



BERTScope™  BERTScope™

Remote Control Guide

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This Remote Control Guide is applicable to the following SyntheSys Research, Inc., products:

BERTScope™ 7500 7.5 Gbit Bit Error Analysis System
BERTScope™ 12500 12.5 Gbit Bit Error Analysis System
BERTScope™ Spe Stressed Pattern Generator
BitAlyzer® 1500 1.5 Gbit Bit Error Analysis System

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BitAlyzer[®]/BERTScope[™] Remote Control

Theory of Operation

The BitAlyzer/**BERTScope** remote control features enable operation of the instrument's bit error analysis processes remotely via an IEEE-488 communications connection. Remote control is implemented using a text-oriented command protocol described in the following pages of this document. These commands enable you to set and query the system parameters of the BitAlyzer or **BERTScope**, and to operate the analyzer in different modes, including live error analysis and off-line playback of previously recorded error data.

The text-oriented commands follow a basic three-part structure, consisting of one word identifying the major feature of the BitAlyzer/**BERTScope** being addressed, another word identifying a specific operation or parameter within that feature, and optional parameters. The BitAlyzer/**BERTScope** receives and operates on each command immediately. Command execution sets a status variable that may be queried by the user to determine if the previous command was successful. Alternatively, a mode can be selected in which these statuses are automatically returned after each command execution.

It is most useful to have an understanding of the basic principles of BitAlyzer Error Location Analysis before undertaking remote control programming. There is a high degree of similarity between the BitAlyzer's graphical user interface and the remote control command protocol.

This document describes how to interface with the BitAlyzer/**BERTScope** using the IEEE-488 connection. The BitAlyzer/**BERTScope** is an IEEE-488 bus peripheral only; it is not an IEEE-488 bus controller and cannot produce SRQ signals. The IEEE-488 Setup panel. In the System View, touch the Tools tab, then the Remote button, then IEEE Address. Enter the unique address in the GPIB Address field.

For more technical assistance in programming your remote control applications, please contact SyntheSys Research, Inc. We are glad to help.

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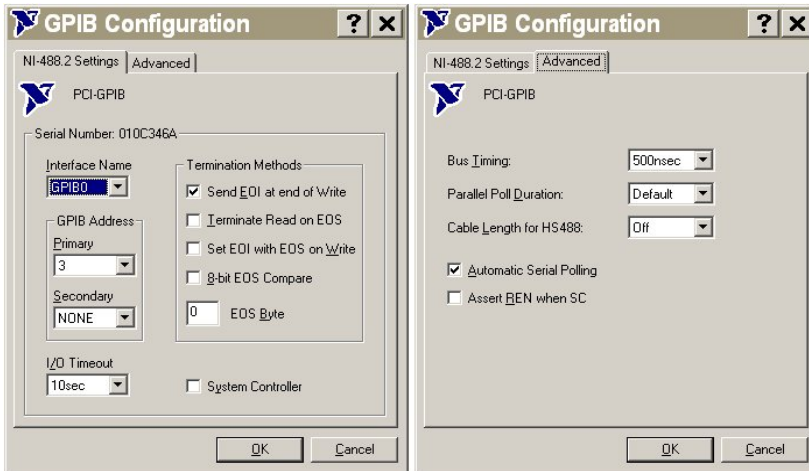
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Setting Up Remote Control

Launch the BERTScope “RemoteClient” program by pressing the **Remote** button in the BERTScope’s System view. Next, press the **Disconnect** button to enable the **IEEE Address** button. You might need to wait a few seconds for this to occur. Finally, press the **IEEE Address** button.

You should now see the GPIB Configuration dialog. The Primary GPIB Address should be set to ‘3’.



Remote Control Protocol

Command Description

Remote control communications are exchanged as ASCII strings over a LAN telnet (TCP port 23) between the host computer and the BitAnalyzer or **BERTScope**. Select a communications port to be used for access to the instrument's remote control operations. If the port is set to NONE, then remote control is disabled.

The input values of commands are checked against the same ranges as the user interface. If an input is received that is outside of this legal range, the input will be clipped and recorded in the status queue.

It is recommended that you request the status of a command by sending "**SYSTem:ERRor?**" after each command. Besides telling you what has happened with the command, this will also synchronize command transmission and handling.

Command Syntax

Most commands have both a "long version" and "short version," indicated by capitalized versus lowercase letters. For example: **GENerator:PATtern?** can be typed out exactly as shown, or as **GEN:PATT?** The capital letters and the colon (:) are required; the lowercase letters are optional. The actual use of capital and lowercase letters is not significant – commands are *not* case-sensitive.

Remote Control Command Lines are defined as ASCII text strings ending with "\r" or "\n".

Every Command Line consists of two parts, a Command and <Setup Data> that are separated by a space and defined as ASCII texts.

<Setup Data> can be Double, Integer, or Boolean numbers; a file's absolute pathname; a special word; or a Data Type. For a Boolean data type, the input can be ON, OFF, 1, or 0. The returned response will be either **1** for true or **0** for false. A question-mark character (?) is added at the end of a command, without a space, to create a Query.

When command setup data uses a string as a parameter, the string should be enclosed in double-quotes ("string"). Filenames always require the absolute path, enclosed within double-quotes.

For every Command processed, an error code will be returned. If the command has a question mark (a Query), the setup information is also returned. A list of these codes is included below:

Error Codes

0	"NO ERROR"
-350	"Queue Overflow"
-10	File transfer error
-20	System error or event
-30	Command error; see list of error messages
-40	No software option

Error Messages

"TOO MANY PARAMETERS"
"UNRECOGNIZED COMMAND"
"WRONG PARAMETER TYPE"
"TOO LITTLE PARAMETERS"
"WRONG PARAMETER FORMAT"
"WRONG PARAMETER NUMBER"
"WRONG ACTION-ONLY"
"WRONG QUERY-ONLY"
"REQUESTED <QUERY PARAMETER> IS
NOT SUPPORTED ON THE PLATFORM"

Communications Timeouts

Most commands issued to the BitAlyzer/**BERTScope** are processed quickly and return within milliseconds. A handful of commands require considerable processing and take longer, including:

- Detector Delay Calibration – 8 sec. (approximately)
- Generator Delay Calibration – 7 sec.
- Detector Auto-Align – 5 sec.
- Generator Data Signal Enabling (**BERTScope** only) – 7 sec.
- Run State Enable (Physical Layer Tests that perform initial auto-align) – 6 sec.

As a result, programming the communications architecture with a two-second timeout for most commands, and a 10-second timeout for the commands listed above is one approach. Another approach is to set all communications timeouts to be 10 seconds. Of course, commands that don't require this much time will not be affected by the longer timeout, and this ensures that all commands can complete without triggering communications timeouts.

Sample of Remote Programming

Rev. March 2005

Remote Command Usage: **BERTScope**

Cabling Setup:

Cable the Generator ClockP out to the Detector Clock In
Cable the Generator DataP out to the Detector DataP In
Cable the Generator DataN out to the Detector DataN In
NOTE: Data cables must be the same length

Misc: Assume that data outputs are already set for 50-ohm output impedance.

• View Generator

```
VIEW Generator
```

• Turn off Generator Amps

```
GEN:DOP:ENAB 0      ; Turn off DataP
GEN:DON:ENAB 0      ; Turn off DataN
GEN:COP:ENAB 0      ; Turn off ClockP
GEN:CON:ENAB 0      ; Turn off ClockN
```

• PN7 pattern to both Generator and Detector

```
GEN:PATT PN7        ; Use a HW 2^7-1 pattern. Load in
                    ; Generator
DET:PATT PN7        ; Same pattern loaded into Detector
```

• View Detector

```
VIEW Detector
```

• General Detector settings

```
DET:AREN 0          ; Auto Resync mode off
```

• Set Detector to custom levels. Clock, then Data

```
                    ; voltage which Gen ClkP will be
                    ; set to AC coupled after the DC
                    ; termination voltage setting

DET:CINP:TAC
DET:DIMP:IMOD DIFF  ; Detector is expecting differential
                    ; data (both inputs)
DET:DINP:TVOL 0     ; Detector is going to terminate
                    ; inputs to 0 mV DC
                    ; Don't care about threshold voltage.

                    ; Auto align will find and set
```

- Finish setting up the Generator. Set frequency, set output amp conditions

```
VIEW Generator
GEN:ICL 9953000000 ; Set internal synthesizer to 9.953 GHz
GEN:CSEL INT       ; Gate the internal synthesizer to
                   ; the Generator (not an ext syn)

GEN:COP:TVOL 0     ; 0 mV Termination for ClockP
GEN:COP:SLOF 0     ; 0 mV Offset for ClockP
GEN:COP:SLAM 1000  ; 1000 mV (1 V) Amplitude for ClockP
GEN:DOUT:LPNS 1    ; Link DataP & DataN. Only set
                   ; conditions for one, other follows

GEN:DOP:TVOL 0     ; 0 mV Termination for DataP
GEN:DOP:SLOF 0     ; 0 mV Offset for DataP
GEN:DOP:SLAM 1000  ; 1000 mV (1 V) Amplitude for DataP
```

- Turn outputs on, and query their “on” status—they can take up to 3 seconds to turn on

```
GEN:COP:ENAB 1     ; Enable ClockP output
GEN:DOP:ENAB 1     ; Enable DataP output
GEN:DON:ENAB 1     ; Enable DataN output

Loop Until = 1
GEN:COP:ENAB?      ; Is Generator ClockP Enabled yet?
Wait 0.25
Repeat

Loop Until = 1
GEN:DOP:ENAB?      ; Is Detector DataP Enabled yet?
Wait 0.25
Repeat

Loop Until = 1
GEN:DON:ENAB?      ; Is Detector DataN Enabled yet?
Wait 0.25
Repeat
```

- Calibrate Generator and Detector Delay paths for this frequency at this time and temperature

```
GEN:PCAL           ; Initiate Generator Delay Calibration.
Wait Until reply   ; Takes awhile (10 s?)
RSTATE?

Repeat

DET:PCAL           ; Initiate a Detector Delay Calibration.
Wait Until reply   ; Takes awhile (10 s?)
RSTATE?

Repeat
```

- Now, Auto Align the Detector (“Perform Data Centering”)

```
DET:PDC          ; Initiate an Auto Align.
Wait Until reply ; Takes awhile
RSTATE?

Repeat
```

- Auto Align is completed, and Detector is ready to run (error-free if cabled back-to-back)

```
DET:DCS?          ; Was Auto Align successful?
                  ; Result = 1 if successful
DET:ISYNC?        ; Should be sync'd
                  ; Result = 1 if sync'd
```

- But, first, query some results from the Auto Align:

```
DET:DCAM?          ; What is the data amplitude in mV?
                  ; Should be about 2 V pp (differ-
                  ; ential – adds the amplitudes of
                  ; the two out-of-phase inputs)
DET:DCHM?          ; What is the data offset voltage
                  ; in mV? Should be about 0 V DC
DET:DCW?           ; What is the width of the eye?
                  ; Should be inverse of frequency
```

- Run bits through the detector for 20 seconds.

```
DET:RUIN 20       ; Sets the run interval for 20 seconds
RSTATE 1          ; Runs the detector for the set time
                  ; above (20 seconds)

Wait Until Reply

RSTATE?           ; Are we done with the 20 second run
                  ; yet?

Repeat
```

- Running has stopped. Did errors accumulate along the way? (If you want errors to accumulate, slightly unscrew the data cables during run time, and watch the GUI in Detector view.)

```
DET:BITS?         ; How many bits passed during the
                  ; 20-second run? Should be about 20
                  ; seconds x 9.953 Gb/s
DET:ERR?          ; And how many errors in those 20
                  ; seconds?
```

Command Listing

Generator

DELAY:GENRecal?

Retrieve the information that indicates whether Generator delay needs recalibration. Query only. **Note:** Since monitoring for these calibrations is suspended while Physical Layer tests are running, using this command under those circumstances may not return an accurate result.

Returns: < 1 > Needs delay recalibration.
 < 0 > Does not need a delay recalibration.

GENerator:CREference <EXTernal | INTernal>

GENerator:CREference?

Set or retrieve the Generator input clock reference. Available on **BERTScope** only.

Params: <EXTernal> External clock reference
 <INTernal> Internal clock reference

Returns: < EXTernal | INTernal >

GENerator:CSElect <INTernal | EXTernal>

GENerator:CSElect?

Set or retrieve the clock used by the Generator.

Params: <INTernal> Generator uses the internal clock synthesizer
 <EXTernal> Generator uses the external clock

Returns: < INTernal | EXTernal >

GENerator:DDElay <numeric>

GENerator:DDElay?

Set or retrieve the Generator data delay.

Params: <numeric> Generator data delay.

BA1500: When the BA1500 is operating within range [1 to 981 MHz], Data Delay is within range [0 to 33,000 ps]. Input out of range will be clipped and recorded in the status queue.

When the BA1500 is operating within range [982 to 1,500 MHz], Data Delay is within range [0 to 5,000 ps].

BERTScope: When the BERTScope is operating within range [500 to 1,000 MHz], Data Delay is within range [0 to 32,000 ps]. Input out of range will be clipped and recorded in the status queue.

When the BERTScope is operating within range [1,100 to 12,500 MHz], Data Delay is within range [0 to 3,000 ps].

Returns: < numeric >

GENerator:DINVert <bool>**GENerator:DINVert?**

Set or retrieve data inversion state for the Generator.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Data invert is on

< 0 > Data invert is off

GENerator:DRATe?

Retrieve the Generator data rate. Query only.

Returns: < numeric > Generator data rate in bits/sec. "0" means No Clock.

GENerator:ICLock <numeric>**GENerator:ICLock?**

Set or retrieve the internal clock synthesizer frequency of the Generator. May require some delay to complete.

Params: <numeric> Generator internal clock synthesizer frequency in Hz.

BA1500: Range [1 to 1,500,000].

BERTScope: Range [500,000,000 to 12,500,000,000].

Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:PCALibration

Perform Generator delay calibration. Action only. May require some delay to complete.

GENerator:PSTart:TVOLTage <numeric>**GENerator:PSTart:TVOLTage?**

Set or retrieve the termination voltage of the Generator clock input.

Params: <numeric> Generator clock input termination voltage in mV, range [-2,000 to +3,300]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Generator — Data Generator**GENerator:ISERror**

Inject a single error. Action only.

GENerator:LUPFilename?

Retrieve user pattern file that has been loaded to the Generator. Query only.

Returns: < "filename" > The file containing the user pattern that has been loaded into the Generator. Filename is enclosed in quotes.

GENerator:PATtern <PN7 | PN11* | PN15 | PN20 | PN23 | PN31 | UStart | UCYCLe | ALLZERO>

GENerator:PATtern?

Set or retrieve the data type of the Generator.

Params: <PN7 | PN11 | PN15 | PN20 | PN23 | PN31> Generator data type. PN11 pattern is available only on the **BERTScope**.
<UStart> User pattern (See **GEN:UPLoad** command to load a user pattern file.)
<UCYCLe> User pattern cycle
<ALLZERO> All-zeros pattern

Returns: < PN7 | PN11* | PN15 | PN20 | PN23 | PN31 | UStart | UCYCLe | ALLZERO >

*PN11 pattern is available only on the **BERTScope**.

GENerator:PSElect <A | B>

GENerator:PSElect?

Set or retrieve the selected page of the user pattern loaded to the Generator.

Params: <A> Generator user pattern page A.
 Generator user pattern page B.

Returns: < PageA | PageB >

GENerator:PSWitch

Switch the page of the user pattern loaded to the Generator. Action only.

GENerator:UPLoad <"filename">

Load user pattern from the specified file. Action only.

Params: <"filename"> Load the specified user pattern file into the Generator. Use the absolute pathname and enclose the string in quotes.

