Digital Storage Oscilloscope

GDS-1000-U Series

PROGRAMMING MANUAL

GW INSTEK PART NO. 82DS-1102UI01

ISO-9001 CERTIFIED MANUFACTURER

GW INSTEK

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The information in this manual was correct at the time of printing. However, Good Will continues to improve its products and therefore reserves the right to change the specifications, equipment, and maintenance procedures at any time without notice.

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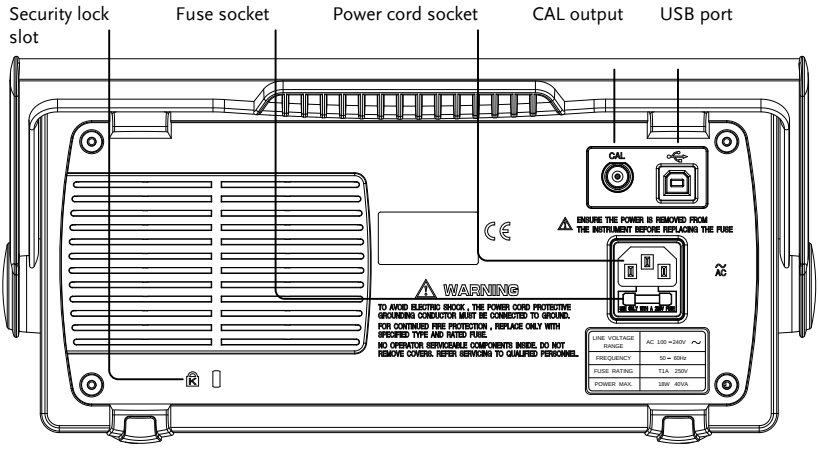
INTERFACE OVERVIEW

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

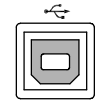


Configuring the USB Interface

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 MTTTY (Multi-Threaded TTY). To check the COM port No., see the Device Manager in the PC. For WindowsXP, select Control panel → System → Hardware tab.

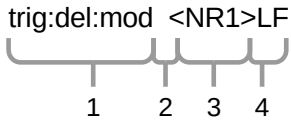
4. Run this query command via the terminal application.
   *idn?
   This command should return the manufacturer, model number, serial number, and firmware version in the following format.
   GW, GDS-1052-U, 000000001, V1.00

5. Configuring the command interface is completed. Refer to the programming manual for the remote commands and other details.

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	 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

COMMAND DETAILS

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

System command

*IDN → Query

Description	Returns the oscilloscope ID: manufacturer, model name, serial number, and firmware version. Same as: Utility key → F4
Syntax	*idn?
Example	*idn? GW, GDS-1052-U, 000000001, V1.00 Returns the ID for a GDS-1052-U.

*LRN → Query

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 > :system:error?		< Short > :syst:err?	
Parameter	ID	Contents	ID	Contents
	-100	command error	-102	syntax error
	-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 > :system:version?	< Short > :syst:vers?
Note	For retrieving all system information including the firmware version, use the *idn? command.	

Acquisition Command

:ACQuire:AVERage

Set →
→ Query

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

:ACQuire:MODe

Set →
→ Query

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

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

:ACQuire<X>:MEMory → Query

Description	Returns the total waveform data in the acquisition memory.	
Syntax	< Long >	< Short >
	:acquire<X>:memory?	: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

Set →

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 > :autoset	< Short > :aut

Channel / Math Command

:CHANnel<X>:BWLimit

Set → Query →

Description	Selects or returns the bandwidth limit on/off. Same as: Channel key → F3			
Syntax	< Long > :channel<X>:bwlimit <Boolean> :channel<X>:bwlimit?		< Short > :chan<X>:bwl <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	

:CHANnel<X>:MATH

Set → Query

Description	Selects or returns the math operation type. Same as: Math key → F1			
Syntax	< Long > :channel<X>:math <NR1> :channel<X>:math?		< Short > :chan<X>:math <NR1> :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	

:CHANnel<X>:OFFSet

Set → Query

Description	Sets or returns the offset level for a channel. The offset level range depends on the vertical scale.			
Syntax	< Long > :channel<X>:offset <NR3> :channel<X>:offset?		< Short > :chan<X>:offs <NR3> :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

Set → / → Query

Description	Sets or returns the probe attenuation factor. Same as: Channel key → F4			
Syntax	< Long >			< Short >
	:channel<X>:probe <NR3>			:chan<X>:prob <NR1>
	:channel<X>:probe?			: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

:CHANnel<X>:SCALe

Set → / → Query

Description	Sets or returns the vertical scale. The scale depends on the probe attenuation factor. Same as: Volts/Div knob	
Syntax	< Long >	< Short >
	:channel<X>:scale <NR3>	:chan<X>:scal <NR3>
	:channel<X>:scale?	: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

Set → → Query

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

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

Set →

Description	Turns the horizontal or vertical cursors on/off. Same as: Cursor key			
Syntax	< Long > :cursor:y<X>display <Boolean>		< Short > :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	

:CURSor:SOURce

Set → / → Query

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

Display Command

:DISPlay:ACCumulate

Set →
→ Query

Description	Turns the display accumulate mode on/off or returns its status. Same as: Display key → F2	
Syntax	< Long > :display:accumulate <Boolean> :display:accumulate?	< Short > :disp:acc <Boolean> :disp:acc?
Parameter	<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 > :display:contrast <NR1> :display:contrast?	< Short > :disp:cont <NR1> :disp:cont?

