

Digital Storage Oscilloscope

GDS-1000-U Series

PROGRAMMING MANUAL

GW INSTEK PART NO. 82DS-1102UI01



ISO-9001 CERTIFIED MANUFACTURER

GW INSTEK

December 2011 edition

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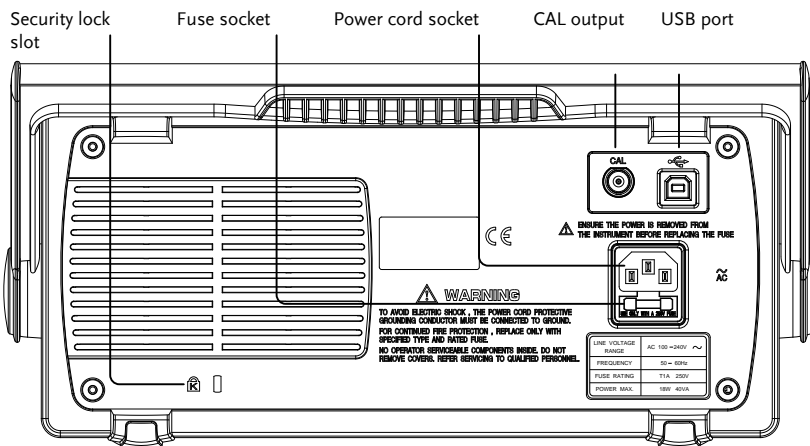
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INTERFACE OVERVIEW

This manual describes how to use the GDS-1000-U's remote command functionality and lists the command details. The Overview chapter describes how to configure the GDS-1000-U USB remote control interface.

Rear Panel Overview



Configuring the USB Interface

USB connection	PC end	Type A, host
	GDS-1000-U end	Type B, slave
	Speed	1.1/2.0 (full speed)

Procedure

1. Connect the USB cable to the USB slave port on the GDS-1000-U.



2. When the PC asks for the USB driver, select `dso_cdc_1000.inf` which is downloadable from the GW website, www.gwinstek.com.tw, GDS-1000-U product corner.
3. On the PC, activate a terminal application such as MTTY (Multi-Threaded TTY). To check the COM port No., see the Device Manager in the PC. For WindowsXP, select Control panel → System → Hardware tab.
4. Run this query command via the terminal application.
`*idn?`
 This command should return the manufacturer, model number, serial number, and firmware version in the following format.
`GW, GDS-1052-U, 000000001, V1.00`
5. Configuring the command interface is completed. Refer to the programming manual for the remote commands and other details.

C COMMAND OVERVIEW

The Command overview chapter lists all GDS-1000-U commands in functional order as well as alphabetical order. The command syntax section shows you the basic rules you have to apply when using commands.

Command Syntax

- Compatible standard
- IEEE488.2, 1992 (fully compatible)
 - SCPI, 1994 (partially compatible)

Command format `trig:del:mod <NR1>LF`

1: command header
 2: single space
 3: parameter
 4: message terminator

Parameter	Type	Description	Example
	<Boolean>	boolean logic	0, 1
	<NR1>	integers	0, 1, 2, 3
	<NR2>	decimal numbers	0.1, 3.14, 8.5
	<NR3>	floating point	4.5e-1, 8.25e+1
	<NRf>	any of NR1, 2, 3	1, 1.5, 4.5e-1
Message terminator	LF^END	line feed code (hexadecimal 0A) with END message	
	LF	line feed code	
	<dab>^END	last data byte with END message	

Note Commands are non-case sensitive.

List of Command in Functional Order

System	*IDN.....	12
	*LRN	12
	*RST	13
	:SYSTem:ERRor.....	13
	:SYSTem:VERSion.....	13
<hr/>		
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	:ACQuire:MODE	14
	:ACQuire<X>:MEMory.....	15
<hr/>		
Autoset	:AUToset	17
<hr/>		
Channel / Math	:CHANnel<X>:BWLimit.....	18
	:CHANnel<X>:COUPling.....	18
	:CHANnel<X>:DISPlay	19
	:CHANnel<X>:INVert	19
	:CHANnel<X>:MATH	20
	:CHANnel<X>:OFFSet.....	20
	:CHANnel<X>:PROBe	21
:CHANnel<X>:SCALe	21	
<hr/>		
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	:CURSor:Y<X>Position	24
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	:CURSor:<X>DISPlay	25
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<hr/>		
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	:DISPlay:CONTRast	27
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	:DISPlay:WAVEform.....	28
	:REFResh.....	29

Measure	:MEASure:FALL.....	30
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	:MEASure:FPReshoot.....	31
	:MEASure:FREQuency.....	32
	:MEASure:NWIDth.....	32
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	:MEASure:PWIDth.....	33
	:MEASure:RISe.....	34
	:MEASure:ROVShoot.....	34
	:MEASure:RPReshoot.....	35
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<hr/>		
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	:DATALOG:SAVe	51
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Save/Recall	:MEMory<X>:RECall:SETup	53
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	*RCL.....	55
	:REF<X>:DISPlay.....	55
	:REF<X>:LOCate	56
	:REF<X>:SAVe.....	56
	*SAV.....	57

Time	:TIMebase:DELay	58
(Horizontal)	:TIMebase:SCALe.....	58
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	:TRIGger:FREQuency.....	63
	:TRIGger:LEVel.....	63
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C COMMAND DETAILS

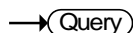
The Command details chapter shows syntax in detail, the equivalent panel operation, and an example for each command. For a list of all commands, see page 7.

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System command

*IDN	12
*LRN	12
*RST	13
:SYSTem:ERRor	13
:SYSTem:VERSion.....	13

*IDN



Description Returns the oscilloscope ID: manufacturer, model name, serial number, and firmware version.
Same as: Utility key → F4

Syntax *idn?

Example *idn? Returns the ID for a GDS-1052-U.
GW, GDS-1052-U,
000000001, V1.00

*LRN



Description Returns the oscilloscope settings as a data string.

Syntax *lrn?

Example *lrn?
:DISPlay:WAVEform 0;ACCumulate 0;CONTrast 9;GRATICule 0;;CHANnel1:DISPlay 1;BWLimit 0;COUPLing 0;INVert 0;OFFSet 5.000e-01;PROBE 1;SCALe 5.000e-02;;CHANnel2:DISPlay 1;BWLimit 0;COUPLing 0;INVert 0;OFFSet 5.000e-02;PROBE 0;SCALe 5.000e-02;;CHANnel1:MATH 0;;TIMEbase:SWEEp 0;SCALe 1.000e-08;DELay 0.000e+00;WINDow:SCALe 1.000E-09;DELay 0.000E+00;;ACQUIRE:MODE 0;AVERage 0;;TRIGger:TYPE 0;SOURce 0;MODE 1;SLOP 0;COUple 1;REJect 0;NREJ 0;LEVel 0.000E+00;PULSe:MODE: 0;TIME 0.000E+00;;VIDeo:TYPE 1;POLarity 1;FIEld 1;LINE 1;;CURSor:SOURce 1;XDISPlay 0;X1Position 75;X2Position 175;YDISPlay 0;Y1Position 54;Y2Position 154;;REF1:DISPlay 0;LOCate 50;;REF2:DISPlay 0;LOCate -50;;RUN

***RST**

Set →

Description Resets the GDS-1000-U (recalls the default panel settings).
 Same as: Save/Recall key → F1

Syntax *rst

:SYSTem:ERRor

→ Query

Description Returns the oscilloscope system error messages, if there are any.