GENerator:UPLPercent?

Retrieve the user pattern loading percentage completion value. Query returns 100 if the loading is complete. Query only.

Returns: < number > The percentage of user pattern loaded into the Generator.

GENerator:UPLTracking <bool>

GENerator:UPLTracking?

Set or retrieve whether the Generator tracks the Detector when loading a user pattern. If the tracking is true, the command **GEN:UPL** <"filename"> loads the user pattern into both the Generator and the Detector.

Params: <bool> On = 1, Off = 0

Returns: <1> Loading user pattern is tracked
<0> Loading user pattern is not tracked

Generator Pattern Start

GENerator:PStart:LFAMily <LVTTL | CML | ECL | PECL | LVPECL>

GENerator:PStart:LFAMily?

Set or retrieve the pattern start input signal logic family. This command is available *only* on the **BA1500** platform.

Params: <LVTTL | CML | ECL | PECL | LVPECL> The pattern start input logic family.

Returns: < string > The name of the logic family.

GENerator:PStart:TAC <bool>

GENerator:PStart:TAC?

Set or retrieve the termination AC of the Generator pattern start input.

Params: <bool> On = 1, Off = 0

Returns: < 1 > AC is on.
< 0 > AC is off.

GENerator:PStart:THReshold <numeric>

GENerator:PStart:THReshold?

Set or retrieve the threshold of the Generator pattern start input. This command is available *only* on the **BA1500** platform.

Params: <numeric> Generator pattern start input threshold in mV, range [-2,000 to 4,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:PStart:TMODe <REDGe | FEDGe | DISabled>

GENerator:PStart:TMODe?

Set or retrieve the trigger mode of the Generator pattern start input.

Params: <REDGe> Generator pattern start trigger at the rising edge.
<FEDGe> Generator pattern start trigger at the falling edge.
<DISabled> Trigger is disabled.

Returns: < REDGe | FEDGe | DISabled >

Generator Clock Input

GENERator:CINPut:LFAMILY <LVTTL | CML | ECL | PECL | LVPECL>

GENERator:CINPut:LFAMILY?

Set or retrieve the Generator Clock input logic family. This command is available *only* on the **BA1500** platform.

Params: <LVTTL | CML | ECL | PECL | LVPECL> Set the Generator Clock input logic family.

Returns: < string > The name of the logic family.

GENERator:CINPut:TAC <bool>

GENERator:CINPut:TAC?

Set or retrieve the termination AC of the Generator Clock input.

Params: <bool> On = 1, Off = 0

Returns: < 1 > AC is on.

< 0 > AC is off.

GENERator:CINPut:THReshold <numeric>

GENERator:CINPut:THReshold?

Set or retrieve the threshold of the Generator Clock input. This command is available *only* on the **BA1500** platform.

Params: <numeric> Generator Clock input threshold in mV, range [–1,200 to +800]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENERator:CINPut:TVOLTage <numeric>

GENERator:CINPut:TVOLTage?

Set or retrieve the termination voltage of the Generator Clock input.

Params: <numeric> Generator Clock input termination voltage in mV, range [–2,000 to +3,300]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENERator:SUBRatediv <1 | 2 | 4 | 8 | 16 | 32 | 64 | 128>

GENERator:SUBRatediv?

Set or retrieve the sub-rate clock output divider for the Generator's internal clock synthesizer.

Params: <1 | 2 | 4 | 8 | 16 | 32 | 64 | 128> Generator internal clock synthesizer sub-rate clock output divider. "1" is full rate.

Returns: <1 | 2 | 4 | 8 | 16 | 32 | 64 | 128>

Generator Clock Output Pos.

GENerator:COPositive:CLIPped?

Retrieve whether the Generator Clock output positive setting is clipped. Query only.

Returns: < 1 > The Generator Clock (+) setting is clipped.
 < 0 > The Generator Clock (+) setting is not clipped.

GENerator:COpositive:ENABLE <bool>

GENerator:COpositive:ENABLE?

Set or retrieve whether the Generator Clock output positive is enabled. May require some delay to complete.

Params: <bool> On = 1, Off = 0
Returns: < 1 > Generator Clock output (+) is enabled.
 < 0 > Generator Clock output (+) is disabled.

GENerator:COpositive:IMPedance <numeric>

GENerator:COpositive:IMPedance?

Set or retrieve the impedance of the Generator Clock output positive. May require some delay to complete.

Params: <numeric> Generator Clock output (+) impedance in Ohms, range [30 to 100,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:COpositive:LFAMILY <LVTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL>

GENerator:COpositive:LFAMILY?

Set or retrieve the Generator Clock output positive logic family. PECL is not available on the **BERTScope**.

Params: <LVTTL | CML | ECL | The Generator Clock output (+) logic
 PECL | LVPECL | LVDS | family.
 SCFL>

Returns: < string > The name of the logic family.

GENerator:COpositive:SLAMplitude <numeric>

GENerator:COpositive:SLAMplitude?

Set or retrieve the signal level amplitude of the Generator Clock output positive. May require some delay to complete.

Params: <numeric> Generator Clock output (+) signal level amplitude in mV.
 Input out of range will be clipped and recorded in the status
 queue.

BA1500: Range [70 to 2,000].

BERTScope: Range [250 to 2,000].

Returns: < numeric > Clock output signal level amplitude.

GENerator:COPositive:SLOffset <numeric>**GENerator:COPositive:SLOffset?**

Set or retrieve the signal level offset of the Generator Clock output positive. May require some delay to complete.

Params: <numeric> Generator Clock output (+) signal level offset in mV. Input out of range will be clipped and recorded in the status queue.

BA1500: Range [−2,000 to +4,000].

BERTScope: Range [−2,000 to +2,000].

Returns: < numeric > Clock output signal level offset.

GENerator:COPositive:SLVHigh <numeric>**GENerator:COPositive:SLVHigh?**

Set or retrieve the signal level V_H of the Generator Clock output positive. May require some delay to complete.

Params: <numeric> Generator Clock output (+) signal level V_H in mV, range [−1,750 to +3,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:COPositive:SLVLow <numeric>**GENerator:COPositive:SLVLow?**

Set or retrieve the signal level V_L of the Generator Clock output positive. May require some delay to complete.

Params: <numeric> Generator Clock output (+) signal level V_L in mV, range [−2,250 to +1,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:COPositive:TAC <bool>**GENerator:COPositive:TAC?**

Set or retrieve the termination AC of the Generator Clock output positive. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > AC is on.

< 0 > AC is off.

GENerator:COPositive:TVOLTage <numeric>**GENerator:COPositive:TVOLTage?**

Set or retrieve the termination voltage of the Generator Clock output positive. May require some delay to complete.

Params: <numeric> Generator Clock output (+) termination voltage in mV, range [−2,000 to +2,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Generator Clock Output Neg.

GENerator:CONegative:CLIPped?

Retrieve whether the Generator Clock output negative setting is clipped. Query only.

Returns: < 1 > The Generator Clock (–) setting is clipped
 < 0 > The Generator Clock (–) setting is not clipped

GENerator:CONegative:ENABle <bool>

GENerator:CONegative:ENABle?

Set or retrieve whether the Generator Clock output negative is enabled. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Generator Clock output (–) is enabled.
 < 0 > Generator Clock output (–) is disabled.

GENerator:CONegative:IMPedance <numeric>

GENerator:CONegative:IMPedance?

Set or retrieve the impedance of the Generator Clock output negative. May require some delay to complete.

Params: <numeric> Generator Clock output (–) impedance in Ohm, range [30 to 100,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:CONegative:LFAMily <LVTTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL>

GENerator:CONegative:LFAMily?

Set or retrieve the clock input logic family. PECL is not available on the **BERTScope**.

Params: <LVTTTL | CML | ECL | The input logic family.
 PECL | LVPECL | LVDS |
 SCFL>

Returns: < string > The name of the logic family.

GENerator:CONegative:SLAMplitude <numeric>

GENerator:CONegative:SLAMplitude?

Set or retrieve the signal level amplitude of the Generator Clock output negative. May require some delay to complete.

Params: <numeric> Generator Clock output (–) signal level amplitude in mV, range [250 to 2,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:CONegative:SLOffset <numeric>**GENerator:CONegative:SLOffset?**

Set or retrieve the signal level offset of the Generator Clock output negative. May require some delay to complete.

Params: <numeric> Generator Clock output (–) signal level offset in mV, range [–2,000 to +2,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:CONegative:SLVHigh <numeric>**GENerator:CONegative:SLVHigh?**

Set or retrieve the signal level V_H of the Generator Clock output negative. May require some delay to complete.

Params: <numeric> Generator Clock output (–) signal level V_H in mV, range [–1,750 to +3,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:CONegative:SLVLow <numeric>**GENerator:CONegative:SLVLow?**

Set or retrieve the signal level V_L of the Generator Clock output negative. May require some delay to complete.

Params: <numeric> Generator Clock output (–) signal level V_L in mV, range [–2,250 to +1,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:CONegative:TAC <bool>**GENerator:CONegative:TAC?**

Set or retrieve the termination AC of the Generator Clock output negative. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > AC is on.

 < 0 > AC is off.

GENerator:CONegative:TVOLTage <numeric>**GENerator:CONegative:TVOLTage?**

Set or retrieve the termination voltage of the Generator Clock output negative. May require some delay to complete.

Params: <numeric> Generator Clock output (–) termination voltage in mV, range [–2,000 to +2,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Generator Clock Output Pos./Neg.

GENerator:CLKDIVider <long>

GENerator:CLKDIVider?

Set or retrieve the value of the clock divider.

Params: <long> Value of Clock Divider

Returns: < long >

GENerator:COUTput:LPNSignals <bool>

GENerator:COUTput:LPNSignals?

Set or retrieve whether the Generator Data output positive and negative are linked. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Generator Clock output (–) and (+) are linked.

 < 0 > Generator Clock output (–) and (+) are not linked.

GENerator:SUBRatediv <1 | 2 | 4 | 8 | 16 | 32 | 64 | 128>

GENerator:SUBRatediv?

Set or retrieve the sub-rate clock output divider for the Generator's internal clock synthesizer.

Params: <1 | 2 | 4 | 8 | 16 | 32 | 64 | 128> Generator internal clock synthesizer sub-rate clock output divider. "1" is full rate.

Returns: <1 | 2 | 4 | 8 | 16 | 32 | 64 | 128>

GENerator:SUBRate:STress:CLKMODE <STressed | SUBRate>

GENerator:SUBRate:STress:CLKMODE ?

Set or retrieve the sub-rate clock mode.

Params: < STressed > Stressed

 < SUBRate > Sub-Rate

Generator Data Output Pos.

GENerator:DOPositive:CLIPped?

Retrieve whether the Generator Data output positive setting is clipped. Query only.

Returns: < 1 > The Generator Data (+) setting is clipped

 < 0 > The Generator Data (+) setting is not clipped

GENerator:DOPositive:ENABLE <bool>

GENerator:DOPositive:ENABLE?

Set or retrieve whether the Generator Data output positive is enabled. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Generator Data output (+) is enabled.

 < 0 > Generator Data output (+) is disabled.

GENerator:DOPositive:IMPedance <numeric>**GENerator:DOPositive:IMPedance?**

Set or retrieve the impedance of the Generator Data output positive. May require some delay to complete.

Params: < numeric > Generator Data output (+) impedance in Ohms, range [30 to 100,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DOPositive:LFAMILY <LVTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL>**GENerator:DOPositive:LFAMILY?**

Set or retrieve the Generator Data output positive logic family. PECL is not available on the **BERTScope**.

Params: <LVTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL> The Generator Data output (+) logic family.

Returns: < string > The name of the logic family.

GENerator:DOPositive:SLAMplitude <numeric>**GENerator:DOPositive:SLAMplitude?**

Set or retrieve the signal level amplitude of the Generator Data output positive. May require some delay to complete.

Params: < numeric > Generator Data output (+) signal level amplitude in mV, range [250 to 2,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DOPositive:SLOffset <numeric>**GENerator:DOPositive:SLOffset?**

Set or retrieve the signal level offset of the Generator Data output positive. May require some delay to complete.

Params: < numeric > Generator Data output (+) signal level offset in mV, range [-2,000 to +2,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DOPositive:SLVHigh <numeric>**GENerator:DOPositive:SLVHigh?**

Set or retrieve the signal level V_H of the Generator Data output positive. May require some delay to complete.

Params: < numeric > Generator Data output (+) signal level V_H in mV, range [-1,750 to +3,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENERator:DOPositive:SLVLow <numeric>**GENERator:DOPositive:SLVLow?**

Set or retrieve the signal level V_L of the Generator Data output positive. May require some delay to complete.

Params: < numeric > Generator Data output (+) signal level V_L in mV, range [–2,250 to +1,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENERator:DOPositive:SYMmetry <numeric>**GENERator:DOPositive:SYMmetry?**

Set or retrieve the symmetry adjustment of the Generator Data output positive.

Params: <numeric> Generator Data output (+) symmetry, in percent, range [25 to 75]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENERator:DOPositive:TAC <bool>**GENERator:DOPositive:TAC?**

Set or retrieve the termination AC of the Generator Data output positive. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > AC is on.

 < 0 > AC is off.

GENERator:DOPositive:TVOLtage <numeric>**GENERator:DOPositive:TVOLtage?**

Set or retrieve the termination voltage of the Generator Data output positive. May require some delay to complete.

Params: < numeric > Generator Data output (+) termination voltage in mV, range [–2,000 to +2,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Generator Data Output Neg.**GENERator:DONegative:CLIPped?**

Retrieve whether the Generator Data output negative setting is clipped. Query only.

Returns: < 1 > The Generator Data (–) setting is clipped

 < 0 > The Generator Data (–) setting is not clipped

GENerator:DONegative:ENABLE <bool>**GENerator:DONegative:ENABLE?**

Set or retrieve whether the Generator Data output negative is enabled. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Generator Data output (–) is enabled.

< 0 > Generator Data output (–) is disabled.

GENerator:DONegative:IMPedance <numeric>**GENerator:DONegative:IMPedance?**

Set or retrieve the impedance of the Generator Data output negative. May require some delay to complete.

Params: <numeric> Generator Data output (–) impedance in Ohms, range [30 to 100,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DONegative:LFAMILY <LVTTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL>**GENerator:DONegative:LFAMILY?**

Set or retrieve the Generator Data output negative logic family. PECL is not available on the **BERTScope**.

Params: <LVTTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL> The Generator Data output (–) logic family.

Returns: < string > The name of the logic family.

GENerator:DONegative:SLAMplitude <numeric>**GENerator:DONegative:SLAMplitude?**

Set or retrieve the signal level amplitude of the Generator Data output negative. May require some delay to complete.

Params: <numeric> Generator Data output (–) signal level amplitude in mV, range [250 to 2,000 mV]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DONegative:SLOffset <numeric>**GENerator:DONegative:SLOffset?**

Set or retrieve the signal level offset of the Generator Data output negative. May require some delay to complete.

Params: <numeric> Generator Data output (–) signal level offset in mV, range [–2,000 to +2,000 mV]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DONegative:SLVHigh <numeric>**GENerator:DONegative:SLVHigh?**

Set or retrieve the signal level V_H of the Generator Data output negative. May require some delay to complete.

Params: <numeric> Generator Data output (–) signal level V_H in mV, range [–1,750 to +3,000 mV]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DONegative:SLVLow <numeric>**GENerator:DONegative:SLVLow?**

Set or retrieve the signal level V_L of the Generator Data output negative. May require some delay to complete.

Params: <numeric> Generator Data output (–) signal level V_L in mV, range [–2,250 to +1,000 mV]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DONegative:SYMMetry <numeric>**GENerator:DONegative:SYMMetry?**

Set or retrieve the symmetry adjustment of the Generator Data output negative.

