM:COUP

:CALC{1-16}:MARK:FUNC:DOM:COUP

Description: For a select channel, specifies whether to set the coupling of the marker search range for all traces.

Type: Read/ Write

Parameters:

OFF or 0	Turns off (Specifies the search range for each trace)
ON or 1	Turns on (Specifies the search range with the trace coupling)

Example of use: :CALC1:MARK:FUNC:DOM:COUP ON

:CALC1:MARK:FUNC:DOM:COUP?

1.2.2.88. CALC{1-16}:MARK:FUNC:DOM:STOP

:CALC{1-16}:MARK:FUNC:DOM:STOP

Description: For a select channel, sets/gets the stop value of the marker search range.

Type: Read/ Write

Parameters: Double (Unit Hz)

Example of use: :CALC1:MARK:FUNC:DOM:STOP 2E9

:CALC1:MARK:FUNC:DOM:STOP?

1.2.2.89. CALC{1-16}:MARK:FUNC:DOM:STAR

:CALC{1-16}:MARK:FUNC:DOM:STAR

Description: For a select channel, sets/gets the start value of the marker search range.

Type: Read/ Write

Parameters: Double(Unit Hz)

Example of use: :CALC1:MARK:FUNC:DOM:STAR 1E8

:CALC1:MARK:FUNC:DOM:STAR?

1.2.2.90. CALC{1-16}:MARK:FUNC:DOM:MULT

CALC{1-16}:MARK:FUNC:DOM:MULT

Description: This command sets/gets the state of the multiple search range for the active trace of the selected channel.

Type: Read/Write

Parameter: Status

ON or 1	Turn on multiple search range
OFF or 0	Turn off multiple search range

Example of use: CALC1:MARK:FUNC:DOM:MULT ON

CALC1:MARK:FUNC:DOM:MULT?

1.2.2.91. CALC{1-16}:MARK{1-16}:FUNC:DOM:MULT:RANG

CALC{1-16}:MARK{1-16}:FUNC:DOM:MULT:RANG

Description: This command sets/gets the target range of search analysis for the selected

marker, for the selected channel

Type: Read/Write

Parameter: Target search range of search analysis(Integer:1-16)

Example of use: CALC1:MARK2:FUNC:DOM:MULT:RANG 2

CALC1:MARK2:FUNC:DOM:MULT:RANG?

1.2.2.92. CALC{1-16}:MARK{1-16}:FUNC:DOM:MULT:STAR

CALC{1-16}:MARK{1-16}:FUNC:DOM:MULT:STAR

Description: This command sets/gets the start value of the target range in the multiple search range for the selected channel

Type: Read/Write

Parameter:

	Description
Range	Target search range of search analysis(Integer:1-16)
Value	Start value of the target range in the multiple search range (Double precision floating point type)

Example of use: CALC1:MARK1:FUNC:DOM:MULT:STAR 2,1.1E9

CALC1:MARK1:FUNC:DOM:MULT:STAR? 2

1.2.2.93. CALC{1-16}:MARK{1-16}:FUNC:DOM:MULT:STOP

CALC{1-16}:MARK{1-16}:FUNC:DOM:MULT:STOP

Description: This command sets/gets the stop value of the target range in the multiple search range for the selected channel

Type: Read/Write

Parameter:

	Description
Range	Target search range of search analysis(Integer:1-16)
Value	Stop value of the target range in the multiple search range (Double precision floating point type)

Example of use: CALC1:MARK1:FUNC:DOM:MULT:STOP 2,3E9

CALC1:MARK1:FUNC:DOM:MULT:STOP? 2

1.2.2.94. CALC{1-16}:MARK:REF

:CALC{1-16}:MARK:REF

Description:For the active trace of a select channel, turns on/off reference marker.

Type: Read/Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:MARK:REF ON

:CALC1:MARK:REF?

1.2.2.95. CALC{1-16}:MARK{1-16}

:CALC{1-16}:MARK{1-16}

Description: For the active trace of a select channel, turns on/off marker (MK).

Type: Read/Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:MARK3 ON

:CALC1:MARK3?

1.2.2.96. CALC{1-16}:MARK:COUN

CALC{1-16}:MARK:COUN

Description: Sets the number of turned ON markers

Type: Write/Read

Parameters: 1-16

Example of use: CALC1:MARK:COUN 2

CALC1:MARK:COUN?

1.2.2.97. CALC{1-16}:MARK{1-16}:ACT

:CALC{1-16}:MARK{1-16}:ACT

Description: For the active trace of the select channel sets the select marker to the active marker.

Type: Write

Parameters: None

Example of use: :CALC1:MARK1:ACT

1.2.2.98. CALC{1-16}:MARK{1-16}:BWID:DATA

:CALC{1-16}:MARK{1-16}:BWID:DATA

Description: For the active trace of a select channel, reads out the bandwidth search result of marker 1 to marker 15, and reference marker(Mk:16).

Type: Read

Parameters:

Data(0)	The bandwidth.

Data(1)	The center frequency between 2 cut-off frequency points.
Data(2)	The minimum value.
Data(3)	The maximum value.
Data(4)	The Q value.
Data(5)	The loss.

Example of use: :CALC1:MARK2:BWID:DATA?

1.2.2.99. CALC{1-16}:MARK{1-16}:BWID:THR

:CALC{1-16}:MARK{1-16}:BWID:THR

Description: For the active trace of a select channel, sets bandwidth definition value of marker 1 to marker 15 and reference marker(defined the smoothing band pass value)

Type: Read/ Write

Parameters: -5E8 to 5E8 (double)

Example of use: :CALC1:MARK1:BWID:THR -7

:CALC1:MARK1:BWID:THR?

1.2.2.100. CALC{1-16}:MARK{1-16}:BWID:TYPE

:CALC{1-16}:MARK{1-16}:BWID:TYPE

Description: For the active trace of a select channel, sets/gets bandwidth search type.

Type: Read/ Write

Parameters:

BPAS	Band pass

NOTC	Notch

Example of use: :CALC1:MARK1:BWID:TYPE BPAS

:CALC1:MARK1:BWID:TYPE?

1.2.2.101. CALC{1-16}:MARK{1-16}:FUNC:EXEC

:CALC{1-16}:MARK{1-16}:FUNC:EXEC

Description: For the active trace of a select channel, executes the research with marker1 to marker 15 and reference marker. To specify the type of the search, use CALC (Ch):MARK(Mk):FUNC:TYPE.

Type: Write

Parameters: None

Example of use: :CALC1:MARK3:FUNC:EXEC

1.2.2.102. CALC{1-16}:MARK{1-16}:FUNC:PEXC

:CALC{1-16}:MARK{1-16}:FUNC:PEXC

Description: For the active trace of a select channel, sets the lower limit for the peak excursion value. When executes peak value search with marker 1 to marker 15 and reference marker, peak excursion value is the minimum difference value between the two adjacent measurement points.

Type: Read/Write

Parameters: 0 to 5E8 (double)

Example of use: :CALC1:MARK2:FUNC:PEXC 500.5

:CALC1:MARK2:FUNC:PEXC?

1.2.2.103. CALC{1-16}:MARK{1-16}:FUNC:PPOL

:CALC{1-16}:MARK{1-16}:FUNC:PPOL

Description: For the active trace of a select channel, sets/gets the polarity of the peak to be searched with marker 1 to marker 15 and reference marker.

Type: Read/ Write

Parameters:

POSitive	Specifies the positive peak.
NEGative	Specifies the negative peak.
BOTH	Specifies both the positive peak and the negative peak.

Example of use: :CALC1:MARK2:FUNC:PPOL NEG

:CALC1:MARK2:FUNC:PPOL?

1.2.2.104. CALC{1-16}:MARK{1-16}:FUNC:TYPE

:CALC{1-16}:MARK{1-16}:FUNC:TYPE

Description: For a active trace of a select channel, selects research type of marker 1 to marker 15 and reference marker (Mk:16).

Type: Read/Write

Parameters:

MAXimum	Sets the search type to the maximum value.
MINimum	Sets the search type to the minimum value.
PEAK	Sets the search type to the peak search.
LPEak	Sets the search type to the peak search. begin from the left of the marker position.
RPEak	Sets the search type to the peak search. begin from the right of the marker position.

TARGet	Sets the search type to the Target search.
LTARget	Sets the search type to the target, begin from the left of the marker position.
RTARget	Sets the search type to the target, begin from the right of the marker position.

Example of use: :CALC1:MARK2:FUNC:TYPE RPE

:CALC1:MARK2:FUNC:TYPE?

1.2.2.105. CALC{1-16}:MARK{1-16}:FUNC:TARG

:CALC{1-16}:MARK{1-16}:FUNC:TARG

Description: For the active trace of a select channel,sets the target value to be searched with marker 1 to marker 15 and reference marker(16).

Type: Read/Write

Parameters: -5E8 to 5E8(Unit: Varies depending on the data format)

Example of use: :CALC1:MARK1:FUNC:TARG -10.5

:CALC1:MARK1:FUNC:TARG?

1.2.2.106. CALC{1-16}:MARK{1-16}:FUNC:TRAC

:CALC{1-16}:MARK{1-16}:FUNC:TRAC

Description: For the active trace of a select channel,turns ON/OFF the search tracking of marker 1 to marker 15 and reference marker(16)

Type: Read/Write

Parameters:

OFF or 0(preset value)	Turns OFF the search tracking.
ON or 1	Turns ON the search tracking.

Example of use: :CALC1:MARK1:FUNC:TRAC ON

:CALC1:MARK1:FUNC:TRAC?

1.2.2.107. CALC{1-16}:MARK{1-16}:FUNC:TTR

:CALC{1-16}:MARK{1-16}:FUNC:TTR

Description: For the active trace of a select channel,selects the transition type when performing the target search with marker 1 to marker 15 and reference marker(16).

Type: Read/Write

Parameters:

POSitive	Specifies positive.
NEGative	Specifies negative.
BOTH	Specifies both positive and negative

Example of use: :CALC1:MARK1:FUNC:TTR NEG

:CALC1:MARK1:FUNC:TTR?

1.2.2.108. CALC{1-16}:MARK{1-16}:SET

:CALC{1-16}:MARK{1-16}:SET

Description: For the active trace of a select channel, sets the position value of marker 1 to marker 15 and reference marker (Mk:16) to the value of instruments setting item.

Type: Write

Parameters:

STARt	Reads the sweep start value to the stimulus value at the marker position.

STOP	Reads the sweep stop value to the stimulus value at the marker position.
CENTer	Reads the sweep center value to the stimulus value at the marker position.
RLEVel	Sets the reference line value to the response value at the selected marker position
DELay	Sets the electrical delay time value to the value of the group delay at the selected marker position
RMARker	Sets the reference marker position to the stimulus value at the marker position
SPAN	Sets the span at the between the selected marker and reference marker. If reference marker (Mk=16) is selected, span is set at 0.

Example of use: :CALC1:MARK2:SET STOP

1.2.2.109. CALC{1-16}:MARK{1-16}:X

:CALC{1-16}:MARK{1-16}:X

Description: For the active trace of a select channel, sets the stimulus value of marker 1 to marker 15 and reference marker.

Type: Read/Write

Parameters:Sweep start value to sweep stop value (Unit Hz)

Example of use: :CALC1:MARK2:X 1E9

:CALC1:MARK2:X?

1.2.2.110. CALC{1-16}:MARK{1-16}:Y

:CALC{1-16}:MARK{1-16}:Y

Description: For the active trace of a select channel, reads out the response value of marker 1 to marker 15 and reference marker (Mk:16).

Type: Read

Parameters:

Data(0)	Response value (primary value) at the marker position
Data(1)	Response value (secondary value) at the marker position. Always 0 when the data format is not the Smith chart format or the polar format.

Example of use: :CALC1:MARK2:Y?

1.2.2.111. CALC{1-16}:MARK{1-16}:DATA

CALC{1-16}:MARK{1-16}:DATA

Description: This command reads the response and stimulus value of marker 1 to 15 (Mk) and reference marker (Mk:16), for the active trace of specified channel

Type:Read

Parameters:

Data(0)	Response value (primary value) at the marker position
Data(1)	Response value (secondary value) at the marker position. Always 0 when the data format is not the Smith chart format or the polar format.
Data(2)	Stimulus value at the marker position

Example of use: :CALC1:MARK2:DATA?

