FDS Series
Programming Manual

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SCPI Introduction

Syntax

SCPI commands present a hierarchical tree structure and contain multiple sub-systems, each of which is made up of a root keyword and one or more sub-keywords. The command string usually starts with ":", the keywords are separated by ":" and are followed by the parameter settings available, "?" is added at the end of the command string to indicate query and the command and parameter are separated by "space".

For example：

:TRIGger:SINGle:EDGE:SOURce <source>
:TRIGger:SINGle:EDGE:SOURce?

TRIGger is the root keyword of the command. **SINGle、EDGE** and **SOURce** are the second level, third level and fourth level keywords.The command string starts with "**:**" which separates the multiple-level keywords. **<source>** represents parameters available for setting,"**?**" represents query and the command:**TRIGger:SINGle:EDGE:SOURce** and the parameter **<source>** are separated by "space".

Syntax Rules

SCPI language itself defines a group of sub-system keywords, and at the same time allows users to add or reduce keywords. Those keywords can be some meaningful English words and are easy to remember, which are called mnemonics. Mnemonic has long and short types. The short are the abbreviation of the long.Keywords, data, and statements are separated by special characters.

➢ **Rule to format mnemonics:**

1. If the letter number of an English word is less than or equal to 4, then the word itself can be the mnemonic.(such as "Free" can be "FREE")；

2. If the letter number of an English word exceeds 4, then the first four letters

will be the mnemonic.(such as "Frequency" can be "FREQ")；

3. If the forth letter is vowel, then mnemonic uses the former three letters. Vowels consists of a, e, i, o, and u.(such as "Power" can be "POW");

4. If it is not a word but a sentence, then use the first letters of the former words and the whole of the last word. (such as "Input Voltage" can be "IVOLtage")

➢ **Usage of symbols**

1. Space

The space is used to separate command and parameter.

2. Colon :

If the colon is in front of the first character, it means the following is Root Command. When the colon is set between two keywords, then it means moving from the current level to the next level.

3. asterisk*

The commands start with asterisk are named Common Command, which is used to execute IEEE488.2 common commands.

4. Braces {}

The parameters enclosed in the braces are optional and are usually separated by the vertical bar "|". When using this command, one of the parameters must be selected.

5. Vertical Bar |

The vertical bar is used to separate multiple parameters and one of the parameters must be selected when using the command.

6. Triangle Brackets < >

The parameter enclosed in the triangle brackets must be replaced by an effective value.

7. Square Brackets [ ]

The content (command keyword) enclosed in the square brackets can be omitted.

➢ **Parameter Type**

1. **Discrete**

    The parameter should be one of the values listed.

    For example：

    :TRIGger:SINGle:EDGE:SOURce <source>

:TRIGger:SINGle:EDGE:SOURce?

Of which：

<source> can be set to: CH1|CH2|EXT|EXT/5|ACLine

The query returns an abbreviated form：CH1、CH2、EXT、EXT/5 or ACLine.

2. **Real**

Parameters can be any real number in the range of valid values， This command accepts decimal numbers(NR2 format) and scientific notation (NR3 format)parameter input. For example：

:CH<n>:OFFSet <offset>

:CH<n>:OFFSet?

Of which：

<n> can be set to: 1 or 2 denote channel1 or channel2.

<offset> can be set to: between -2000 and 2000 .

The query returns the number between -2000 and 2000.

3. **Bool**

The parameter could be "OFF"、 "0"、 "ON"、 "1".For example：

:CH1:DISPlay <bool>

:CH1:DISPlay?

Of which：

<bool> can be set to： {OFF|0}|{ON|1}

The query returns "OFF" or "ON".

4. **ASCII String**

The parameter could be ASCII characters combination.For example:

:TRIGger:SINGle:EDGE:LEVel <level>

:TRIGger:SINGle:EDGE:LEVel?

Of which：

<level> can be set to: 25mV.

Command Abbreviation

Each SCPI command can be written mixed with uppercase and lowercase according to the syntax rules, and the capital letter part is just the abbreviation of the command. If abbreviation is used, all the capital letters in the command must be written completely. For parameters with units, please refer to the detail

parameter specifications in the sub-system.

Example1：

:ACQuire:MODE SAMPle

Abbreviation Below：

:ACQ:MODE SAMP

Example2：

:CH1:SCALe 1V

Abbreviation Below：

:CH1:SCAL 1V

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Third-party API

The SCPI protocol communication of this instrument can use USB or network interface.Run the software on the computer.Select "Command Line" under the "Transfer" menu to open the SCPI command control window, and then you can send SCPI commands to control the power supply.

SCPI Command List

IEEE488.2 Common Command

*IDN?

Return the ID character string of the instrument.

Command format

*IDN?

Function Description

The query returns the ID character string of the instrument.

Parameter

None.

Instruction

None.

Return format

<Factory>,<model>,<serial number>,XX.X.X.X.X

<model>: type of instrument.

<serial number>: serial number of instrument.

XX.X.X.X.X: software version of instrument.

Example

Factory,model,2322011,V1.0.2.0.1

*RST

Restore the instrument to its default value.

Command format

*RST

Function Description

Restore the instrument to its default value.

Parameter

None.

Instruction

None.

Return format

None.
Example

None.

Oscilloscope SCPI Command List

:ACQuire Command subsystem

:ACQuire:MODE

Command format

:ACQuire:MODE <type>

:ACQuire:MODE?

Function Description

Set or query the acquisition method.

Parameter

Name	Type	Range	Default
<type>	Discrete	{SAMPle|AVERage|PEAK}	SAMP

Instruction

- **SAMPle:**In this mode,the oscilloscope does not perform any processing on the acquire samples, which is the default mode of the oscilloscope.
- **AVERage:**In this mode,the oscilloscope averages the multiple acquired waveforms , reduce random noise on the input signal and improve the vertical resolution.
- **PEAK:**In this mode,the oscilloscope keeps the maximum and minimum values of all waveforms in each acquisition interval.

Return format

The query returns "SAMPle"、"AVERage" or "PEAK".

Example

Set the acquire mode to AVERage:

:ACQuire:MODE AVERage

Query the acquire mode:

:ACQuire:MODE?

:ACQuire:AVERage:NUM <count>

Command format

:ACQuire:AVERage:NUM <count>

:ACQuire:AVERage:NUM?

Function Description

Set or query the average sampling times.

Parameter

Name	Type	Range	Default
<count>	Discrete	{4|16|64|128}	4

Instruction

● The average values currently supported are 4, 16, 64, or 128.

Return format

The query returns "4"、"16"、"64" or "128".