Syntax	< Long >	< Short >
	:system:error?	:syst:err?

Parameter	ID	Contents	ID	Contents
		-100	command error	-102
	-220	parameter error	-221	settings conflict
	-222	data out of range	-223	too much data
	-224	illegal parameter	-232	invalid format

Example	:system:error? -102	Indicates that the command syntax is wrong
----------------	------------------------	--

:SYSTem:VERSion

→ Query

Description Returns the oscilloscope firmware version.
 Same as: Utility key → F4 (only the firmware version)

Syntax	< Long >	< Short >
	:system:version?	:syst:vers?

Note For retrieving all system information including the firmware version, use the *idn? command.

Acquisition Command

:ACquire:AVERage 14
 :ACquire:MODE 14
 :ACquire<X>:MEMory..... 15

:ACquire:AVERage



Description Selects or returns the average number of waveform acquisitions that are used in the average acquisition mode.
 Same as: Acquire key → F2

Syntax	< Long >	< Short >
	:acquire:average <NR1>	:acq:aver <NR1>
	:acquire:average?	:acq:aver?

Parameter	<NR1>	Average No.	<NR1>	Average No.
	1	2	5	32
	2	4	6	64
	3	8	7	128
	4	16	8	256

Note Before using this command, select the average acquisition mode. See the example below.

Example	:acquire:mode 2	Selects the average acquisition mode, and
	:acquire:average 2	select the average number 4

:ACquire:MODE



Description Selects or returns the acquisition mode.
 Same as: Acquire key → F1 ~ F3

Syntax	< Long > :acquire:mode <NR1> :acquire:mode?	< Short > :acq:mod <NR1> :acq:mod?
Parameter	<NR1> Mode 0 Normal 1 Peak detect	<NR1> Mode 2 Average
Example	:acquire:mode 2 :acquire:average 2	Selects the average acquisition mode, and select the average number 4

:ACQuire<X>:MEMory



Description	Returns the total waveform data in the acquisition memory.	
Syntax	< Long > :acquire<X>:memory?	< Short > :acq<X>:mem?
Parameter	<X> Channel 1/2 Channel1/2	
Example	:acquire1:memory?	Returns the channel 1 waveform data
Data format	Six data elements are concatenated to form one data string. # A B C D E F A: Data size digit B: Data size C: Time interval D: Channel indicator E: Reserved data F: Waveform data	
	Data size digit Indicates the number of digits used for the data string that follows. The data size digit is always 4.	

Data size

Indicates the data size. The data size is always 8008 (4000 points per channel).

Time interval

Indicates the time interval between two adjacent sampling points in the floating point format, compatible with IEEE 754 standards.

Note: The data is sorted in the little-endian format.

Channel indicator

Indicates the channel, 1 or 2.

Reserved data

An unused data block, 3 bytes.

Waveform data

The waveform data comprised of 8000 data points. Each point is made up of 2 bytes (16 bits), high byte (MSD) first.

Autoset Command

:AUToset



Description Runs the Autoset function to automatically configure the horizontal scale, vertical scale, and trigger according to the input signal.

Same as: Auto Set key

Syntax	< Long >	< Short >
	:autoset	:aut

Channel / Math Command

:CHANnel<X>:BWLimit.....	18
:CHANnel<X>:COUPling	18
:CHANnel<X>:DISPlay	19
:CHANnel<X>:INVert	19
:CHANnel<X>:MATH	20
:CHANnel<X>:OFFSet.....	20
:CHANnel<X>:PROBe	21
:CHANnel<X>:SCALE	21

:CHANnel<X>:BWLimit (Set) →
→ (Query)

Description	Selects or returns the bandwidth limit on/off. Same as: Channel key → F3		
Syntax	< Long >	< Short >	
	:channel<X>:bwlimit <Boolean>	:chan<X>:bwl	
	:channel<X>:bwlimit?	<Boolean>	
		:chan:bwl?	
Parameter	<X>	Channel	<NR1> Limit
	1/2	CH1/2	0 Off
			1 On
Example	:channel1:bwlimit 1	Turns on the bandwidth limit for Channel 1	

:CHANnel<X>:COUPling (Set) →
→ (Query)

Description	Selects or returns the coupling mode. Same as: Channel key → F1		
Syntax	< Long >	< Short >	

	:channel<X>:coupling <NR1>		:chan<X>:coup <NR1>	
	:channel<X>:coupling?		:chan:coup?	
Parameter	<X>	Channel	<NR1>	Coupling mode
	1/2	CH1/2	0	AC coupling
			1	DC coupling
			2	Ground coupling
Example	:channel1:coupling 1		Selects the DC coupling for Channel 1	

:CHANnel<X>:DISPlay

Set →

→ Query

Description	Turns a channel on/off or returns its status. Same as: Channel key			
Syntax	< Long >		< Short >	
	:channel<X>:display <Boolean>		:chan<X>:disp <Boolean>	
	:channel<X>:display?		:chan<X>:disp?	
Parameter	<X>	Channel	<NR1>	Channel on/off
	1/2	CH1/2	0	Off
			1	On
Example	:channel1:display 1		Turns on Channel 1	

:CHANnel<X>:INVert

Set →

→ Query

Description	Inverts a channel or returns its status. Same as: Channel key → F2			
Syntax	< Long >		< Short >	
	:channel<X>:invert <Boolean>		:chan<X>:inv <Boolean>	
	:channel<X>:invert?		:chan<X>:inv?	
Parameter	<X>	Channel	<NR1>	Channel invert

1/2	CH1/2	0	off
		1	on

Example :channel1:invert 1 Inverts Channel 1

Set →

:CHANnel<X>:MATH

→ Query

Description Selects or returns the math operation type.
Same as: Math key → F1

Syntax	< Long >	< Short >
	:channel<X>:math <NR1>	:chan<X>:math <NR1>
	:channel<X>:math?	:chan<X>:math?

Parameter	<X>	Channel	<NR1>	Math operation
	1/2	CH1 or CH2	0	Math off
			1	Add
			2	Subtract
			3	FFT

Example1 :channel1:math 2 Channel 1 – Channel 2

Example2 :channel2:math 2 Channel 1 – Channel 2

Example3 :channel2:math 2 Runs FFT on Channel 2

Set →

:CHANnel<X>:OFFSet

→ Query

Description Sets or returns the offset level for a channel. The offset level range depends on the vertical scale.

Syntax	< Long >	< Short >
	:channel<X>:offset <NR3>	:chan<X>:offs <NR3>
	:channel<X>:offset?	:chan<X>:offs?