1.2.2.112. CALC{1-16}:MARK{1-16}:DISC

CALC{1-16}:MARK{1-16}:DISC

Description: For the active trace of a select channel,turns ON/OFF the discrete mode (mode in which the marker moves only at the measurement points) of marker 1 to marker 15 and reference marker(MK:16).

Type: Read/Write

Parameters:

OFF or 0	Turns OFF the discrete mode
ON or 1	Turns ON the discrete mode

Example of use: :CALC1:MARK1:DISC OFF

:CALC1:MARK1:DISC?

1.2.2.113. CALC{1-16}:MATH:FUNC

:CALC{1-16}:MATH:FUNC

Description: For the active trace of a select channel, sets/gets the data trace display method (math method between measurement data and memory trace data).

Type: Read/Write

Parameters:

NORMal	Specifies Data (no math)
DIVide	Specifies Data / Mem
MULTiply	Specifies Data × Mem
SUBTract	Specifies Data - Mem
ADD	Specifies Data + Mem

Example of use: :CALC1:MATH:FUNC SUBT

:CALC1:MATH:FUNC?

1.2.2.114. CALC{1-16}:MATH:MEM

:CALC{1-16}:MATH:MEM

Description: For the active trace of a select channel, copies the measurement data to the memory trace.

Type: Write

Example of use: :CALC1:MATH:MEM

1.2.2.115. CALC{1-16}:MST

:CALC{1-16}:MST

Description: Turns ON/OFF the statistics value display of the work trace of a select channel.

Type: Read/Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:MST ON

:CALC1:MST?

1.2.2.116. CALC{1-16}:MST:DATA?

:CALC{1-16}:MST:DATA?

Description:For the active trace of channel 1 to channel 16,reads out the statistics values display.

Type: Read

Parameters: {numeric 1},{numeric 2},{numeric 3}

{numeric 1}	Mean value
{numeric 2}	Standard deviation
{numeric 3}	Difference between the maximum value and the minimum value(Peak to Peak)

Example of use: :CALC1:MST:DATA?

1.2.2.117. CALC{1-16}:MST:DOM

CALC{1-16}:MST:DOM

Description: Selects either the partial frequency range or the entire frequency range to be used for math statistic calculation. The partial frequency range is limited by two markers

Type: Write/Read

Paramters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: CALC1:MST:DOM ON

CALC1:MST:DOM?

1.2.2.118. CALC{1-16}:MST:DOM:STAR

CALC{1-16}:MST:DOM:STAR

Description: Sets or reads out the number of the marker, which specifies the start frequency of the math statistics range

Type: Write/Read

Paramters: marker number from 1 to 16

Example of use: CALC1:MST:DOM:STAR 1

CALC1:MST:DOM:STAR?

1.2.2.119. CALC{1-16}:MST:DOM:STOP

CALC{1-16}:MST:DOM:STOP

Description: Sets or reads out the number of the marker, which specifies the stop frequency of the math statistics range

Type: Write/Read

Paramters: marker number from 1 to 16

Example of use: CALC1:MST:DOM:STOP 1

CALC1:MST:DOM:STOP?

1.2.2.120. CALC{1-16}:PAR:COUN

:CALC{1-16}:PAR:COUN

Description: Sets/ Gets the number of traces of a select channel.

Type: Read/ Write

Parameters: 1 to 16

Example of use: :CALC1:PAR:COUN 6

:CALC1:PAR:COUN?

1.2.2.121. CALC{1-16}:PAR{1-16}:DEF

:CALC{1-16}:PAR{1-16}:DEF

Description: Sets/Gets the measurement parameters of the select trace of a select channel.

Type: Read/ Write

Parameters:

S11
S21
S12
S22

Example of use: :CALC1:PAR2:DEF S12

:CALC1:PAR2:DEF?

1.2.2.122. CALC{1-16}:PAR{1-16}:SEL

:CALC{1-16}:PAR{1-16}:SEL

Description: Sets the select trace of the select channel to the active trace.

Type: Write

Parameters: None

Example of use: :CALC2:PAR1:SEL

1.2.2.123. CALC{1-16}:SMO

:CALC{1-16}:SMO

Description: For the active trace of a select channel, turns ON/OFF the smoothing.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:SMO ON

:CALC1:SMO?

1.2.2.124. CALC{1-16}:SMO:APER

:CALC{1-16}:SMO:APER

Description: Gets/Sets the smoothing aperture of active trace for a select channel.(The percentage of sweep span value)

Type: Read/Write

Parameters: 0.05 to 20(Unit：Percentage)

Example of use: :CALC2:SMO:APER 6.65

:CALC2:SMO:APER?

1.2.2.125. CALC{1-16}:FILT:TIME

:CALC{1-16}:FILT:TIME

Description: For the active trace of channel 1 to channel 16 selects the gate type used for the gating function of the time domain function

Type: Read/Write

Parameters:

BPASs(preset value)	Specifies the band-pass type
NOTCh	Specifies the notch type.

Example of use: :CALC1:FILT:TIME NOTC

:CALC1:FILT:TIME?

1.2.2.126. CALC{1-16}:FILT:TIME:CENT

:CALC{1-16}:FILT:TIME:CENT

Description:For the active trace of channel 1 to channel 16,sets the center value of the gate used for the gating function of the time domain function

Type: Read/Write

Parameters：-66.73e-9 to 66.73e-9 (Unit: seconds)

Example of use: :CALC1:FILT:TIME:CENT 1E-8

:CALC1:FILT:TIME:CENT?

1.2.2.127. CALC{1-16}:FILT:TIME:SHAP

:CALC{1-16}:FILT:TIME:SHAP

Description: For the active trace of channel 1 to channel 16,selects the shape of the gate used for the gating function of the time domain function

Type: Read/Write

Parameters:

MAXimum	Specifies the maximum shape
WIDE	Specifies the wide shape
NORMal (preset value)	Specifies the normal shape
MINimum	Specifies the minimum shape

Example of use: :CALC1:FILT:TIME:SHAP NORM

:CALC1:FILT:TIME:SHAP?

1.2.2.128. CALC{1-16}:FILT:TIME:SPAN

:CALC{1-16}:FILT:TIME:SPAN

Description: For the active trace of channel 1 to channel 16, sets the span value of the gate used for the gating function of the time domain function.

Type: Read/Write

Parameters: 0 to 133.35e-9(Unit: second)

Example of use: :CALC1:FILT:TIME:SPAN 1E-8

:CALC1:FILT:TIME:SPAN?

1.2.2.129. CALC{1-16}:FILT:TIME:STAR

:CALC{1-16}:FILT:TIME:STAR

Description: For the active trace of channel 1 to channel 16, sets the start value of the gate used for the gating function of the time domain function.

Type: Read/Write

Parameters: -66.73e-9 to 66.73e-9(Unit: second)

Example of use: :CALC1:FILT:TIME:STAR 1E-8

:CALC1:FILT:TIME:STAR?

1.2.2.130. CALC{1-16}:FILT:TIME:STOP

:CALC{1-16}:FILT:TIME:STOP

Description: For the active trace of channel 1 to channel 16, sets the stop value of the gate used for the gating function of the time domain function.

Type: Read/Write

Parameters: -66.73e-9 to 66.73e-9(Unit: second)

Example of use: :CALC1:FILT:TIME:STOP 2E-8

:CALC1:FILT:TIME:STOP?

1.2.2.131. CALC{1-16}:FILT:TIME:STAT

:CALC{1-16}:FILT:TIME:STAT

Description: For the active trace of channel 1 to 16,turns ON/OFF the gating function of the time domain function.

Type: Read/Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :CALC1:FILT:TIME:STAT ON

:CALC1:FILT:TIME:STAT?

1.2.2.132. CALC{1-16}:TRAN:TIME

:CALC{1-16}:TRAN:TIME

Description: For the active trace of channel 1 to channel 16,selects the transformation type used for the transformation function of the time domain function.

Type: Read/Write

Parameters:

BPASs	Specifies the band-pass
LPASs_STEP	Specifies the low-pass-step
LPASs_IMPulse	Specifies the low-pass-impulse

Example of use: :CALC1:TRAN:TIME LPAS_STEP

:CALC1:TRAN:TIME?

1.2.2.133. CALC{1-16}:TRAN:TIME:KBES

:CALC{1-16}:TRAN:TIME:KBES

Description: For the active trace of channel 1 to channel 16, sets the shape of the Kayser Bessel window using β used for the transformation function of the time domain function.

Type: Read/Write

Parameters: 0 to 13

Example of use: :CALC1:TRAN:TIME:KBES 3

:CALC1:TRAN:TIME:KBES?

1.2.2.134. CALC{1-16}:TRAN:TIME:STAT

:CALC{1-16}:TRAN:TIME:STAT

Description: For the active trace of channel 1 to channel 16,turns ON/OFF the transformation function of the time domain function.

Type:Read/Write

Parameters:

OFF or 0	Turns off the transformation function

ON or 1	Turns on the transformation function

Example of use: :CALC1:TRAN:TIME:STAT ON

:CALC1:TRAN:TIME:STAT?

1.2.2.135. CALC{1-16}:TRAN:TIME:SPAN

:CALC{1-16}:TRAN:TIME:SPAN

Description: For the active trace of channel 1 to channel 16,selects the span value used for the transformation function of the time domain function.

Type: Read/Write

Parameters: 0 to 6.66734e-5(Unit: second)

Example of use: :CALC1:TRAN:TIME:SPAN 1E-8

:CALC1:TRAN:TIME:SPAN?

1.2.2.136. CALC{1-16}:TRAN:TIME:CENT

:CALC{1-16}:TRAN:TIME:CENT

Description: For the active trace of channel 1 to channel 16,selects the center value used for the transformation function of the time domain function.

Type: Read/Write

Parameters: -3.33367e-5 to 3.33367e-5(Unit: second)

Example of use: :CALC1:TRAN:TIME:CENT 1E-8

:CALC1:TRAN:TIME:CENT?

1.2.2.137. CALC{1-16}:TRAN:TIME:STAR

:CALC{1-16}:TRAN:TIME:STAR

Description: For the active trace of channel 1 to channel 16,selects the start value used

for the transformation function of the time domain function.

Type: Read/Write

Parameters: -3.33367e-5 to 3.33367e-5(Unit: second)

Example of use: :CALC1:TRAN:TIME:STAR 0

:CALC1:TRAN:TIME:STAR?

1.2.2.138. CALC{1-16}:TRAN:TIME:STOP

:CALC{1-16}:TRAN:TIME:STOP

Description: For the active trace of channel 1 to channel 16,selects the stop value used for the transformation function of the time domain function

Type: Read/Write

Parameters: -3.33367e-5 to 3.33367e-5(Unit: second)

Example of use: :CALC1:TRAN:TIME:STOP 2E-8

:CALC1:TRAN:TIME:STOP?

1.2.2.139. CALC{1-16}:TRAN:TIME:UNIT

CALC{1-16}:TRAN:TIME:UNIT

Description: Selects the transformation unit for the time domain transformation function: seconds, meters

Type: Write/Read

Parameters:

SEConds	Seconds
METers	Meters

Example of use: CALC1:TRAN:TIME:UNIT SEC

CALC1:TRAN:TIME:UNIT?

1.2.2.140. DISP:COL:RES

:DISP:COL:RES

Description: This command resets the display color settings for all the items to the factory preset state, for normal display.

Type: Write

Parameters: NONE

Example of use: DISP:COL:RES

1.2.2.141. DISP:COL:TRAC:DATA

DISP:COL:TRAC:DATA

Description: This command sets/gets the color of the data trace of traces 1 to16, for normal display.

Type: Read/Write

Parameters:

Data(0)	Sets amount of red 0-255
Data(1)	Sets amount of green 0-255
Data(2)	Sets amount of blue 0-255

Example of use: DISP:COL1:TRAC1:DATA 1,2,3

DISP:COL1:TRAC1:DATA?