Params: <numeric> Generator Data output (–) symmetry, in percent, range [25 to 75%]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:DONegative:TAC <bool>**GENerator:DONegative:TAC?**

Set or retrieve the termination AC of the Generator Data output negative. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > AC is on.

 < 0 > AC is off.

GENerator:DONegative:TVOLTage <numeric>**GENerator:DONegative:TVOLTage?**

Set or retrieve the termination voltage of the Generator Data output negative. May require some delay to complete.

Params: <numeric> Generator Data output (–) termination voltage in mV, range [–2,000 to +2,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Generator Data Output Pos./Neg.

GENerator:DOUTput:LPNSignals <bool>

GENerator:DOUTput:LPNSignals?

Set or retrieve whether the Generator Data output positive and negative are linked.
May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Generator Data output (–) and (+) are linked.
 < 0 > Generator Data output (–) and (+) are not linked.

Generator Trigger

GENerator:TOFFset <numeric>

GENerator:TOFFset?

Set or retrieve the Generator Trigger offset.

Params: <numeric> Generator Trigger offset

BA1500: in 32-bit words, range [0 to (Pattern Size – 1)] for all the PRBS patterns. For others, the range is [0 to 0]. Input out of range will be clipped and recorded in the status queue.

BERTScope: in 128-bit words, range [0 to (Pattern Size – 1)] for all the PRBS patterns. For others, the range is [0 to 0]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:TOMethod <PCYClE | CLOCk>

GENerator:TOMethod?

Set or retrieve the Generator Trigger out method.

Params: <PCYClE> Generator Trigger out method is pattern cycle.

 <CLOCk> **BA1500:** Generator Trigger out method is a divided-down clock/64

BERTScope: Generator trigger out method is a divided-down clock/256

Returns: <PCYClE | CLOCk >

Generator Error Inject

GENerator:EIEType <1BIT | 2BITS | 4BITS | 8BITS | 16Bits | 32Bits | 64Bits | 128Bits>

GENerator:EIEType?

Set or retrieve the Generator Error Inject type. May require some delay to complete.

Params: <1Bit | 2Bits | 4Bits | 8Bits | 16Bits | 32Bits | 64Bits | 128Bits>

Generator error inject type is 1, 2, 4, 8, 16, 32, 64, or 128 bit(s).

Returns: < 1BIT | 2BITS | 4BITS | 8BITS | 16Bits | 32Bits | 64Bits | 128Bits >

GENerator:EIInterval <numeric>

GENerator:EIInterval?

Set or retrieve the Generator Error Inject interval. May require some delay to complete.

Params: <numeric> Generator Error Inject interval in bits.

BA1500: Range [32 to 16,777,184]; must be modulo 32.

Input out of range will be clipped and recorded in the status queue.

BERTScope: Range [128 to 16,777,184]; must be modulo 128. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

GENerator:EIMode <CONTInuous | MANual | EXTernal | OFF>

GENerator:EIMode?

Set or retrieve the Generator Error Inject mode. May require some delay to complete.

Params: <CONTInuous> Generator Error Inject mode is continuous.

<MANual> Generator Error Inject mode is manual.

<EXTernal> Generator is set to inject a single error on receipt of an external signal.

<OFF> Generator Error Inject is off.

Returns: < CONTInuous | MANual | EXTernal | OFF >

GENerator:IBER?

Retrieve the injected BER of the Generator. Query only.

Returns: < numeric > Generator injected bit error rate.

GSM – Generator Stress Module – Stressed Eye

All GSM commands apply *only* to the **BERTScope** family of analyzers. Before using the GSM commands, send **GSM:STress:ENABLE 1** to enable all stress features (see **GSM:STress** below).

GSM:BUJitter:AMPUi <number>

GSM:BUJitter:AMPUi?

Set or retrieve the PRBS jitter amplitude in percent of UI.

Params: <number> PRBS jitter amplitude in %UI. Range [0 to 50%]. The amplitude limits change with regard to the analyzer's operating frequency.

Returns: < number >

GSM:BUJitter:ENABLE <bool>

GSM:BUJitter:ENABLE?

Set or retrieve whether the PRBS jitter on the clock is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > PRBS jitter on the clock is enabled.
 < 0 > PRBS jitter on the clock is disabled.

GSM:BUJitter:FREQUENCY <number>

GSM:BUJitter:FREQUENCY?

Set or retrieve the PRBS jitter frequency in Hz.

Params: <number> PRBS jitter frequency in Hz. Range [100,000,000 to 2,500,000,000 Hz].

Returns: < number >

GSM:BUJitter:TYPE <PRBS7 | PRBS10 | PRBS11>

GSM:BUJitter:TYPE?

Set or retrieve the PRBS jitter type.

Params: <PRBS7> Insert PRBS7 jitter.
 <PRBS10> Insert PRBS10 jitter.
 <PRBS11> Insert PRBS11 jitter.

Returns: < PRBS7 | PRBS10 | PRBS11 >

GSM:EXHFrequency:ENABLE <bool>

GSM:EXHFrequency:ENABLE?

Set or retrieve whether the external high frequency jitter is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > External high frequency jitter is enabled
 < 0 > External high frequency jitter is disabled

GSM:EXSJitter:AMPUI <number>**GSM:EXSJitter:AMPUI?**

Set or retrieve the external sinusoidal jitter amplitude in percent of UI.

Params: <number> External sinusoidal jitter amplitude in %UI. Range [0 to Maximum allowed %UI]. The amplitude limits change with regard to the analyzer's operating frequency.

Returns: < number >

GSM:EXSJitter:MODE <DISable | POSitive | INVerted>**GSM:EXSJitter:MODE?**

Set or retrieve the external sinusoidal jitter mode.

Params: <DISable> External sinusoidal jitter is disabled.
<POSitive> External sinusoidal jitter is positive.
<INVerted> External sinusoidal jitter is inverted.

Returns: < DISable | POSitive | INVerted >

GSM:RCONfiguration <"filename">

Restore Stress configuration. Action only.

Params: <"filename"> Configuration filename used to restore. Filename is enclosed in quotes.

Returns: < filename >

GSM:RJitter:AMPUI <number>**GSM:RJitter:AMPUI?**

Set or retrieve the random jitter amplitude in percent of UI.

Params: <number> Random jitter amplitude in %UI. Range [0 to 50%]. The amplitude limits change with regard to the analyzer's operating frequency.

Returns: < number >

GSM:RJitter:ENABLE <bool>**GSM:RJitter:ENABLe?**

Set or retrieve whether the random jitter on the clock is enabled.

Params: <bool> On = 1, Off = 0
Returns: < 1 > Random jitter on the clock is enabled.
< 0 > Random jitter on the clock is disabled.

GSM:SCONfiguration <"filename">

Save Stress configuration. Action only.

Params: <"filename"> Configuration filename used to save. Filename is enclosed in quotes.

Returns: < filename >

GSM:SJitter:AMPUI <number>**GSM:SJitter:AMPUI?**

Set or retrieve the sinusoidal jitter amplitude in percent of UI.

Params: <number> Sinusoidal jitter amplitude in %UI. Range [0 to Maximum allowed %UI]. The amplitude limits change with regard to the analyzer's operating frequency.

Returns: < number >

GSM:SJitter:ENABLE <bool>**GSM:SJitter:ENABLE?**

Set or retrieve whether the sinusoidal jitter on the clock is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Sinusoidal jitter on the clock is enabled.

< 0 > Sinusoidal jitter on the clock is disabled.

GSM:SJitter:FREQUENCY <number>**GSM:SJitter:FREQUENCY?**

Set or retrieve the sinusoidal jitter frequency in Hz.

Params: <number> Sinusoidal jitter frequency in Hz. Range [20,000 to 80,000,000 Hz]

Returns: < number >

GSM:SInterference:FREQUENCY <number>**GSM:SInterference:FREQUENCY?**

Set or retrieve the sinusoidal interference frequency in Hz.

Params: <number> Sinusoidal interference frequency in Hz. Range [100,000,000 to 2,500,000,000 Hz]

Returns: < number >

GSM:SInterference:MODE <INPhase | OUTPhase>**GSM:SInterference:MODE?**

Set or retrieve the internal sinusoidal interference mode.

Params: <INPhase> Sinusoidal interference is in phase.

<OUTPhase> Sinusoidal interference is out of phase.

<EXTernal> Sinusoidal interference is External.

Returns: < INPhase | OUTPhase | EXTernal >

GSM:SINegative:AMPLitude <number>**GSM:SINegative:AMPLitude?**

Set or retrieve the data (–) sinusoidal interference amplitude in mV.

Params: <number> Sinusoidal interference amplitude on the data (–). Range [0 to 400 mV]. The amplitude limits change with regard to the analyzer's operating frequency.

Returns: < number >

GSM:SINegative:ENABLE <bool>**GSM:SINegative:ENABLE?**

Set or retrieve whether the sinusoidal interference on the data (–) is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Sinusoidal interference on the data (–) is enabled.

< 0 > Sinusoidal interference on the data (–) is disabled.

GSM:SIPOsitive:AMPLitude <number>**GSM:SIPOsitive:AMPLitude?**

Set or retrieve the data (+) sinusoidal interference amplitude in mV.

Params: <number> Sinusoidal interference amplitude on the data (+). Range [0 to 400 mV]. The amplitude limits change with regard to the analyzer's operating frequency.

Returns: < number >

GSM:SIPOsitive:ENABLE <bool>**GSM:SIPOsitive:ENABLE?**

Set or retrieve whether the sinusoidal interference on the data (+) is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Sinusoidal interference on the data (+) is enabled.

< 0 > Sinusoidal interference on the data (+) is disabled.

GSM:STress:ENABLE <bool>**GSM:STress:ENABLE?**

Set or retrieve whether the entire global stress feature is enabled. The entire stress feature includes jitter insertion of sinusoidal jitter (SJ), external sinusoidal jitter (EXSJ), random jitter (RJ), PRBS jitter (BUJ) and external high frequency jitter (EXHF). There are commands to enable each individual stress insertion, like GSM:SJitter:ENABLE; however, unless the **Stress Feature** is enabled using this command, those individual jitter insertion enabling commands do not enable any jitter insertion. For example, if one sent a "GSM:SJitter:Enabled 1" without enabling the stress feature (query "GSM:STress:ENABLE?" returns 0), the system merely caches the SJ Enable value. The next time "GSM:STress:ENABLE 1" is sent, the SJ is then enabled. After the stress feature is enabled, one can still enable or disable individual types of jitter insertion by sending the corresponding ENABLE command.

This command corresponds to the Clock control's "Jitter Insertion Enabled" menu item in the Generator view.

Params: <bool> On = 1, Off = 0

Returns: < 1 > All stress enabled.

< 0 > All stress disabled.

Detector

DELAY:DETRecal?

Retrieve the information that indicates whether Detector delay needs recalibration. Query only. **Note:** Since monitoring for these calibrations is suspended while Physical Layer tests are running, using this command under those circumstances may not return an accurate result.

Returns: < 1 > Needs Delay Recalibration.
 < 0 > Does not need a Delay Recalibration.

DETECTOR:BINVert <bool>

DETECTOR:BINVert?

Set or retrieve the blank invert of the Detector.

Params: <bool> On = 1, Off = 0
Returns: < 1 > Detector Blank is inverted.
 < 0 > Detector Blank is not inverted.

DETECTOR:CINVert <bool>

DETECTOR:CINVert?

Set or retrieve the clock invert of the Detector.

Params: <bool> On = 1, Off = 0
Returns: < 1 > Detector Clock is inverted.
 < 0 > Detector Clock is not inverted.

DETECTOR:DDElay?

Set or retrieve the data delay of the Detector.

Params: <numeric> Detector Data delay.

BA1500: When the BA1500 is operating within the range [1 to 981 MHz], the Detector Data Delay is within a range [0 to 33,000 ps]. Input out of range will be clipped and recorded in the status queue.

When the BA1500 is operating within the range [982 to 1,500 MHz], the Detector Data Delay is within a range [0 to 5,000 ps].

BERTScope: When the **BERTScope** is operating within the range [500 to 1,000 MHz], the Detector Data Delay is within a range [0 to 32,000 ps]. Input out of range will be clipped and recorded in the status queue.

When the **BERTScope** is operating within the range [1,100 to 12,500 MHz], the Detector Data Delay is within a range [0 to 3,000 ps].

Returns: < numeric >

DETEctor:DINVert <bool>

DETEctor:DINVert?

Set or retrieve the data invert of the Detector.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector Data is inverted.

< 0 > Detector Data is not inverted.

DETEctor:DRATe?

Retrieve the data rate of the Detector. Query only.

Returns: < numeric > Detector Data rate in Bits/s. "0" means No Clock.

DETEctor: OPERmode <ELEC | OPTIC>

DETEctor: OPERmode?

Set or retrieve Detector operating mode, Electrical or Optical. **BERTScope** only.

Params: <ELEC> BERTScope operates in Electrical mode

<OPTIC> BERTScope operates in Optical mode

Returns: < ELEC | OPTIC >

DETEctor:PCALibration

Perform Detector delay calibration. Action only. May require some delay to complete.

DETEctor:RSNumber?

Retrieve the result serial number of the Detector. Query only.

Returns: < numeric > Detector's result serial number.

Detector Error Detector

DETEctor:ARENable <bool>

DETEctor:ARENable?

Set or retrieve the automatic resync of the Detector.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector automatic resync is on.

< 0 > Detector automatic resync is off.

DETEctor:ARTHreshold <numeric>

DETEctor:ARTHreshold?

Set or retrieve the threshold of the Detector automatic resync.

Params: <numeric> Detector automatic resync threshold in number of errors, range [3 to 100,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

DETECTOR:DPATTERN?

Retrieve detected pattern of the Detector. The PN11 pattern is available only on the **BERTScope**. Query only.

Returns: < PN7 | PN11* | PN15 | PN20 | PN23 | PN31 | USER NONE > The detected pattern is either one of the PRBS patterns, a user pattern, or none. Pseudo-random data types are: PRBS-7, PRBS-11*, PRBS-15, PRBS-20, PRBS-23, PRBS-31.

*PN11 pattern is available only on the **BERTScope**.

DETECTOR:GLENGTH <integer>

DETECTOR:GLENGTH?

Set or retrieve the Detector capture length. The action causes the machine to capture the input number of words into the Detector. The query returns the amount of captured RAM in words.

Params: <integer> Number of words to capture

Returns: < integer > Number of words captured.

DETECTOR:ISYNC?

Retrieve whether the Detector is in sync. Query only.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector is in sync.

< 0 > Detector is not in sync.

DETECTOR:LUPFILENAME?

Retrieve user pattern file that has been loaded to the Detector. Query only.

Returns: < filename > The file containing the user pattern which has been loaded to the Detector.

DETECTOR:NALARM?

Retrieve the negative input protection alarm. Query only.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Negative input protection alarm is on.

< 0 > No negative input protection alarm.

DETECTOR:PALARM?

Retrieve the positive input protection alarm. Query only.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Positive input protection alarm is on.

< 0 > No positive input protection alarm.

DETECTOR:PATTERN <PN7 | PN11* | PN15 | PN20 | PN23 | PN31 | UStart | UGRab | USHift | AUTomatic>

DETECTOR:PATTERN?

Set or retrieve the data type of the Detector.

Params: <PN7 | PN11* | PN15 | PN20 | PN23 | PN31> Detector Data types are PN7, PN11*, PN15, PN20, PN23, PN31.
<UStart>
<UGRab> Grab and Go
<USHift> Shift and Sync
<AUTomatic> Automatic

Returns: < PN7 | PN11* | PN15 | PN20 | PN23 | PN31 | USTART | UGRAB | USHIFT | AUTOMATIC >

*The PN11 pattern is available only on the **BERTScope**.