Parameter	<X>	Channel	<NR3>	Offset level
	1/2	CH1/2	±0.5	-0.5V ~ +0.5V (2mV/div~50mV/div)

		±5.0	-5.0V ~ +5.0V (100mV/div~500mV/div)
		±50.0	-50.0V ~ +50.0V (1V/div ~ 5V/div)

Example	:channel1:scale 1.00e-2 :channel1:offset 2.00e-2	Sets the Channel 1 scale to 10mV/div Sets the Channel 1 offset to 20mV
---------	---	---

:CHANnel<X>:PROBE  

Description	Sets or returns the probe attenuation factor. Same as: Channel key → F4
-------------	--

Syntax	< Long > :channel<X>:probe <NR3> :channel<X>:probe?	< Short > :chan<X>:prob <NR1> :chan<X>:prob?
--------	---	--

Parameter	<X>	Channel	<NR1>	Probe attenuation factor
	1/2	CH1/2	0	1x
			1	10x
			2	100x

Example	:channel1:probe 1	Sets the Channel 1 probe attenuation factor to 10x
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:CHANnel<X>:SCALE  

Description	Sets or returns the vertical scale. The scale depends on the probe attenuation factor. Same as: Volts/Div knob
-------------	---

Syntax	< Long > :channel<X>:scale <NR3> :channel<X>:scale?	< Short > :chan<X>:scal <NR3> :chan<X>:scal?
--------	---	--

Parameter	<X>	Channel	<NR3>	Vertical scale
	1/2	CH1/2	2e-3 ~ 5e+0	2mV ~ 5V (Probe x1)
			2e-2 ~ 5e+1	20mV ~ 50V (Probe x10)
			2e-1 ~ 5e+2	200mV ~ 500V (Probe x100)
Example	:channel1:probe 0		Sets the Channel 1 probe attenuation factor to x1	
	:channel1:scale 2.00e-3		Sets the Channel 1 vertical scale to 2mV/div	

Cursor Command

:CURSor:X<X>Position	23
:CURSor:Y<X>Position	24
:CURSor:<X>DELta	24
:CURSor:<X>DISplay	25
:CURSor:SOURce.....	26

:CURSor:X<X>Position  

Description	Sets or returns the horizontal (X axis) cursor position. Same as: Cursor key → F5 (X-Y) → F2 (X1) or F3 (X2) + Variable knob		
Syntax	< Long >	< Short >	
	:cursor:x<X>position <NR1>	:curs:x<X>p <NR1>	
	:cursor:x<X>position?	:curs:x<X>p?	
Parameter	<X>	Cursor 1 or 2 <NR1>	Cursor position
	1	Cursor X1	1 ~ 249 point
	2	Cursor X2	
Note	When in the query mode, the returned data format is <NR3> as follows. CH1, CH2, Math (CH1 ± CH2): time (s) Math (FFT): frequency (Hz)		
Example	:cursor:xdisplay 1 :cursor:x1position 100	Puts the horizontal cursor X1 on the 100 point position	
	:channel:math 3 :cursor:xdisplay 1 :cursor:x1position? → 2.500E+03	Returns the X1 cursor position as 2500Hz in the Math FFT mode	

:CURSor:Y<X>Position (Set) →
→ (Query)

Description Selects or returns the vertical (Y axis) cursor position.
 Same as: Cursor key → F5 (X-Y) → F2(Y1) or F3(Y2) + Vertical knob

Syntax < Long > < Short >
 :cursor:y<X>position <NR1> :curs:y<X>p <NR1>
 :cursor:y<X>position? :curs:y<X>p?

Parameter	<X>	Cursor 1 or 2	<NR1>	Cursor position
	1	Cursor Y1	1 ~ 199	1 ~ 199 point
	2	Cursor Y2		

Note When in the query mode, the returned data format is <NR3> as follows.
 CH1, CH2, Math (CH1 ± CH2): voltage (V)
 Math (FFT): decibel (dB)

Example :cursor:ydisplay 1 Puts the vertical cursor Y1 on the 100 point position
 :cursor:y1position 100
 :channel:math 3 Returns the Y1 cursor position as 2.5dB in the Math FFT mode
 :cursor:ydisplay 1
 :cursor:y1position?
 → 2.500E+00

CURSor:<X>DELta → (Query)

Description Returns the distance between two horizontal (X axis) or vertical (Y axis) cursors.
 Same as: Cursor key → F5 (X-Y) → F4

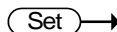
Syntax < Long > < Short >
 :cursor:<X>delta? :curs:<X>del?

Parameter	<X>	Horizontal or vertical cursor
	x	Horizontal cursor (X axis)
	y	Vertical cursor (Y axis)

Note The returned data format is <NR3> as follows.
 CH1, CH2, Math (CH1 ± CH2): time (s) for horizontal cursor, voltage (V) for vertical cursor
 Math (FFT): frequency (Hz) for horizontal cursor, decibel (dB) for vertical cursor

Example	:channel:math 3 :cursor:xdisplay 1 :cursor:xdelta? → 2.500E+03	Returns the frequency (2500Hz) between the two horizontal cursors in the Math FFT mode
	:channel:math 3 :cursor:ydisplay 1 :cursor:ydelta? → 2.500E+00	Returns the decibel (2.5dB) between the two vertical cursors in the Math FFT mode

:CURSor:<X>DISplay



Description Turns the horizontal or vertical cursors on/off.
 Same as: Cursor key

Syntax < Long > < Short >
 :cursor:y<X>display <Boolean> :curs:y<X>dis <Boolean>

Parameter	<X>	X or Y cursor	<NR1>	Cursor on/off
	x	X (horizontal)	0	off
	y	Y (vertical)	1	on

Example :cursor:ydisplay 1 Turn Y cursor on

Set →

→ Query

:CURSor:SOURce

Description	Selects or returns the cursor source channel. Same as: Cursor key →F1 (Source)	
Syntax	< Long > :cursor:source <NR1> :cursor:source?	< Short > :curs:sour <NR1> :curs:sour?
Parameter	<NR1> 1/2 3	Cursor source channel Channel ½ Math result
Example	:cursor:source 2	Selects Channel 2 as the cursor source

Display Command

:DISPlay:ACCumulate	27
:DISPlay:CONTRast	27
:DISPlay:GRATicule	28
:DISPlay:WAVEform	28
:REFResh	29

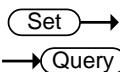
:DISPlay:ACCumulate (Set) →
→ (Query)

Description	Turns the display accumulate mode on/off or returns its status. Same as: Display key → F2							
Syntax	< Long >	< Short >						
	:display:accumulate <Boolean>	:disp:acc <Boolean>						
	:display:accumulate?	:disp:acc?						
Parameter	<table border="1"> <tr> <td><NR1></td> <td>Display accumulation</td> </tr> <tr> <td>0</td> <td>off</td> </tr> <tr> <td>1</td> <td>on</td> </tr> </table>		<NR1>	Display accumulation	0	off	1	on
<NR1>	Display accumulation							
0	off							
1	on							
Example	:display:accumulate 1	Turns on the accumulation						

:DISPlay:CONTRast (Set) →
→ (Query)

Description	Sets or returns the display contrast level. Same as: Display key → F4	
Syntax	< Long >	< Short >
	:display:contrast <NR1>	:disp:cont <NR1>
	:display:contrast?	:disp:cont?

