3.11 :HISTogram Commands

This histogram analysis function provides a diagram of the statistics on the waveforms or its measurement results, enabling you to judge the trend of waveforms, and quickly locate the potential abnormalities of the signal.

NOTE

Only the DHO900 series supports the histogram analysis function.

Histogram Analysis Results

The statistical results of the histogram analysis include the following items.

- Sum: indicates the sum of all bins (buckets) in the histogram.
- Peaks: indicates the maximum number of hits in any single bin.
- Max: indicates the maximum value.
- Min: indicates the minimum value.
- Pk_Pk: indicates the Delta (Max-Min) between the max. value and the min. value.
- Mean: indicates the average value of the histogram.
- Median: indicates the median value of the histogram.
- Mode: indicates the mode value of the histogram.
- Bin width: indicates the width of each bin (bucket) in the histogram.
- Sigma: indicates the standard deviation of the histogram.
- XScale: indicates the horizontal scale of the histogram. It is 100 times the value of Bin width.

3.11.1 :HISTogram:ENABle

Syntax

`:HISTogram:ENABle` <*bool*>

`:HISTogram:ENABle?`

Description

Enables or disables the histogram function; or queries the on/off status of the histogram.

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Parameter

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

Remarks

N/A

Return Format

The query returns 1 or 0.

Examples

```
:HISTogram:ENABle ON /*Enables the histogram function.*/
:HISTogram:ENABle? /*The query returns 1.*/
```

3.11.2 :HISTogram:TYPE

Syntax

:HISTogram:TYPE <*type*>

:HISTogram:TYPE?

Description

Sets or queries the type of the histogram.

Parameter

Name	Type	Range	Default
<type>	Discrete	{HORizontal|VERTical}	VERTical

Remarks

- **HORizontal:** horizontal histogram.
- **VERTical:** vertical histogram.

Return Format

The query returns HOR or VERT.

Example

```
:HISTogram:TYPE VERTical    /*Sets the histogram type to Vertical.*/
:HISTogram:TYPE?      /*The query returns VERT.*/
```


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3.11.3 :HISTogram:SOURce

Syntax

:HISTogram:SOURce <*source*>

:HISTogram:SOURce?

Description

Sets or queries the source of the histogram.

Parameter

Name	Type	Range	Default
<source>	Discrete	{CHANnel1|CHANnel2|CHANnel3|CHANnel4}	CHANnel1

Remarks

N/A

Return Format

The query returns CHAN1, CHAN2, CHAN3, CHAN4.

Example

```
:HISTogram:SOURce CHANnel2    /*Sets the source of the histogram to
CH2.*/
:HISTogram:SOURce?      /*The query returns CHAN2.*/
```

3.11.4 :HISTogram:HEIGht

Syntax

:HISTogram:HEIGht <*height*>

:HISTogram:HEIGht?

Description

Sets or queries the height of the histogram.

Parameter

Name	Type	Range	Default
<height>	Integer	1div to 4div	2div

Remarks

N/A

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Return Format

The query returns an integer ranging from 1 to 4.

Example

```
:HISTogram:HEIGht 2    /*Sets the histogram height to 2.*/
:HISTogram:HEIGht?      /*The query returns 2.*/
```

3.11.5 :HISTogram:RANGe:LEFT

Syntax

:HISTogram:RANGe:LEFT <*number*>

:HISTogram:RANGe:LEFT?

Description

Sets or queries the left limit of the histogram.

Parameter

Name	Type	Range	Default
<number>	Real	(-5 x Horizontal Time Base + Horizontal Offset) to (5 x Horizontal Time Base + Horizontal Offset)	-

Remarks

- The left limit should be smaller than the right limit. You can use *:HISTogram:RANGe:RIGHt* to set or query the right limit of the histogram.
- You can use *:TIMebase[:MAIN]:SCALe* to set or query the horizontal time base.
- You can use *:TIMebase[:MAIN][:OFFSet]* to set or query the horizontal offset.

Return Format

The query returns the left limit in scientific notation.

Example

```
:HISTogram:RANGe:LEFT -2    /*Sets the left limit of the histogram
to -2 s.*/
:HISTogram:RANGe:LEFT?      /*The query returns -2.000000E0.*/
```

3.11.6 :HISTogram:RANGe:RIGHt

Syntax

:HISTogram:RANGe:RIGHt <*number*>

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:HISTogram:RANGe:RIGHt?

Description

Sets or queries the right limit of the histogram.

Parameter

Name	Type	Range	Default
<number>	Real	(-5 x Horizontal Time Base + Horizontal Offset) to (5 x Horizontal Time Base + Horizontal Offset)	-

Remarks

- The right limit should be greater than the left limit. You can use *:HISTogram:RANGe:LEFT* to set or query the left limit of the histogram.
- You can use *:TIMebase[:MAIN]:SCALe* to set or query the horizontal time base.
- You can use *:TIMebase[:MAIN][:OFFSet]* to set or query the horizontal offset.

Return Format

The query returns the right limit in scientific notation.

Example

```
:HISTogram:RANGe:RIGHt 2    /*Sets the right limit of the histogram
to 2 s.*/
:HISTogram:RANGe:RIGHt?      /*The query returns 2.000000E0.*/
```

3.11.7 :HISTogram:RANGe:TOP

Syntax

:HISTogram:RANGe:TOP <*number*>

:HISTogram:RANGe:TOP?

Description

Sets or queries the top limit of the histogram.

Parameter

Name	Type	Range	Default
<number>	Real	(-4 x VerticalScale - OFFSet) to (4 x VerticalScale - OFFSet)	-

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Remarks

- The top limit should be greater than the bottom limit. You can use *:HISTogram:RANGe:BOTTom* to set or query the bottom limit of the histogram.
- You can use *:CHANnel<n>:SCALe* to set or query the vertical scale for the specified channel.
- You can use *:CHANnel<n>:OFFSet* to set or query the vertical offset for the specified channel.

Return Format

The query returns the top limit in scientific notation.

Example

```
:HISTogram:RANGe:TOP -2     /*Sets the top limit of the histogram to
-2 V.*/
:HISTogram:RANGe:TOP?       /*The query returns -2.000000E0.*/
```

3.11.8 :HISTogram:RANGe:BOTTom

Syntax

:HISTogram:RANGe:BOTTom <*number*>

:HISTogram:RANGe:BOTTom?

Description

Sets or queries the bottom limit of the histogram.

Parameter

Name	Type	Range	Default
<number>	Real	(-4 x VerticalScale - OFFSet) to (4 x VerticalScale - OFFSet)	-

Remarks

- The bottom limit should be smaller than the top limit. You can use *:HISTogram:RANGe:TOP* to set or query the top limit of the histogram.
- You can use *:CHANnel<n>:SCALe* to set or query the vertical scale for the specified channel.

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