1.2.2.142. DISP:COL:TRAC:MEM

DISP:COL:TRAC:MEM

Description: This command sets/gets the color of the memory trace of traces 1 to16, for normal display.

Type: Read/Write

Parameters:

Data(0)	Sets amount of red 0-255
Data(1)	Sets amount of green 0-255
Data(2)	Sets amount of blue 0-255

Example of use: DISP:COL1:TRAC1:MEM 1,2,3

DISP:COL1:TRAC1:MEM?

1.2.2.143. DISP:SKEY

:DISP:SKEY

Description:Turns ON/OFF the display of the softkey labels.

Type: Read/Write

Parameters:

OFF or 0	Specifies OFF
ON or 1	Specifies ON

Example of use: :DISP:SKEY ON

:DISP:SKEY?

1.2.2.144. DISP:ENAB

:DISP:ENAB

Description: Gets/Sets the turns on/off the update of the display.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :DISP:ENAB ON

:DISP:ENAB?

1.2.2.145. DISP:FSIG

:DISP:FSIG

Description:This command turns on or off the fail display on the LCD display, when the limit test fails.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :DISP:FSIG ON

:DISP:FSIG?

1.2.2.146. DISP:MAX

:DISP:MAX

Description: Gets/Sets the window maximization state of the active channel.

Type: Read/Write.

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :DISP:MAX ON

:DISP:MAX?

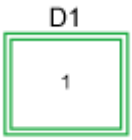
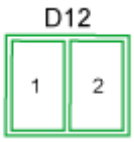
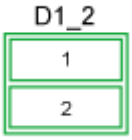
1.2.2.147. DISP:SPL

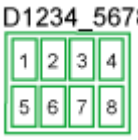
:DISP:SPL

Description: Sets the layout of the windows on the display panel.

Type: Read/Write

Parameters:

D1	
D12	
D1_2	
D123	
D1_2_3	
D11_23	
D12_34	
D1_2_3_4	
D123_456	
D12_34_56	

D1234_5678	
D123_456_789	
D1234_5678_9ABC	
D123_456_789_ABC	
D1234__CDEF	

Example of use: :DISP:SPL D123_456_789

:DISP:SPL?

1.2.2.148. DISP:TABL

DISP:TABL

Description: This command turns ON/OFF the display of the window that appears in the lower part of the LCD display

Type: Write/Read

Parameters:

OFF or 0	Turns off the display
ON or 1	Turns on the display

Example of use: :DISP:TABL ON

:DISP:TABL ?

1.2.2.149. DISP:TABL: TYPE

DISP:TABL: TYPE

Description: This command selects the type of the window that appears in the lower part of the LCD display

Type: Write/Read

Parameters:

MARKer	Specifies the marker table window
LIMit	Specifies the limit test table window
SEGMent	Specifies the segment table window
RLIMit	Specifies the ripple test table window

Example of use: :DISP:TABL:TYPE MARK

:DISP:TABL:TYPE?

1.2.2.150. DISP:MARK:TABL

DISP:MARK:TABL

Description: Turns the marker table ON/OFF.

Type: Write/Read

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: DISP:MARK:TABL ON

DISP:MARK:TABL?

1.2.2.151. DISP:UPD

DISP:UPD

Description: This command executes the display update once when the display update

of the LCD screen is set to OFF

Type: Write

Parameters: NONE

Example of use: DISP:UPD

1.2.2.152. DISP:WIND{1-16}:ACT

:DISP:WIND{1-16}:ACT

Description: Sets a select channel to the active channel.

Type: Write

Parameters: None

Example of use: DISP:WIND4:ACT

1.2.2.153. DISP:WIND{1-16}:ANN:MARK:ALIG

:DISP:WIND{1-16}:ANN:MARK:ALIG

Description: For a select channel, turns ON/OFF the alignment mode in which the display positions of the marker values for each trace are aligned (relative to trace 1).

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :DISP:WIND2:ANN:MARK:ALIG ON

:DISP:WIND2:ANN:MARK:ALIG?

1.2.2.154. DISP:WIND{1-16}:ANN:MARK:SING

:DISP:WIND{1-16}:ANN:MARK:SING

Description: For a select channel, turns ON/OFF the active trace marker value display.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :DISP:WIND2:ANN:MARK:SING ON

:DISP:WIND2:ANN:MARK:SING?

1.2.2.155. DISP:WIND{1-16}:MAX

:DISP:WIND{1-16}:MAX

Description: Turns ON/OFF the maximization of the active trace of a select channel.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :DISP:WIND2:MAX ON

:DISP:WIND2:MAX?

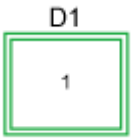
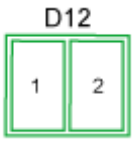
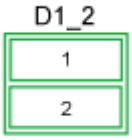
1.2.2.156. DISP:WIND{1-16}:SPL

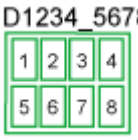
:DISP:WIND{1-16}:SPL

Description: Sets/Gets the graph layout of a select channel.

Type: Read/ Write

Parameters:

D1	
D12	
D1_2	
D123	
D1_2_3	
D11_23	
D12_34	
D1_2_3_4	
D123_456	
D12_34_56	

D1234_5678	
D123_456_789	
D1234_5678_9ABC	
D123_456_789_ABC	
D1234__CDEF	

Example of use: :DISP:WIND3:SPL D123_456_789

:DISP:WIND3:SPL?

1.2.2.157. DISP:WIND{1-16}:TITL

:DISP:WIND{1-16}:TITL

Description:For the select channel turns ON/OFF the display of the title label in the title area

Type: Read/Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: DISP:WIND4:TITL ON

DISP:WIND4:TITL?

1.2.2.158. DISP:WIND{1-16}:TITL:DATA

:DISP:WIND{1-16}:TITL:DATA

Description: Sets/Gets the title label displayed in the title area of a select channel.

Type: Read/Write

Parameters: string

Example of use: DISP:WIND4:TITL:DATA Ch4

DISP:WIND4:TITL:DATA?

1.2.2.159. DISP:WIND{1-16}:TRAC{1-16}:ANN:MARK:POS:X

:DISP:WIND{1-16}:TRAC{1-16}:ANN:MARK:POS:X

Description: For a select trace of a select channel, sets/gets the X-axis position where the marker value is displayed as the percentage of the display area width.

Type: Read/ Write

Parameters: 0 to 100 (Unit: percent)

Example of use: DISP:WIND3:TRAC2:ANN:MARK:POS:X 30

DISP:WIND3:TRAC2:ANN:MARK:POS:X?

1.2.2.160. DISP:WIND{1-16}:TRAC{1-16}:ANN:MARK:POS:Y

:DISP:WIND{1-16}:TRAC{1-16}:ANN:MARK:POS:Y

Description:For a select trace of a select channel, sets the Y-axis position where the marker value is displayed as the percentage of the display area width.

Type: Read/Write

Parameters: 0 to100 (Unit: percent)

Example of use: DISP:WIND3:TRAC1:ANN:MARK:POS:Y 30

DISP:WIND3:TRAC1:ANN:MARK:POS:Y?

1.2.2.161. DISP:WIND{1-16}:TRAC{1-16}:MEM

:DISP:WIND{1-16}:TRAC{1-16}:MEM

Description: For a select trace of a select channel, turns ON/OFF the display of the memory trace.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: DISP:WIND3:TRAC2:MEM ON

DISP:WIND3:TRAC2:MEM?

1.2.2.162. DISP:WIND{1-16}:TRAC{1-16}:STAT

:DISP:WIND{1-16}:TRAC{1-16}:STAT

Description: For a select trace of a select channel, turns ON/OFF the display of the data trace.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: DISP:WIND3:TRAC2:STAT ON

DISP:WIND3:TRAC2:STAT?

1.2.2.163. DISP:WIND{1-16}:TRAC{1-16}:Y:AUTO

:DISP:WIND{1-16}:TRAC{1-16}:Y:AUTO

Description: For a select trace of a select channel, executes the auto scale (function to automatically adjust the value of the reference graticule and the scale per division to display the trace appropriately).

Type:Write

Example of use: DISP:WIND4:TRAC5:Y:AUTO

1.2.2.164. DISP:WIND{1-16}:TRAC{1-16}:Y:PDIV

:DISP:WIND{1-16}:TRAC{1-16}:Y:PDIV

Description: For a select trace of a select channel: when the data format is not the Smith chart format or the polar format, sets the scale per division; when the data format is the Smith chart format or the polar format, sets the full scale value (the value of the outermost circle).

Type: Read/ Write

Parameters: 1E-18 to 1E8 (Unit：Varies depending on the data format)

Example of use: DISP:WIND3:TRAC2:Y:PDIV 10

DISP:WIND3:TRAC2:Y:PDIV?

1.2.2.165. DISP:WIND{1-16}:TRAC{1-16}:Y:RLEV

:DISP:WIND{1-16}:TRAC{1-16}:Y:RLEV

Description: For a select trace of a select channel, sets the value of the reference graticule line.

Type: Read/ Write

Parameters: -5E8 to 5E8 (Unit:Varies depending on the data format)

Example of use: DISP:WIND3:TRAC2:Y:RLEV 20

DISP:WIND3:TRAC2:Y:RLEV?

1.2.2.166. DISP:WIND{1-16}:TRAC{1-16}:Y:RPOS

:DISP:WIND{1-16}:TRAC{1-16}:Y:RPOS

Description: For a select trace of a select channel, specifies the poison of a reference graticule line with its number.

Type: Read/ Write

Parameters: 0 to the number of divisions

Example of use: DISP:WIND3:TRAC2:Y:RPOS 5

DISP:WIND3:TRAC2:Y:RPOS?

1.2.2.167. DISP:WIND{1-16}:Y:DIV

:DISP:WIND{1-16}:Y:DIV

Description: Sets the number of divisions of all the graphs of select channel

Type: Read/ Write

Parameters: 4 to 30

Example of use: DISP:WIND3:Y:DIV 10

DISP:WIND3:Y:DIV?

1.2.2.168. FORM:BORD

FORM:BORD

Description: This command sets/gets the transfer order of each byte in the output data (byte order),when the data transfer format is set to binary mode

Type:Write/Read

Parameter:

NORMal	Specifies the byte order in which transfer starts from the byte including MSB (Most Significant Bit).
SWAPped	Specifies the byte order in which transfer starts from the byte including LSB (Least Significant Bit).

Example of use: :FORM:BORD NORM

:FORM:BORD?

1.2.2.169. FORM:DATA

FORM:DATA

Description: This command can be used to get format data using the following SCPI commands:

:CALC{1-16}:DATA:FDAT?
:CALC{1-16}:DATA:FMEM?
:CALC{1-16}:DATA:SDAT?
:SENS{1-16}:FREQ:DATA?
:SENS{1-16}:CORR:COEF?

Type:Write/Read

Parameter:

ASCii	Specifies the ASCII transfer format
REAL	Specifies the IEEE 64-bit floating point binary transfer format
REAL32	Specifies the IEEE 32-bit floating point binary transfer format

Example of use: :FORM:DATA ASC

:FORM:DATA?

1.2.2.170. FORM:PUSH

FORM:PUSH

Description: This command saves the current settings and sets new values for the data transfer format and byte order

Type: Write

Parameter: <format>,<border>

Format data:

ASCii	Specifies the ASCII transfer format
REAL	Specifies the IEEE 64-bit floating point binary transfer format
REAL32	Specifies the IEEE 32-bit floating point binary transfer format

Border data:

NORMal	Specifies the byte order in which transfer starts from the byte including MSB (Most Significant Bit).
SWAPped	Specifies the byte order in which transfer starts from the byte including LSB (Least Significant Bit).

Example of use: FORM:PUSH REAL,NORM

1.2.2.171. FORM:POP

FORM:POP

Description: Restores the settings for the data transfer format and byte order saved by the preceding FORM:PUSH command

Type: Write

Parameters: NONE

Example of use: FORM:POP

1.2.2.172. INIT{1-16}

:INIT{1-16}

Description: Changes the state of each select channel to the startup state in the trigger system. When this command is executed for a channel in the idle state, it

goes into the initiate state immediately. Then, after measurement is executed once, it goes back to the idle state.