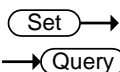
Parameter	<NR1> -10 ~ 10	Display contrast Lowest (-10) to the Highest (+10)
Example	:display:contrast 0	Sets the display contrast to the middle (±0)



:DISPlay:GRATICule

Description	Sets or returns the display grid type. Same as: Display key → F5		
Syntax	< Long >	< Short >	
	:display:graticule <NR1>	:disp:grat <NR1>	
	:display:graticule?	:disp:grat?	
Parameter	<NR1>	Grid type	<NR1> Grid type
	0	Full mode	2 Frame mode
	1	Cross mode	

Example	:display:graticule 0	Selects the full grid
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:DISPlay:WAVEform

Description	Sets or returns the display waveform type. Same as: Display key → F1		
Syntax	< Long >	< Short >	
	:display:waveform <NR1>	:disp:wav <NR1>	
	:display:waveform?	:disp:wav?	
Parameter	<NR1>	Display waveform type	
	0	Vectors	
	1	Dots	

Example	:display:waveform 0	Selects the vectors waveform
---------	---------------------	------------------------------

:REFresh



Description Erases the existing waveform and draws a new one.
 Same as: Display key → F3

Syntax	< Long >	< Short >
	:refresh	:refr

Measure command

:MEASure:FALL.....	30
:MEASure:FOVShoot.....	31
:MEASure:FPReshoot.....	31
:MEASure:FREQuency.....	32
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:MEASure:FALL

→ Query

Description	Returns the falltime measurement result. Same as: Measure key → F1~F5 → F3 (Fall Time)	
Syntax	< Long > :measure:fall?	< Short > :meas:fall?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	

Example	:measure:source 1 :measure:fall?	Selects Channel 1, and then measures the fall time.
---------	-------------------------------------	---

:MEASure:FOVShoot

→ Query

Description	Returns the fall overshoot amplitude. Same as: Measure key → F1~F5 → F3 (FOVShoot)	
Syntax	< Long > :measure:fovshoot?	< Short > :meas:fovs?
Returns	<NR2> with % sign	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:fall?	Selects Channel 1, and then measures the fall overshoot.

:MEASure:FPReshoot

→ Query

Description	Returns fall preshoot amplitude. Same as: Measure key → F1~F5 → F3 (FPREShoot)	
Syntax	< Long > :measure:fovshoot?	< Short > :meas:fovs?
Returns	<NR2> with % sign	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:fall?	Selects Channel 1, and then measures the fall preshoot.

:MEASure:FREQuency → Query

Description	Returns the frequency value. Same as: Measure key → F1~F5 → F3 (Frequency)	
Syntax	< Long > :measure:frequency?	< Short > :meas:freq?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:frequency?	Selects Channel 1, and then measures the frequency.

:MEASure:NWIDth → Query

Description	Returns the first negative pulse width timing. Same as: Measure key → F1~F5 → F3 (-Width)	
Syntax	< Long > :measure:nwidth?	< Short > :meas:nwid?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:nwidth?	Selects Channel 1, and then measures the negative pulse width.

:MEASure:PDUTy → Query

Description	Returns the positive duty cycle ratio. Same as: Measure key → F1~F5 → F3 (DutyCycle)	
Syntax	< Long >	< Short >

	:measure:pduty?	:meas:pdut?
Returns	<NR2> as the percentage	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:pduty?	Selects Channel 1, and then measures the positive duty cycle.

:MEASure:PERiod → Query

Description	Returns the period. Same as: Measure key → F1~F5 → F3 (Period)	
Syntax	< Long > :measure:period?	< Short > :meas:per?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:period?	Selects Channel 1, and then measures the period.

:MEASure:PWIDth → Query

Description	Returns the first positive pulse width. Same as: Measure key → F1~F5 → F3 (+Width)	
Syntax	< Long > :measure:period?	< Short > :meas:per?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	

Example	:measure:source 1 :measure:pwidth?	Selects Channel 1, and then measures the positive pulse width.
---------	---------------------------------------	--

:MEASure:RISe → Query

Description	Returns the first pulse rising edge timing. Same as: Measure key → F1~F5 → F3 (RiseTime)	
Syntax	< Long > :measure:rise?	< Short > :meas:ris?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:rise?	Selects Channel 1, and then measures the rising edge timing.

:MEASure:ROVShoot → Query

Description	Returns rise overshoot amplitude in percentage. Same as: Measure key → F1~F5 → F3 (ROVShoot)	
Syntax	< Long > :measure:rovshoot?	< Short > :meas:rovs?
Returns	<NR2> with % sign	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:rovshoot?	Selects Channel 1, and then measures the rise overshoot.

:MEASure:RPReshoot → **Query**

Description	Returns rise overshoot amplitude in percentage. Same as: Measure key → F1~F5 → F3 (RPReshoot)	
Syntax	< Long > :measure:rprshoot?	< Short > :meas:rpr?
Returns	<NR2> with % sign	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:rprshoot?	Selects Channel 1, and then measures the rise preshoot.

→ **Set**

:MEASure:SOURce → **Query**

Description	Selects the measurement channel. Same as: Measure key → F1~F5 → F1, F2	
Syntax	< Long > :measure:source <NR1> :measure:source?	< Short > :meas:sour <NR1> :meas:sour?
Parameter	<NR1> 1 ~ 2	Channel1 ~ 2
Example	:measure:source 1 :measure:rprshoot?	Selects Channel 1, and then measures the rise preshoot.

:MEASure:VAMplitude → **Query**

Description	Returns the voltage difference between positive and negative peak. Same as: Measure key → F1~F5 → F3 (Vamp)	
-------------	--	--

Syntax	< Long > :measure:vamplitude?	< Short > :meas:vamp?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:vamplitude?	Selects Channel 1, and then measures the rise Voltage amplitude.

:MEASure:VAverage → Query

Description	Returns the average voltage. Same as: Measure key → F1~F5 → F3 (Vavg)	
Syntax	< Long > :measure:vaverage?	< Short > :meas:vavg?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:vaverage?	Selects Channel 1, and then measures the average Voltage.

:MEASure:VHI → Query

Description	Returns the global high voltage. Same as: Measure key → F1~F5 → F3 (Vhi)	
Syntax	< Long > :measure:vhi?	< Short > :meas:vhi?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	

Example	:measure:source 1 :measure:vhi?	Selects Channel 1, and then measures the global high Voltage.
---------	------------------------------------	---

:MEASure:VLO

→ Query

Description	Returns the global low voltage. Same as: Measure key → F1~F5 → F3 (Vlo)	
Syntax	< Long > :measure:vlo?	< Short > :meas:vlo?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:vlo?	Selects Channel 1, and then measures the global low Voltage.

:MEASure:VMAX

→ Query

Description	Returns the maximum amplitude. Same as: Measure key → F1~F5 → F3 (Vmax)	
Syntax	< Long > :measure:vmax?	< Short > :meas:vmax?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:vmax?	Selects Channel 1, and then measures the maximum amplitude.

:MEASure:VMIN → Query

Description	Returns the minimum amplitude. Same as: Measure key → F1~F5 → F3 (Vmin)	
Syntax	< Long > :measure:vmin?	< Short > :meas:vmin?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:vmin?	Selects Channel 1, and then measures the minimum amplitude.

:MEASure:VPP → Query

Description	Returns the peak-to-peak amplitude (difference between maximum and minimum amplitude) Same as: Measure key → F1~F5 → F3 (Vpp)	
Syntax	< Long > :measure:vpp?	< Short > :meas:vpp?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:vpp?	Selects Channel 1, and then measures the peak-to-peak amplitude.

:MEASure:VRMS → Query

Description	Returns the root-mean-square voltage. Same as: Measure key → F1~F5 → F3 (Vrms)	
-------------	---	--

Syntax	< Long > :measure:vrms?	< Short > :meas:vrms?
Returns	<NR3>	
Note	Before using this command, select the measurement channel. See the example below.	
Example	:measure:source 1 :measure:vrms?	Selects Channel 1, and then measures the root mean square voltage.

Go No-Go Commands

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:GONogo:CLEar



Description Clears the Go No-Go test result ratio. This is the equivalent to clearing the “failed” to “total tests” result ratio as shown in the Go-NoGo menu.