Example

Set the average sampling times to 64:

:ACQuire:AVERage:NUM 64

Query average sampling times:

:ACQuire:AVERage:NUM?

:ACQuire:DEPMEM<mdep>

Command format

:ACQuire:DEPMEM <mdep>

:ACQuire:DEPMEM?

Function Description

Set or query the number of waveform points that the oscilloscope can store in a single trigger acquisition.

Parameter

Name	Type	Range	Default
\<mdep\>	Discrete	{1k|10k|100k|1M|10M}	10k

Instruction

None.

Return format

The query returns "1k"、"10k"、"100k"、"1M" or "10M".

Example

Set the storage depth to "10k":

:ACQuire:DEPMEM 10k

Query the storage depth:

:ACQuire:DEPMEM?

:ACQuire:ADCBit\<type\>

Command format

:ACQuire:ADCBit \<type\>

:ACQuire:ADCBit?

Function Description

Set or query the accuracy of oscilloscope data.

Parameter

Name	Type	Range	Default
\<type\>	Discrete	{8bit|12bit|14bit}	8bit

Instruction

None.

Return format

The query returns "8bit"、"12bit" or "14bit".

Example

Set the precision mode to 8bit:

:ACQuire:ADCBit 8bit

Query the precision mode:

:ACQuire:ADCBit?

:HORIzontal Command subsystem

:HORIzontal:SCALe

Command format

:HORIzontal:SCALe <scale_value>

:HORIzontal:SCALe?

Function Description

Set or query the primary time base gear.

Parameter

Name	Type	Range	Default
<scale_value>	Discrete	See Instruction	1.000ms

Instruction

● Default primary time base gear setting.

The range of time base gear is as follows：

{2.00ns|5.00ns|10.00ns|20.00ns|50.00ns|100.00ns|200.00ns|500.00ns|1.000us|2.00 0us|5.000us|10.00us|20.00us|50.00us|100.0us|200.0us|500.0us|1.000ms|2.000ms|5. 000ms|10.00ms|20.00ms|50.00ms|100.0ms|200.0ms|500.0ms|1.000s|2.000s|5.000s| 10.00s|20.00s|50.00s|100.0s|200.0s|500.0s|1.00ks}

Return format

The query returns the time base range value as a string.

Example

Set the primary time base gear to 200.0us:

:HORIzontal:SCALe 200.0us

Query the primary time base gear:

:HORIzontal:SCALe?

:HORIzontal:OFFset

Command format

:HORIzontal:OFFset <value>

:HORIzontal:OFFset?

Function Description

Set or query the horizontal trigger location in primary time base mode.

Parameter

Name	Type	Range	Default
<value>	Real	-10 to 1000000	0

Instruction

● <value> range is related to the current horizontal time base mode and operating state of the oscilloscope.

● If the current primary time base is 500us/div, assuming a horizontal offset of 2 cells, then the time for the horizontal offset is 1.000ms.

Return format

The query returns the horizontal trigger location as a string.

Example

Set the horizontal gear of channel 1 to be offset by 1 square:

:HORIzontal:OFFset 1

Query the horizontal trigger position:

:HORIzontal:OFFset?

:CH Command subsystem

:CH<n>:DISPlay

Command format

:CH<n>:DISPlay <bool>

:CH<n>:DISPlay?

Function Description

Set or query the channel status.

Parameter

Name	Type	Range	Default
<n>	Discrete	{1|2}	1
<bool>	Bool	{{OFF|0}|{ON|1}}	OFF|0

Instruction

None.

Return format

The query returns "OFF" or "ON".

Example

Set the display of channel 1 to ON:

:CH1:DISPlay ON

Query the display of channel 1 :

:CH1:DISPlay?

:CH<n>:COUPling

Command format

:CH<n>:COUPling <coupling>

:CH<n>:COUPling?

Function Description

Set or query the coupling mode of channel input.

Parameter

Name	Type	Range	Default
<n>	Discrete	{1|2}	1
<coupling>	Discrete	{AC|DC|GND}	DC

Instruction

- AC: The DC component of the measured signal is blocked.
- DC:Both the DC and AC components of the measured signal can be passed.
- GDN:Both the DC and AC components of the measured signal are blocked.

Return format

The query returns"AC"、"DC" or "GND".

Example

Set the input coupling mode of channel 1 to "DC":

:CH1:COUPling DC

Query the input coupling mode of channel 1:

:CH1:COUPling?

:CH<n>:PROBe

Command format

:CH<n>:PROBe <atten>

:CH<n>:PROBe?

Function Description

Set or query the attenuation ratio of the probe.

Parameter

Name	Type	Range	Default
<n>	Discrete	{1|2}	1
<coupling>	Real	0.000001X to 1000000X	10.0X

Instruction

None.

Return format

The query returns probe attenuation ratio.

Example

Set the attenuation ratio of the probe connected to channel 1 to 10X:

:CH1:PROBe 10

Query the attenuation ratio of the probe connected to channel 1:

:CH1:PROBe?

:CH<n>:SCALe

Command format

:CH<n>:SCALe <scale>

:CH<n>:SCALe?

Function Description

Set or query the vertical gear displayed by the specified channel waveform.

Parameter

Name	Type	Range	Default
<n>	Discrete	{1|2}	1
<scale>	Discrete	{1.000mV|2.000mV|5.000mV|10.00mV|20.00mV|50.00mV|100.0mV|200.0mV|500.0mV|1.000V|2.000V|5.000V|10.00V}	100mV

Instruction

- When setting the command parameters, the influence of the probe ratio parameter should be considered. The probe ratio of the current parameter is 1X, when the probe ratio is 10X and the 10mV is to be set, the command is: CH<n>:SCALe 100mV.

Return format

The query returns the vertical gear value as a string.

Example

Set the vertical gear of channel 1 to 1V/div:
:CH1:SCALe 1V
Query the vertical gear of channel 1:
:CH1:SCALe?

:CH<n>:OFFSet

Command format

:CH<n>:OFFSet <offset>
:CH<n>:OFFSet?

Function Description

Set or query the vertical offset of the waveform display for a specified channel.

Parameter

Name	Type	Range	Default
<n>	Discrete	{1|2}	1
<offset>	Real	-2000 to 2000 ,the range is related to the current voltage gear of the oscilloscope, please refer to the instructions.	2

Instruction

- <n> 1 indicates channel 1,<offset> is the vertical offset of corresponding channel 1.Default is 2.
- offset*scale<=±2V(1 mV/div - 50 mV/div);Probe ratio is 1X;

- offset*scale<=± 20 V (100 mV/div - 1 V/div);Probe ratio is 1X;
- offset*scale<=± 200 V (2 V/div - 10 V/div);Probe ratio is 1X.