DETECTOR:SETHreshold <integer>

DETECTOR:SETHreshold?

Set or retrieve the Detector Shift Error Tolerance. This action causes the machine to capture the input number of words into the detector.

Params: <integer> Number of errors permitted for synchronizing.

Returns: < integer >

DETECTOR:UPLoad <"filename">

Load user pattern from the specified file. Action only.

Params: <filename> Load the specified pattern file into the Detector. Use the absolute pathname and enclose the string in quotes.

DETECTOR:UPLPercent?

Retrieve the user pattern loading percentage completion value. It returns 100 if the loading is complete. Query only.

Returns: < number > The percentage of user pattern loaded into the Detector.

Detector Start Detect

DETECTOR:SDETECT:TAC <bool>

DETECTOR:SDETECT:TAC?

Set or retrieve the termination AC of the Detector Start Detect.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector Start Detect Termination AC is on.

< 0 > Detector Start Detect Termination AC is off.

DETECTOR:SDETECT:THRESHOLD <numeric>**DETECTOR:SDETECT:THRESHOLD?**

Set or retrieve the threshold of the Detector Start Detect.

Params: <numeric> Detector Start Detect threshold in mV, range [–2,000 to +4,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

DETECTOR:SDETECT:TMODE <REDGE | FEDGE | DISABLED>**DETECTOR:SDETECT:TMODE?**

Set or retrieve the trigger mode of the Detector Start Detect.

Params: <REDGE> Trigger at the rising edge.
 <FEDGE> Trigger at the falling edge.
 <DISABLED> Trigger disabled.

Returns: < REDGE | FEDGE | Disabled >

DETECTOR:SDETECT:TVOLTAGE <numeric>**DETECTOR:SDETECT:TVOLTAGE?**

Set or retrieve the termination voltage of the Detector Start Detect.

Params: <numeric> Detector Start Detect termination voltage in ps, range [–2,000 to +3,300]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Detector Clock Input**DETECTOR:CINPUT:CLIPPED?**

Retrieve whether the Detector Clock input setting is clipped. Query only.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector Clock input setting is clipped
 < 0 > Detector Clock input setting is not clipped

DETECTOR:CINPUT:IMODE <DIFFERENTIAL | SENDED | ISENDED>**DETECTOR:CINPUT:IMODE?**

Set or retrieve the interface mode of the Detector Clock input. May require some delay to complete.

Params: <DIFFERENTIAL> Differential interface.
 <SENDED> Single-ended interface.
 <ISENDED> Inverted single-ended interface.

Returns: < Differential | SingleEnded | SingleEndedInverted >

DETECTOR:CINPut:LFAMILY <LVTTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL
| DLVTTTL | DCML | DECL | DPECL | DLVPECL |
DLVDS>

DETECTOR:CINPut:LFAMILY?

Set or retrieve the clock input logic family. PECL and DPECL are not available on the BERTScope,.

Params: <LVTTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL |
DLVTTTL | DCML | DECL |
DPECL | DLVPECL |
DLVDS>

Returns: < string > The name of the logic family.

DETECTOR:CINPut:TAC <bool>

DETECTOR:CINPut:TAC?

Set or retrieve the termination AC of the Detector Clock input. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector Clock input termination AC is on.

< 0 > Detector Clock input termination AC is off.

DETECTOR:CINPut:THRESHOLD <numeric>

DETECTOR:CINPut:THRESHOLD?

Set or retrieve the threshold of the Detector Clock input. May require some delay to complete. Available only on BA1500.

Params: <numeric> Detector Clock input threshold in mV, range [–2,000 to +4,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

DETECTOR:CINPut:TVOLTAGE <numeric>

DETECTOR:CINPut:TVOLTAGE?

Set or retrieve the termination voltage of the Detector Clock input. May require some delay to complete.

Params: <numeric> Detector Clock input termination voltage in ps, range [–2,000 to +3,300]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Detector Data Input

DETECTOR:DINPut:CLIPped?

Retrieve whether the Detector Data input setting is clipped. Query only.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector Data input setting is clipped.

< 0 > Detector Data input setting is not clipped.

DETECTOR:DINPut:IMODE <DIFFerential | SENDeD | ISENded>

DETECTOR:DINPut:IMODE?

Set or retrieve the interface mode of the Detector Data input. May require some delay to complete.

Params: <DIFFerential> Differential interface.

<SENDeD> Single-ended interface.

<ISENded> Inverted single-ended interface.

Returns: < Differential | SingleEnded | SingleEndedInverted >

DETECTOR:DINPut:LFAMILY <LVTTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL | DLVTTTL | DCML | DECL | DPECL | DLVPECL | DLVDS>

DETECTOR:DINPut:LFAMILY?

Set or retrieve the Data input logic family. PECL and DPECL are not available on the BERTScope,.

Params: <LVTTTL | CML | ECL | PECL | LVPECL | LVDS | SCFL | DLVTTTL | DCML | DECL | DPECL | DLVPECL | DLVDS> The input logic family.

Returns: < string > The name of the logic family.

DETECTOR:DINPut:TAC <bool>

DETECTOR:DINPut:TAC?

Set or retrieve the termination AC of the Detector Data input. May require some delay to complete.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector Data input termination AC is on.

< 0 > Detector Data input termination AC is off.

DETECTOR:DINPut:THReshold <numeric>**DETECTOR:DINPut:THReshold?**

Set or retrieve the threshold of the Detector Data input. May require some delay to complete.

Params: <numeric> Detector Data input threshold in mV, range [–2,400 to +2,500]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

DETECTOR:DINPut:TVOLTage <numeric>**DETECTOR:DINPut:TVOLTage?**

Set or retrieve the termination voltage of the Detector Data input. May require some delay to complete.

Params: <numeric> Detector Data input termination voltage in ps, range [–2,000 to +3,300]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Detector Blank Input**DETECTOR:BINPut:CDBLank <bool>****DETECTOR:BINPut:CDBLank?**

Set or retrieve the count during blank of the Detector Blank input.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector blank input count during blank is on.
 < 0 > Detector blank input count during blank is off.

DETECTOR:BINPut:ROENd <bool>**DETECTOR:BINPut:ROENd?**

Set or retrieve the resync on end of the Detector Blank input.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Detector blank input resync on end is on.
 < 0 > Detector blank input resync on end is off.

Detector Trigger

DETECTOR:TOFFset <numeric>

DETECTOR:TOFFset?

Set or retrieve the Detector Trigger offset.

Params: <numeric> Detector Trigger offset.

BA1500: in 32-bit words, range [0 to (Pattern Size – 1) if the detected pattern is one of the PRBS patterns. For other patterns, the range is [0 to 0]. Input out of range will be clipped and recorded in the status queue.

BERTScope: in 128-bit words, range [0 to (Pattern Size – 1)] if the detected pattern is one of the PRBS patterns. For others, the range is [0 to 0]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

DETECTOR:TOMethod <PCYCLE | CLOCK>

DETECTOR:TOMethod?

Set or retrieve the Detector Trigger out method.

Params: <PCYCLE> Detector Trigger out method is pattern cycle.

 <CLOCK> **BA1500:** Detector trigger out method is clock/64.

BERTScope: Detector trigger out method is clock/256.

Returns: < PatternCycle | Clock/64 | Clock/256 >

Detector Results

DETECTOR:BDMODE <TACCumulation | INTerval>

DETECTOR:BDMODE?

Set or retrieve the Detector BER display mode.

Params: <TACCumulation> Display the total accumulation BER.

 <INTerval> Display the BER of the interval.

Returns: < TACCumulation | INTerval >

DETECTOR:BEDFormat <DECimal | SCientific>

DETECTOR:BEDFormat?

Set or retrieve the Detector's display format for bits and errors.

Params: <DECimal> Display the bits and errors as decimal.

 <SCientific> Display the bits and errors in scientific format.

Returns: < DECimal | SCientific >

DETector:BER?

Retrieve the current bit error rate. Query only.

DETector:BITS?

Retrieve how many bits the Detector has received. Query only.

DETector:EFBits?

Retrieve the latest count of error free bits. Query only.

DETector:EFTIME?

Retrieve the latest error free time. Query only.

DETector:ETIME?

Retrieve the elapsed time since last reset. Query only.

DETector:ERRors?

Retrieve how many errors the Detector has detected. Query only.

DETector:RESyncs?

Retrieve how many resyncs the Detector has tried. Query only.

DETector:RRESults

Reset the Detector results. Action only.

DETector:RUINterval <numeric>**DETector:RUINterval?**

Set or retrieve the Detector's results update interval.

Params: <numeric> Detector results update interval in seconds, range [1 to 3,600]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

Detector Convenience**DETector:PDARKcalibration**

Perform Dark Calibration. Action only. May require some delay to complete.

DETector:PDCenter

Perform Data Centering. Action only. May require some delay to complete.

DETector:MRESync

Perform manual resync. Action only.

Detector Auto Align Results

DETECTOR:DCAMV?

Retrieve the data center amplitude in mV. Query only.

DETECTOR:DCHMV?

Retrieve the data center height in mV. Query only.

DETECTOR:DCSuccess?

Retrieve whether the Detector Data Centering (Auto Align) succeeds or not. Query only.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Data centering is successful.

 < 0 > Data centering is not successful.

DETECTOR:DCTIME?

Retrieve the data center time. Query only.

DETECTOR:DCUinterval?

Retrieve the data center unit interval. Query only.

DETECTOR:DCUMV?

Retrieve the data center Ua in mV. Query only.

DETECTOR:DCWidth?

Retrieve the data center width. Query only.

DETECTOR:IVALue?

Retrieve the illegal value. Query only.

Before data centering is successful, all the result queries will return this illegal value. The user can read the value to know what it is.

Detector Optical Mode

NOTE: In Electrical mode, values are displayed in millivolts or percent of amplitude. In Optical mode, choose between μ Watts or dBm.

DETECTOR: OPERmode <ELEC | OPTIC>

DETECTOR: OPERmode?

Set or retrieve Detector operating mode, Electrical or Optical. Applies to **BERTScope** only.

Params: <ELEC> BERTScope operates in Electrical mode

 <OPTIC> BERTScope operates in Optical mode

Returns: < ELEC | OPTIC >

OPTIC:ADDRcv <string,long,double,double,bool>

Add a new optical Receiver.

Params: <"Name"> String of (maximum) 15 characters. The string is enclosed in quotes.

 <Wavelength> Numerical value with a minimum of 500 nM and a maximum of 2000 nM.

 <Gain> Numerical value with a minimum of 1 V/W and a maximum of 3000 V/W.

 <Offset> Numerical value with a minimum of 500nM and a maximum of 2000nM.

 <AC Coupled> True for AC Coupled and False for DC Coupled.

OPTIC:DELRcv <string >

Delete an optical Receiver.

Params: <"Name"> String of (maximum) 15 characters. The string is enclosed in quotes. There should be at least one valid optical receiver.

OPTIC:PIKRcv <string >**OPTIC:PIKRcv?**

Select or retrieve the selected optical Receiver.

Params: <"Name"> String of (maximum) 15 characters. The string is enclosed in quotes. There should be at least one valid optical receiver.

Returns: < string >

Clock Recovery Control

The Clock Recovery Option Control and Service remote control commands are published in a separate manual, PN 0130-702.00 Rev. A.

Analysis Engine

EANalysis:BEFThreshold <long>

EANalysis:BEFThreshold?

Set or retrieve Burst Error Free Threshold.

Params: <long> Enter the Burst Error Free Threshold. Range [1 to 1,000,000]

Returns: < long > Burst Error Free Threshold

EANalysis:BMLength <long>

EANalysis:BMLength?

Set or retrieve Burst Minimum Length.

Params: <long> Enter the Burst Minimum Length. Range [2 to 1,000,000]

Returns: < long > Burst Minimum Length

EANalysis:BRANalysis?

Returns Analysis Bit Rate. Query only.

EANalysis:BSBLanking <bool>

EANalysis:BSBLanking?

Set or retrieve whether Bursts should span Blanking.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Turn on Bursts Span Blanking

< 0 > Turn off Bursts Span Blanking

EANalysis:BSIPeriod <bool>

EANalysis:BSIPeriod?

Set or retrieve whether Bursts should span Integration Periods.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Turn on Bursts Span Integration Period

< 0 > Turn off Bursts Span Integration Period

EANalysis:BSMarker <bool>

EANalysis:BSMarker?

Set or retrieve whether Bursts should span Markers.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Turn on Bursts Span Markers

< 0 > Turn off Bursts Span Markers

EANalysis:BRACquisition?

Returns Acquisition Bit Rate. Query only.

EANalysis:CAResults

Clear All Results. Action only.

EANalysis:CDBLanking <bool**EANalysis:CDBLanking?**

Set or retrieve whether to Count During Blanking.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Count During Blanking.

< 0 > Do not Count During Blanking.

EANalysis:CPUFile

Cancel Playback of UER File. Action only.

EANalysis:EPSecond?

Returns Events Per Second. Query only.

EANalysis:IBLanking <bool>**EANalysis:IBLanking?**

Set or retrieve whether to Invert Blanking.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Invert Blanking

< 0 > Do not Invert Blanking

EANalysis:IMODE <BLANK | DATA | MARKer>**EANalysis:IMODE?**

Set or retrieve Integration Mode to define the Integration Period boundary.

Params: <BLANK> Select Blank signal as the boundary.

<DATA> Set the number of bits as the boundary.

<MARKer> Select Marker signal as the boundary.

Returns: < BLANK | DATA | MARKer >

EANalysis:IPERiod <double>**EANalysis:IPERiod?**

Set or retrieve the number of bits in an Integration Period.

Params: <long> Enter the Integration Period in bits. Range [10,000,000 to 1.00E+20]

Returns: < long > Integration Period

EANalysis:MPSecond?

Returns Markers Per Second. Query only.

EANalysis:OUFile <bool>**EANalysis:OUFile?**

Set or retrieve whether OK To Overwrite UER File.

Params: <bool> On = 1, Off = 0

Returns: < 1 > OK to Overwrite UER File

 < 0 > Do not Overwrite UER File

EANalysis:PUPRogress?

Returns Playback UER Progress. Query only.

EANalysis:RAPRoperties <"filename">

Restore All Properties. Action only.

Params: <"filename"> Configuration filename used to restore. Use the absolute pathname and enclose the string in quotes.

EANalysis:RFPathname <"string">**EANalysis:RFPathname?**

Set or retrieve Record File Pathname.

Params: <"string"> Record File pathname. Use the absolute pathname and enclose the string in quotes.

Returns: < string > The pathname to the Record File.

EANalysis:RFSLimit <long>**EANalysis:RFSLimit?**

Set or retrieve Record File Size Limit

Params: <long> Enter the Record File Size limit. Range [100,000 to 500,000,000]

Returns: < long > Record File Size limit

EANalysis:RPATtern?

Returns Recognized Pattern. Query only.

EANalysis:SADefaults

Set All Defaults. Action only.

EANalysis:SANalyzer?

Returns Analyzer State. Query only.

EANalysis:SAPRoperties <"string">

Save All Properties. Action only.

Params: <"string"> Configuration filename used for save. Use the absolute pathname and enclose the string in quotes.

EANalysis:SECount?

Returns Squelch Event Count. Query only.

EANalysis:BBER:NAValue?

Retrieve "Not Available" value. Query only.

EANalysis:BBER:NBERate?

Retrieve Non-Burst Error Rate. Query only.

EANalysis:BBER:NBERrors?

Retrieve Non-Burst Errors. Query only.

EANalysis:BBER:SCount?

Retrieve Squelched Count. Query only.

EANalysis:BBER:STATistics?

Retrieve Total Bit Count, Total Error Count, and Total Squelched Count. Query only.