Same as: Utility key → More (F5) → Go-NoGo Menu(F1)→Ratio:(F5).

Note Before any Go-NoGo command can be used, please use the :GONogo:FUNctioN 1 command to initialize the oscilloscope.

Syntax	< Long >	< Short >
	:GONogo:CLEar	:GON:CLE

:GONogo:EXECute



Description Starts or stops the Go-NoGo testing.
 Same as: Utility key → More (F5) →Go-NoGo Menu(F1)→Go-NoGo(F4).

Note Before any Go-NoGo command can be used, please use the :GONogo:FUNcTION 1 command to initialize the oscilloscope.

Syntax	< Long >	< Short >
	:GONogo:EXECute {0 1}	:GON:EXEC {0 1}
	:GONogo:EXECute?	:GON:EXEC ?

Parameter/ Return parameter	0	Off. Stop Go-NoGo testing.
	1	On. Start Go-NoGo testing.

Example :GON:EXEC 0 Turn Go-NoGo off.

:GONogo:FUNcTION



Description Initializes the oscilloscope for the Go-NoGo mode. This command must be used to initialize the oscilloscope for Go-NoGo mode before any Go-NoGo commands can be executed. To exit from Go-NoGo mode, use this function to un-initialize Go-NoGo mode.

Syntax	< Long >	< Short >
	:GONogo:FUNcTION {0 1}	:GON:FUNC {0 1}
	:GONogo:FUNcTION?	:GON:FUNC ?

Parameter/ Return parameter	0	Un-initialize the oscilloscope from Go-NoGo mode.
	1	Initialize the oscilloscope for Go-NoGo mode.

Example :GON:FUNC 1 Initialize the scope.

→ Query

:GONogo:NGCount?

Description	Returns the test result count ratio (failed count, total count).	
Syntax	< Long > :GON:NGC?	< Short > :GON:NGC?
Return parameter	<NR1>, <NR1>	<failed count>,<total count>
Example	:GON:NGC? >2,128	2 fails from 128 Go-NoGo tests.

Set →

:GONogo:NGDefine

→ Query

Description	Sets or queries the Go-NoGo boundary template conditions.	
Note	Before any Go-NoGo command can be used, please use the :GONogo:FUNCTION 1 command to initialize the oscilloscope.	
Syntax	< Long > :GONogo:NGDefine {0 1} :GONogo:NGDefine?	< Short > :GON:NGD {0 1} :GON:NGD
Parameter/ Return parameter	0	No-Go when the waveform doesn't exceed the boundary template.
	1	No-Go when the waveform exceeds the boundary template.
Example	:GON:NGD 1	NoGo conditions set to when outside template.

Set →

:GONogo:SOURce

→ Query

Description	Sets the Go-NoGo channel source.	
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Note Before any Go-NoGo command can be used, please use the :GONogo:FUNCTion 1 command to initialize the oscilloscope.

Syntax	< Long >	< Short >
	:GONogo:SOURce {1 2}	:GON:SOUR {1 2}
	:GONogo:SOURce?	:GON:SOUR?

Parameter/ Return parameter	1	Sets the source to channel 1
	2	Sets the source to channel 2

Example :GON:SOUR 1 Sets the source to channel 1.

Set →

→ Query

:GONogo:VIOLation

Description Sets or queries the Go-NoGo violation conditions.

Note Before any Go-NoGo command can be used, please use the :GONogo:FUNCTion 1 command to initialize the oscilloscope.

Syntax	< Long >	< Short >
	:GONogo:VIOLation {0 1}	:GON:VIOL {0 1}
	:GONogo:VIOLation?	:GON:VIOL?

Parameter/ Return parameter	0	Violation condition = "Continue"
	1	Violation condition = "Stop"

Example :GON:VIOL 1 Sets the violation condition to "Continue".

Set →

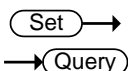
→ Query

:TEMPlate:MODE

Description Sets or queries the Go-NoGo template mode. When Auto mode is selected, CH1 or CH2 are used as the template source. When Normal mode is selected, the template source can be selected from internal memory (W1~W15, RefA or RefB).

Note	Before any Go-NoGo command can be used, please use the :GONogo:FUNCTION 1 command to initialize the oscilloscope.	
Syntax	< Long > :TEMPlate:MODE {0 1} :TEMPlate:MODE?	< Short > :TEMP:MOD {0 1} :TEMP:MOD?
Parameter/ Return parameter	0 1	Select Normal template mode. Select Auto template mode.
Example	:TEMP :MOD 1	Set to Auto mode.

:TEMPlate:MAX




Description	Sets or queries the template used for the MAX boundary (W1~W15, RefA).	
Note	<p>A template can only be defined for the MAX or MIN template, not both.</p> <p>Before this command can be used, please set the template mode to normal using the :TEMPlate:MODE 0 command.</p> <p>Before any Go-NoGo command can be used, please use the :GONogo:FUNCTION 1 command to initialize the oscilloscope.</p>	
Syntax	< Long > :TEMPlate:MAX <NR1> :TEMPlate:MAX?	< Short > :TEMP:MAX <NR1> :TEMP:MAX?
Parameter/ Return parameter	0 1~15	Set RefA as the MAX template. Set W1 ~ W15 as the MAX template
Example	:TEMP :MAX ? >1	RefA is the template.

:TEMPlate:MIN



Description	Sets or queries the template used for the MIN boundary (W1~W15, RefB).	
Note	<p>A template can only be defined for the MAX or MIN template, not both.</p> <p>Before this command can be used, please set the template mode to normal using the :TEMPlate:MODE 0 command.</p> <p>Before any Go-NoGo command can be used, please use the :GONogo:FUNCTion 1 command to initialize the oscilloscope.</p>	
Syntax	< Long >	< Short >
	:TEMPlate:MIN <NR1>	:TEMP:MIN <NR1>
	:TEMPlate:MIN?	:TEMP:MIN?
Parameter/ Return parameter	0	Set RefB as the MIN template.
	1~15	Set W1 ~ W15 as the MIN template
Example	:TEMP :MIN ? >1	RefB is the template.

:TEMPlate:POSition:MAX



Description	Sets and queries the position of the MAX template in grid divisions. 1 grid division = 25 on-screen pixels.
-------------	---

Note This command will not alter the position of the waveform (RefA, W1~15) in memory, unless the template is saved with the :TEMPLate:SAVe :MAXimum command.

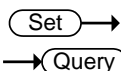
Before this command can be used, please set the template mode to normal using the :TEMPLate:MODE 0 command.

Before any Go-NoGo command can be used, please use the :GONogo:FUNCTion 1 command to initialize the oscilloscope.

Syntax	< Long >	< Short >
	:TEMPLate:POSition:MAX <NR2>	:TEMP:POS:MAX <NR2>
	:TEMP:POS:MAX?	:TEMP:POS:MAX?

