3.9 :DISPlay Commands

The **:DISPlay** commands can be used to set the displayed type of the waveform, persistence time, intensity, grid type, grid brightness, etc.

3.9.1 :DISPlay:CLEar

Syntax

```
:DISPlay:CLEar
```

Description

Clears all the waveforms on the screen.

Parameter

N/A

Remarks

- If the oscilloscope is in the "RUN" state, new waveforms will continue being displayed after being cleared.
- You can also send the *:CLEar* command to clear all the waveforms on the screen.
- This command functions the same as the front-panel key 

.

Return Format

N/A

Example

```
N/A
```

3.9.2 :DISPlay:TYPE

Syntax

:DISPlay:TYPE <*type*>

:DISPlay:TYPE?

Description

Sets or queries the display type of the waveforms on the screen.

Parameter

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

Remarks

VECTors: The sample points are connected by lines and displayed. Normally, this mode can provide the most vivid waveform to view the steep edge of the waveform (such as square waveforms).

Return Format

The query returns VECT.

Example

```
:DISPlay:TYPE VECTors    /*Sets the display type to VECTors.*/
:DISPlay:TYPE?          /*The query returns VECT.*/
```

3.9.3 :DISPlay:GRADing:TIME

Syntax

:DISPlay:GRADing:TIME <*time*>

:DISPlay:GRADing:TIME?

Description

Sets or queries the persistence time. The default unit is s.

Parameter

Name	Type	Range	Default
<time>	Discrete	{MIN|0.1|0.2|0.5|1|2|5|10|INFinite}	MIN

Remarks

- **MIN:** sets the persistence time to its minimum value to view how the waveform changes at a high refresh rate.
- **specified value (e.g. 0.1, 0.2, 0.5, 1, 2, 5, 10):** sets the persistence time to any of the above specific value to observe glitches that change relatively slowly or glitches with low occurrence probability.

- **INFinite:** In this mode, the oscilloscope displays the waveform newly acquired without clearing the waveforms acquired formerly. It can be used to measure noise and jitter and to capture incidental events.

Return Format

The query returns MIN, 0.1, 0.2, 0.5, 1, 2, 5, 10, or INF.

Example

```
:DISPlay:GRADing:TIME 0.1   /*Sets the persistence time to 100 ms.*/
:DISPlay:GRADing:TIME?     /*The query returns 0.1.*/
```

3.9.4 :DISPlay:WBRightness

Syntax

`:DISPlay:WBRightness` <*brightness*>

`:DISPlay:WBRightness?`

Description

Sets or queries the brightness of the waveform on the screen, expressed in percentage.

Parameter

Name	Type	Range	Default
<brightness>	Integer	1 to 100	50

Remarks

N/A

Return Format

The query returns an integer ranging from 1 to 100.

Example

```
:DISPlay:WBRightness 50    /*Sets the waveform brightness to 50%.*/
:DISPlay:WBRightness?      /*The query returns 50.*/
```

3.9.5 :DISPlay:GRID

Syntax

`:DISPlay:GRID` <*grid*>

`:DISPlay:GRID?`

Description

Sets or queries the display type of the screen grid.

Parameter

Name	Type	Range	Default
<grid>	Discrete	{FULL|HALF|NONE}	FULL

Remarks

- **FULL:** turns the background grid and coordinates on.
- **HALF:** turns the background grid off and turns the coordinate on.
- **NONE:** turns the background grid and coordinate off.

Return Format

The query returns FULL, HALF, or NONE.

Example

```
:DISPlay:GRID NONE    /*Turns the background grid and coordinates
off.*/
:DISPlay:GRID?         /*The query returns NONE.*/
```

3.9.6 :DISPlay:GBRightness

Syntax

:DISPlay:GBRightness <*brightness*>

:DISPlay:GBRightness?

Description

Sets or queries the brightness of the screen grid, expressed in percentage.

Parameter

Name	Type	Range	Default
<brightness>	Integer	0 to 100	50

Remarks

N/A

Return Format

The query returns an integer ranging from 0 to 100.

Example

```
:DISPlay:GBRightness 60     /*Sets the screen grid brightness to
60%.*/
:DISPlay:GBRightness?       /*The query returns 60.*/
```

3.9.7 :DISPlay:DATA?

Syntax

:DISPlay:DATA?[<*type*>]

Description

Queries the bitmap data stream of the currently displayed image.

Parameter

Name	Type	Range	Default
<type>	Discrete	{BMP|PNG|JPG}	BMP

Remarks

The read data format is TMC header + binary data stream of the screenshot + terminator. The TMC header is in #NXXXXXX format; wherein, # is the TMC header identifier; N following # represents the number of digits (in the decimal integer) that follow; the length of the binary data stream of the screenshot is expressed in ASCII strings, and the terminator represents the ending of communication. For example, the data read for one time is #9000387356. 9 indicates the number of digits (in the decimal integer) that follow, and "000387356" indicates the length of the binary data stream, that is, the number of bytes to be transmitted.

Return Format

The query returns the binary data stream of the screenshot in format.

Example

```
N/A
```

3.9.8 :DISPlay:RULers

Syntax

:DISPlay:RULers <*bool*>

:DISPlay:RULers?

Description

Enables or disables the display of the scale ruler; or queries the on/off status of the scale ruler.

Parameter

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

Remarks

N/A

Return Format

The query returns 1 or 0.

Example

```
:DISPlay:RULers ON    /*Enables the display of the scale ruler.*/
:DISPlay:RULers?       /*The query returns 1.*/
```

3.9.9 :DISPlay:COLor

Syntax

:DISPlay:COLor <*bool*>

:DISPlay:COLor?

Description

Enables or disables the color grade display; or queries the on/off status of the color grade display.

Parameter

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

Remarks

When it is enabled, different colors are displayed on the screen to indicate the times of data acquisition or acquisition probability.

Return Format

The query returns 1 or 0.

Examples

```
:DISPlay:COLor ON /*Enables the color grade display.*/
:DISPlay:COLor? /*The query returns 1.*/
```