EANalysis:BBER:TBERate?

Retrieve Total Error Rate. Query only.

EANalysis:BBER:TCount?

Retrieve Total Bit Count. Query only.

EANalysis:BBER:TERRors?

Retrieve Total Errors. Query only.

EANalysis:BBER:TSCount?

Retrieve Total Squelched Count. Query only.

Block Errors**EANalysis:BLOCK:ACENTER**

Auto Center Block Errors view. Action only.

EANalysis:BLOCK:BCount?

Retrieve Block Errors chart Bin Count. Query only.

EANalysis:BLOCK:BDATA?

Retrieve Block Errors binary Bin Data. Query only. The binary query should return #1nnbbb...b where:

- 1 is a number from 1 to 9 (tells number of digits for block length)
- nn is the block length (number of bytes to follow)
- b is a byte of binary data

EANalysis:BLOCK:BMAPping <int, int>**EANalysis:BLOCK:BMAPping?**

Set or retrieve Block Errors chart Bin Mapping (start, end).

Params: <int> Bin Map Start value. Range [0 to 999]
 <int> Bin Map End value. Range [1 to 1.00E+99]

Returns: < int, int >

EANalysis:BLOCK:BMODe <BLANKing | MARKer | PATtern | USERquantity>**EANalysis:BLOCK:BMODe?**

Set or retrieve mode used to define the Block Errors view Block boundary.

Params: <BLANKing> Select Blank signal as the boundary.
 <MARKer> Select Marker signal as the boundary.
 <PATtern> Select Pattern Cycle as the boundary.
 <USERquantity> Select a user-specified quantity of bits as the
 boundary.

Returns: < BLANKing | MARKer | PATtern | USERquantity >

EANalysis:BLOCK:BRESolution?

Retrieve Block Errors view Bin Resolution. Query only.

EANalysis:BLOCK:BQUANTITY?

Retrieve quantity of bits set as the Block boundary. Query only.

EANalysis:BLOCK:CEXTents <Xmin, Xmax, Ymin, Ymax>**EANalysis:BLOCK:CEXTents?**

Set or retrieve Block Errors view Chart Extents

Params: <Xmin> X-Axis minimum, double
 <Xmax> X-Axis maximum, double
 <Ymin> Y-Axis minimum, double
 <Ymax> Y-Axis maximum, double

Returns: < Xmin, Xmax, Ymin, Ymax >

EANalysis:BLOCK:ECOUNT?

Retrieve Block Errors Element Count. Query only.

EANalysis:BLOCK:FCURSors

Fit Block Errors Cursors. Action only.

EANalysis:BLOCK:HCURSors <bool>**EANalysis:BLOCK:HCURSors?**

Enable Block Errors Horizontal Cursors

Params: <bool> On = 1, Off = 0
Returns: < 1 > Enable horizontal cursors.
 < 0 > Disable horizontal cursors.

EANalysis:BLOCK:LSCale <bool>**EANalysis:BLOCK:LSCale?**

Enable Block Errors Log Scale

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Log scale on chart.

< 0 > Disable Log scale on chart.

EANalysis:BLOCK:UQUANTITY <double>**EANalysis:BLOCK:UQUANTITY?**

Set or retrieve Block Errors view Block Mode User Quantity, if BLOCK:BMODE (above) is set to USERquantity.

Params: <UQUANTITY> Set a quantity of bits as the Block boundary. Range [1 to 1.00E+100].

Returns: < double > Quantity of bits defining a Block.

EANalysis:BLOCK:VCURSORS <bool>**EANalysis:BLOCK:VCURSORS?**

Enable Block Errors Vertical Cursors

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable vertical cursors.

< 0 > Disable vertical cursors.

Burst Length**EANalysis:BLENGTH:ACENTER**

Auto Center the Burst Length view. Action only.

EANalysis:BLENGTH:BCOUNT?

Retrieve Burst Length view Bin Count. Query only.

EANalysis:BLENGTH:BDATA?

Retrieve Burst Length binary Bin Data. Query only. The binary query should return #1nnbbb...b where:

1 is a number from 1 to 9 (tells number of digits for block length)

nn is the block length (number of bytes to follow)

b is a byte of binary data

EANalysis:BLENGTH:BMAPPING <int, int>**EANalysis:BLENGTH:BMAPPING?**

Set or retrieve Burst Length Bin Mapping (start, end)

Params: <int> Bin Map Start value. Range [0 to 999]

<int> Bin Map End value. Range [1 to 1.00E+99]

Returns: < int, int >

EANalysis:BLENGTH:BRESolution?

Retrieve Burst Length bin resolution. Query only.

EANalysis:BLENGTH:CEXTents <Xmin, Xmax, Ymin, Ymax>**EANalysis:BLENGTH:CEXTents?**

Set or retrieve Burst Length Chart Extents.

Params: <Xmin> X-Axis minimum, double
 <Xmax> X-Axis maximum, double
 <Ymin> Y-Axis minimum, double
 <Ymax> Y-Axis maximum, double

Returns: < Xmin, Xmax, Ymin, Ymax >

EANalysis:BLENGTH:ECOUNT?

Retrieve Block Errors Element Count. Query only.

EANalysis:BLENGTH:FCURSors

Fit Burst Length Cursors. Action only.

EANalysis:BLENGTH:HCURSors <bool>**EANalysis:BLENGTH:HCURSors?**

Enable Horizontal Cursors.

Params: <bool> On = 1, Off = 0
Returns: < 1 > Enable horizontal cursors.
 < 0 > Disable horizontal cursors.

EANalysis:BLENGTH:LSCale <bool>**EANalysis:BLENGTH:LSCale?**

Enable Burst Length view Log Scale

Params: <bool> On = 1, Off = 0
Returns: < 1 > Enable Log scale on chart.
 < 0 > Disable Log scale on chart.

EANalysis:BLENGTH:VCURSors <bool>**EANalysis:BLENGTH:VCURSors?**

Enable Burst Length Vertical cursors.

Params: <bool> On = 1, Off = 0
Returns: < 1 > Enable vertical cursors.
 < 0 > Disable vertical cursors.

Correlation

EANalysis:CORRelation:ACENter

Auto Center Correlation View. Action only.

EANalysis:CORRelation:BCOunt?

Retrieve Correlation Bin Count. Query only.

EANalysis:CORRelation:BDATa?

Retrieve Correlation binary Bin Data. Query only. The binary query should return #1nnbbb...b, where:

- 1 is a number from 1 to 9 (tells number of digits for block length)
- nn is the block length (number of bytes to follow)
- b is a byte of binary data

EANalysis:CORRelation:BMAPping <int, int>

EANalysis:CORRelation:BMAPping?

Set or retrieve Bin Mapping (start, end) values.

Params: <int> Bin Map Start value. Range [0 to 999]
 <int> Bin Map End value. Range [1 to 1.00E+99]

Returns: < int, int >

EANalysis:CORRelation:BRESolution?

Retrieve Correlation Bin Resolution. Query only.

EANalysis:CORRelation:CMODE <BLANKing | MARKer | PATtern | USERquantity>

EANalysis:CORRelation:CMODE?

Set or retrieve Correlation Mode to define the Correlation Cycle boundary.

Params: <BLANKing> Select Blank signal as the boundary.
 <MARKer> Select Marker signal as the boundary.
 <PATtern> Select Pattern Cycle as the boundary.
 <USERquantity> Select a user-specified quantity of bits as the boundary.

Returns: < BLANKing | MARKer | PATtern | USERquantity >

EANalysis:CORRelation:CEXTents <Xmin, Xmax, Ymin, Ymax>

EANalysis:CORRelation:CEXTents?

Set or retrieve Correlation Chart Extents

Params: <Xmin> X-Axis minimum, double
 <Xmax> X-Axis maximum, double
 <Ymin> Y-Axis minimum, double
 <Ymax> Y-Axis maximum, double

Returns: < Xmin, Xmax, Ymin, Ymax >

EANalysis:CORRelation:CQQuantity?

Retrieve Correlation Quantity. Query only.

EANalysis:CORRelation:ECOUNT?

Retrieve Correlation Element Count. Query only.

EANalysis:CORRelation:FCURsors

Fit Correlation Cursors. Action only.

EANalysis:CORRelation:HCURsors <bool>**EANalysis:CORRelation:HCURsors?**

Enable Correlation Horizontal Cursors

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable horizontal cursors.

< 0 > Disable horizontal cursors.

EANalysis:CORRelation:LSCale <bool>**EANalysis:CORRelation:LSCale?**

Enable/disable Log scale on Correlation chart.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Log scale on chart.

< 0 > Disable Log scale on chart.

EANalysis:CORRelation:UQQuantity <double>**EANalysis:CORRelation:UQQuantity?**

Set or retrieve User Quantity used to define the Correlation Cycle boundary.

Params: <USERquantity> Set the quantity of bits to be used as the boundary.
Range [1 to 1.00E+100].

Returns: < double > Quantity of bits defining a Correlation Cycle.

EANalysis:CORRelation:VCURsors <bool>**EANalysis:CORRelation:VCURsors?**

Enable Correlation Vertical Cursors

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable vertical cursors.

< 0 > Disable vertical cursors.

Error Free Interval

EANalysis:EFInterval:ACENter

Auto Center the Error Free Interval view. Action only.

EANalysis:EFInterval:BCount?

Retrieve Bin Count on EFI Analysis view. Query only.

EANalysis:EFInterval:BDATa?

Retrieve binary Bin Data on EFI Analysis view. Query only. The binary query should return #1nnbbb...b, where:

- 1 is a number from 1 to 9 (tells number of digits for block length)
- nn is the block length (number of bytes to follow)
- b is a byte of binary data

EANalysis:EFInterval:BMAPping <int, int>

EANalysis:EFInterval:BMAPping?

Sets or retrieves Bin Mapping (start, end) values on EFI Analysis view.

Params: <int> Bin Map Start value. Range [0 to 999]
 <int> Bin Map End value. Range [1 to 1.00E+99]

Returns: < int, int >

EANalysis:EFInterval:BRESolution?

Retrieve Bin Resolution on EFI Analysis view. Query only.

EANalysis:EFInterval:CEXTents <Xmin, Xmax, Ymin, Ymax>

EANalysis:EFInterval:CEXTents?

Set or retrieve Chart Extents on EFI Analysis view.

Params: <Xmin> X-Axis minimum, double
 <Xmax> X-Axis maximum, double
 <Ymin> Y-Axis minimum, double
 <Ymax> Y-Axis maximum, double

Returns: < Xmin, Xmax, Ymin, Ymax >

EANalysis:EFInterval:ECOut?

Retrieve Element Count. Query only.

EANalysis:EFInterval:FCURsors

Fit Cursors. Action only.

EANalysis:EFInterval:HCURSors <bool>**EANalysis:EFInterval:HCURSors?**

Enable Horizontal Cursors on EFI Analysis view.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable horizontal cursors.

< 0 > Disable horizontal cursors.

EANalysis:EFInterval:LSCale <bool>**EANalysis:EFInterval:LSCale?**

Enable Log Scale on EFI Analysis view.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Log scale on chart.

< 0 > Disable Log scale on chart.

EANalysis:EFInterval:VCURSors <bool>**EANalysis:EFInterval:VCURSors?**

Enable Vertical Cursors on EFI Analysis view.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable vertical cursors.

< 0 > Disable vertical cursors.

Error Map**EANalysis:EMAP:ACENTER**

Auto Center 2-D Error Map View. Action only.

EANalysis:EMAP:CEXTents <Xmin, Xmax, Ymin, Ymax>**EANalysis:EMAP:CEXTents?**

Set or retrieve 2-D Error Map Chart Extents.

Params: <Xmin> X-Axis minimum, double

<Xmax> X-Axis maximum, double

<Ymin> Y-Axis minimum, double

<Ymax> Y-Axis maximum, double

Returns: < Xmin, Xmax, Ymin, Ymax >

EANalysis:EMAP:CMODE <NONE | SEGMENT | SLENGth | SINGLE>**EANalysis:EMAP:CMODE?**

Set or retrieve the 2-D Error Map View Cursor Mode.

Params: <NONE> No cursors are displayed.

<SEGMENT> Segment axis cursor displayed.

<SLENGth> Length axis cursor displayed.

<SINGLE> Single cursor is displayed.

Returns: < NONE | SEGMENT | SLENGth | SINGLE >

EANalysis:EMAP:DATa?

Error Map Data. Query only.

EANalysis:EMAP:DBCCount?

Retrieve 2-D Error Map Database Burst Count. Query only.

EANalysis:EMAP:DMCount?

Retrieve 2-D Error Map Database Marker Count. Query only.

EANalysis:EMAP:DSCCount?

Retrieve 2-D Error Map Database Squelch Count. Query only.

EANalysis:EMAP:FCURsors

Fit 2-D Error Map Cursors. Action only.

EANalysis:EMAP:FGRaph

Fit 2-D Error Map Graph. Action only.

EANalysis:EMAP:HCURsors <bool>**EANalysis:EMAP:HCURsors?**

Enable 2-D Error Map Horizontal Cursors.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable horizontal cursors.

< 0 > Disable horizontal cursors.

EANalysis:EMAP:LSCale <bool>**EANalysis:EMAP:LSCale?**

Enable/disable Log scale on 2-D Error Map.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Log scale on chart.

< 0 > Disable Log scale on chart.

EANalysis:EMAP:RPRogress?

Retrieve 2-D Error Map Rendering Progress. Query only.

EANalysis:EMAP:SBURsts <bool>**EANalysis:EMAP:SBURsts?**

Choose whether to show bursts on 2-D Error Map.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Show Bursts

< 0 > Disable Show Bursts

EANalysis:EMAP:SCount?

Retrieve 2-D Error Map Segment Count. Query only.

EANalysis:EMAP:SERRors <bool>**EANalysis:EMAP:SERRors?**

Choose whether to show errors on 2-D Error Map.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Show Errors

< 0 > Disable Show Errors

EANalysis:EMAP:SLENgth?

Retrieve 2-D Error Map Segment Length. Query only.

EANalysis:EMAP:SMODE <MARKers | QUANtity | SEConds>**EANalysis:EMAP:SMODE?**

Set or retrieve mode used to define Error Map Segment.

Params: <MARKers> Use marker signal to define Segment

<QUANtity> Use quantity of bits to define Segment

<SEConds> Use quantity of seconds to define Segment

Returns: < MARKers | QUANtity | SEConds >

EANalysis:EMAP:SSEConds <double>**EANalysis:EMAP:SSEConds?**

Set or retrieve quantity of seconds used to define a 2-D Error Map Segment if mode is set to SEConds.

Params: <SEConds> Set a quantity of seconds to define a Segment. Range [1 to 1.00E+100].

Returns: < double > Quantity of seconds defining a Segment.

EANalysis:EMAP:SQUANTITY <double>**EANalysis:EMAP:SQUANTITY?**

Set or retrieve quantity of bits used to define a 2-D Error Map Segment if mode is set to QUANtity.

Params: <QUANtity> Set a quantity of bits to define a Segment. Range [1 to 1.00E+100].

Returns: < double > Quantity of bits defining a Segment.

EANalysis:EMAP:SSQuelches <bool>**EANalysis:EMAP:SSQuelches?**

Choose whether to show squelches on 2-D Error Map.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Show Squelches

< 0 > Disable Show Squelches

EANalysis:EMAP:VCURsors <bool>**EANalysis:EMAP:VCURsors?**

Enable Error Map Vertical Cursors.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable vertical cursors.

< 0 > Disable vertical cursors.

FEC Emulation**EANalysis:FEC:CNAME?**

Retrieve Forward Error Correction Analysis Configuration filename. Query only.