Parameter/ Return parameter	<NR2>	-12.00 ~ 12.00 Div. 0 represents the center division.
--	-------	---

Example	:TEMP:POS:MAX 2.00	Sets the template to the 2 nd grid division above the center division.
----------------	--------------------	---

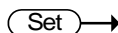


:TEMPLate:POSition:MIN

Description	Sets and queries the position of the MIN template in grid divisions. 1 grid division = 25 on-screen pixels.
--------------------	---

Note	<p>This command will not alter the position of the waveform (RefA, W1~15) in memory, unless the template is saved with the :TEMPlate:SAVe:MINimum command.</p> <p>Before this command can be used, please set the template mode to normal using the :TEMPlate:MODE 0 command.</p> <p>Before any Go-NoGo command can be used, please use the :GONogo:FUNcTION 1 command to initialize the oscilloscope.</p>	
Syntax	<p>< Long ></p> <p>:TEMPlate:POSition:MIN <NR2></p> <p>:TEMP:POS:MIN? <NR2></p>	<p>< Short ></p> <p>:TEMP:POS:MIN <NR2></p> <p>:TEMP:POS:MIN?</p>
Parameter/ Return parameter	<NR2>	-12.00 ~ 12.00 Div. 0 represents the center division.
Example	:TEMP:POS:MIN 2.00	Sets the template to the 2 nd grid division above the center division.

:TEMPlate:SAVe:MAXimum



Description	<p>Saves the maximum template.</p> <p>Same as: Utility key → More (F5) → Go-NoGo Menu(F1) → Template Edit(F1) → Save & Create(F4).</p>	
Note	<p>Before this command can be used, please set the template mode to normal using the :TEMPlate:MODE 0 command.</p> <p>Before any Go-NoGo command can be used, please use the :GONogo:FUNcTION 1 command to initialize the oscilloscope.</p>	
Syntax	<p>< Long ></p> <p>:TEMPlate:SAVe:MINimum</p>	<p>< Short ></p> <p>:TEMP:SAV:MIN</p>

:TEMPlate:SAVe:MINimum

Set →

Description	Saves the minimum template. Same as: Utility key → More (F5) → Go-NoGo Menu(F1) → Template Edit(F1) → Save & Create(F4).	
Note	Before this command can be used, please set the template mode to normal using the :TEMPlate:MODE 0 command. Before any Go-NoGo command can be used, please use the :GONogo:FUNCTION 1 command to initialize the oscilloscope.	
Syntax	< Long > :TEMPlate:SAVe:MINimum	< Short > :TEMP:SAV:MIN

Set →

:TEMPlate:TOLerance

→ **Query**

Description	Sets or queries the tolerance (as a percentage) of the auto template.	
Note	Before this command can be used, please set the template mode to auto using the :TEMPlate:MODE 1 command. Before any Go-NoGo command can be used, please use the :GONogo:FUNCTION 1 command to initialize the oscilloscope.	
Syntax	< Long > :TEMPlate:TOLerance <NR2> :TEMPlate:TOLerance?	< Short > :TEMP:TOL <NR2> :TEMP:TOL?
Parameter/ Return parameter	<NR2>	4.0 ~ 40 (0.4% ~ 40%).
Example	:TEMP:TOL 10	Sets the tolerance to 10%.

:TEMPlate:SAVe:AUTo**Set** →

Description	Saves the auto template. Same as: Utility key → More (F5) → Go-NoGo Menu(F1) → Template Edit(F1) → Save & Create(F4).	
Note	Before this command can be used, please set the template mode to auto using the :TEMPlate:MODE 1 command. Before any Go-NoGo command can be used, please use the :GONogo:FUNCTioN 1 command to initialize the oscilloscope.	
Syntax	< Long > :TEMPlate:SAVe:AUTo	< Short > :TEMP:SAV:AUT

Data Log Commands

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:DATALOG:STATE




Description	Turns the datalogging function on/off. Same as: Utility key → More (F5) → Data Logging Menu(F3)→Data Logging (F1).	
Syntax	< Long >	< Short >
	:DATALOG:STATE {0 1}	:DATALOG:STATE {0 1}
	:DATALOG:STATE?	:DATALOG:STATE?
Parameter/ Return parameter	0	Off. Stop data logging function.
	1	On. Start data logging function.
Example	:DATALOG:STATE 1	Turn data logging on.

:DATALOG:SOURce




Description	Sets or queries the data logging source channel.	
Syntax	< Long >	< Short >
	:DATALOG:SOURce{1 2}	:DATALOG:SOUR{1 2}
	:DATALOG:SOURce?	:DATALOG:SOUR?
Parameter/ Return parameter	1	Sets CH1 as the source channel
	2	Sets CH2 as the source channel
Example	:DATALOG:SOUR 1	Set source as CH1.

:DATALOG:SAVe
 Set →
 Query

Description	Sets the save type as waveform or image.	
Syntax	< Long > :DATALOG:SAVe {0 1} :DATALOG:SAVe?	< Short > :DATALOG:SAV {0 1} :DATALOG:SAV?
Parameter/ Return parameter	0 1	Save as image Save as waveform
Example	:DATALOG:SAVe 1	Set the save type to waveform.

:DATALOG:INTerval
 Set →
 Query

Description	Sets or queries the interval time between each recording.	
Syntax	< Long > :DATALOG:INTerval <NR1> :DATALOG:INTerval?	< Short > :DATALOG:INT <NR1> :DATALOG:INT?
Parameter/ Return parameter	<NR1>	Discrete time intervals in seconds: {2 3 4 5 10 20 30 60 120 300 600 1200 1800}
Example	:DATALOG:INT 2	Sets the interval time to 2 seconds.

:DATALOG:DURation
 Set →
 Query

Description	Sets or queries the duration time of each recording.	
Syntax	< Long >	< Short >

```

:DATALOG:DURation <NR1> :DATALOG:DUR
:DATALOG:DURation?      <NR1>
                          :DATALOG:DUR?
    
```

Parameter/ Return parameter	<NR1>	Discrete recording time in minutes: {5 10 15 20 25 30 60 90 120 150 180 210 240 270 300 330 360 390 420 45 0 480 510 540 570 600 1200 1800 240 0 3000 3600 4200 4800 5400 6000}
--------------------------------	-------	---

Example	:DATALOG:DUR 5	Sets the recording time to 5 minutes.
---------	----------------	--

Save/Recall Command

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:MEMory<X>:RECall:SETup



Description	Recalls a panel setting from the internal memory. Same as: Save/Recall key (recall) → F3	
Syntax	< Long > :memory<x>:recall:setup	< Short > :mem<x>:rec:set
Parameter	<X> 1 ~ 15	Internal memory S1 ~ S15
Example	:memory1:recall:setup	Recalls the settings from the internal memory S1

:MEMory<X>:RECall:WAVEform



Description	Recalls a waveform from the internal memory and saves it to a reference waveform. Same as: Save/Recall key (recall) → F4	
Syntax	< Long > :memory<x>:recall:waveform <NR1>	< Short > :mem<x>:rec:wav <NR1>
Parameter	<X>	Internal memory

1 ~ 15	W1 ~ W15
<NR1>	Reference waveform
1, 2	RefA, RefB

Example `:memory1:recall:waveform 1` Recalls a waveform from the internal memory W1 and saves it to the reference waveform A

:MEMory<X>:SAVe:SETup (Set) →

Description	Saves the current panel settings to an internal memory. Same as: Save/Recall key (save) → F1	
Syntax	< Long >	< Short >
	<code>:memory<x>:save:setup</code>	<code>:mem<x>:sav:set</code>
Parameter	<X>	Internal memory
	1 ~ 15	S1 ~ S15
Example	<code>:memory1:save:setup</code>	Save the current panel settings to the memory S1