Type: Write

Example of use: INIT3

1.2.2.173. INIT{1-16}:CONT

:INIT{1-16}:CONT

Description：Sets/ Gets the continuous initiation mode of a select channel in the trigger system.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: INIT2:CONT ON

INIT2:CONT?

1.2.2.174. MMEM:DEL

:MMEM:DEL

Description: Deletes an existing file or directory (folder).When you delete a directory, all the files and directories in it are deleted.

Type:Write

Parameters: string(Range:254 characters or less)

Example of use: :MMEM:DEL "CSV\test.csv"

:MMEM:DEL "D:\test.csv"

1.2.2.175. MMEM:MDIR

:MMEM:MDIR

Description: Creates a new directory (folder)

Type:Write

Parameters: string(Range:254 characters or less)

Example of use: :MMEM:MDIR "Test"

:MMEM:MDIR "D:\Test"

1.2.2.176. MMEM:LOAD

:MMEM:LOAD

Description: Recalls the specified instrument state file (file with the .sta extension)

Type: Write

Parameters: Instrument state file name (Range:254 characters or less)

Example of use: :MMEM:LOAD "State01.sta"

:MMEM:LOAD "C:\State01.sta"

1.2.2.177. MMEM:LOAD:CHAN

:MMEM:LOAD:CHAN

Description: Recalls the instrument state for an individual channel from the specified register as the setting of the active Channel. It is possible to recall the register from a different channel where it was not saved.

Type: Write

Parameters: register name (A/B/C/D)

Example of use: :MMEM:LOAD:CHAN B

1.2.2.178. MMEM:LOAD:CHAN:COEF

:MMEM:LOAD:CHAN:COEF

Description: Recalls the instrument state for an individual channel from the specified register as the setting of the active Channel. It is possible to recall the register from a different channel where it was not saved.

Type: Write

Parameters: register name(A/B/C/D)

Example of use: :MMEM:LOAD:CHAN:COEF B

1.2.2.179. MMEM:LOAD:LIM

:MMEM:LOAD:LIM

Description: As the limit table for the active trace of the active channel,recalls the specified limit table file.

Type: Write

Parameters: string(Range:254 characters or less)

Example of use: :MMEM:LOAD:LIM "Test.lim"

:MMEM:LOAD:LIM "D:\Test.lim"

1.2.2.180. MMEM:LOAD:SEGM

:MMEM:LOAD:SEGM

Description: As the segment sweep table for the active channel,recalls the specified segment sweep table file.

Type: Write

Parameters: string(Range:254 characters or less)

Example of use: :MMEM:LOAD:SEGM "Test.seg"

:MMEM:LOAD:SEGM "D:\Test.seg"

1.2.2.181. MMEM:LOAD:CKIT{1-24}

MMEM:LOAD:CKIT{1-24}

Description: This command recalls the definition file of the specified calibration kit

Type: Write

Parameter: File name of the definition table of a calibration kit

Example of use: MMEM:LOAD:CKIT1 kit1.ckd

1.2.2.182. MMEM:LOAD:RLIM

MMEM:LOAD:RLIM

Description: This command recalls the specified ripple limit table file

Type:Write

Parameters: File name of the ripple limit table

Example of use: MMEM:LOAD:RLIM rlim.csv

1.2.2.183. MMEM:STOR

:MMEM:STOR

Description: Saves the instrument state into a file(Filename extension: .sta)

Type: Write

Parameters: File name of the instrument state(Range:254 characters or less)

Example of use: :MMEM:STOR "State01.sta"

:MMEM:STOR "D:\State01.sta"

1.2.2.184. MMEM:STOR:CHAN

:MMEM:STOR:CHAN

Description: Saves the instrument state of the items set for the active channel specific to that channel only into the specified register (volatile memory).

Type: Write

Parameters: register name(A/B/C/D)

Example of use: :MMEM:STOR:CHAN B

1.2.2.185. MMEM:STOR:CHAN:COEF

:MMEM:STOR:CHAN:COEF

Description: Saves the instrument state of the items set for the active channel specific to that channel only into the specified register (volatile memory).

Type: Write

Parameters: register name(A/B/C/D)

Example of use: :MMEM:STOR:CHAN:COEF B

1.2.2.186. MMEM:STOR:CHAN:CLE

:MMEM:STOR:CHAN:CLE

Description: Deletes the instrument state for each channel in all the register.

Type:Write

Parameters: NONE

Example of use: :MMEM:STOR:CHAN:CLE

1.2.2.187. MMEM:STOR:FDAT

:MMEM:STOR:FDAT

Description: Saves the formatted data array of the active trace of the active channel into a file in the CSV format (filename extension : .csv)

Type: Write

Parameters: File name in which you want to save the formatted data array(Range:254

characters or less)

Example of use: :MMEM:STOR:FDAT "TraceData.csv"

1.2.2.188. MMEM:STOR:IMAG

:MMEM:STOR:IMAG

Description: Saves the display image on the LCD display at the execution of the command into a file in the bitmap (.bmp) or portable network graphics (.png) format.

Type: Write

Parameters: File name in which you want to save the formatted data array(Range:254 characters or less)

Example of use: :MMEM:STOR:IMAG "D:\TraceData.bmp"

1.2.2.189. MMEM:STOR:LIM

:MMEM:STOR:LIM

Description:Saves the limit table for the active trace of the active channel into a file in the LIM format.

Type: Write

Parameters: string(Range:254 characters or less)

Example of use: :MMEM:STOR:LIM "Test.lim"

:MMEM:STOR:LIM "D:\Test.lim"

1.2.2.190. MMEM:STOR:SEGM

:MMEM:STOR:SEGM

Description: Save the segment sweep table for the active channel into a file in the SEG format.

Type: Write

Parameters: string(Range:254 characters or less)

Example of use: :MMEM:STOR:SEGM "Test.seg"

:MMEM:STOR:SEGM "D:\Test.seg"

1.2.2.191. MMEM:STOR:RLIM

MMEM:STOR:RLIM

Description: This command saves the ripple limit table of the active trace

Type: Write

Parameters: File name used to save the ripple limit table

Example of use: MMEM:STOR:RLIM "D:\rlim.csv"

1.2.2.192. MMEM:STOR:CKIT{1-24}

MMEM:STOR:CKIT{1-24}

Description: This command saves the definition table of the calibration kit to a file

Type: Write

Parameters: File name used to save the calibration kit

Example of use: MMEM:STOR:CKIT1 "D:\kit1.ckd"

1.2.2.193. MMEM:STOR:STYP

:MMEM:STOR:STYP

Description: Selects the contents saved when saving the instrument state into a file.

Type: Read/ Write

Parameters:

STAT	Specifies the save of the measurement conditions only.
CST	Specifies the save of the measurement conditions and the calibration state.

DST	Specifies the save of the measurement conditions and the formatted data array.
CDST	Specifies the save of the measurement conditions, the calibration state, and the formatted data array.

Example of use: :MMEM:STOR:STYP STAT

:MMEM:STOR:STYP?

1.2.2.194. MMEM:STOR:SNP

MMEM:STOR:SNP

Description: Saves the measurement data for the active channel into a file in the touchstone format

Type: Write

Parameter: File name you want to use when saving file in the touchstone format

<file type>	<extension>
When specifying one port	s1p
When specifying two ports	s2p
When specifying three ports	s3p
When specifying four ports	s4p

Example of use: MMEM:STOR:SNP TEST.s1p

1.2.2.195. MMEM:STOR:SNP:FORM

MMEM:STOR:SNP:FORM

Description: This command sets/gets the data format for saving the measurement data for the active channel into a file in the touchstone format

Type: Read/Write

Parameters: Touchstone file format

MA	Specifies data format “Magnitude-Angle”
DB	Specifies data format “dB-Angle”
RI	Specifies data format “Real-Imaginary”

Example of use: MMEM:STOR:SNP:FORM MA

MMEM:STOR:SNP:FORM?

1.2.2.196. MMEM:STOR:SNP:TYPE:S1P

MMEM:STOR:SNP:TYPE:S1P

Description: This command sets/gets the specified port to the file type (1 port) when saving measurement data for the active channel into a file in the touchstone format

Type: Read/Write

Parameters: Port number (1 to 4)

Example of use: MMEM:STOR:SNP:TYPE:S1P 2

MMEM:STOR:SNP:TYPE:S1P?

1.2.2.197. MMEM:STOR:SNP:TYPE:S2P

MMEM:STOR:SNP:TYPE:S2P

Description: This command sets/gets the specified port to the file type (2 port) when saving measurement data for the active channel into a file in the touchstone format.

Type: Read/Write

Parameters: Ports(Ports(0): Specifies a port for file type,Ports(1): Specifies the other

port for file type)

Example of use: MMEM:STOR:SNP:TYPE:S2P 1,2

MMEM:STOR:SNP:TYPE:S2P?

1.2.2.198. MMEM:STOR:SNP:TYPE:S3P

MMEM:STOR:SNP:TYPE:S3P

Description: This command sets/gets the specified port to the file type (3 port) when saving measurement data for the active channel into a file in the touchstone format.

Type: Read/Write

Parameters: Ports(Ports(0): Specifies a port for file, Ports(1): Specifies a port for file, Ports(2):Specifies a port for file)

Example of use: MMEM:STOR:SNP:TYPE:S3P 1,2,3

MMEM:STOR:SNP:TYPE:S3P?

1.2.2.199. MMEM:STOR:SNP:TYPE:S4P

MMEM:STOR:SNP:TYPE:S4P

Description: This command sets/gets the specified port to the file type (4 port) when saving measurement data for the active channel into a file in the touchstone format.

Type: Read/Write

Parameters: Ports(Ports(0): Specifies a port for file, Ports(1): Specifies a port for file, Ports(2):Specifies a port for file, Ports(3):Specifies a port for file)

Example of use: MMEM:STOR:SNP:TYPE:S4P 1,2,3,4

MMEM:STOR:SNP:TYPE:S4P?

1.2.2.200. MMEM:STOR:SNP:TYPE?

MMEM:STOR:SNP:TYPE?

Description: Reads out the type of Touchstone file (S1P, S2P) to be used when saving S–

parameters with the MMEM:STOR:SNP command

Type: Read

Parameters: NONE

Example of use: MMEM:STOR:SNP:TYPE?

1.2.2.201. MMEM:COPY

MMEM:COPY

Description: This command copies a file

Type: Write

Example of use: MMEM:COPY Test1/State01.sta,d:Test1_01.sta

MMEM:CAT

1.2.2.202. MMEM:CAT

MMEM:CAT

Description: This command reads the following information on the built-in storage device of the device .Space in use. Available space. Name and size of all files (including directories) in the specified directory

Type: Read

Parameters: Directory name whose information you want to read out

Example of use: MMEM:CAT? "\"

1.2.2.203. MMEM:TRAN

MMEM:TRAN

Description: This command gets data from a file on the built-in storage device. By reading out data with this command.

Type: Read

Parameters: File name on the built-in storage device

Example of use: MMEM:TRAN test.dat

1.2.2.204. OUTP

:OUTP

Description: Sets/ Gets the stimulus signal output. You cannot perform measurement until you turn on the stimulus signal output.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :OUTP ON

:OUTP?

1.2.2.205. SENS{1-16}:AVER

:SENS{1-16}:AVER

Description: Sets/ Gets the averaging function of a select channel.

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :SENS3:AVER 1

:SENS3:AVER?

1.2.2.206. SENS{1-16}:AVER:COUN

:SENS{1-16}:AVER:COUN

Description: Sets/ Gets the averaging factor of a select channel.

Type: Read/ Write

Parameters: 1 to 999

Example of use: :SENS1:AVER:COUN 25

:SENS1:AVER:COUN?

1.2.2.207. SENS{1-16}:AVER:CLE

:SENS{1-16}:AVER:CLE

Description: Clears the measurement data used for averaging of channel 1 to channel 16. Measurement data before the execution of this command is not used for averaging.