Returns: < filename > Retrieve name of file used to store FEC configuration.
(See **EANalysis:FEC:SCONfiguration**)

EANalysis:FEC:DTAB <CINTERval | PROCessing | TACCumulation>**EANalysis:FEC:DTAB?**

Set or retrieve FEC Display Tab.

Params: <CINTERval> Current Interval

<PROCessing> Processing

<TACCumulation> Total Accumulation

Returns: < CINTERval | PROCessing | TACCumulation >

EANalysis:FEC:EMODE <DISabled | FULL | IAOuter | IONLy>**EANalysis:FEC:EMODE?**

Set or retrieve FEC Emulation Mode.

Params: <DISabled> Disable FEC Emulation

<FULL> Set Emulation Mode to Full: all stages engaged.

<IAOuter> Set Emulation Mode to Inner and Outer (two-dimensional code), with erasure deactivated

<IONLy> Set Emulation Mode to Inner Only (one-dimensional).
Outer code and erasure are disabled.

Returns: < DISabled | FULL | IAOuter | IONLy >

EANalysis:FEC:IMODE <BIT | SYMBol>**EANalysis:FEC:IMODE?**

Set or retrieve FEC Interleave Mode.

Params: <BIT> Set Interleave Mode to Bit. On, Off, 1, 0

<SYMBol> Set Interleave Mode to Symbol

Returns: < BIT | SYMBol >

EANalysis:FEC:KINNeR <long>**EANalysis:FEC:KINNeR?**

Set or retrieve Inner (or one-dimensional code) k value (output block size).

Params: <long> Set Inner k value. Range [1 to 255.00]

Returns: < long >

EANalysis:FEC:KOUTer <long>**EANalysis:FEC:KOUTer?**

Set or retrieve a two-dimensional code Outer k value (output block size).

Params: <long> Set Outer k value. Range [1 to 1.00E+00]

Returns: < long >

EANalysis:FEC:NINNeR <long>**EANalysis:FEC:NINNeR?**

Set or retrieve Inner (or one-dimensional code) n value (input block size).

Params: <long> Set Inner n value. Range [1 to 65,536.00]

Returns: < long >

EANalysis:FEC:NOOUTer <long>**EANalysis:FEC:NOOUTer?**

Set or retrieve a two-dimensional code Outer n value (input block size).

Params: <long> Set Outer n value. Range [1 to 65,536.00]

Returns: < long >

EANalysis:FEC:RINTerval <double>**EANalysis:FEC:RINTerval?**

Set or retrieve Report Interval in seconds.

Params: <double> Set number of seconds in Report Interval. Range [1 to 300.00]

Returns: < double >

EANalysis:FEC:RITables?

Retrieve the number of FEC Emulation Tables during the Report Interval. Query only.

EANalysis:FEC:SFEC <bool>**EANalysis:FEC:SFEC?**

Enable or disable Strip FEC Overhead

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Strip FEC Overhead

< 0 > Disable Strip FEC Overhead

EANalysis:FEC:SPINterval?

Retrieve FEC Emulation Symbols Per Interval. Query only.

EANalysis:FEC:SSize <long>**EANalysis:FEC:SSize?**

Set or retrieve FEC (Forward Error Correction) symbol size.

Params: <long> Set FEC symbol size. Range [1 to 12.00]

Returns: < long >

EANalysis:FEC:TDFLag <bool>**EANalysis:FEC:TDFLag?**

Set or retrieve Two Dimensional Flag

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Two-Dimensional flag

< 0 > Disable Two-Dimensional flag

EANalysis:FEC:TERasure <long>**EANalysis:FEC:TERasure?**

Set or retrieve a two-dimensional code Erasure t value (erasure strength).

Params: <long> Set Erasure t value. Range [0 to 1.00]

Returns: < long >

EANalysis:FEC:TINner <long>**EANalysis:FEC:TINner?**

Set or retrieve Inner (or one-dimensional code) t value (correction strength).

Params: <long> Set Inner t value. Range [0 to 255.00]

Returns: < long >

EANalysis:FEC:TOUTer <long>**EANalysis:FEC:TOUTer?**

Set or retrieve two-dimensional code Outer t value (correction strength).

Params: <long> Set Outer t value. Range [0 to 1.00]

Returns: < long >

EANalysis:FEC:AABCount?

Retrieve total accumulated Bit Count after FEC Emulation. Query only.

EANalysis:FEC:AAECount?

Retrieve total accumulated Error Count after FEC Emulation. Query only.

EANalysis:FEC:AAERate?

Retrieve total accumulated Error Rate after FEC Emulation. Query only.

EANalysis:FEC:ABBCount?

Retrieve total accumulated Bit Count before FEC Emulation. Query only.

EANalysis:FEC:ABECount?

Retrieve total accumulated Error Count before FEC Emulation. Query only.

EANalysis:FEC:ABERate?

Retrieve total accumulated Error Rate before FEC Emulation. Query only.

EANalysis:FEC:AICorrections?

Retrieve total accumulated Inner Corrections. Query only.

EANalysis:FEC:AIFailures?

Retrieve total accumulated Inner Failures. Query only.

EANalysis:FEC:AOCorrections?

Retrieve total accumulated Outer Corrections. Query only.

EANalysis:FEC:AOFailures?

Retrieve total accumulated Outer Failures. Query only.

EANalysis:FEC:AECorrections?

Retrieve total accumulated Erasure Corrections. Query only.

EANalysis:FEC:AEFailures?

Retrieve total accumulated Erasure Failures. Query only.

EANalysis:FEC:ADRate?

Retrieve Data Rate after FEC Emulation. Query only.

EANalysis:FEC:BDRate?

Retrieve Data Rate before FEC Emulation. Query only.

EANalysis:FEC:IABCount?

Retrieve current interval Bit Count after FEC Emulation. Query only.

EANalysis:FEC:IAECount?

Retrieve current interval Error Count after FEC Emulation. Query only.

EANalysis:FEC:IAERate?

Retrieve current interval Error Rate after FEC Emulation. Query only.

EANalysis:FEC:IBBCount?

Retrieve current interval Bit Count before FEC Emulation. Query only.

EANalysis:FEC:IBECount?

Retrieve current interval Error Count before FEC Emulation. Query only.

EANalysis:FEC:IBERate?

Retrieve current interval Error Rate before FEC Emulation. Query only.

EANalysis:FEC:IECorrections?

Retrieve interval Erasure Corrections. Query only.

EANalysis:FEC:IEFailures?

Retrieve current interval Erasure Failures. Query only.

EANalysis:FEC:IICorrections?

Retrieve current interval Inner Corrections. Query only.

EANalysis:FEC:IIFailures?

Retrieve current interval Inner Failures. Query only.

EANalysis:FEC:IOCorrections?

Retrieve current interval Outer Corrections. Query only.

EANalysis:FEC:IOFailures?

Retrieve current interval Outer Failures. Query only.

EANalysis:FEC:MINPut?

Retrieve FEC Emulation Markers Input. Query only.

EANalysis:FEC:MOUTput?

Retrieve FEC Emulation Markers output. Query only.

EANalysis:FEC:OVERhead?

Retrieve FEC Emulation FEC Overhead. Query only.

EANalysis:FEC:RCONfiguration <"filename">

Restore FEC Configuration. Action only.

Params: <"filename"> Configuration filename used for restore (see **SCONfiguration**, above). Filename is enclosed in quotes.

EANalysis:FEC:SCONfiguration <"filename">

Save FEC Configuration. Action only.

Params: <"filename"> Configuration filename used to save (see **RCONfiguration**). Filename is enclosed in quotes.

EANalysis:FEC:TBLanked?

Retrieve FEC Emulation Tables Blanked. Query only.

EANalysis:FEC:TOVerrun?

Retrieve FEC Emulation Tables Overrun. Query only.

EANalysis:FEC:TPRocessed?

Retrieve FEC Emulation Tables Processed. Query only.

EANalysis:FEC:TSQuelched?

Retrieve FEC Emulation Tables Squelched. Query only.

Pattern Sensitivity

EANalysis:PSEnsitivity:ACENter

Auto Center Pattern Sensitivity View. Action only

EANalysis:PSEnsitivity:BCOunt?

Retrieve Pattern Sensitivity Bin Count. Query only.

EANalysis:PSEnsitivity:BDATa?

Retrieve binary Pattern Sensitivity Bin Data. Query only. The binary query should return #1nnbbb...b where:

- 1 is a number from 1 to 9 (tells number of digits for block length)
- nn is the block length (number of bytes to follow)
- b is a byte of binary data

EANalysis:PSEnsitivity:BMApping <int, int>

EANalysis:PSEnsitivity:BMApping?

Set or retrieve Pattern Sensitivity Bin Mapping (start, end) values.

Params: <int> Bin Map Start value. Range [0 to 999]
 <int> Bin Map End value. Range [1 to 1.00E+99]

Returns: < int, int >

EANalysis:PSEnsitivity:BRESolution?

Retrieve Bin Resolution. Query-only

EANalysis:PSEnsitivity:CEXTents <Xmin, Xmax, Ymin, Ymax>

EANalysis:PSEnsitivity:CEXTents?

Set or retrieve Pattern Sensitivity Chart Extents

Params: <Xmin> X-Axis minimum, double
 <Xmax> X-Axis maximum, double
 <Ymin> Y-Axis minimum, double
 <Ymax> Y-Axis maximum, double

Returns: < Xmin, Xmax, Ymin, Ymax >

EANalysis:PSEnsitivity:ECOunt?

Retrieve Element Count. Query only

EANalysis:PSEnsitivity:FCURsors

Fit Cursors. Action only

EANalysis:PSENSitivity:HCURsors <bool>**EANalysis:PSENSitivity:HCURsors?**

Enable Horizontal Cursors on Pattern Sensitivity view.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable horizontal cursors.

< 0 > Disable horizontal cursors.

EANalysis:PSENSitivity:LSCale <bool>**EANalysis:PSENSitivity:LSCale?**

Enable log scale on Pattern Sensitivity view.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Log scale on chart.

< 0 > Disable Log scale on chart.

EANalysis:PSENSitivity:PFOund?

Pattern Found, read-only result.

EANalysis:PSENSitivity:PMODE <PRBS | "filename">**EANalysis:PSENSitivity:PMODE?**

Set or retrieve the Pattern Sensitivity Pattern Mode; a pre-defined PRBS pattern, or a User Pattern contained in the named file.

Params: <PRBS> Pseudo-Random Pattern to be used in Pattern Sensitivity analysis.

<"filename"> User Pattern to be used in Pattern Sensitivity analysis.
Filename is enclosed in quotes.

Returns: < PRBS | filename >

EANalysis:PSENSitivity:UPFile <"filename">**EANalysis:PSENSitivity:UPFile?**

Set or retrieve Pattern Sensitivity User Pattern filename

Params: <"filename"> Filename of the User Pattern File. Filename is enclosed in quotes

Returns: < filename >

EANalysis:PSENSitivity:VCURsors <bool>**EANalysis:PSENSitivity:VCURsors?**

Enable Pattern Sensitivity Vertical Cursors

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable vertical cursors

< 0 > Disable vertical cursors

Strip Chart

EANalysis:SCHart:ACENter

Auto Center Strip Chart View. Action only.

EANalysis:SCHart:ASCRoll <bool>

EANalysis:SCHart:ASCRoll?

Enable/disable Strip Chart Auto Scroll.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable Auto Scroll

< 0 > Disable Auto Scroll

EANalysis:SCHart:CEXTents <Xmin, Xmax, Ymin, Ymax>

EANalysis:SCHart:CEXTents?

Set or retrieve Strip Chart's Chart Extents

Params: <Xmin> X-Axis minimum, double

<Xmax> X-Axis maximum, double

<Ymin> Y-Axis minimum, double

<Ymax> Y-Axis maximum, double

Returns: < Xmin, Xmax, Ymin, Ymax >

EANalysis:SCHart:FCURsors

Fit Cursors. Action only.

EANalysis:SCHart:HCURsors <bool>

EANalysis:SCHart:HCURsors?

Enable Strip Chart Horizontal Cursors.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable horizontal cursors

< 0 > Disable horizontal cursors

EANalysis:SCHart:VCURsors <bool>

EANalysis:SCHart:VCURsors?

Enable Strip Chart Vertical Cursors.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable vertical cursors

< 0 > Disable vertical cursors

Physical Layer Test

Eye Diagram

EYE:AMPPf <UW | DBM>

EYE:AMPPf?

BERTScope only, Optical mode. Set or retrieve the auto center optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed in dBm

Returns: < MW | DBM >

EYE:ASMode <EOPening | TRANSition>

EYE:ASMode?

Set or retrieve the auto center mode of the Eye view.

Params: <EOPening> Auto center at the eye opening
 <TRANSition> Auto center at the transition

Returns: < EYEOPENING | TRANSITION >

EYE:CMODE <NONE | TIME | VOLT | TVOL | SINGLE>

EYE:CMODE?

Set or retrieve the cursor mode of the Eye view.

Params: <NONE> No cursor is displayed
 <TIME> Only 2 time cursors are displayed
 <VOLT> Only 2 voltage cursors are displayed
 <TVOL> 2 time cursors and 2 voltage cursors are displayed
 <SINGLE> Single cursor is displayed

Returns: < NONE | TIME | VOLTAGE | TIME&VOLTAGE | SINGLE >

EYE:CN0Pf <UW | DBM>

EYE:CN0Pf?

BERTScope only, Optical mode. Set or retrieve Cross Noise 0 optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:CN1Pf <UW | DBM>

EYE: CN1Pf?

BERTScope only, Optical mode. Set or retrieve Cross Noise 1 optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:CRAPf <UW | DBM>

EYE:CRAPf?

BERTScope only, Optical mode. Set or retrieve Cross Amplitude optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed in dBm

Returns: < MW | DBM >

EYE:CVFormat <MV | %>

EYE:CVFormat?

Set or retrieve Crossing Voltage power format.

Params: <MV> The crossing voltage measurement value is in mV
 <%> The crossing voltage measurement value is in %UI

Returns: < MV | % >

EYE:CVPF <UW | DBM>

EYE:CVPF?

BERTScope only, Optical mode. Set or retrieve Crossing Voltage optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:EHFormat <MV | %>

EYE:EHFormat?

Set or retrieve the Eye Height measurement value format.

Params: <MV> Eye height measurement value is in mV
 <%> Eye height measurement value is in %UI

Returns: < MV | % >

EYE:EHPF <UW | DBM>

EYE:EHPF?

BERTScope only, Optical mode. Set or retrieve Eye Height optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:EdgeMODE <8020 | 9010>**EYE:EdgeMODE?**

Set or retrieve the edge mode of the Eye view.

Params: <8020> Use 80%–20% edge
 <9010> Use 90%–10% edge

Returns: < 8020 | 9010 >

EYE:ERFO <dB | %>**EYE:ERFO?**

Set or retrieve the Extinction Ratio measurement value format.

Params: <dB> Extinction Ratio measurement is in dB
 <%> Extinction Ratio measurement is in %

Returns: < dB | % >

EYE:EWFO <TIME | %UI>**EYE:EWFO?**

Set or retrieve the Eye Width measurement value format.

Params: <TIME> Eye Width measurement is in ps
 <%UI> Eye Width measurement is in %UI

Returns: < TIME | %UI >

EYE:GENable <bool>**EYE:GENable?**

Set or retrieve whether the graticule of the Eye is displayed.

Params: <bool> On = 1, Off = 0
Returns: < 1 > Eye graticule is on.
 < 0 > Eye graticule is off.

EYE:JPFormat <TIME | %UI>**EYE:JPFormat?**

Set or retrieve the Eye Jitter P-P measurement value format.

Params: <TIME> Jitter P-P measurement value is in ps
 <%UI> Jitter P-P measurement value is in %UI

Returns: < TIME | %UI >

EYE:JRFormat <TIME | %UI>**EYE:JRFormat?**

Set or retrieve the Eye Jitter RMS measurement value format.