Return format

The query returns the zero lattice position as float data, as in 1.00.

Example

Set the vertical position of channel 1 to 1 grid:

:CH1:OFFSet 1

Query the vertical position of channel 1:

:CH1:OFFSet?

:CH<n>:INVErse

Command format

:CH<n>:INVErse <bool>

:CH<n>:INVErse?

Function Description

Set or query the waveform inversion of a specified channel.

Parameter

Name	Type	Range	Default
<n>	Discrete	{1|2}	1
<bool>	Bool	{{OFF|0}|{ON|1}}	OFF|0

Instruction

- When the waveform inversion is turned off, the waveform is displayed normally.
  When the waveform is turned on, the waveform is reversed 180 degrees.

Return format

The query returns"OFF" or "ON".

Example

Set the inverting of channel 1:

:CH1:INVErse ON

Query the inverting of channel 1:

:CH1:INVErse?

:CH<n>:BANDlimit

Command format

:CH<n>:BANDlimit <type>

:CH<n>:BANDlimit?

Function Description

Set or query the bandwidth limit for a specified channel.

Parameter

Name	Type	Range	Default
<type>	Discrete	{20E6|FULL}	20E6

Instruction

● 20E6 denotes 20MHz,FULL denotes full bandwidth.

Return format

The query returns"20E6" or "FULL".

Example

Set the bandwidth limit of channel 1 to 20MHz:

:CH1:BANDlimit 20E6

Query the bandwidth limit of channel 1:

:CH1:BANDlimit?

:TRIGger Command subsystem

:TRIGger:STATus?

Command format

:TRIGger:STATus?

Function Description

Query the current trigger state.

Parameter

Type	Range	Default
Discrete	{AUTO|READy|STOP|SCAN|TRIG}	AUTO

Instruction

None.

Return format

The query returns"AUTO"、"READy"、"STOP"、"SCAN" or "TRIG".

Example

Query the current trigger state:

:TRIGger:STATus?

:TRIGger:SINGle

:TRIGger:SINGle:MODE

Command format

:TRIGger:SINGle:MODE <type>

:TRIGger:SINGle:MODE?

Function Description

Set or query the single trigger type.

Parameter

Name	Type	Range	Default
<type>	Discrete	{EDGE}	EDGE

Instruction

● EDGE:Indicates that the current trigger type is edge trigger.

Return format

The query returns the trigger type currently in use.

Example

Set the single trigger type to EDGE:

:TRIGger:SINGle:MODE EDGE

Query the single trigger type:

:TRIGger:SINGle:MODE?

:TRIGger:SINGle:EDGE

:TRIGger:SINGle:EDGE:SOURce

Command format

:TRIGger:SINGle:EDGe:SOURce <source>

:TRIGger:SINGle:EDGe:SOURce?

Function Description

Set or query the source of the single trigger.

Parameter

Name	Type	Range	Default
<source>	Discrete	{CH1|CH2|EXT|EXT/5|ACLine}	CH1

Instruction

None.

Return format

The query returns"CH1"、"CH2"、"EXT"、"EXT/5" or "ACLine"

Example

Set the source of the single trigger to CH2:

:TRIGger:SINGle:EDGE:SOURce CH2

Query the source of the single trigger:

:TRIGger:SINGle:EDGE:SOURce?

:TRIGger:SINGle:EDGE:COUPling

Command format

:TRIGger:SINGle:EDGE:COUPling <coupling>

:TRIGger:SINGle:EDGE:COUPling?

Function Description

Set or query the coupling mode for single trigger.

Parameter

Name	Type	Range	Default
<coupling>	Discrete	{DC|AC|HF}	DC

Instruction

- DC:Allow DC and AC components to pass through the trigger path.
- AC:Block any DC components from passing through the trigger path.
- HF:Suppression of high-frequency components through the trigger path.

Return format

The query returns"DC"、"AC" or "HF".

Example

Set the coupling mode of the single trigger to AC:

:TRIGger:SINGle:EDGE:COUPling AC

Query the coupling mode of the single trigger:

:TRIGger:SINGle:EDGE:COUPling?

:TRIGger:SINGle:EDGE:SLOPe

Command format

:TRIGger:SINGle:EDGE:SLOPe <slope>

:TRIGger:SINGle:EDGE:SLOPe?

Function Description

Set or query the slope of the single trigger.

Parameter

Name	Type	Range	Default
<slope>	Discrete	{RISE|FALL}	RISE

Instruction

- RISE: Rising edge.
- FALL: Falling edge.

Return format

The query returns"RISE" or "FALL".

Example

Set the single trigger slope toFALL:

:TRIGger:SINGle:EDGE:SLOPe FALL

Query the single trigger slope to:

:TRIGger:SINGle:EDGE:SLOPe?

:TRIGger:SINGle:EDGE:LEVel

Command format

:TRIGger:SINGle:EDGE:LEVel <level>

:TRIGger:SINGle:EDGE:LEVel?

Function Description

Set or query the single trigger level.

Parameter

Name	Type	Range	Default
<level>	String	-5×VerticalScale-OFFSet to 5×VerticalScale-OFFSet	0.000pV

Instruction

None.

Return format

The query returns the trigger level voltage value in the form of float data.

Example

Set the trigger level of the single trigger source to CH1 to 25mV:

:TRIGger:SINGle:EDGE:SOURce CH1;

:TRIGger:SINGle:EDGE:LEVel 25mV

Query the trigger level of the single trigger source:

:TRIGger:SINGle:EDGE:LEVel?

:TRIGger:SINGle:HOLDoff

Command format

:TRIGger:SINGle:HOLDoff <time>

:TRIGger:SINGle:HOLDoff?

Function Description

Set or query the time for single trigger release.

Parameter

Name	Type	Range	Default
<time>	String	100ns to10s	100ns

Instruction

None.

Return format

The query returns release time.

Example

Set the time of single trigger release to 1ms:

:TRIGger:SINGle:HOLDoff 1ms

Query the time of single trigger release:

:TRIGger:SINGle:HOLDoff?

:TRIGger:SINGle:SWEEp

Command format

:TRIGger:SINGle:SWEEp <mode>

:TRIGger:SINGle:SWEEp?

Function Description

Set or query the single trigger mode.

Parameter

Name	Type	Range	Default
<mode>	Discrete	{AUTO|NORMal|SINGle}	AUTO

Instruction

● AUTO:Automatically triggered, waveform display regardless of whether the
trigger conditions are met;

NORMal:Normally triggered.When the trigger conditions are met, the waveform is displayed. If not , the original waveform is displayed and the next trigger is displayed;

SINGle:Single trigger,the oscilloscope waits for the trigger, displays the waveform when the trigger conditions are met, and then stops.