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

:DISPlay:GRATicule

Set → / → Query

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	

:DISPlay:WAVeform

Set → / → Query

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

Set →

Description	Erases the existing waveform and draws a new one. Same as: Display key → F3	
Syntax	< Long >	< Short >
	:refresh	:refr

Measure command

: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:rpreshoot?	< 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:rpreshoot?	Selects Channel 1, and then measures the rise preshoot.

:MEASure:SOURce Set → / → 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 >	< Short >
	:measure:vamplitude?	: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 >	< Short >
	:measure:vaverage?	: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 >	< Short >
	:measure:vhi?	: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

:GONogo:CLEar

Set →

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

Set → / → Query

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

Set → / → Query

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 >	< Short >
	:GON:NGC?	:GON:NGC?
Return parameter	<NR1>, <NR1>	<failed count>,<total count>
Example	:GON:NGC? >2,128	2 fails from 128 Go-NoGo tests.

Set / Query

:GONogo:NGDefine

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 >	< Short >
	:GONogo:NGDefine {0|1}	:GON:NGD {0|1}
	:GONogo:NGDefine?	: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 / Query

:GONogo:SOURce

Description	Sets the Go-NoGo channel source.

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.

:GONogo:VIOLation

Set → / → Query

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".

:TEMPlate:MODe

Set → / → Query

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 >	< Short >
	:TEMPlate:MODe {0|1}	:TEMP:MOD {0|1}
	:TEMPlate:MODe?	:TEMP:MOD?
Parameter/ Return parameter	0	Select Normal template mode.
	1	Select Auto template mode.
Example	:TEMP :MOD 1	Set to Auto mode.

:TEMPlate:MAX

Set → → Query

Description	Sets or queries the template used for the MAX boundary (W1~W15, RefA).	
Note	A template can only be defined for the MAX or MIN template, not both. 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:MAX <NR1>	:TEMP:MAX <NR1>
	:TEMPlate:MAX?	:TEMP:MAX?
Parameter/ Return parameter	0	Set RefA as the MAX template.
	1~15	Set W1 ~ W15 as the MAX template
Example	:TEMP :MAX ? >1	RefA is the template.

:TEMPlate:MIN

Set →
→ Query

Description	Sets or queries the template used for the MIN boundary (W1~W15, RefB).	
Note	A template can only be defined for the MAX or MIN template, not both. 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:MIN <NR1> :TEMPlate:MIN?	< Short > :TEMP:MIN <NR1> :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

Set →
→ Query

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 2nd grid division above the center division.

:TEMPlate:POSition:MIN

Set → / → Query

Description	Sets and queries the position of the MIN 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 :MINimum 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:MIN <NR2>	:TEMP:POS:MIN <NR2>
	:TEMP:POS:MIN?	:TEMP:POS:MIN?
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 2nd grid division above the center division.

:TEMPlate:SAVe:MAXimum

Set ⟶

Description	Saves the maximum 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 >	< Short >
	:TEMPlate:SAVe:MINimum	:TEMP:SAV:MIN

: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 >	< Short >
	:TEMPlate:SAVe:MINimum	:TEMP:SAV:MIN

:TEMPlate:TOLerance

Set → 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 >	< Short >
	:TEMPlate:TOLerance <NR2>	:TEMP:TOL <NR2>
	:TEMPlate:TOLerance?	: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 >	< Short >
	:TEMPlate:SAVe:AUTo	:TEMP:SAV:AUT

Data Log Commands

:DATALOG:STATE

Set → / → Query

Description	Turns the datalogging function on/off. Same as: Utility key → More (F5) →Data Logging Menu(F3)→Data Logging (F1).	
Syntax	< Long > :DATALOG:STATE {0|1} :DATALOG:STATE?	< Short > :DATALOG:STATE {0|1} :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

Set → / → Query

Description	Sets or queries the data logging source channel.	
Syntax	< Long > :DATALOG:SOURce{1|2} :DATALOG:SOURce?	< Short > :DATALOG:SOUR{1|2} :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 >	< Short >
	:DATALOG:SAVe {0|1}	:DATALOG:SAV {0|1}
	:DATALOG:SAVe?	:DATALOG:SAV?
Parameter/ Return parameter	0	Save as image
	1	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 >	< Short >
	:DATALOG:INTerval <NR1>	:DATALOG:INT <NR1>
	:DATALOG:INTerval?	: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:DURation?		:DATALOG:DUR <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|450|480|510|540|570|600|1200|1800|2400|3000|3600|4200|4800|5400|6000}	
Example	:DATALOG:DUR 5		Sets the recording time to 5 minutes.