Params: <TIME> Jitter RMS measurement value is in ps
 <%UI> Jitter RMS measurement value is in %UI

Returns: < TIME | %UI >

EYE:L0PF <UW | DBM>

EYE:L0PF?

BERTScope only, Optical mode. Set or retrieve Level 0 optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:L1PF <UW | DBM>

EYE:L1PF?

BERTScope only, Optical mode. Set or retrieve Level 1 optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:LCRTHresh <numeric>

EYE:LCRTHresh?

Sets or retrieves the threshold level (in mV or μ W, depending on the mode) for the Rising or Falling Level Crossing measurement.

Params: <numeric> The threshold value in mV or μ W that defines the level at which the 80/20 or 90/10 rising or falling edge crosses to set the Rising or Falling Level Crossing in ps. Limits vary depending on the signal, and must be between the 80/20 or 90/10 points on the rising or falling edges, depending on the edge mode configuration.

Returns: < numeric >

EYE:MBARsel <OFF | MEASUREMENTS | STRESS>

EYE:MBARsel?

Set or retrieve the Sidebar selection in the Eye Diagram.

Params: <OFF> No Sidebar.
 <MEASUREMENTS> Show Measurements.
 <STRESS> Show Stress controls. **Note: Applies only to BERTScope with Stress Option turned on.**

Returns: < OFF | MEASUREMENTS | STRESS >

EYE:MDENable <bool>

EYE:MDENable?

Set or retrieve whether the measurements of the Eye are displayed.

Params: <bool> On = 1, Off = 0
Returns: < 1 > Eye measurements are displayed.
 < 0 > Eye measurements are not displayed.

EYE:NL0Pf <UW | DBM>

EYE:NL0Pf?

BERTScope only, Optical mode. Set or retrieve Noise Level 0 optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:NL1Pf <UW | DBM>

EYE:NL1Pf?

BERTScope only, Optical mode. Set or retrieve Noise Level 1 optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:NLPF <UW | DBM>

EYE:NLPF?

BERTScope only, Optical mode. Set or retrieve Noise Level optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:OMAPf <UW | DBM>

EYE:OMAPf?

BERTScope only, Optical mode. Set or retrieve OMA optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:OverSHoot1Format <MV | %>

EYE:OverSHoot1Format?

Set or retrieve the Eye Overshoot1 measurement format.

Params: <MV> The Eye Overshoot1 in mV
 <%> The Eye Overshoot1 in %UA

Returns: < MV | % >

EYE:OverSHoot0Format <MV | %>

EYE:OverSHoot0Format?

Set or retrieve the Eye Overshoot0 measurement format.

Params: <MV> The Eye Overshoot0 in mV
 <%> The Eye Overshoot0 in %UA

Returns: < MV | % >

EYE:PERStence <numeric>**EYE:PERStence?**

Set or retrieve the persistence of the Eye view.

Params: <numeric> Eye persistence as a number of images being persisted. Range [0 to 5]. Input out of range will be clipped and recorded in the status queue.

 A value of -1 runs the Eye diagram with infinite persistence.

Returns: < numeric >

EYE:SDEPth <numeric>**EYE:SDEPth?**

Set or retrieve the Eye Sample Depth in bits.

Params: <numeric> Eye Sample Depth in bits. Range [2,000 to 10,000,000]. Input out of range will be clipped and recorded in the status queue. A value of -1 runs the Eye diagram in the 'Auto' mode with a sample depth of 10,000 bits.

Returns: < numeric >

EYE:TCOFFset <numeric>**EYE:TCOFFset?**

Set or retrieve the Eye center time offset of the Eye view.

Params: <numeric> Eye center time offset in ps. The range of the input is the same as described in the numeric keypad if you click the volt Center button in the Eye view. Range [0 to 33,000 ps]

Returns: < numeric >

EYE:TEXTent <numeric>**EYE:TEXTent?**

Set or retrieve the time extent of the Eye view.

Params: <numeric> Eye time extent in ps, range [200 to 33,000]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

EYE:TOFFset <numeric>**EYE:TOFFset?**

Set or retrieve the time offset of the Eye view.

Params: <numeric> Eye time offset in ps, range [-16,500 to +16,500]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric > An integer. Range [-16,500 to +16,500 ps].

EYE:VCOFFset <numeric>**EYE:VCOFFset?**

Set or retrieve the Eye center voltage offset of the Eye view.

Params: <numeric> Eye center voltage offset in mV. The range of the input is the same as described in the numeric keypad if you click the time Center button in the Eye view. Range [–2000 to +4000 mV]

Returns: < numeric >

EYE:VEXTent <numeric>**EYE:VEXTent?**

Set or retrieve the voltage extent of the Eye view.

Params: <numeric> Eye voltage extent in mV, range [160 to 6,000 mV]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

EYE:VMAPf <UW | DBM>**EYE:VMAPf?**

BERTScope only, Optical mode. Set or retrieve Maximum voltage optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:VMIPf <UW | DBM>**EYE:VMIPf?**

BERTScope only, Optical mode. Set or retrieve Minimum voltage optical power format.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:VOFFset <numeric>**EYE:VOFFset?**

Set or retrieve the voltage offset of the Eye view.

Params: <numeric> Eye voltage offset in mV, range [–2000 to 4000 mV]. Input out of range will be clipped and recorded in the status queue.

Returns: < numeric >

EYE:VOFPf <UW | DBM>

EYE:VOFPf?

BERTScope only, Optical mode. Set or retrieve Voltage Offset optical power format.

Params: <UW> Power value displayed in μ Watts

 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:VPPPf <UW | DBM>

EYE:VPPPf?

BERTScope only, Optical mode. Set or retrieve Peak-to-Peak optical power format.

Params: <UW> Power value displayed in μ Watts

 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

Eye: Enable Eye Measurement Overlay

EYE:MCONfig:ADD <RTIMe | FTIMe | UINterval | JRMS | SCNT | AMPLitude |
NLEVel | NLV0 | NLV1 | EWIDth | EHEight | JITTer | 0LEVel |
1LEVel | EXTRatio | VECp | OMA | DCALibration | DSNR |
VOFSet | VPP | VMIN | VMAX | CAMPlitude | CAN0 | CAN1 |
CVOLt | RLCross | FLCross | OVerSHoot1 | OVerSHoot2>

Add the specified measurement to the Eye measurement list. Action only.

Params:	<RTIM>	Rise Time
	<FTIM>	Fall Time
	<UNIT>	Unit Interval
	<JRMS>	Jitter RMS
	<SCNT>	Sample Count
	<AMPL>	Amplitude
	<NLEV>	Noise Level
	<NLV0>	Level 0 Noise
	<NLV1>	Level 1 Noise
	<EWID>	Eye Width
	<EHE>	Eye Height
	<JITT>	Jitter Peak to Peak
	<0LEV>	Level 0
	<1LEV>	Level 1
	<EXTR>	Extinction Ratio
	<VECP>	VECP
	<OMA>	OMA
	<DCAL>	Dark Calibration
	<DSNR>	DSNR
	<VOFS>	Voltage Offset
	<VPP>	Voltage Peak to Peak
	<VMIN>	Voltage Minimum
	<VMAX>	Voltage Maximum
	<CAMP>	Cross Amplitude
	<CAN0>	Cross Amplitude Noise 0
	<CAN1>	Cross Amplitude Noise 1
	<CVOL>	Crossing Voltage
	<RLC>	Rising Level Crossing
	<FLC>	Falling Level Crossing
	<OVSH1>	Overshoot 1
	<OVSH2>	Overshoot 2

EYE:MCONfig:REMove <RTIME | FTIME | UNITerval | JRMS | SCNT | AMPLitude |
 NLEVel | NLV0 | NLV1 | EWIDth | EHEight | JITTER | 0LEVel |
 1LEVel | EXTRatio | VECp | OMA | DCALibration | DSNR |
 VOFSet | VPP | VMIN | VMAX | CAMPlitude | CAN0 | CAN1 |
 CVOLt | RLCross | FLCross | OVerSHoot1 | OVerSHoot2>

Remove the specified measurement from the Eye measurement list. Action only.

Params:	<RTIM>	Rise Time
	<FTIM>	Fall Time
	<UNIT>	Unit Interval
	<JRMS>	Jitter RMS
	<SCNT>	Sample Count
	<AMPL>	Amplitude
	<NLEV>	Noise Level
	<NLV0>	Level 0 Noise
	<NLV1>	Level 1 Noise
	<EWID>	Eye Width
	<EHE>	Eye Height
	<JITT>	Jitter Peak to Peak
	<0LEV>	Level 0
	<1LEV>	Level 1
	<EXTR>	Extinction Ratio
	<VECP>	VECP
	<OMA>	OMA
	<DCAL>	Dark Calibration
	<DSNR>	DSNR
	<VOFS>	Voltage Offset
	<VPP>	Voltage Peak to Peak
	<VMIN>	Voltage Minimum
	<VMAX>	Voltage Maximum
	<CAMP>	Cross Amplitude
	<CAN0>	Cross Amplitude Noise 0
	<CAN1>	Cross Amplitude Noise 1
	<CVOL>	Crossing Voltage
	<RLC>	Rising Level Crossing
	<FLC>	Falling Level Crossing
	<OVSH1>	Overshoot 1
	<OVSH2>	Overshoot 2

EYE:MCONfig:RMAI

Remove all the measurements from the Eye measurement list. Action only.

EYE:MOENable:0LEVel <bool>

EYE:MOENable:0LEVel?

Set or retrieve whether the Eye 0-Level measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye Level0 measurement is overlaid.

< 0 > Eye Level0 measurement is not overlaid.

EYE:MOENable:1LEVel <bool>

EYE:MOENable:1LEVel?

Set or retrieve whether the Eye Level1 measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Level1 measurement is overlaid.

< 0 > Level1 measurement is not overlaid.

EYE:MOENable:AMPLitude <bool>

EYE:MOENable:AMPLitude?

Set or retrieve whether the Eye Amplitude measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Amplitude measurement is overlaid.

< 0 > Amplitude measurement is not overlaid.

EYE:MOENable:CAMPLitude <bool>

EYE:MOENable:CAMPLitude?

Set or retrieve whether the Cross Amplitude measurement of the Eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Cross Amplitude measurement is overlaid.

< 0 > Cross Amplitude measurement is not overlaid.

EYE:MOENable:CAN0 <bool>

EYE:MOENable:CAN0?

Set or retrieve whether the Cross Amplitude Noise Level0 measurement of the Eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Cross Amplitude Noise Level0 measurement is overlaid.

< 0 > Cross Amplitude Noise Level0 measurement is not overlaid.

EYE:MOENable:CAN1 <bool>**EYE:MOENable:CAN1?**

Set or retrieve whether the Cross Amplitude Noise Level1 measurement of the Eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Cross Amplitude Noise Level1 measurement is overlaid.
< 0 > Cross Amplitude Noise Level1 measurement is not overlaid.

EYE:MOENable:CVOLt <bool>**EYE:MOENable:CVOLt?**

Set or retrieve whether the Crossing Voltage measurement of the Eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Crossing Voltage measurement is overlaid.
< 0 > Crossing Voltage measurement is not overlaid.

EYE:MOENable:DCALibration <bool>**EYE:MOENable:DCALibration?**

Set or retrieve whether the Dark Calibration measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Dark Calibration measurement is overlaid.
< 0 > Dark Calibration measurement is not overlaid.

EYE:MOENable:DSNR <bool>**EYE:MOENable:DSNR?**

Set or retrieve whether the Eye DSNR measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye DSNR measurement is overlaid.
< 0 > Eye DSNR measurement is not overlaid.

EYE:MOENable:EHEight <bool>**EYE:MOENable:EHEight?**

Set or retrieve whether the Eye height measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye height measurement is overlaid.
< 0 > Eye height measurement is not overlaid

EYE:MOENable:EWIDth <bool>**EYE:MOENable:EWIDth?**

Set or retrieve whether the Eye Width measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye's eye width measurement is overlaid.
< 0 > Eye's eye width measurement is not overlaid.

EYE:MOENable:EXTRatio <bool>**EYE:MOENable:EXTRatio?**

Set or retrieve whether the Eye Extinction Ratio measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye's Extinction Ratio measurement is overlaid.
< 0 > Eye's Extinction Ratio measurement is not overlaid.

EYE:MOENable:FLCRoss <bool>**EYE:MOENable:FLCRoss?**

Set or retrieve whether the Falling Level Crossing measurement of the eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Falling Level Crossing measurement is overlaid.
< 0 > Falling Level Crossing measurement is not overlaid.

EYE:MOENable:FTIME <bool>**EYE:MOENable:FTIME?**

Set or retrieve whether the Eye Fall Time measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye fall time measurement is overlaid.
< 0 > Eye fall time measurement is not overlaid.

EYE:MOENable:JITTer <bool>**EYE:MOENable:JITTer?**

Set or retrieve whether the Eye Jitter P-P measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye jitter P-P measurement is overlaid.
< 0 > Eye jitter P-P measurement is not overlaid.

EYE:MOENable:JRMS <bool>**EYE:MOENable:JRMS?**

Set or retrieve whether the Eye Jitter RMS measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye jitter RMS measurement is overlaid.
< 0 > Eye jitter RMS measurement is not overlaid.

EYE:MOENable:NLEVEL <bool>**EYE:MOENable:NLEVEL?**

Set or retrieve whether the Eye Noise Level measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye Noise Level measurement is overlaid.
< 0 > Eye Noise Level measurement is not overlaid.

EYE:MOENable:NLV0 <bool>**EYE:MOENable:NLV0?**

Set or retrieve whether the Eye Noise Level0 measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye Noise Level0 measurement is overlaid.

< 0 > Eye Noise Level0 measurement is not overlaid.

EYE:MOENable:NLV1 <bool>**EYE:MOENable:NLV1?**

Set or retrieve whether the Eye Noise Level1 measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye Noise Level1 measurement is overlaid.

< 0 > Eye Noise Level1 measurement is not overlaid.

EYE:MOENable:OMA <bool>**EYE:MOENable:OMA?**

Set or retrieve whether the Eye OMA measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye OMA measurement is overlaid.

< 0 > Eye OMA measurement is not overlaid.

EYE:MOENable:OverShoot1 <bool>**EYE:MOENable:OverShoot1?**

Set or retrieve whether the Overshoot1 measurement of the eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye Overshoot1 measurement is overlaid.

< 0 > Eye Overshoot1 measurement is not overlaid.

EYE:MOENable:OverShoot0 <bool>**EYE:MOENable:OverShoot0?**

Set or retrieve whether the Overshoot0 measurement of the eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye Overshoot0 measurement is overlaid.

< 0 > Eye Overshoot0 measurement is not overlaid.

EYE:MOENable:RLCRoss <bool>**EYE:MOENable:RLCRoss?**

Set or retrieve whether the Rising Level Crossing measurement of the eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Rising Level Crossing measurement is overlaid.

< 0 > Rising Level Crossing measurement is not overlaid.

EYE:MOENable:RTIME <bool>**EYE:MOENable:RTIME?**

Set or retrieve whether the Eye Rise Time measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye rise time measurement is overlaid.

< 0 > Eye rise time measurement is not overlaid.

EYE:MOENable:SCNT <bool>**EYE:MOENable:SCNT?**

Set or retrieve whether the Sample Count measurement of the Eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye Sample Count measurement is overlaid.

< 0 > Eye Sample Count measurement is not overlaid.

EYE:MOENable:UINterval <bool>**EYE:MOENable:UINterval?**

Set or retrieve whether the Eye Unit Interval measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye unit interval measurement is overlaid.