Return format

The query returns"AUTO"、 "NORMal" or "SINGle".

Example

Set the single trigger mode to NORMal:
:TRIGger:SINGle:SWEEp NORMal
Query the single trigger mode:
:TRIGger:SINGle:SWEEp?

:MEASUrement Command subsystem

:MEASUrement:CH<n>:<items>

Command format

:MEASUrement:CH<n>:<items>?

Function Description

Gets the value of the channel measurement term.

Parameter

Name	Type	Range	Default
<n>	Discrete	{1|2}	1
<items>	Discrete	{MAX|MIN|PKPK|VTOP|VBASe|VAMP|AVERage|SQUAresum|CYCRms|OVERShoot|PREShoot|PERiod|FREQuency|RTime|FTime|PWIDth|NWIDth|PDUTy|NDUTy|SCREenduty|StdDev|CYCLearea|HARDfrequency|FALLedgenum|AREA	--

		|PPULsenum|NPULsenum|RISEedgenum}	

Parameter annotation

Items(voltage)	annotation	Items（time）	annotation
MAX	Maximum value	PERiod	Period
MIN	Minimum value	FREQuency	Frequency
PKPK	Peak-to-peak value	RTime	Rise time
VTOP	Top value	FTime	Fall time
VBASe	Base value	PWIDth	Positive pulsewidth
VAMP	Amplitude	NWIDth	Negative pulsewidth
AVERage	Average value	PDUTy	Positive duty cycle
SQUAresum	RMS value	NDUTy	Negative duty cycle
CYCRms	Periodic root mean square	SCREenduty	Screen pulsewidth ratio
OVERShoot	Overshoot	StdDev	Standard deviation
PREShoot	Preshoot		

Items（Count values and others）	annotation
CYCLearea	Cycle Area
HARDfrequency	Hardware frequency meter
FALLedgenum	Falling edges number
AREA	Area
PPULsenum	Positive pulse number
NPULsenum	Negative pulse number
RISEedgenum	Rising edges number

Instruction

None.

Return format

The query returns current measurement type.

Example

Query period for the channel 1:

:MEASUrement:CH1:PERiod?

:MEASUrement:CH<n>

Command format

:MEASUrement:CH<n>?

Function Description

Gets all measurements for the specified channel (JSON format).

Parameter

Name	Type	Range	Default
<n>	Discrete	{1|2}	1

Instruction

None.

Return format

{"MAX":"-100.0mV,ON","MIN":"-180.0mV,ON","AVERage":"-132.8mV,ON","SQUAres um":"135.0mV,ON","StdDev":"2.220V,ON","PKPK":"80.00mV,ON","VTOP":"-120.0m V,ON","VBASe":"-160.0mV,ON","VAMP":"40.00mV,ON","OVERShoot":"50.00%,ON", "PREShoot":"50.00%,ON","CYCRms":"0.000pV,ON","CYCMean":"0.000pV,ON","PE Riod":"?,ON","FREQuency":"?,ON","RTime":"?,ON","FTime":"?,ON","PWIDth":"0s,O N","NWIDth":"0s,ON","PDUTy":"?,ON","NDUTy":"?,ON","SCREenduty":"?,ON","Burst W":"0s,ON","PPULsenum":"0,ON","NPULsenum":"0,ON","RISEedgenum":"0,ON","FA LLedgenum":"0,ON","CYCLearea":"0.000pVs,ON","AREA":"-15.30Vs,ON"}

Example

Query all measurements for channel 1:
:MEASUrement:CH1?

:MEASUrement:ALL

Command format

:MEASUrement:ALL?

Function Description

Get all measurements for channel 1 and channel 2（JSON format）.

Parameter

None.

Instruction

None.

Return format

{"CH1":{"MAX":"-100.0mV,ON","MIN":"-180.0mV,ON","AVERage":"-139.5mV,ON","SQUAresum":"141.7mV,ON","StdDev":"2.220V,ON","PKPK":"80.00mV,ON","VTOP":"-140.0mV,ON","VBASe":"-160.0mV,ON","VAMP":"20.00mV,ON","OVERShoot":"200.00%,ON","PREShoot":"100.00%,ON","CYCRms":"0.000pV,ON","CYCMean":"0.000pV,ON","PERiod":"?,ON","FREQuency":"?,ON","RTime":"?,ON","FTime":"?,ON","PWIDth":"0s,ON","NWIDth":"0s,ON","PDUTy":"?,ON","NDUTy":"?,ON","SCREenduty":"?,ON","BurstW":"0s,ON","PPULsenum":"0,ON","NPULsenum":"0,ON","RISEedgenum":"0,ON","FALLedgenum":"0,ON","CYCLearea":"0.000pVs,ON","AREA":"-16.07Vs,ON"},"CH2":{"MAX":"-40.00mV,ON","MIN":"-120.0mV,ON","AVERage":"-80.00mV,ON","SQUAresum":"83.75mV,ON","StdDev":"2.000V,ON","PKPK":"80.00mV,ON","VTOP":"-80.00mV,ON","VBASe":"-100.0mV,ON","VAMP":"20.00mV,ON","OVERShoot":"200.00%,ON","PREShoot":"100.00%,ON","CYCRms":"0.000pV,ON","CYCMean":"0.000pV,ON","PERiod":"?,ON","FREQuency":"?,ON","RTime":"?,ON","FTime":"?,ON","PWIDth":"0s,ON","NWIDth":"0s,ON","PDUTy":"?,ON","NDUTy":"?,ON","SCREenduty":"?,ON","BurstW":"0s,ON","PPULsenum":"0,ON","NPULsenum":"0,ON","RISEedgenum":"0,ON","FALLedgenum":"0,ON","CYCLearea":"0.000pVs,ON","AREA":"-9.221Vs,ON"}}

Example

None.

:DATA Command subsystem

:DATA command obtains a large amount of data,so the data returned by each

instruction has a four-byte file length that indicates the amount of data returned by this instruction.

:DATA:WAVE:SCREen:HEAD?

Command format

:DATA:WAVE:SCREen:HEAD?

Function Description

Get screen waveform file header information.

Parameter

None.

Instruction

- ?\03\00\00 indicates the data length of the returned text, and the data format is in binary mode.
- "XXXX,XXXXXXX" denote "Manufacturer information,Model information".

Return format

The query returns a piece of text in json format.