Type: Write

Parameters: NONE

Example of use: :SENS1:AVER:CLE

1.2.2.208. SENS{1-16}:BAND

:SENS{1-16}:BAND

Description: Sets the IF bandwidth of channel 1 to channel 16. This command provides the same function as the :SENS{1-16}:BWID command.

Type: Read/ Write

Parameters: 1 to 30000 (Unit: Hz)

Example of use: :SENS1:BAND 10000

:SENS1:BAND?

1.2.2.209. SENS{1-16}:BWID

:SENS{1-16}:BWID

Description: Sets the IF bandwidth of channel 1 to channel 16. This command provides the same function as the :SENS{1-16}:BAND command

Type: Read/ Write

Parameters: 1 to 30000 (Unit: Hz)

Example of use: :SENS1:BWID 10000

:SENS1:BWID?

1.2.2.210. SENS{1-16}:CORR:CLE

:SENS{1-16}:CORR:CLE

Description: Clears all calibration coefficients for a select channel, when the function of frequency offset is set to turn off.

Type: Write

Parameters: None

Example of use: :SENS6:CORR:CLE

1.2.2.211. SENS{1-16}:CORR:COLL:CLE

SENS{1-16}:CORR:COLL:CLE

Description: This command clears the calibration measurement data when the frequency offset feature is off, for the selected channel

Type: Write

Parameters: None

Example of use: SENS1:CORR:COLL:CLE

1.2.2.212. SENS{1-16}:CORR:COLL:CKIT

:SENS{1-16}:CORR:COLL:CKIT

Description: Sets/ Gets the name of selects the calibration kit of channel 1 (:SENS1) to channel 16 (:SENS16).。

Type: Read/ Write

Parameters: 1 to 11

No.	calibration kit
Cal Kit 1	You can check the Cal kit name under menu: Calibration->Cal Kit
Cal Kit 2	
....	
Cal Kit 10	
Cal Kit 11	

Example of use: :SENS6:CORR:COLL:CKIT 2

:SENS6:CORR:COLL:CKIT?

1.2.2.213. SENS{1-16}:CORR:COLL:CKIT:LAB

:SENS{1-16}:CORR:COLL:CKIT:LAB

Description: Sets a calibration kit name for the calibration kit selected for channel 1 to channel 16.

Type: Read/Write

Parameters: string

Example of use: :SENS1:CORR:COLL:CKIT:LAB CKIT_1

:SENS1:CORR:COLL:CKIT:LAB?

1.2.2.214. SENS{1-16}:CORR:COLL:CKIT:DESC

:SENS{1-16}:CORR:COLL:CKIT:DESC

Description: Sets a calibration kit description string for the calibration kit selected for channel

Type: Read/Write

Parameters: string

Example of use: :SENS1:CORR:COLL:CKIT:DESC CKIT_1

:SENS1:CORR:COLL:CKIT:DESC?

1.2.2.215. SENS{1-16}:CORR:COLL:CKIT:RES

:SENS{1-16}:CORR:COLL:CKIT:RES

Description: This command resets the calibration kit selected for selected channel to the default factory setting state

Type: Write

Parameters: NONE

Example of use: :SENS1:CORR:COLL:CKIT:RES

1.2.2.216. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:ARB

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:ARB

Description: For the calibration kit selected for channel 1to channel 16, sets the value of the arbitrary impedance of the standard1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18 (Unit: Ω)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:ARB 50.5

:SENS1:CORR:COLL:CKIT:STAN1:ARB?

1.2.2.217. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:C0

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:C0

Description: For the calibration kit selected for channel 1 to channel 16, sets the value of the C0 of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18 (Unit: fF)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:C0 12.3

:SENS1:CORR:COLL:CKIT:STAN1:C0?

1.2.2.218. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:C1

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:C1

Description: For the calibration kit selected for channel 1 to channel 16, sets the value of the C1 of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18 (1E-27 F/Hz)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:C1 12.5

:SENS1:CORR:COLL:CKIT:STAN1:C1?

1.2.2.219. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:C2

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:C2

Description: For the calibration kit selected for channel 1 to channel 16, sets the value of the C2 of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18 (Unit: 1E-36 F/Hz^2)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:C2 12.5

:SENS1:CORR:COLL:CKIT:STAN1:C2?

1.2.2.220. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:C3

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:C3

Description: For the calibration kit selected for channel 1 to channel 16, sets the

value of the C3 of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18 (1E-45 F/Hz^3)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:C3 12.5

:SENS1:CORR:COLL:CKIT:STAN1:C3?

1.2.2.221. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:DEL

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:DEL

Description: For the calibration kit selected for channel 1 to channel 16, sets the value of the offset delay of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18 (Unit: second)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:DEL 12.3

:SENS1:CORR:COLL:CKIT:STAN1:DEL?

1.2.2.222. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:L0

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:L0

Description:For the calibration kit selected for channel 1 to channel 16, sets the value of the L0 of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18(Unit: pH)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:L0 12.5

:SENS1:CORR:COLL:CKIT:STAN1:L0?

1.2.2.223. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:L1

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:L1

Description:For the calibration kit selected for channel 1 to channel 16, sets the value of the L1 of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18(Unit: 1E-24 H/Hz)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:L1 12.5

:SENS1:CORR:COLL:CKIT:STAN1:L1?

1.2.2.224. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:L2

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:L2

Description:For the calibration kit selected for channel 1 to channel 16, sets the value of the L2 of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18(Unit: 1E-33 H/Hz^2)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:L2 12.5

:SENS1:CORR:COLL:CKIT:STAN1:L2?

1.2.2.225. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:L3

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:L3

Description:For the calibration kit selected for channel 1 to channel 16, sets the value of the L3 of the standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18(Unit: 1E-42 H/Hz^3)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:L3 12.5

:SENS1:CORR:COLL:CKIT:STAN1:L3?

1.2.2.226. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:LAB

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:LAB

Description: For the calibration kit selected for channel 1 to channel 16,sets the name of standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: string

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:LAB OPEN

:SENS1:CORR:COLL:CKIT:STAN1:LAB?

1.2.2.227. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:LOSS

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:LOSS

Description: For the calibration kit selected for channel 1 to channel 16,sets the value of offset loss of standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18(Unit: Ω/s)

Example of use: :SENS1:CORR:COLL:CKIT:STAN1:LOSS 12.3

:SENS1:CORR:COLL:CKIT:STAN1:LOSS?

1.2.2.228. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:TYPE

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:TYPE

Description: For the calibration kit selected for channel 1 to channel 16,sets the standard type of standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: string

Parameters Type	Description
OPEN	Specifies open.
SHORt	Specifies short
LOAD	Specifies load
THRU	Specifies thru

Example of use: :SENS1:CORR:COLL:CKIT:STAN2:TYPE OPEN

:SENS1:CORR:COLL:CKIT:STAN2:TYPE?

1.2.2.229. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:Z0

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:Z0

Description: For the calibration kit selected for channel 1 to channel 16,set the value of offset Z0 of standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: -1E18 to 1E18(Unit: Ω)

Example of use: :SENS1:CORR:COLL:CKIT:STAN2:Z0 50.5

:SENS1:CORR:COLL:CKIT:STAN2:Z0?

1.2.2.230. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:FMAX

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:FMAX

Description: For the calibration kit selected for channel 1 to channel 16,set the value of stop frequency of standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: 0 to 999E9(Unit: Hz)

Example of use: :SENS1:CORR:COLL:CKIT:STAN2:FMAX 5E9

:SENS1:CORR:COLL:CKIT:STAN2:FMAX?

1.2.2.231. SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:FMIN

:SENS{1-16}:CORR:COLL:CKIT:STAN{1-N}:FMIN

Description: For the calibration kit selected for channel 1 to channel 16,set the value of start frequency of standard 1 to standard N(Varies depending on the calibration kit).

Type: Read/Write

Parameters: 0 to 999E9(Unit: Hz)

Example of use: :SENS1:CORR:COLL:CKIT:STAN2:FMIN 3E9

:SENS1:CORR:COLL:CKIT:STAN2:FMIN?

1.2.2.232. SENS{1-16}:CORR:COLL:ECAL:SOLT1

SENS{1-16}:CORR:COLL:ECAL:SOLT1

Description: This command executes 1-port calibration of the specified port of selected channel using the ECal (Electronic Calibration) module

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Calibration port

Example of use: SENS1:CORR:COLL:ECAL:SOLT1 1

1.2.2.233. SENS{1-16}:CORR:COLL:ECAL:SOLT2

SENS{1-16}:CORR:COLL:ECAL:SOLT2

Description: This command executes 2-port calibration of the specified port of selected channel using the ECal (Electronic Calibration) module

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Calibration port

Port(1)	Calibration port

Example of use: SENS1:CORR:COLL:ECAL:SOLT2 1,2

1.2.2.234. SENS{1-16}:CORR:COLL:ECAL:SOLT3

SENS{1-16}:CORR:COLL:ECAL:SOLT3

Description: This command executes 3-port calibration of the specified port of selected channel using the ECal (Electronic Calibration) module

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Calibration port
Port(1)	Calibration port
Port(2)	Calibration port

Example of use: SENS1:CORR:COLL:ECAL:SOLT3 1,2,3

1.2.2.235. SENS{1-16}:CORR:COLL:ECAL:SOLT4

SENS{1-16}:CORR:COLL:ECAL:SOLT4

Description: This command executes 4-port calibration of the specified port of selected channel using the ECal (Electronic Calibration) module

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Calibration port
Port(1)	Calibration port
Port(2)	Calibration port
Port(3)	Calibration port

Example of use: SENS1:CORR:COLL:ECAL:SOLT4 1,2,3,4

1.2.2.236. SENS{1-16}:CORR:COLL:ISOL

:SENS{1-16}:CORR:COLL:ISOL

Description: For a select channel, measure the calibration data of the isolation from the stimulus port to the response port。

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Response port number Port0
Port(1)	Stimulus port number:Port1

Example of use: :SENS5:CORR:COLL:ISOL 1,2

1.2.2.237. SENS{1-16}:CORR:COLL:LOAD

:SENS{1-16}:CORR:COLL:LOAD

Description: For a select channel, measures the calibration data of the load standard of the specified port.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Port1 calibration

Example of use: :SENS3:CORR:COLL:LOAD 1

1.2.2.238. SENS{1-16}:CORR:COLL:OPEN

:SENS{1-16}:CORR:COLL:OPEN

Description: For a select channel, measures the calibration data of the open standard of the specified port.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Port1 calibration

Example of use: :SENS8:CORR:COLL:OPEN 1

1.2.2.239. SENS{1-16}:CORR:COLL:SAVE

:SENS{1-16}:CORR:COLL:SAVE

Description: From the measured calibration data, calculates the calibration coefficients depending on the selected calibration type.

Type: Write

Parameters: None

Example of use: :SENS8:CORR:COLL:SAVE

1.2.2.240. SENS{1-16}:CORR:COLL:PART:SAVE

:SENS{1-16}:CORR:COLL:PART:SAVE

Description: This command, used for partial overwrite, recalculates the calibration coefficients depending on the selected calibration type from the measured calibration data

Type: Write

Parameters: None

Example of use: :SENS8:CORR:COLL:PART:SAVE

1.2.2.241. SENS{1-16}:CORR:COLL:SHOR

:SENS{1-16}:CORR:COLL:SHOR

Description: For a select channel, measures the calibration data of the short standard of the specified port.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Port1 calibration

Example of use: :SENS5:CORR:COLL:SHOR 1

1.2.2.242. SENS{1-16}:CORR:COLL:THRU

:SENS{1-16}:CORR:COLL:THRU

Description: For a select channel, measures the calibration data of the thru standard from the stimulus port to the response port.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Select port 0
Port(1)	Select port 1

Example of use: :SENS3:CORR:COLL:THRU 1,2

1.2.2.243. SENS{1-16}:CORR:COLL:METH:ERES

:SENS{1-16}:CORR:COLL:METH:ERES

Description: This command sets the calibration type to the enhanced response calibration between the two specified ports, for the selected channel.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Specifies the response port.
Port(1)	Specifies the stimulus port.