:MEMory<X>:SAVe:WAVEform (Set) →

Description	Saves a reference waveform to the internal memory. Same as: Save/Recall key (save) → F2	
Syntax	< Long >	< Short >
	<code>:memory<x>:save:waveform</code> <NR1>	<code>:mem<x>:sav:wav</code> <NR1>
Parameter	<X>	Internal memory
	1 ~ 15	W1 ~ W15
	<NR1>	Reference waveform

0	CH1	1	CH2
2	Math	3	RefA
4	RefB		

Example :memory1:save:waveform 1 Saves the reference waveform A to the internal memory W1

***RCL** (Set) →

Description Recalls a set of panel setting from one of the fifteen internal memories, S1 to S15.
 Same as: Save/Recall key (recall) → F3

Syntax *rc1 <NR1>

Parameter	<NR1>	Settings
	1 to 15	S1 to S15

Example *rc1 Recalls the panel settings from S1


:REF<X>:DISPlay (Set) →
→ (Query)


Description Recalls a reference waveform into the display or returns its status.
 Same as: Save/Recall key (recall) → F5 → F2 or F3

Syntax	< Long >	< Short >
	:ref<x>:display <Boolean>	:ref<x>disp <Boolean>
	:ref<x>:display?	:ref<x>disp?

Parameter	<X>	Reference	<Boolean>	Reference on/off
	1	A	0	off
	2	B	1	on


Example :ref1:display 1 Turns on the reference waveform A





:REF<X>:LOCate


Description	Moves or returns the position of a reference waveform. Same as: Save/Recall key → F5 → Variable knob												
Syntax	< Long > :ref<x>:locate <NR1> :ref<x>:locate?	< Short > :ref<x>:loc <NR1> :ref<x>:loc?											
Parameter	<table border="1"> <thead> <tr> <th><X></th> <th>Reference</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A</td> </tr> <tr> <td>2</td> <td>B</td> </tr> </tbody> </table>	<X>	Reference	1	A	2	B	<table border="1"> <thead> <tr> <th><NR1></th> <th>Position</th> </tr> </thead> <tbody> <tr> <td>-100 to +100</td> <td></td> </tr> </tbody> </table>	<NR1>	Position	-100 to +100		
<X>	Reference												
1	A												
2	B												
<NR1>	Position												
-100 to +100													
Note	Before using this command, turn on a reference waveform. See the example below.												
Example	:ref1:display 1 :ref1:locate 0	Turns on the reference waveform A and move it to ±0 position											



:REF<X>:SAVe

Description	Saves an input signal as a reference waveform. Same as: Save/Recall key (save) → F2 → F2 → F3																
Syntax	< Long > :ref<x>:save <NR1>	< Short > :ref<x>:sav <NR1>															
Parameter	<table border="1"> <thead> <tr> <th><X></th> <th>Reference</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A</td> </tr> <tr> <td>2</td> <td>B</td> </tr> </tbody> </table>	<X>	Reference	1	A	2	B	<table border="1"> <thead> <tr> <th><NR1></th> <th>Source</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Channel 1</td> </tr> <tr> <td>2</td> <td>Channel 2</td> </tr> <tr> <td>3</td> <td>Math</td> </tr> </tbody> </table>	<NR1>	Source	1	Channel 1	2	Channel 2	3	Math	
<X>	Reference																
1	A																
2	B																
<NR1>	Source																
1	Channel 1																
2	Channel 2																
3	Math																
Example	:ref1:save 1	Saves the Channel 1 signal as the reference waveform A															

***SAV**

Description	Saves the current panel settings into the internal memory. Same as: Save/Recall key  → F1	
Syntax	*sav	
Parameter	<NR1> 1 to 15	Internal memory S1 to S15
Example	*sav 1	Saves the current panel settings into S1

Time (Horizontal) command

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:TIMEbase:SCALE	58
:TIMEbase:SWEEp	59
:TIMEbase:WINDow:DELay.....	59
:TIMEbase:WINDow:SCALE	60

:TIMEbase:DELay (Set) →
→ (Query)

Description	Sets or returns the horizontal delay.	
Syntax	< Long > :timebase:delay <NR3> :timebase:delay?	< Short > :tim:del <NR3> :tim:del?
Example	:timebase:delay 0	Sets the horizontal delay to 0 sec

:TIMEbase:SCALE (Set) →
→ (Query)

Description	Selects or returns the horizontal scale. Same as: Time/div knob					
Syntax	< Long > :timebase:scale <NR3>		< Short > :tim:scal <NR3>			
Parameter	s/div	<NR3>	s/div	<NR3>	s/div	<NR3>
	1ns	1e ⁻⁹	5us	5e ⁻⁶	25ms	25e ⁻³
	2.5ns	2.5e ⁻⁹	10us	10e ⁻⁶	50ms	50e ⁻³
	5ns	5e ⁻⁹	25us	25e ⁻⁶	100ms	100e ⁻³
	10ns	10e ⁻⁹	50us	50e ⁻⁶	250ms	250e ⁻³
	25ns	25e ⁻⁹	100us	100e ⁻⁶	500ms	500e ⁻³
	50ns	50e ⁻⁹	250us	250e ⁻⁶	1s	1

Trigger command

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:FORCe



Description Manually triggers the GDS-1000-U and displays the input signals.

Same as: (Trigger) Force key

Syntax	<Long format>	<Short format>
	:force	:forc

:RUN (Set) →

Description Starts waiting for a trigger condition.
Same as: Run key

Syntax :run

:SINGLE (Set) →

Description Selects the single trigger mode and starts waiting for a trigger condition.
Same as: (Trigger) Single key

Syntax <Long format> <Short format>
:single :singl

:STOP (Set) →

Description Stops waiting for a trigger condition.
Same as: Stop key

Syntax :stop

***TRG** (Set) →

Description Manually triggers the GDS-1000-U and displays the input signals.
Same as: (Trigger) Force key

Syntax *trg

:TRIGger:COUple (Set) →
→ (Query)

Description Selects or returns the trigger coupling mode.
Same as: Trigger menu key → F4 → F2

Syntax < Long > < Short >

	:trigger:couple <NR1>	:trig:coup <NR1>
	:trigger:couple?	:trig:coup?
Parameter	<NR1> Coupling mode	
	1 AC	
	2 DC	
Note	Before using this command, select the edge or pulse trigger. See the example below.	
Example	:trigger:type 0 :trigger:couple 1	Selects the edge trigger and AC coupling mode

:TRIGger:FREQuency → Query

Description	Returns the trigger frequency readout.	
Syntax	< Long >	< Short >
	:trigger:frequency?	:trig:freq?
		Set →
:TRIGger:LEVel		→ Query

Description	Selects or returns the trigger level. Same as: Trigger level knob	
Syntax	< Long >	< Short >
	:trigger:level <NR3>	:trig:lev <NR3>
	:trigger:level?	:trig:lev?
Parameter	<NR3> Trigger level in voltage	
Example	:trigger:level 0	Sets the trigger level at ±0

:TRIGger:MODE Set →
→ Query

Description	Selects or returns the trigger mode. Same as: Trigger key → F5	
-------------	---	--

Syntax	< Long > :trigger:mode <NR1> :trigger:mode?	< Short > :trig:mod <NR1> :trig:mod?
Parameter	<NR1> Trigger mode 1 Auto 2 Normal	
Note	Before using this command, select the edge or pulse trigger. See the example below.	
Example	:trigger:type: 0 :trigger:mode 2	Selects the edge trigger and normal trigger mode



Description	Turns the noise rejection mode on/off. Same as: Trigger key → F4 → F4	
Syntax	< Long > :trigger:nrej <Boolean> :trigger:nrej?	< Short > :trig:nrej <Boolean> :trig:nrej?
Parameter	<Boolean> Noise rejection mode 0 off 1 on	
Note	Before using this command, select the edge or pulse trigger. See the example below.	
Example	:trigger:type 0 :trigger:nrej 0	Selects the edge trigger and turns off the noise rejection

:TRIGger:PULSe:MODE




Description	Selects the trigger mode in the pulse trigger. Same as: Trigger key → F1(Pulse) → F3			
Syntax	< Long >		< Short >	
	:trigger:pulse:mode <NR1>		:trig:puls:mod <NR1>	
	:trigger:pulse:mode?		:trig:puls:mod?	
Parameter	<NR1>	Mode	<NR1>	Mode
	0	<	2	=
	1	>	3	≠
Note	Before using this command, select the pulse trigger. See the example below.			