Example

Query the text returned by the command:

:DATA:WAVE:SCREen:HEAD?
?\03\00\00{"DATATYPE":"SCREEN","RUNSTATUS":"TRIG","IDN":"XXXX,XXXXXXX,2225036,V1.0.2.1.2","MODEL":"610201101","TIMEBASE":{"SCALE":"200.0us","HOFFSET":0},"SAMPLE":{"FULLSCREEN":1800,"SLOWMOVE":-1,"DATALEN":1800,"SAMPLERATE":"(2.5MS\/s)","TYPE":"SAMPle","DEPMEM":"10K","PRECISION":0},"CHANNEL":[{"NAME":"CH1","DISPLAY":"ON","Current_Rate":10000,"Current_Ratio":50,"Measure_Current_Switch":"OFF","COUPLING":"DC","PROBE":1,"SCALE":0.5,"OFFSET":125,"FREQUENCY":1000.0047059044983,"INVERSE":false},{"NAME":"CH2","DISPLAY":"ON","Current_Rate":10000,"Current_Ratio":50,"Measure_Current_Switch" :"OFF","COUPLING":"DC","PROBE":10,"SCALE":0.001,"OFFSET":-125,"FREQUENCY":912.5230166382427,"INVERSE":false}],"Trig":{"Mode":"SINGle","Type":"EDGE

","Sweep":"AUTO","Items":{"Channel":"CH1","Level":"-80.0mV","Edge":"RISE","Coupling":"DC","HoldOff":"100ns "}}}.

:DATA:WAVE:SCREen:CH<x>?

Command format

:DATA:WAVE:SCREen:CH<x>?

Function Description

Gets the number of screen waveform channels.

Parameter

None.

Instruction

- Data points are two bytes per dot, using LITTLE_ENDIAN byte order.
- Must first execute :DATA:WAVE:SCREen:HEAD? command and then can be execute :DATA:WAVE:SCREen:CH1? command, otherwise the data cannot be obtained.

Return format

The query returns data for the screen waveform channel.

Example

A complete acquisition of the waveform file at once

:DATA:WAVE:SCREen:HEAD?

:DATA:WAVE:SCREen:CH1?

:DATA:WAVE:SCREen:CH2?

:DATA:WAVE:SCREen:BMP?

Command format

:DATA:WAVE:SCREen:BMP?

Function Description

Get screenshots.

Parameter

None.

Instruction

None.

Return format

The query returns a BMP screenshot.

Example

Query a BMP file format:

:DATA:WAVE:SCREen:BMP?

Other Command

:AUTOset ON

Function Description

:AUTOset ON

Function Description

Automatic setup.

Parameter

None.

Instruction

None.

Return format

None.

Example

None.

Multimeter SCPI Command List

:DMM Command subsystem

:DMM:FUNCtion

Command format

:DMM:FUNCtion<type>

:DMM:FUNCtion?

Function Description

Set or query the current multimeter function.

Parameter

Name	Type	Range	Default
<type>	Discrete	{mV|V|Capacitance|uA|mA|A|Resistance}	V

Instruction

None.

Return format

The query returns"mV"、"V"、"Capacitance"、"uA"、"mA"、"A" or "Resistance".

Example

Set the multimeter function to Resistance

:DMM:FUNCtion Resistance

Query the multimeter function :

:DMM:FUNCtion?

:DMM:MEAS

Command format

:DMM:MEAS?

Function Description

Query the current functional measurement.

Parameter

None.

Instruction

None.

Return format

None.

Example

Query the current functional measurement:

:DMM:MEAS?

Source SCPI Command List

:FUNCtion Command subsystem

:FUNCtion

Command format

:FUNCtion<waveform>

:FUNCtion?

Function Description

Set or query the function waveform of the current channel output of the signal generator.

Parameter

Name	Type	Range	Default
<waveform>	Discrete	{SINE|SQUare|RAMP|PULSe|ARB}	SINE

Instruction

● The parameters controlled under the FUNCtion command are the current editing channel. If you need to set other channels, you need to switch channels first (if the instrument is multi-channel), refer to:CH Command subsystem

Return format

The query returns"SINE"、"SQUare"、"RAMP"、"PULSe" or "ARB".

Example

Set the function waveform of the channel output to SINE:

:FUNCtion SINE

Query the function waveform of the channel output:

:FUNCtion?

:FUNCtion:FREQuency

Command format

:FUNCtion:FREQuency<frequency>

:FUNCtion:FREQuency?

Function Description

Set or query the frequency of the current channel output function of the signal generator.

Parameter

Name	Type	Range	Default
<frequency>	Real	Sine：1 to 5e12 ; Square：1 to 2.5e12 ; Pulse：1 to 1e12 ; Ramp：1 to 1e11 ; Arbitrary：1 to 1e12 .	1.000000kHz

Instruction

- <frequency> default unit is Hz.
- DC or noise has no frequency parameter.

Return format

Returns the current channel by scientific notation <frequency> values.

The <frequency> values returned by the query are expressed in scientific notation as follows：1.000000e+04.

Example

Set the frequency of the channel output function to1kHz:

:FUNCtion:FREQuency 1000

Query the frequency of the channel output function:

:FUNCtion:FREQuency?

:FUNCtion:PERiod

Command format

:FUNCtion:PERiod \<period\>

:FUNCtion:PERiod?

Function Description

Set or query the period of the output function of the current channel.

Parameter

Name	Type	Range	Default
\<period\>	Real	Sine：2e-8 to 1e+6 ; Square：4e-8 to 1e+6 ; Pulse：1e-7 to 1e+6 ; Ramp：1e-6 to 1e+6 ; Arbitrary：1e-7 to 1e+6 .	1.000000ms

Instruction

- \<period\> default unit is s.
- DC or noise has no frequency parameter.

Return format

Returns the current channel by scientific notation \<period\> values.

The \<period\> values returned by the query are expressed in scientific notation as follows：1.000000e-04.

Example

Set the current channel waveform period to 10us:

:FUNCtion:PERiod 1e-5

Query the current channel waveform period:

:FUNCtion:PERiod?

:FUNCtion:PHAse

Command format

:FUNCtion:PHASe <phase>

:FUNCtion:PHASe?

Function Description

Set or query the starting phase of the current channel output function.

Parameter

Name	Type	Range	Default
<phase>	Real	0 to 360	0.0º

Instruction

- <phase>default unit is degree(º).
- DC or noise has no frequency parameter.

Return format

Returns the current channel by float data <phase> values.

The <phase> values returned by the query are expressed in float data as follows：4.5.

Example

Set the starting phase of the channel output function to 2°:

:FUNCtion:PHASe 2

Query the starting phase of the channel output function :

:FUNCtion:PHASe?