Example of use: :SENS1:CORR:COLL:METH:ERES 1,2

1.2.2.244. SENS{1-16}:CORR:COLL:METH:OPEN

:SENS{1-16}:CORR:COLL:METH:OPEN

Description: For a select channel, sets the calibration type to the response calibration (open) of the specified port.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Calibration port

Example of use: :SENS1:CORR:COLL:METH:OPEN 1

1.2.2.245. SENS{1-16}:CORR:COLL:METH:SHOR

:SENS{1-16}:CORR:COLL:METH:SHOR

Description: For a select channel, sets the calibration type to the response calibration (short) of the specified port.

Type: Write

Parameters:

Parameters Type	Description

Port(0)	Calibration port

Example of use: :SENS6:CORR:COLL:METH:SHOR 2

1.2.2.246. SENS{1-16}:CORR:COLL:METH:SOLT1

:SENS{1-16}:CORR:COLL:METH:SOLT1

Description: For a select channel, sets the calibration type to the full 1-port calibration of the specified port.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Calibration port

Example of use: :SENS5:CORR:COLL:METH:SOLT1 2

1.2.2.247. SENS{1-16}:CORR:COLL:METH:SOLT2

:SENS{1-16}:CORR:COLL:METH:SOLT2

Description: For a select channel, sets the calibration type to the full 2-port calibration between the 2 specified ports.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Specifies a port for full 2-port calibration
Port(1)	Specifies a port for full 2-port calibration

Example of use: :SENS2:CORR:COLL:METH:SOLT2 2,1

1.2.2.248. SENS{1-16}:CORR:COLL:METH:SOLT3

:SENS{1-16}:CORR:COLL:METH:SOLT3

Description: For a select channel, sets the calibration type to the full 3-port calibration between the 3 specified ports.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Specifies a port for full 3-port calibration
Port(1)	Specifies a port for full 3-port calibration
Port(2)	Specifies a port for full 3-port calibration

Example of use: :SENS2:CORR:COLL:METH:SOLT3 1,2,3

1.2.2.249. SENS{1-16}:CORR:COLL:METH:SOLT4

:SENS{1-16}:CORR:COLL:METH:SOLT4

Description: For a select channel, sets the calibration type to the full 2-port calibration between the 4 specified ports.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Specifies a port for full 4-port calibration
Port(1)	Specifies a port for full 4-port calibration
Port(2)	Specifies a port for full 4-port calibration
Port(3)	Specifies a port for full 4-port calibration

Example of use: :SENS2:CORR:COLL:METH:SOLT4 1,2,3,4

1.2.2.250. SENS{1-16}:CORR:COLL:METH:THRU

:SENS{1-16}:CORR:COLL:METH:THRU

Description: For a select channel, sets the calibration type to the response calibration (thru) of the specified port.

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Select port 1
Port(1)	Select port 2

Example of use: :SENS2:CORR:COLL:METH:THRU 2,1

1.2.2.251. SENS{1-16}:CORR:COLL:METH:TYPE

:SENS{1-16}:CORR:COLL:METH:TYPE

Description: For a select channel, reads out the select calibration type.

Type: Read

Parameters:

Parameters Type	Description
NONE	The calibration type is set to nothing.
RESPO	The calibration type is the response calibration (open).
RESPS	The calibration type is the response calibration (short).
RESPT	The calibration type is the response calibration (thru).
SOLT1	The calibration type is the full 1-port calibration.
SOLT2	The calibration type is the full 2-port calibration.

Example of use: :SENS2:CORR:COLL:METH:TYPE?

1.2.2.252. SENS{1-16}:DATA:CORR

SENS{1-16}:DATA:CORR

Description: This command gets S-Parameter data

Type: Read

Parameters: S-parameter(S<XY>Where: x=1 to 4 and Y=1to 4)

Example of use: SENS1:DATA:CORR? S11

1.2.2.253. SENS{1-16}:DATA:RAWD

SENS{1-16}:DATA:RAWD

Description: This command gets the raw data

Type: Read

Parameters: S-parameter(S<XY>Where: x=1 to 4 and Y=1to 4)

Example of use: SENS1:DATA:RAWD? S11

1.2.2.254. SENS{1-16}:CORR:STAT

:SENS{1-16}:CORR:STAT

Description: For a select channel, turns ON/OFF the error correction

Type: Read/Write

Parameters:

ON or 1	Turn on
OFF or 0	Turn off

Example of use: :SENS1:CORR:STAT ON

:SENS1:CORR:STAT?

1.2.2.255. SENS{1-16}:CORR:EXT

:SENS{1-16}:CORR:EXT

Description: For channel 1 to channel 16, turns ON/OFF the port extension.

Type: Read/Write

Parameter:

ON or 1	Turn on the port extension
OFF or 0	Turn off the port extension

Example of use: :SENS1:CORR:EXT ON

:SENS1:CORR:EXT?

1.2.2.256. SENS{1-16}:CORR:EXT:PORT{1-N}:TIME

:SENS{1-16}:CORR:EXT:PORT{1-N}:TIME

Description: For channel 1 to channel 16, sets the correction amount for the port extension of port 1 to port N(Varies depending on the instrument) as the delay time.

Type: Read/Write

Parameters: -10 to 10(Unit: second)

Example of use: :SENS1:CORR:EXT:PORT1:TIME 1E-3

:SENS1:CORR:EXT:PORT1:TIME?

1.2.2.257. SENS{1-16}:CORR:EXT:AUTO:CONF

SENS{1-16}:CORR:EXT:AUTO:CONF

Description: This command sets/gets the frequency point to calculate the auto port extension, for the selected channel

Type: Write/Read

Parameters:

CSPN	Uses the frequency of the current sweep range
AMKR	Use the frequency of the active marker. This is applied to Loss 1 and Loss 2 is ignored
USPN	This is executed with the arbitrary specified start frequency and stop frequency

Example of use: :SENS1:CORR:EXT:AUTO:CONF CSPN

:SENS1:CORR:EXT:AUTO:CONF?

1.2.2.258. SENS{1-16}:CORR:EXT:AUTO:RES

SENS{1-16}:CORR:EXT:AUTO:RES

Description: This command deletes the finished measurement data (OPEN and SHORT), for the selected channel

Type: Write

Example of use: :SENS1:CORR:EXT:AUTO:RES

1.2.2.259. SENS{1-16}:CORR:EXT:PORT{1-4}:INCL{1|2}

SENS{1-16}:CORR:EXT:PORT{1-4}:INCL{1|2}

Description: This command turns ON/OFF the set of loss value and frequency value of include 1 and 2 of the port 1 to 4, for the selected channel.

Type: Read/Write

Parameters:

ON(1)	Turns ON the loss value and frequency value
OFF(0)	Turns OFF the loss value and frequency value

Example of use: :SENS1:CORR:EXT:PORT1:INCL ON

:SENS1:CORR:EXT:PORT1:INCL?

1.2.2.260. SENS{1-16}:CORR:EXT:PORT{1-4}:LOSS{1|2}

SENS{1-16}:CORR:EXT:PORT{1-4}:LOSS{1|2}

Description: This command sets/gets the loss value of the loss 1 to 2 of the port 1 to 4 , for the selected channel

Type: Read/Write

Example of use: :SENS1:CORR:EXT:PORT1:LOSS1 0.8

:SENS1:CORR:EXT:PORT1:LOSS1?

1.2.2.261. SENS{1-16}:CORR:EXT:PORT{1-4}:FREQ{1|2}

SENS{1-16}:CORR:EXT:PORT{1-4}:FREQ{1|2}

Description: This command sets/gets the frequency used for calculation of the loss value of the frequency 1 and 2 of the selected port , for the selected channel .

Type: Read/Write

Example of use: :SENS1:CORR:EXT:PORT1:FREQ1 10E6

:SENS1:CORR:EXT:PORT1:FREQ1?

1.2.2.262. SENS{1-16}:CORR:EXT:PORT{1-4}:LDC

SENS{1-16}:CORR:EXT:PORT{1-4}:LDC

Description: This command sets/gets the DC loss value of the port 1 to 4 , for the selected channel .

Type:Read/Write

Example of use: :SENS1:CORR:EXT:PORT1:LDC 0

:SENS1:CORR:EXT:PORT1:LDC?

1.2.2.263. SENS{1-16}:CORR:EXT:AUTO:MEAS

SENS{1-16}:CORR:EXT:AUTO:MEAS

Description: This command measures the calibration data of the OPEN standard or SHORT standard of the auto port extension, for the selected channel .

Type:Write

Parameters:

OPEN	Measures the calibration data of the OPEN standard

SHORT	Measures the calibration data of the SHORT standard

Example of use: :SENS1:CORR:EXT:AUTO:MEAS OPEN

1.2.2.264. SENS{1-16}:CORR:EXT:AUTO:PORT{1-4}

SENS{1-16}:CORR:EXT:AUTO:PORT{1-4}

Description: This command turns ON/OFF or gets the status of the auto port extension, for the selected channel

Type: Read/Write

Parameters:

ON(1)	Turns ON the auto port extension
OFF(0)	Turns OFF the auto port extension

Example of use: :SENS1:CORR:EXT:AUTO:PORT1 ON

:SENS1:CORR:EXT:AUTO:PORT1?

1.2.2.265. SENS{1-16}:CORR:COEF

:SENS{1-16}:CORR:COEF

Description: This command sets/gets the calibration coefficient data for specified channel

Type: Read/Write

Parameters:

Calibration type (String)	Select from the following: "ES": Source match "ER": Reflection tracking "ED": Directivity "EL": Load match "ET": Transmission tracking "EX": Isolation

numeric 1	Response port(1 or 2)
numeric 2	Stimulus port(1 or 2) Note:If ES, ER, or ED is used, the response port and the stimulus port must be the same, while EL, ET, or EX is used, the response port and the stimulus port must be different.
Parameter Array numeric 3	Indicates the array data (corrected data array) of NOP (number of measurement points)x2. Where n is an integer between 1 and NOP. Data(nX2-2): Real part of data (complex number) at the n-th measurement point. Data(nX2-1): Imaginary part of data (complex number) at the n-th measurement point.The index of the array starts from 0.

Example of use: :SENS1:CORR:COEF ES,<numeric 1>, <numeric 2>, <numeric 3>,..., <numeric 3 n*2>

:SENS1:CORR:COEF? ES,1,1

1.2.2.266. SENS{1-16}:CORR:COEF:METH:ERES

:SENS{1-16}:CORR:COEF:METH:ERES

Description: This command sets the calibration type to the enhanced response calibration between the two specified ports,when the calibration coefficient data array is written, for the specified channel

Type:Write

Parameter:

numeric 1	Specifies the response port
numeric 2	Specifies the stimulus port

Example of use: :SENS1:CORR:COEF:METH:ERES <numeric 1>,<numeric 2>

1.2.2.267. SENS{1-16}:CORR:COEF:METH:OPEN

:SENS{1-16}:CORR:COEF:METH:OPEN

Description: This command sets the calibration type to the response calibration (open) of the specified port,when the calibration coefficient data array is written, for the specified channel

Type:Write

Parameter:

Parameter	Description
Port(0)	Calibration port

Example of use: :SENS1:CORR:COEF:METH:OPEN 1

1.2.2.268. SENS{1-16}:CORR:COEF:METH:SHOR

SENS{1-16}:CORR:COEF:METH:SHOR

Description: This command sets the calibration type to the response calibration (short) of the specified port,when the calibration coefficient data array is written, for the specified channel

Type:Write

Parameter:

Parameter	Description
Port(0)	Calibration port

Example of use: :SENS1:CORR:COEF:METH:SHOR 1

1.2.2.269. SENS{1-16}:CORR:COEF:METH:THRU

SENS{1-16}:CORR:COEF:METH:THRU

Description: This command sets the calibration type to the response calibration (thru) between the two specified ports,when the calibration coefficient data array is written, for the specified channel

Type: Write

Parameter:

Parameters Type	Description
Port(0)	Select port 1
Port(1)	Select port 2

Example of use: :SENS1:CORR:COEF:METH:THRU 1,2

1.2.2.270. SENS{1-16}:CORR:COEF:METH:SOLT1

SENS{1-16}:CORR:COEF:METH:SOLT1

Description: This command sets the calibration type to the full 1-port calibration of the specified port,when the calibration coefficient data array is written, for the specified channel

Type:Write

Parameters:

Parameters	Description
Port(0)	Calibration port

Example of use: :SENS{1-16}:CORR:COEF:METH:SOLT1 2

1.2.2.271. SENS{1-16}:CORR:COEF:METH:SOLT2

SENS{1-16}:CORR:COEF:METH:SOLT2

Description: This command sets the calibration type to full 2-port calibration between the two specified ports,when the calibration coefficient data array is written, for the

specified channel

Type:Write

Parameters:

Parameters Type	Description
Port(0)	Specifies a port for full 2-port calibration
Port(1)	Specifies a port for full 2-port calibration

Example of use: :SENS1:CORR:COEF:METH:SOLT2 1,2

1.2.2.272. SENS{1-16}:CORR:COEF:METH:SOLT3

SENS{1-16}:CORR:COEF:METH:SOLT3

Description: This command sets the calibration type to full 3-port calibration between the three specified ports, when the calibration coefficient data array is written, for the specified channel

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Specifies a port for full 3-port calibration
Port(1)	Specifies a port for full 3-port calibration
Port(2)	Specifies a port for full 3-port calibration

Example of use: :SENS1:CORR:COEF:METH:SOLT3 1,2,3

1.2.2.273. SENS{1-16}:CORR:COEF:METH:SOLT4

SENS{1-16}:CORR:COEF:METH:SOLT4

Description: This command sets the calibration type to full 4-port calibration between the three specified ports, when the calibration coefficient data array is written, for the specified channel

Type: Write

Parameters:

Parameters Type	Description
Port(0)	Specifies a port for full 3-port calibration
Port(1)	Specifies a port for full 3-port calibration
Port(2)	Specifies a port for full 3-port calibration
Port(3)	Specifies a port for full 3-port calibration

Example of use: :SENS1:CORR:COEF:METH:SOLT4 1,2,3,4

1.2.2.274. SENS{1-16}:CORR:COEF:SAVE

SENS{1-16}:CORR:COEF:SAVE

Description: This command enables the calibration coefficients depending on the selected calibration type from the writing calibration data

Type: Write

Parameter: none

Example of use: :SENS1:CORR:COEF:SAVE

1.2.2.275. SENS{1-16}:CORR:DATA:CAT

SENS{1-16}:CORR:DATA:CAT

Description: This command gets the list of available calibrated S-parameter, for the selected channel.

Type: Read

Parameters: none

Example of use:SENS1:CORR:DATA:CAT?

1.2.2.276. SENS{1-16}:CORR:DATA:CDAT

SENS{1-16}:CORR:DATA:CDAT

Description: This command gets multiple corrected S-parameter data, for the selected channel

Type: Read

Parameters: Measurement parameter(Sx1y1,Sx2y2…Sxnyn)

Example of use: SENS1:CORR:DATA:CDAT? S11,S22

1.2.2.277. SENS{1-16}:CORR:IMP

SENS{1-16}:CORR:IMP

Description: This command sets/gets the system characteristic impedance (Z0) value

Type:Write/Read

Parameter: 1E-3 to 1000 (ohm)

Example of use: :SENS1:CORR:IMP 50

:SENS1:CORR:IMP?

1.2.2.278. SENS{1-16}:CORR:TYPE

SENS{1-16}:CORR:TYPE

Description: Reads the information about the calibration type and the number of ports to which the calibration is applied for the specified trace.

Type:Read

Parameter: none

Example of use: :SENS1:CORR:TYPE?

1.2.2.279. SENS{1-16}:FREQ

SENS{1-16}:FREQ

Description: This command sets/gets the fixed frequency (CW frequency) for the power sweep for the specified channel

Type:Write/Read

Parameter: Double precision floating point type(unit:Hz)

Example of use: :SENS1:FREQ 1E5

:SENS1:FREQ?

1.2.2.280. SENS{1-16}:FREQ:CENT

:SENS{1-16}:FREQ:CENT

Description: Gets/Sets the center value of the sweep range of a select channel.

Type: Read/ Write

Parameters:Based on product models and frequency options(Unit: Hz)

Example of use: :SENS6:FREQ:CENT 2e9

:SENS6:FREQ:CENT?

1.2.2.281. SENS{1-16}:FREQ:FIX

SENS{1-16}:FREQ:FIX

Description: This command sets/gets the fixed frequency (CW frequency) for the power sweep for the specified channel

Type:Write/Read

Parameter: Double precision floating point type(unit:Hz)

Example of use: :SENS1:FREQ:FIX 1E5

:SENS1:FREQ:FIX?

1.2.2.282. SENS{1-16}:FREQ:SPAN

:SENS{1-16}:FREQ:SPAN

Description: Sets/Gets the span value of the sweep range of a select channel.

Type: Read/ Write

Parameters:Based on product models and frequency options(Unit: Hz)

Example of use: :SENS6:FREQ:SPAN 800000

:SENS6:FREQ:SPAN?

1.2.2.283. SENS{1-16}:FREQ:STAR

:SENS{1-16}:FREQ:STAR

Description: Sets/Gets the start value of the sweep range of a select channel.

Type: Read/ Write

Parameters: Based on product models and frequency options(Unit: Hz)

Example of use: :SENS6:FREQ:STAR 1e8

:SENS6:FREQ:STAR?

1.2.2.284. SENS{1-16}:FREQ:STOP

:SENS{1-16}:FREQ:STOP

Description: Sets/Gets the stop value of the sweep range of a select channel.

Type: Read/ Write

Parameters: Based on product models and frequency options(Unit: Hz)

Example of use: :SENS6:FREQ:STOP 4.5e9

:SENS6:FREQ:STOP?

1.2.2.285. SENS{1-16}:FREQ:DATA?

:SENS{1-16}:FREQ:DATA?

Description: For channel 1 to channel 16, reads out the frequencies of all measurement point.

Type: Read

Parameters: {numeric 1},…,{numeric NOP}

	Description

{numeric n}	Frequency at the n-th measurement point

Example of use: :SENS1:FREQ:DATA?

1.2.2.286. SENS{1-16}:SEGM:DATA

:SENS{1-16}:SEGM:DATA

Description: Creates the segment sweep table for a select channel

Type: Read/ Write

Parameters: The first value is 5 0r 6 and the parameters listed below follow

	Description
<mode>	Stimulus setting mode(0 –start/stop, 1 –center/span)
<ifbw>	ON/OFF of the IF bandwidth setting(0 –Turns off,1 –Turns on)
<pow>	ON/OFF of the power setting(0 –Turns off, 1 –Turns on)
<del>	ON/OFF of the sweep delay time setting (0 –Turns off, 1 –Turns on)
<swp>	ON/OFF of the sweep mode setting for each segment(0-Turns off,1-Turns on) Not required when the first value is 5
<time>	ON/OFF of the sweep time setting (0 –Turns off, 1 –Turns on)
<segm>	Number of segments
<star n>	Start value/center value of the n-th segment
<stop n>	Stop value/span value of the n-th segment
<nop n>	Number of measurement points of the n-th segment
<ifbw n>	IF bandwidth of the n-th segment(Required when the function setting for each segment is ON)
<pow n>	Power of the n-th segment Not required when the power setting for each segment is OFF (<pow> = 0)
<del n>	Sweep delay time of the n-th segment Not required when the sweep delay time setting for each segment is OFF (<del> = 0)
<swp n>	Sweep mode of the n-th segment Not required when the first value is 5 or the sweep mode setting for each segment is OFF (<swp> = 0)
<time n>	Sweep time of the n-th segment (specify 0 If you want to set “auto setting”) Not required when the sweep time setting for each segment is OFF (<time>

	= 0)

Example of use: :SENS1:SEGM:DATA 5,0,1,0,0,0,3,1E9,3E9,11,10E3,
3E9,3.5E9,51,7E3,3.5E9,4E9,11,10E3
:SENS1:SEGM:DATA?

1.2.2.287. SENS{1-16}:SEGM:LIST:CONT:DATA

SENS{1-16}:SEGM:LIST:CONT:DATA

Description: This command sets/gets the state of each segment in the segment sweep table of selected channel

Type: Write/Read

Parameters:

Description	Indicates the state array data; where N is the number of segments and n is an integer between 1 and N. Data = {<state1>,... ,<state n>,.... ,<state N>}

Example of use: SENS1:SEGM:LIST:CONT:DATA 1,0,1

1.2.2.288. SENS{1-16}:SEGM:SWE:POIN?

:SENS{1-16}:SEGM:SWE:POIN?

Description: For the segment sweep table of channel 1 to channel 16, reads out the total number of the measurement points of all segments.

Type: Read

Parameters: {numeric}

Example of use: :SENS1:SEGM:SWE:POIN?

1.2.2.289. SENS{1-16}:SEGM:SWE:TIME?

:SENS{1-16}:SEGM:SWE:TIME?

Description: For the segment sweep table of channel 1 to channel 16, reads out the total sweep time of all segments.

Type: Read

Parameters: {numeric}

Example of use: :SENS1:SEGM:SWE:TIME?

1.2.2.290. SENS{1-16}:SWE:DEL

:SENS{1-16}:SWE:DEL

Description: Sets/ Gets sweep delay time for the select channel.

Type: Read/ Write

Parameters: 0 to 0.3 (Unit: seconds)

Example of use: :SENS6:SWE:DEL 0.1

:SENS6:SWE:DEL?

1.2.2.291. SENS{1-16}:SWE:POIN

:SENS{1-16}:SWE:POIN

Description: For select channel ,Sets/ Gets the number of measurement point.

Type: Read/ Write

Parameters: 2 to 10001

Example of use: :SENS6:SWE:POIN 800

:SENS6:SWE:POIN?

1.2.2.292. SENS{1-16}:SWE:TYPE

:SENS{1-16}:SWE:TYPE

Description: Sets/ Gets the sweep type of a select channel.

Type: Read/ Write

Parameters:

LINear	Specifies the linear sweep.
LOGarithmic	Specifies the logarithmic sweep.
SEGMent	Specifies the segment sweep
POWer	Specifies the power sweep

Example of use: :SENS1:SWE:TYPE POW

:SENS1:SWE:TYPE?

1.2.2.293. SERV:CHAN:ACT

SERV:CHAN:ACT

Description: This command reads the active channel number

Type: Read

Parameters: none

Example of use: SERV:CHAN:ACT?

1.2.2.294. SERV:CHAN:COUN

SERV:CHAN:COUN

Description: This reads the upper limit of the number of channels

Type: Read

Parameters: none

Example of use: SERV:CHAN:COUN?

1.2.2.295. SERV:CHAN{1-16}:TRAC:ACT

SERV:CHAN{1-16}:TRAC:ACT

Description: This command reads the active trace number of selected channel

Type: Read

Parameters: none

Example of use: SERV:CHAN1:TRAC:ACT?

1.2.2.296. SERV:CHAN:TRAC:COUN

SERV:CHAN:TRAC:COUN

Description: This reads the upper limit of the number of traces

Type: Read

Parameters: none

Example of use: SERV:CHAN:TRAC:COUN?

1.2.2.297. SERV:SWE:POIN

SERV:SWE:POIN

Description: This command reads the upper limit of the number of measurement points

Type:Read

Parameters:none

Example of use: :SERV:SWE:POIN?

1.2.2.298. SERV:PORT:COUN

SERV:PORT:COUN

Description: This command reads the number of ports

Type:Read

Parameters:none

Example of use: :SERV:PORT:COUN?

1.2.2.299. SERV:SWE:FREQ:MAX

SERV:SWE:FREQ:MAX

Description: This command reads the upper limit of measurement frequency

Type:Read

Parameters:none

Example of use: :SERV:SWE:FREQ:MAX?

1.2.2.300. SERV:SWE:FREQ:MIN

SERV:SWE:FREQ:MIN

Description: This command reads the lower limit of measurement frequency

Type:Read

Parameters:none

Example of use: :SERV:SWE:FREQ:MIN?