Save/Recall Command

:MEMory<X>:RECall:SETup

Set →

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

:MEMory<X>:RECall:WAVeform

Set →

Description	Recalls a waveform from the internal memory and saves it to a reference waveform. Same as: Save/Recall key (recall) → F4		
Syntax	< Long >		< Short >
	:memory<x>:recall:waveform <NR1>		: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 >
	:memory<x>:save:setup	:mem<x>:sav:set
Parameter	<X>	Internal memory
	1 ~ 15	S1 ~ S15
Example	:memory1:save:setup	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 >
	:memory<x>:save:waveform <NR1>	:mem<x>:sav:wav <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	*rcl <NR1>

Parameter	<NR1>	Settings
	1 to 15	S1 to S15

Example	*rcl 1	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

Set → / → Query

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	<X>	Reference	<NR1>	Position
	1	A	-100 to +100	
	2	B		
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

Set →

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	<X>	Reference	<NR1>	Source
	1	A	1	Channel 1
	2	B	2	Channel 2
			3	Math
Example	:ref1:save 1		Saves the Channel 1 signal as the reference waveform A	

*SAV

Set →

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

Time (Horizontal) command

:TIMebase:DELay

Set → / → Query

Description	Sets or returns the horizontal delay.	
Syntax	< Long >	< Short >
	:timebase:delay <NR3>	:tim:del <NR3>
	:timebase:delay?	: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 >				< Short >	
	:timebase:scale <NR3>				: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

100ns	$100e^{-9}$	500us	$500e^{-6}$	2.5s	2.5
250ns	$250e^{-9}$	1ms	$1e^{-3}$	5s	5
500ns	$500e^{-9}$	2.5ms	$2.5e^{-3}$	10s	10
1us	$1e^{-6}$	5ms	$5e^{-3}$		
2.5us	$2.5e^{-6}$	10ms	$10e^{-3}$		

Example	:timetable:scale 1	Selects 1s/div as the horizontal scale

:TIMebase:SWEep

Set → / → Query

Description	Selects or returns the horizontal sweep mode. Same as: Horizontal menu key → F1 ~ F5				
Syntax	< Long >			< Short >	
	:timebase:sweep <NR1>			:tim:swe <NR1>	
	:timebase:sweep?			:tim:swe?	
Parameter	<NR1>	Sweep mode	<NR1>	Sweep mode	
	0	Main timebase	1	Window	
	2	Window zoom	3	Roll mode	
	4	XY mode			
Example	:timetable:sweep 0		Selects the main timebase as the horizontal sweep mode		

:TIMebase:WINDow:DELay

Set → / → Query

Description	Sets or returns the width of the zoomed window. Same as: Horizontal menu key → F2 (Window) → Time/div knob	
Syntax	< Long >	< Short >
	:timebase:window:delay <NR3>	:tim:wind:del <NR3>

Example	:timetable:window:delay 100	Sets the zoom width to 100 points

:TIMebase:WINDow:SCALe

Set → / → Query

Description	Sets or returns the scale (length) of the zoomed window. Same as: Horizontal menu key → F3 (zoom)	
Syntax	< Long > :timebase:window:scale <NR3>	< Short > :tim:wind:scal<NR3>
Example	:timetable:window:scale 100	Sets the zoom length to 100 points

Trigger command

:FORCe

Set →

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?

:TRIGger:LEVel → Set → 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 >		< Short >
	:trigger:mode <NR1>		:trig:mod <NR1>
	:trigger:mode?		: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

:TRIGger:NREJ

Set → / → Query

Description	Turns the noise rejection mode on/off. Same as: Trigger key → F4 → F4		
Syntax	< Long >		< Short >
	:trigger:nrej <Boolean>		:trig:nrej <Boolean>
	:trigger:nrej?		: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

Set → Query

Description	Selects the trigger mode in the pulse trigger. Same as: Trigger key → F1(Pulse) → F3			
Syntax	< Long > :trigger:pulse:mode <NR1> :trigger:pulse:mode?		< Short > :trig:puls:mod <NR1> :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

Set → Query

Description	Selects the trigger time in the pulse trigger. Same as: Trigger key → F1(Pulse) → F3 → Variable knob		
Syntax	< Long > :trigger:pulse:time <NR3> :trigger:pulse:time?		< Short > :trig:puls:tim <NR3> :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

:TRIGger:REJect

Set → Query

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	<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	:trigger:type 0 :trigger:reject 1	Selects the edge trigger and LF rejection filter

:TRIGger:SLOP

Set → Query

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	<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

Set → / → Query

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	

:TRIGger:TYPe

Set → / → Query

Description	Selects the trigger type. Same as: Trigger key → F1			
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	

:TRIGger:VIDeo:FIELd

Set → / → Query

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	<NR1>	Field
	0	Line	2	even
	1	odd		
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	

:TRIGger:VIDeo:LINe

Set → / → Query

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	<NR1>	Line range
	1 ~ 263	NTSC odd	1 ~ 313	PAL/SECAM odd
	1 ~ 262	NTSC even	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

Set →
→ Query

Description	Selects the video trigger polarity. Same as: Trigger key → F1(Video) → F4		
Syntax	< Long >		< Short >
	:trigger:video:polarity <NR1>		:trig:vid:pol <NR1>
	:trigger:video:polarity?		: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

Set →
→ Query

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

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