:FUNCtion:AMPLitude

Command format

:FUNCtion:AMPLitude <amplitude>

:FUNCtion:AMPLitude?

Function Description

Set or query the amplitude (peak-to-peak value) of the current channel output function.

Parameter

Name	Type	Range	Default
<amplitude>	Real	2e-3 to 1e7	1.000Vpp

Instruction

- <amplitude>default unit is Vpp,can be accurate to 3 decimal places such as:2.222.
- DC doesn't have this parameter.

Return format

Returns the current channel by scientific notation <amplitude> values.

The <amplitude> values returned by the query are expressed in scientific notation as follows：1.000000e+00.

Example

Set the amplitude of the channel output function to 1Vpp:

:FUNCtion:AMPLitude 1

Query the amplitude of the channel output function:

:FUNCtion:AMPLitude?

:FUNCtion:OFFSet

Command format

:FUNCtion:OFFSet <offset>

:FUNCtion:OFFSet?

Function Description

Set or query the offset voltage of the current channel output function.

Parameter

Name	Type	Range	Default
<offset>	Real	-5e6 to 5e6	0mV

Instruction

● <offset> default unit is V,can be accurate to 3 decimal places such as:1.112.

Return format

Returns the current channel by scientific notation <offset> values.

The <offset> values returned by the query are expressed in scientific notation as follows：0.000000e+00.

Example

Set the waveform offset of the current channel to 1V:

:FUNCtion:OFFSet 1

Query the waveform offset of the current channel:

:FUNCtion:OFFSet?

:FUNCtion:HIGH

Command format

:FUNCtion:HIGH<high>

:FUNCtion:HIGH?

Function Description

Set or query the high level voltage of the current channel output function.

Parameter

Name	Type	Range	Default
<offset>	Real	offset + amplitude / 2	500mV

Instruction

● <high> default unit is V,can be accurate to 3 decimal places such as；1.111.

Return format

Returns the current channel by scientific notation <high> values.

The <high> values returned by the query are expressed in scientific notation as follows：5.000000e-01.

Example

Set the waveform high voltage of the current channel to 1V:

:FUNCtion:HIGH 1

Query the waveform high voltage of the current channel:

:FUNCtion:HIGH?

:FUNCtion:LOW

Command format

:FUNCtion:LOW <low>

:FUNCtion:LOW?

Function Description

Set or query the low level voltage of the current channel output function.

Parameter

Name	Type	Range	Default
<offset>	Real	offset - amplitude / 2	-500mV

Instruction

● <low> default unit is V,can be accurate to 3 decimal places such as:1.123.

Return format

Returns the current channel by scientific notation <low> values.

The <low> values returned by the query are expressed in scientific notation as follows：-5.000000e-01.

Example

Set the waveform low voltage of the current channel to-1V:

:FUNCtion:LOW -1

Query the waveform high voltage of the current channel:

:FUNCtion:LOW?

:FUNCtion:RAMP:SYMMetry

Command format

:FUNCtion:RAMP:SYMMetry <symmetry>

:FUNCtion:RAMP:SYMMetry?

Function Description

Set or query the percentage symmetry of the current channel ramp wave.

Parameter

Name	Type	Range	Default
<symmetry>	Real	0 to 100	50.0%

Instruction

- <symmetry>default unit is percentage (%)，can be accurate to 1 decimal place such as:55.5.

Return format

Returns the current channel by float data <symmetry> values.

The <symmetry> values returned by the query are expressed in float data as follows：50.0.

Example

Set the ramp symmetry of the current channel to 60%:

:FUNCtion:RAMP:SYMMetry 60

Query the ramp symmetry of the current channel:

:FUNCtion:RAMP:SYMMetry?

:FUNCtion:PULSe:WIDTh

Command format

:FUNCtion:PULSe:WIDTh <plusewidth>

:FUNCtion:PULSe:WIDTh?

Function Description

Set or query the pulsewidth time of the current channel pulse wave.

Parameter

Name	Type	Range	Default
<plusewidth>	Real	dutycycle / 1000 * period	500.000us

Instruction

- <plusewidth> default unit is s,can be accurate to 6 decimal place such as:0.000001.

Return format

Returns the current channel by scientific notation <plusewidth> values.

The <plusewidth> values returned by the query are expressed in scientific notation as follows：2.000000e-04.

Example

Set the pulsewidth of the current channel to 20us:

:FUNCtion:PULSe:WIDTh 2e-5

Query the pulsewidth of the current channel:

:FUNCtion:PULSe:WIDTh?

:FUNCtion:PULSe:DTYCycle

Command format

:FUNCtion:PULSe:DTYCycle <dtycycle>

:FUNCtion:PULSe:DTYCycle?

Function Description

Set or query the dutycycle percentage of the current channel.

Parameter

Name	Type	Range	Default
<dtycycle>	Real	0.1 to 99.9	50.0%

Instruction

● <dtycycle> default unit is percentage(%).

Return format

Returns the current channel by float data <dutycycle> values.

The <dutycycle> values returned by the query are expressed in float data as follows：

25.0.

Example

Set the dutycycle percentage of the current channel to30%:

:FUNCtion:PULSe:DTYCycle 30

Query the dutycycle percentage of the current channel:

:FUNCtion:PULSe:DTYCycle?

:CHANnel Command subsystem

:CHANnel

Command format

:CHANnel <CHn>

:CHANnel?

Function Description

Set or query the current channel.

Parameter

Name	Type	Range	Default
<CHn>	Discrete	{CH1|CH2}	CH1

Instruction

● Although the two channels are side-by-side, there is an idea of the current channel when operating.

Return format

The query returns"CH1" or "CH2".

Example

Set the current channel to channel 1:

:CHANnel CH1

Query the current channel:

:CHANnel?

:CHANnel:CH<bool>

Command format

:CHANnel:CH <x><bool>

:CHANnel:CH?

Function Description

Set or query the channel output status switch.

Parameter

Name	Type	Range	Default
<x>	Discrete	{1|2}	1
<bool>	Discrete	{{OFF|0}|{ON|1}}	OFF|0

Instruction

None.

Return format

The query returns"OFF" or "ON".

Example

Set the output status of channel 1 to ON：

:CHANnel:CH1 ON

Query the output status of channel 1：

:CHANnel:CH1?

:DATA Command subsystem

:DATA|TRACE:DATA USER<X>,#<4XXXX><XXX...>

Command format

:DATA|TRACE:DATA USER<X>,#<4XXXX><XXX...>

:DATA|TRACE:DATA USER<X>,#<4XXXX><XXX...>?

Function Description

Set arbitrary wave shape data.

Parameter

None.

Instruction

● <XXX...> is binary waveform data.