1.2.2.301. SOUR{1-16}:POW

:SOUR{1-16}:POW

Description: Sets/Gets the power level of the sweep range for the power sweep of channel 1 to channel 16

Type: Read/ Write

Parameters: Varies depending on the power range

Example of use: :SOUR3:POW 0

:SOUR3:POW?

1.2.2.302. SOUR{1-16}:POW:ATT

:SOUR{1-16}:POW:ATT

Description: Sets the power range of channel 1 to channel 16.

Type: Read/Write

Parameters:

Attenuator	Power range	Attenuator	Power range
0dB	-15 to 0dB	5dB	-20 to -5dB
10dB	-25 to -10dB	15dB	-30 to -15dB
20dB	-35 to -20dB	25dB	-40 to -25dB
30dB	-45 to -30dB	35dB	-50 to -35dB

Example of use: :SOUR1:POW:ATT 15

:SOUR1:POW:ATT? (If the power range is not in the upon table,the query response is -1)

1.2.2.303. SOUR{1-16}:POW:CENT

:SOUR{1-16}:POW:CENT

Description:Sets/Gets the center value of the sweep range for the power sweep for channel 1 to channel 16.

Type: Read/ Write

Parameters: Varies depending on the power range

Example of use: :SOUR6:POW:CENT -30

:SOUR6:POW:CENT?

1.2.2.304. SOUR{1-16}:POW:SLOP

:SOUR{1-16}:POW:SLOP

Description:Sets/Gets the correction value of the power slope feature of channel 1 (SOUR1) to channel 16.

Type: Read/ Write

Parameters: -2 to 2(double)

Example of use: :SOUR3:POW:SLOP 0.5

:SOUR3:POW:SLOP?

1.2.2.305. SOUR{1-16}:POW:SLOP:STAT

:SOUR{1-16}:POW:SLOP:STAT

Description: Turns on/off the power slope feature of channel 1 to channel 16. This command also can correct the attenuation (attenuation due to cables and so on) of simple power level (proportional to the frequency).

Type: Read/ Write

Parameters:

OFF or 0	Turns off
ON or 1	Turns on

Example of use: :SOUR3:POW:SLOP:STAT ON

:SOUR3:POW:SLOP:STAT?

1.2.2.306. SOUR{1-16}:POW:SPAN

:SOUR{1-16}:POW:SPAN

Description:Sets/Gets the span value of the sweep range for the power sweep for channel 1 to channel 16.

Type:Read/ Write

Parameters:Varies depending on the power range (Unit: dBm)

Example of use: :SOUR6:POW:SPAN 10

:SOUR6:POW:SPAN?

1.2.2.307. SOUR{1-16}:POW:STAR

:SOUR{1-16}:POW:STAR

Description: Sets/Gets the start value of the sweep range for the power sweep for channel 1 to channel 16.

Type: Read/ Write

Parameters: Varies depending on the power range (Unit: dBm)

Example of use: :SOUR1:POW:STAR -15

:SOUR1:POW:STAR?

1.2.2.308. SOUR{1-16}:POW:STOP

:SOUR{1-16}:POW:STOP

Description: Gets/Sets the stop value of the sweep range for power sweep of channel 1 to channel 16.

Type: Read/ Write

Parameters: Varies depending on the power range. (Unit: dBm)

Example of use: :SOUR1:POW:STOP -5

:SOUR1:POW:STOP?

1.2.2.309. SYST:PRES

:SYST:PRES

Description: Presets the setting state of the device to default setting state.

Type: Write

Example of use: :SYST:PRES

1.2.2.310. SYST:UPR

:SYST:UPR

Description: Presets the setting state of the device to default setting state.

Type: Write

Example of use: :SYST:UPR

1.2.2.311. SYST:CORR

:SYST:CORR

Description: Turns ON/OFF the system error correction.

Type: Read/Write

Parameters:

OFF or 0	Turns OFF the system error correction
ON or 1	Turns ON the system error correction

Example of use: :SYST:CORR OFF

:SYST:CORR?

1.2.2.312. SYST:DATE

:SYST:DATE

Description: Sets the date of the clock built in the instrument.

Type: Read/Write

Parameters: <numeric 1>,<numeric 2>,<numeric 3>

<numeric 1>	Year
<numeric 2>	Month
<numeric 3>	Day

Example of use: :SYST:DATE 2019,3,11

:SYST:DATE?

1.2.2.313. SYST:TIME

:SYST:TIME

Description: Sets the time of the clock built in the instrument.

Type: Read/Write

Parameters: <numeric 1>,<numeric 2>,<numeric 3>

<numeric 1>	Hour
<numeric 2>	Minute
<numeric 3>	Second

Example of use: :SYST:TIME 16,30,11

:SYST:TIME?

1.2.2.314. SYST:ERR?

:SYST:ERR?

Description: Reads out the oldest error of the errors stored in the error queue of the TVNA,The read-out error is deleted from the error queue.

Type: Read

Parameters: {numeric},{string}(Error number,Error message)

Example of use: :SYST:ERR?

1.2.2.315. SYST:KLOC:KBD

:SYST:KLOC:KBD

Description: Sets whether to lock the operation of the front panel (key and rotary knob) and keyboard.

Type: Read/Write

Parameters:

OFF or 0	Specifies lock
ON or 1	Specifies unlock

Example of use: :SYST:KLOC:KBD ON

:SYST:KLOC:KBD?

1.2.2.316. SYST:KLOC:MOUS

:SYST:KLOC:MOUS

Description:Sets whether to lock the operation of the mouse and touch screen.

Type: Read/Write

Parameters:

OFF or 0	Specifies lock
ON or 1	Specifies unlock

Example of use: :SYST:KLOC:MOUS ON

:SYST:KLOC:MOUS?

1.2.2.317. SYST:POFF

SYST:POFF

Description: This command turns OFF the computer

Type: Write

Parameters: none

Example of use: SYST:POFF

1.2.2.318. SYST:CAP:IFBW:MAX

SYST:CAP:IFBW:MAX

Description: Reads out the upper limit of the IFBW

Type: Read

Parameters: none

Example of use: SYST:CAP:IFBW:MAX?

1.2.2.319. SYST:CAP:IFBW:MIN

SYST:CAP:IFBW:MIN

Description: Reads out the lower limit of the IFBW

Type: Read

Parameters: none

Example of use: SYST:CAP:IFBW:MIN?

1.2.2.320. TRIG

:TRIG

Description: Regardless of the setting of the trigger mode, generates a trigger immediately and executes a measurement.

Type: Write

Example of use: :TRIG

1.2.2.321. TRIG:SING

:TRIG:SING

Description: Regardless of the setting of the trigger mode, generates a trigger immediately and executes a measurement.

Type: Write

Example of use: :TRIG:SING

1.2.2.322. TRIG:SOUR

:TRIG:SOUR

Description: Sets/ Gets the trigger source.

Type: Write/ Read

Parameters:

INTernal	Specifies internal trigger.
EXTernal	Specifies external trigger.
MANual	Specifies manual trigger.
BUS	Specifies bus trigger.

Example of use: :TRIG:SOUR INT

:TRIG:SOUR?

1.2.2.323. TRIG:SCOP

TRIG:SCOP

Description: This command sets/gets the effective scope of triggering. When this function is enabled with a value of "ACTive", only active channel is triggered. When this function is enabled with a value of "ALL", all channels are triggered

Type:Write/Read

Parameters:

ALL	Specifies trigger to all channels
ACTive	Specifies trigger to active channel

Example of use: :TRIG:SCOP ALL

:TRIG:SCOP?

A Error Messages

The TVNA provides error messages to indicate its operating status. This appendix describes the error messages of the instrument in order of error number.

Error Messages in Increasing Order of Number

-420 Query UNTERMINATED

The state that generates an “UNTERMINATED” Query error.This error occurs when this instrument is designated as the talker and an incomplete program message is received, for example.

-410 Query INTERRUPTED

The state that generates a “INTERRUPTED” Query error. This error occurs when data bytes or GET are received before the transmission of the response after a query has not been completed, for example.

-400 Query error

A comprehensive query error has occurred showing that this instrument cannot detect a more detailed error.

-256 File name not found

The file name specified is not found and hence the command is not executed correctly. This error occurs when you try to read a file that does not exist in a disk or a disk is not correctly inserted into the drive to read or write a file, for example.

-224 Illegal parameter value

The parameter value is not suitable. This error occurs when the CALC:PAR:DEF command is used to specify an S-parameter that does not exist in the model (S44 in the case of a 2-port model), for example.

-223 Too much data

In this instrument, this error occurs when the number of characters exceeds 254 in a character-string parameter.

-222 Data out of range

A data element (not violating the standard) outside the range defined by this instrument has been received.

-220 Parameter error

A parameter-related error occur showing that this instrument cannot detect a

more detailed error.

-200 Execution error

An error associated with execution has been generated for which this instrument cannot specify the error message.

-158 String data not allowed

A character-string-data element has been received at a position where this instrument does not accept one.

-114 Header suffix out of range

The unit of the header is outside the range. The header is invalid in the unit for numeric parameters following a SCPI command.

-113 Undefined header

A command not defined in this instrument, though not illegal in the syntactic structure, has been received.This error occurs also when a port not existing on this model is specified in a command specifying a port number as an index.

-109 Missing parameter

The number of parameters is less than that required for the command, or the parameter has not been entered.

50 Specified channel hidden

This error occurs when an attempt is made to activate a channel not on display.For example,using the DISP:WIND:ACT command.

51 Specified trace hidden

This error occurs when an attempt is made to handle a trace which is not exist.

52 Specified marker hidden

This error occurs when an attempt is made to handle a marker which is not exist.

B Program example

The following program shows the control over the TVNA using the C language with the VISA library.

Program description as below:

1: Set up the communication with TVNA

2: Read out the information string from TVNA

3: Set up measurement parameters

4: Start up measurement

5: Read out the measurement data and display

```
#include <stdio.h>
#include ".\visa\visa.h"
int main(int argc, char* argv[])
{
	ViSession ViObj;
	ViSession ConObj;
	char* connect = "TCPIP0::localhost::inst0::INSTR";

	if (viOpenDefaultRM(&ViObj) < VI_SUCCESS)
	{
		printf("Init visa error\n");
		return -1;
	}
	//Set up communication
	if (viOpen(ViObj, connect, VI_NULL, VI_NULL, &ConObj) < VI_SUCCESS)
	{
		printf("Open connection erron\n");
		return -1;
	}

	viSetAttribute(ConObj, VI_ATTR_TMO_VALUE, 3500);
	// Terminal character is '\n'
```

```
    viSetAttribute(ConObj, VI_ATTR_TERMCHAR_EN, VI_TRUE);
    viSetAttribute(ConObj, VI_ATTR_TERMCHAR, '\n');
    // Read information string from TVNA
    ViUInt32 GetCoun;
    ViByte BufData[256];
    viPrintf(ConObj, "*IDN?\n");
    viRead(ConObj, BufData, 256, &GetCoun);
    printf("%.*s\n", GetCoun, BufData);
    // Set up measurement
    int SweepPoints = 21;
    viPrintf(ConObj, "SYST:PRES\n"); //Reset
    viPrintf(ConObj, "SENS1:SWE:POIN %d\n", SweepPoints);
    viPrintf(ConObj, "CALC1:PAR1:DEF S11\n");
    viPrintf(ConObj, "CALC1:FORM MLOG\n");
    viPrintf(ConObj, ":TRIG:SOUR MAN\n");
    viPrintf(ConObj, ":TRIG:SING\n");
    viQueryf(ConObj, "*OPC?\n", "%*t");
    // Read data
    double MData[21*2];
    GetCoun = 21 * 2;
    viQueryf(ConObj, "CALC1:DATA:FDAT?\n", "%,#lf", &GetCoun, MData);
    for (int i = 0; i < SweepPoints; i++)
    {
        printf("%f,%f\n",MData[i*2],MData[i*2+1]);
    }
    viClose(ConObj);
    viClose(ViObj);
    printf("Measurement test done,press any key\n");
    getchar();
    return 0;
}
```