Example	:trigger:type 2 :trigger:pulse:mode 0	Selects the pulse trigger and < (smaller than) as the trigger mode
---------	--	--

:TRIGger:PULSe:TIME




Description	Selects the trigger time in the pulse trigger. Same as: Trigger key → F1(Pulse) → F3 → Variable knob			
Syntax	< Long >		< Short >	
	:trigger:pulse:time <NR3>		:trig:puls:tim <NR3>	
	:trigger:pulse:time?		:trig:puls:tim?	
Parameter	<NR3>	Trigger time		
	20e ⁻⁹ ~ 10	20ns ~ 10s		
Note	Before using this command, select the pulse trigger. See the example below.			

Example	:trigger:type 2 :trigger:pulse:time 1	Selects the pulse trigger and sets the trigger time as 1sec
---------	--	---

Set →
 → Query

:TRIGger:REject

Description	Selects the trigger rejection filter. Same as: Trigger key → F4 → F3									
Syntax	< Long > :trigger:reject <NR1> :trigger:reject?	< Short > :trig:rej <NR1> :trig:rej?								
Parameter	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"><NR1></td> <td>Rejection filter</td> </tr> <tr> <td>0</td> <td>off</td> </tr> <tr> <td>1</td> <td>LF</td> </tr> <tr> <td>2</td> <td>HF</td> </tr> </table>		<NR1>	Rejection filter	0	off	1	LF	2	HF
<NR1>	Rejection filter									
0	off									
1	LF									
2	HF									
Note	Before using this command, select the edge or pulse trigger. See the example below.									
Example	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">:trigger:type 0</td> <td>Selects the edge trigger</td> </tr> <tr> <td>:trigger:reject 1</td> <td>and LF rejection filter</td> </tr> </table>		:trigger:type 0	Selects the edge trigger	:trigger:reject 1	and LF rejection filter				
:trigger:type 0	Selects the edge trigger									
:trigger:reject 1	and LF rejection filter									

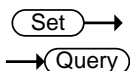
Set →
 → Query

:TRIGger:SLOP

Description	Selects the trigger slope. Same as: Trigger key → F4 → F1							
Syntax	< Long > :trigger:slop <NR1> :trigger:slop?	< Short > :trig:slop <NR1> :trig:slop?						
Parameter	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"><NR1></td> <td>Trigger slope</td> </tr> <tr> <td>0</td> <td>+ (positive)</td> </tr> <tr> <td>1</td> <td>- (negative)</td> </tr> </table>		<NR1>	Trigger slope	0	+ (positive)	1	- (negative)
<NR1>	Trigger slope							
0	+ (positive)							
1	- (negative)							
Note	Before using this command, select the edge or pulse trigger. See the example below.							

Example	:trigger:type 0 :trigger:slop 1	Selects the edge trigger and negative trigger slope
---------	------------------------------------	---

:TRIGger:SOURce



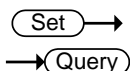
Description	Selects the trigger source channel. Same as: Trigger key → F2	
-------------	--	--

Syntax	< Long > :trigger:source <NR1> :trigger:source?	< Short > :trig:sour <NR1> :trig:sour?
--------	---	--

Parameter	<NR1> Trigger source	<NR1> Trigger source
	0 Channel 1	2 Line
	1 Channel 2	3 External input

Example	:trigger:source 0	Selects Channel 1 as the trigger source
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:TRIGger:TYPe



Description	Selects the trigger type. Same as: Trigger key → F1	
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Syntax	< Long > :trigger:type <NR1> :trigger:type?	< Short > :trig:typ <NR1> :trig:typ?
--------	---	--

Parameter	<NR1> Trigger type	<NR1> Trigger type
	0 Edge	2 Pulse
	1 Video	

Example	:trigger:type 0	Selects the edge trigger type
---------	-----------------	-------------------------------

Set →
 → Query

:TRIGger:VIDeo:FIELD

Description	Selects the trigger field in the video trigger. Same as: Trigger key → F1(Video) → F5	
Syntax	< Long > :trigger:video:field <NR1> :trigger:video:field?	< Short > :trig:vid:fiel <NR1> :trig:vid:fiel?
Parameter	<NR1> Field 0 Line 1 odd	<NR1> Field 2 even
Note	Before using this command, select the video trigger. See the example below.	
Example	:trigger:type 1 :trigger:video:field 1	Selects the video trigger and odd trigger field

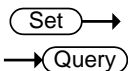
Set →
 → Query

:TRIGger:VIDeo:LINE

Description	Selects the trigger field line in the video trigger. Same as: Trigger key → F1(Video) → F5 → Variable knob	
Syntax	< Long > :trigger:video:line <NR1> :trigger:video:line?	< Short > :trig:vid:lin <NR1> :trig:vid:lin?
Parameter	<NR1> Line range 1 ~ 263 NTSC odd 1 ~ 262 NTSC even	<NR1> Line range 1 ~ 313 PAL/SECAM odd 1 ~ 312 PAL/SECAM even
Note	Before using this command, select the video trigger, TV standard, and odd or even trigger field. See the example below.	

Example	:trigger:type 1 :trigger:video:type 0 :trigger:video:field 1 :trigger:video:line 313	Selects the video trigger, PAL, odd field triggering, and line 313
---------	---	--

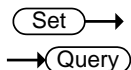
:TRIGger:VIDeo:POLarity



Description	Selects the video trigger polarity. Same as: Trigger key → F1(Video) → F4	
Syntax	< Long > :trigger:video:polarity <NR1> :trigger:video:polarity?	< Short > :trig:vid:pol <NR1> :trig:vid:pol?
Parameter	<NR1> Polarity 0 Positive 1 Negative	
Note	Before using this command, select the video trigger. See the example below.	

Example	:trigger:type 1 :trigger:video:polarity 0	Selects the video trigger and positive polarity
---------	--	---

:TRIGger:VIDeo:TYPE



Description	Selects the TV standard in the video trigger. Same as: Trigger key → F1(Video) → F3	
Syntax	< Long > :trigger:video:type <NR1> :trigger:video:type?	< Short > :trig:vid:typ <NR1> :trig:vid:typ?
Parameter	<NR1> Type 0 PAL 1 NTSC	<NR1> Type 2 SECAM

Note	Before using this command, select the video trigger. See the example below.
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Example	:trigger:type 1	Selects the video trigger
	:trigger:video:type 0	and PAL standard