Return format

None.

Example

The waveform is transferred to the edit memory of the instrument:

:DATA:DATA USER0,#42000<DAB><DAB>...<DAB>

The block data element #42000 indicates that 4 is 2000 bits（byte count）,and that

2000 bytes of binary data are to be sent.

Voltage SCPI Command List

:APPly Command subsystem

:APPly:VOLTage

Command format

:APPly:VOLTage<value>

:APPly:VOLTage?

Function Description

Without switching channels, the set voltage value of each channel is set at the same time.

Parameter

Name	Type	Range	Default
<value>	Real	{<value1>[,<value2>]}	5.000,5.000

Instruction

- value1:channel 1voltage.
- value2:channel 2 voltage.
- The input voltage value can be a decimal value, and channel 1 is set by default if only one value is entered.

Return format

The query returns the set voltage value as float data.

Example

Set the voltage to 1V for channel 1 and 2V for channel 2:

:APPly:VOLTage 1,2

Query all current channel set voltage values:

:APPly:VOLTage?

:APPly:CURRent

Command format

:APPly:CURRent<value>

:APPly:CURRent?

Function Description

Without switching channels, the set current value of each channel is set at the same time.

Parameter

Name	Type	Range	Default
<value>	Real	{<value1>[,<value2>]}	2.000,2.000

Instruction

- value1:channel 1 current.
- value2:channel 2 current.
- The input current value can be a decimal value, and channel 1 is set by default if only one value is entered.

Return format

The query returns the set current value as float data.

Example

Set the voltage to 1A for channel 1 and 2A for channel 2::

:APPly:CURRent 1,2

Query all current channel set current values:

:APPly:CURRent?

:MEASure Command subsystem

:MEASure:VOLTage

Command format

:MEASure:VOLTage?

Function Description

Query the readback voltage value of the current channel.

Parameter

None.

Instruction

None.

Return format

The query returns the readback voltage value as float data.

Example

Query the readback voltage value of the currently selected channel:
MEAS:VOLT?

:MEASure:CURRent

Command format

:MEASure:CURRent?

Function Description

Query the readback current value of the current channel.

Parameter

None.

Instruction

None.

Return format

The query returns the readback current value as float data.

Example

Query the readback current value of the currently selected channel:
MEAS:CURR?

:MEASure:POWer

Command format

:MEASure:POWer?

Function Description

Query the readback power value of the current channel.

Parameter

None.

Instruction

None.

Return format

The query returns the readback power value as float data.

Example

Query the readback power value of the currently selected channel:
MEAS:POWer?

:MEASure:VOLTage:ALL

Command format

:MEASure:VOLTage:ALL?

Function Description

The query returns readback voltage values for all channels.

Parameter

None.

Instruction

None.

Return format

The query returns the readback voltage values for all channels as float data.

Example

Query the readback voltage values for all channels:

MEAS:VOLTage:ALL?

:MEASure:CURRent:ALL

Command format

:MEASure:CURRent:ALL?

Function Description

The query returns readback current values for all channels..

Parameter

None.

Instruction

None.

Return format

The query returns the readback current values for all channels as float data.

Example

Query the readback current values for all channels:

MEAS:CURRent:ALL?

:INSTrument Command subsystem

:INSTrument

Command format

:INSTrument<source>

:INSTrument?

Function Description

Query or switch the currently selected channel.

Parameter

Name	Type	Range	Default
<source>	Discrete	{CH1|CH2}	CH1

Instruction

None.

Return format

The query returns "CH1" or "CH2".

Example

Set the currently selected channel to CH1:

:INSTrument CH1

Query the currently selected channel:

:INSTrument?

:INSTrument:NSELect

Command format

:INSTrument:NSElect<source>

:INSTrument:NSElect?

Function Description

Query or switch the currently selected channel.

Parameter

Name	Type	Range	Default
<source>	Discrete	{1|2}	1

Instruction

None.

Return format

The query returns "1" or "2".

Example

Set the currently selected channel to 2:

:INSTrument:NSElect 2

Query the currently selected channel:

:INSTrument:NSElect?

:OUTPut Command subsystem

:OUTPut

Command format

:OUTPut<bool>

:OUTPut?

Function Description

Set or query all outputs of the power on or off.

Parameter

Name	Type	Range	Default
<bool>	Bool	{{OFF|0}|{ON|1}}	OFF|0

Instruction

None.

Return format

The query returns"ON" or "OFF".

Example

Set the channel output status to ON:

:OUTPut ON

Query the channel output status:

:OUTPut?

:OUTPut:SERies

Command format

:OUTPut:SERies<bool>

:OUTPut:SERies?

Function Description

Set or query the series status of channel 1 and channel 2.

Parameter

Name	Type	Range	Default
<bool>	Bool	{{OFF|0}|{ON|1}}	OFF|0

Instruction

● ON|1 indicates switch to series state,OFF|0 indicates switch to independent state.

Return format

The query returns"ON" or "OFF".

Example

Open channel 1 and channel 2 series state:

:OUTPut:SERies ON

Query channel 1 and channel 2 series state:

:OUTPut:SERies?

:OUTPut:PARallel

Command format

:OUTPut:PARallel<bool>

:OUTPut:PARallel?

Function Description

Set or query the parallel status of channel 1 and channel 2.

Parameter

Name	Type	Range	Default
<bool>	Bool	{{OFF|0}|{ON|1}}	OFF|0

Instruction

● ON|1 indicates switch to parallel state,OFF|0 indicates switch to independent state.

Return format

The query returns"ON" or "OFF".

Example

Open channel 1 and channel 2 parallel state:

:OUTPut:PARallel ON

Query channel 1 and channel 2 parallel state:

:OUTPut:PARallel?

:CHANnel Command subsystem

:CHANnel:OUTPut

Command format

:CHANnel:OUTPut<bool>

:CHANnel:OUTPut?

Function Description

Set or query the output status of the current power channel.

Parameter

Name	Type	Range	Default
<bool>	Bool	{{OFF|0}|{ON|1}}	OFF|0

Instruction

None.

Return format

The query returns"ON" or "OFF".

Example

Set the output status of the current selected channel to ON:

:CHANnel:OUTPut ON

Query the output status of the current selected channel:

:CHANnel:OUTPut?

:CHANnel:OUTPut:ALL

Command format

:CHANnel:OUTPut:ALL<bool>

:CHANnel:OUTPut:ALL?

Function Description

Set or query the output status of all power channels.

Parameter

Name	Type	Range	Default
<bool>	Bool	{{OFF|0}|{ON|1}}	OFF|0

Instruction

- When channel 1 and channel 2 are in independent states, you need to set the status of the two channels respectively.

- When channel 1 and channel 2 are in series or parallel state, you do not need to set the status of the two channels separately.

Return format

The query returns all channel output states "ON" or "OFF".

Example

When channel 1 and channel 2 are independent states,the channel output state is set to ON,ON:

:CHANnel:OUTPut:ALL ON,ON

When channel 1 and channel 2 are in parallel state,the channel output state is set to ON:

:CHANnel:OUTPut:ALL ON

Query all channel output states:

:CHANnel:OUTPut:ALL?

:CURRent Command subsystem

:CURRent

Command format

:CURRent<count>

:CURRent?

Function Description

Set or query the current value of the current channel of the power.

Parameter

Name	Type	Range	Default
<count>	Real	Please refer to Instruction	Please refer to Instruction

Instruction

- <count>is Real,default unit is A,can be accurate to 2 decimal places such as:2.10.

- When channel 1 and channel 2 are independent states,channel 1 range from 0.1 to 3.1A,channel 2 range from 0.1 to 3.1A.Default value is 2.00,2.00.

- When channel 1 and channel 2 are in parallel state,range from 0.1 to 6.1A.Default value is 4.00A.

- When channel 1 and channel 2 are in series state,range from 0.1 to 3.1A.Default value is 2.00A.

- When setting current value < limiting current, the current range from 0.1 to set current value.

  When setting current value = limiting current, the current range from 0.1 to (limiting current value-0.1).

Return format

The query returns the set current value as float data.

Example

Set the set current value of the channel to 1A:

:CURRent 1

Query the set current value of the channel:

:CURRent?

:CURRent:LIMit

Command format

:CURRent:LIMit<count>

:CURRent:LIMit?

Function Description

Set or query the current channel limiting current value.

Parameter

Name	Type	Range	Default
<count>	Real	Please refer to Instruction	Please refer to Instruction

Instruction

- <count>is Real,default unit is A,can be accurate to 2 decimal places such as:2.10.
- When channel 1 and channel 2 are independent states,channel 1 range from 0.1 to 3.1A,channel 2 range from 0.1 to 3.1A.Default value is 3.10,3.10.
- When channel 1 and channel 2 are in parallel state,range from 0.1 to 6.1A.Default value is 6.10A.
- When channel 1 and channel 2 are in series state,range from 0.1 to 3.1A.Default value is 3.10A.

Return format

The query returns the current limiting current value as float data.

Example

Set the limiting current of the channel to 1A:

:CURRent:LIMit 1

Query the limiting current of a channel:

:CURRent:LIMit?

:CURRent:LIMit:ALL

Command format

:CURRent:LIMit:ALL<count>

:CURRent:LIMit:ALL?

Function Description

Set or query the limiting current for all channels.

Parameter

Name	Type	Range	Default
<count>	Real	Please refer to Instruction	Please refer to Instruction

Instruction

- <count>is Real,default unit is A,can be accurate to 2 decimal places such as:1.10.
- When channel 1 and channel 2 are independent states,channel 1 range from 0.1 to 3.1A,channel 2 range from 0.1 to 3.1A.Default value is 3.10,3.10.
- When channel 1 and channel 2 are in parallel state,range from 0.1 to 6.1A.Default value is 6.10A.
- When channel 1 and channel 2 are in series state,range from 0.1 to 3.1A.Default value is 3.10A.

Return format

The query returns all channel limit current values as float data.

Example

Set the limiting current of all channels to 1A:

:CURRent:LIMit:ALL 1,1

Query the limit current value of all channels:

:CURRent:LIMit:ALL?

:VOLTage Command subsystem

:VOLTage

Command format

:VOLTage<count>

:VOLTage?

Function Description

Set or query the voltage value of the current channel of the power.

Parameter

Name	Type	Range	Default
<count>	Real	Please refer to Instruction	Please refer to Instruction

Instruction

- <count>is Real,default unit is V,can be accurate to 2 decimal places such as:2.11.

- When channel 1 and channel 2 are independent states,channel 1 range from 0.01 to 16V,channel 2 range from 0.01 to 16V.Default value is 5.00,5.00.

- When channel 1 and channel 2 are in parallel state,range from 0.01 to 16V. Default value is 5.00V.

- When channel 1 and channel 2 are in series state,range from 0.01 to 31V.Default value is 10.00V.

- When setting voltage value < limiting voltage, the voltage range from 0.01 to set voltage value.

  When setting voltage value = limiting voltage, the voltage range from 0.01 to (limiting voltage value-1).

Return format

The query returns the set voltage value as float data.

Example

Set the set voltage value of the channel to 1V:

:VOLTage 1

Query the set voltage value of the channel:

:VOLTage?

:VOLTage:LIMit

Command format

:VOLTage:LIMit<count>

:VOLTage:LIMit?

Function Description

Set or query the voltage channel limiting current value.

Parameter

Name	Type	Range	Default
<count>	Real	Please refer to Instruction	Please refer to Instruction

Instruction

- <count>is Real,default unit is V,can be accurate to 2 decimal places such as:2.13.
- When channel 1 and channel 2 are independent states,channel 1 range from 0.01 to 16V,channel 2 range from 0.01 to 16V.Default value is 16.00,16.00.
- When channel 1 and channel 2 are in parallel state,range from 0.01 to 16V. Default value is 16.00.
- When channel 1 and channel 2 are in series state,range from 0.01 to 31V.Default value is 31.00.

Return format

The query returns the current limiting voltage value as float data.

Example

Set the limiting voltage of the channel to 1V:

:VOLTage:LIMit 1

Query the limiting voltage of a channel:

:VOLTage:LIMit?

:VOLTage:LIMit:ALL

Command format

:VOLTage:LIMit:ALL<count>

:VOLTage:LIMit:ALL?

Function Description

Set or query the limiting voltage for all channels.

Parameter

Name	Type	Range	Default
<count>	Real	Please refer to Instruction	Please refer to Instruction

Instruction

- <count>is Real,default unit is V,can be accurate to 2 decimal places such as:2.43.
- When channel 1 and channel 2 are independent states,channel 1 range from 0.01 to 16V,channel 2 range from 0.01 to 16V.Default value is 16.00,16.00.
- When channel 1 and channel 2 are in parallel state,range from 0.01 to 16V. Default value is 16.00.
- When channel 1 and channel 2 are in series state,range from 0.01 to 31V.Default value is 31.00.

Return format

The query returns all channel limit voltage values as float data.

Example

Set the limiting voltage of all channels to1V:

:VOLTage:LIMit:ALL 1,1

Query the limit voltage value of all channels:

:VOLTage:LIMit:ALL?