< 0 > Eye unit interval measurement is not overlaid.

EYE:MOENable:VECP <bool>**EYE:MOENable:VECP?**

Set or retrieve whether the Eye VECP measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye VECP measurement is overlaid.

< 0 > Eye VECP measurement is not overlaid.

EYE:MOENable:VMAX <bool>**EYE:MOENable:VMAX?**

Set or retrieve whether the Voltage Maximum measurement of the Eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye V_{MAX} measurement is overlaid.

< 0 > Eye V_{MAX} measurement is not overlaid.

EYE:MOENable:VMIN <bool>**EYE:MOENable:VMIN?**

Set or retrieve whether the Voltage Minimum measurement of the Eye is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye V_{MIN} measurement is overlaid.

< 0 > Eye V_{MIN} measurement is not overlaid.

EYE:MOENable:VOFS <bool>**EYE:MOENable:VOFS?**

Set or retrieve whether the Eye V_{offset} measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye V_{offset} measurement is overlaid.

< 0 > Eye V_{offset} measurement is not overlaid.

EYE:MOENable:VPP <bool>**EYE:MOENable:VPP?**

Set or retrieve whether the Eye Voltage Peak-to-Peak measurement is overlaid.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Eye V_{PP} measurement is overlaid.

< 0 > Eye V_{PP} measurement is not overlaid.

EYE:PDARKcalibration

Perform Dark Calibration. Action only. May require some delay to complete.

Eye: Data Collecting**EYE:ASSuccess?**

Retrieve report of whether the auto center is successful or not. Query only.

Returns: <1> Eye auto center is successful.

<0> Eye auto center is not successful.

EYE:EPProgress?

Retrieve the progress of the Eye data collection. Query only.

EYE:ISNumber?

Retrieve the serial number of the latest Eye image.

EYE:MSNumber?

Retrieve the serial number of the latest Eye measurements.

EYE:NAVailable?

Retrieve the not-available value of the Eye measurement. Query only.

EYE:STATUS?

Retrieve the status of the Eye diagram. Query only.

Returns: NOTRUNNING Status codes.

OK

NOCLOCK

LOWCLOCK

DROPCLOCK

FREQCHANGE

Eye: Optical Mode

NOTE: In Electrical mode, choose between milliVolts or percent of amplitude for Eye Height, Cross Voltage, and Contour Eye Height measurements. In Optical mode, select a power format of μ Watts or dBm.

EYE:AMPPf <UW | DBM>

EYE:AMPPf?

Set or retrieve Optical Mode Amplitude power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:CN0Pf <UW | DBM>

EYE:CN0Pf?

Set or retrieve Optical Mode Cross Noise 0 power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:CN1Pf <UW | DBM>

EYE:CN1Pf?

Set or retrieve Optical Mode Cross Noise 1 power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:CRAPf <UW | DBM>

EYE:CRAPf?

Set or retrieve Optical Mode Cross Amplitude power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:CVPF <UW | DBM>

EYE:CVPF?

Set or retrieve Optical Mode Cross voltage power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:EHPF <UW | DBM>**EYE:EHPF?**

Set or retrieve Optical Mode Eye Height power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:L0PF <UW | DBM>**EYE:L0PF?**

Set or retrieve Optical Mode Level 0 power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:L1PF <UW | DBM>**EYE:L1PF?**

Set or retrieve Optical Mode Level 1 power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:NL0Pf <UW | DBM>**EYE:NL0Pf?**

Set or retrieve Noise Level 0 power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:NL1Pf <UW | DBM>**EYE:NL1Pf?**

Set or retrieve Optical Mode Noise Level 1 power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:NLPF <UW | DBM>**EYE:NLPF?**

Set or retrieve Optical Mode Noise Level power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:OMAPf <UW | DBM>**EYE:OMAPf?**

Set or retrieve Optical Mode OMA power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:OVSH1Pf <UW | DBM>**EYE:OVSH1Pf?**

Set or retrieve Optical Mode Overshoot1 power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:OVSH0Pf <UW | DBM>**EYE:OVSH0Pf?**

Set or retrieve Optical Mode Overshoot0 power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts
 <DBM> Power value displayed as dBm

Returns: < UW | DBM >

EYE:VMAPf <UW | DBM>**EYE:VMAPf?**

Set or retrieve Optical Mode Maximum voltage power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:VMIPf <UW | DBM>**EYE:VMIPf?**

Set or retrieve Optical Mode Minimum voltage power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:VOFPf <UW | DBM>**EYE:VOFPf?**

Set or retrieve Optical Mode Voltage Offset power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

EYE:VPPPf <UW | DBM>**EYE:VPPPf?**

Set or retrieve Optical Mode Peak to Peak power format. BERTScope only.

Params: <UW> Power value displayed in μ Watts.
 <DBM> Power value displayed as dBm.

Returns: < UW | DBM >

Eye: Read Eye Measurement**EYE:AScale**

Perform Eye's auto center. Action only. May require some delay to complete.

EYE:CLEar

Clear the Eye image and measurements. Action only.

EYE:MVALue:0LEVel?

Retrieve the Eye 0-Level. Query only.

EYE:MVALue:1LEVel?

Retrieve the Eye 1-Level. Query only.

EYE:MVALue:AMPLitude?

Retrieve the Amplitude. Query only.

EYE:MVALue:CAN0?

Retrieve Cross Amplitude Noise Level 0. Query only.

EYE:MVALue:CAN1?

Retrieve Cross Amplitude Noise Level 1. Query only.

EYE:MVALue:CVOLT?

Retrieve the Cross Volt measurement value. Query only. The return value is a number in the format that is determined by the Cross Volt measurement value format. If the format is MV, the value is in millivolts. If the format is %, the value is in percentage. The format can be queried and set by using **EYE:CVFomat** command in the **Eye: Enable Eye Measurement Overlay** section, above.

EYE:MVALue:DCALibration?

Retrieve the Dark Calibration. Query only.

EYE:MVALue:DSNR?

Retrieve the rise DSNR. Query only.

EYE:MVALue:EHEight?

Retrieve the Eye Height. Query only.

EYE:MVALue:EWIDth?

Retrieve the Eye Width. Query only.

EYE:MVALue:EXTRatio?

Retrieve the Extinction Ratio. Query only.

EYE:MVALue:FLCRoss?

Queries the Falling Level Crossing in ps. This is the point in time at which the falling edge (the same edge used for the Fall Time measurement) crosses a configurable level crossing threshold in mV or μ W (depending on the mode). Either the 80/20 or the 90/10 points of the falling edge are used, based on the configuration. See **EYE:LCRTHresh** on how to set the level crossing threshold and **EYE:EdgeMODE <8020 | 9010>** on how to set the amount of edge to use.

EYE:MVALue:FTIME?

Retrieve the Fall Time. Query only.

EYE:MVALue:JITTer?

Retrieve the Jitter P-P. Query only. The return value is a number in the format that is determined by the Jitter P-P measurement value format. If the format is in TIME, the value is in picoseconds (ps). If the format is in %UI, the value is in %UI. The format can be queried and set using the **EYE:JPFormat** command in the **Eye: Enable Eye Measurement Overlay** section, above.

EYE:MVALue:JRMS?

Retrieve the Eye Jitter RMS measurement value. Query only. The return value is a number in the format that is determined by the Jitter RMS measurement value format. If the format is in TIME, the value is in picoseconds (ps). If the format is in %UI, the value is in %UI. The format can be queried or set using the **EYE:JRFormat** command in the **Eye: Enable Eye Measurement Overlay** section, above.

EYE:MVALue:NLV0?

Retrieve Noise Level 0. Query only.

EYE:MVALue:NLV1?

Retrieve Noise Level 1. Query only.

EYE:MVALue:NLEVel?

Retrieve the maximum Noise Level. Query only.

EYE:MVALue:OMA?

Retrieve the OMA. Query only.

EYE:MVALue:OVerSHoot1?

Retrieve the Overshoot1 measurement. Query only.

EYE:MVALue:OVerSHoot0?

Retrieve the Overshoot0 measurement. Query only.

EYE:MVALue:RLCRoss?

Queries the Rising Level Crossing in ps. This is the point in time at which the rising edge (the same edge used for the Rise Time measurement) crosses a configurable level crossing threshold in mV or μ W (depending on the mode). Either the 80/20 or the 90/10 points of the rising edge are used, based on the configuration. See

EYE:LCRTHresh on how to set the level crossing threshold and **EYE:EdgeMODe <8020 | 9010>** on how to set the amount of edge to use.

EYE:MVALue:RTIME?

Retrieve the Rise Time. Query only.

EYE:MVALue:SCNT?

Retrieve the Sample Count. Query only.

EYE:MVALue:UINTerval?

Retrieve the Unit Interval. Query only.

EYE:MVALue:VECP?

Retrieve VECP. Query only.

EYE:MVALue:VOFS?

Retrieve the Eye Voffset value. Query only.

EYE:MVALue:VPP?

Retrieve Voltage Peak-to-Peak. Query only.

EYE:MVALue:VMIN?

Retrieve Voltage Minimum. Query only.

EYE:MVALue:VMAX?

Retrieve Voltage Maximum. Query only.

EYE:MVALue:CAMPlitude?

Retrieve Cross Amplitude. Query only.

BER Contour**CONTour:BBER?**

Retrieve BER Contour Best BER. Query only.

CONTour:BDElay?

Retrieve BER Contour Best Delay in ps. Query only.

CONTour:BTHReshold?

Retrieve BER Contour Best Threshold in mV. Query only.

CONTour:CBPPf <UW | DBM>**CONTour:CBPPf?**

(**BERTScope** only, Optical Mode) Set or retrieve BER Contour Best Point Threshold optical power format.

Params: <UW> Power value displayed in μ Watts.

< DBM > Power value displayed as dBm.

Returns: < UW | DBM >

CONTour:CEHPf <UW | DBM>**CONTour:CEHPf?**

(**BERTScope** only, Optical Mode) Set or retrieve BER Contour Eye Height optical power format.

Params: <UW> Power value displayed in μ Watts.

< DBM > Power value displayed as dBm.

Returns: < UW | DBM >

CONTour:CERate:EM<6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16>?

Retrieve specified Contour's Error Rate. Contour is is EM6, EM7, EM8, ..., EM16.

Note there is *no space* before the contour number. Query only.

Params: <6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16> Contour is EM6, EM7, EM8, ..., EM16

Returns: < EMErrRate > Requested Contour's error rate

CONTour:CFG?

Retrieve four configuration parameters for the current BER Contour, including: Unit Interval, Amplitude, Center Time, Center Threshold Voltage. Query only.

Returns: < UI UA CT CV > where "UI" is Unit Interval in picoseconds, "UA" is amplitude in milliVolts, "CT" is center time in picoseconds, and "CV" is center threshold voltage in milliVolts. Example:
contour:cfg?
93.379 357 167.335 1263

CONTour:CLEar

Clear the BER Contour image and measurements. Action only.

CONTour:CStatus?

Retrieve BER Contour Status. Query only.

Returns: NOTRUNNING Status codes.
OK
NOCLOCK
LOWCLOCK
NOPATTERN
NOTFOUND
ACQERROR

CONTour:ECONtour:EM<6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16> <bool>

CONTour:ECONtour:EM<6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16>?

Enable or retrieve state of specified Contour. Note there is *no space* before the contour number.

Params: <6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16> Contour is EM6, EM7, EM8, ..., EM16
<bool> On = 1, Off = 0
Returns: < 1 > The requested contour is enabled
< 0 > The requested contour is disabled

CONTour:ECTFile <layer><"filename">

Export Contour to file. Action only.

Params: <layer> Layer is EM6, EM7, EM8, ..., EM16
<"filename"> Filename is "full path, name and extension" enclosed in quotes.

CONTour:EMContour <EM6 | EM7 | EM8 | EM9 | EM10 | EM11 | EM12 | EM13 | EM14 | EM15 | EM16>

CONTour:EMContour?

Enable or retrieve state of Eye Measure Contour.

Params: < EM6 | EM7 | EM8 | EM9 | Enable contour, selecting from EM6,
EM10 | EM11 | EM12 | EM13 | EM7, EM8, ..., EM16
EM14 | EM15 | EM16 >

Returns: < EM6 | EM7 | EM8 | EM9 | Returns enabled contour
EM10 | EM11 | EM12 | EM13 |
EM14 | EM15 | EM16 >

CONTour:EMHeight?

Retrieve BER Contour Eye Measure Height in mV. Query only.

CONTour:EMWidth?

Retrieve BER Contour Eye Measure Width in picoseconds. Query only.

CONTour:ERRThr <double>

CONTour:ERRThr?

Set or retrieve BER Contour Jitter Error Threshold.

Params: <double> Numeric value. Range [1 to 10,000]

Returns: < double >

CONTour:IMEasurement?

Retrieve BER Contour Invalid Measurement. Query only.

CONTour:MBARsel <OFF | MEASUREMENTS | STRESS | ADVANCED | LAYERS>

CONTour:MBARsel?

Set or retrieve the BER Contour Sidebar selection.

Params: <OFF> No Sidebar.
 <MEASUREMENTS> Show Measurements.
 <STRESS> Show Stress controls. **Note: Applies only to BERTScope with Stress Option turned on.**
 <ADVANCED> Show Advanced features.
 <LAYERS> Show Contour layers.

Returns: < OFF | MEASUREMENTS | STRESS | ADVANCED | LAYERS >

CONTour:MBDepth?

Measure BER depth. Query only.

CONTour:MERate <double>

CONTour:MERate?

Set or retrieve BER Contour Mask Error Rate.

Params: <double> Mask error rate. Range [1E-18 to 1E-02].

Returns: < double >

CONTOur:MFILE <"filename">**CONTOur:MFILE?**

Set or retrieve BER Contour Mask File.

Params: <"filename"> Filename of .MSK file to be used as a BER Contour.
The filename is enclosed in quotes.

Returns: < filename >

CONTOur:PTS <layered>?

Returns the X,Y coordinates of a specified contour produced by the BER Contour view. The contour must be available when queried; otherwise a SERVER ERROR will be returned. Query only.

Params: <layered> Select contour layer from EM6, EM7, EM8, ..., EM16

Returns: < N (ps1, mv1) where "N" is the number of points in the contour, "ps1"
(ps2, mv2), ..., is the first point's time value in picoseconds, "mv1" is
(psN, mvN) > the first point's voltage value in millivolts, etc. The
response is generated on one line of text output.

The series of points can be considered a "closed polygon," where the first point can be connected to the last point. Example:

contour:points em12?

32 (167.000, 1106.404) (159.430, 1104.830)
(151.122, 1107.907) ...

CONTOur:REFMode <LIVEdata | DPATtern>**CONTOur:REFMode?**

Set or retrieve BER Contour Reference mode.

Params: <LIVEdata> Live Data mode
 <DPATtern> Detected Pattern mode

Returns: < LIVEdata | DPATtern >

CONTOur:REFPattern?

Retrieve BER Reference Pattern. Query only.

CONTOur:RETime?

Retrieve BER Contour Run Elapsed Time in seconds. Query only.

CONTOur:STFile <"filename">

Save Contour results to named file. Action only.

Params: <"filename"> Name of .CSV file where Contour analysis results will be
saved. Filename is enclosed in quotes.

CONTour:SUFBits <value>

CONTour:SUFBits?

Set or retrieve BER Contour Sufficient Bits.

Params: <value> A numeric value. Range [1,000 to 1E+11]. A value of -1 initiates automatic mode.

Returns: < value > Numeric Value or Automatic

BER Contour Optical Mode

Optical Mode commands apply only to the **BERTScope**.

NOTE: In Electrical mode, the user can choose between milliVolts or percent of amplitude for Eye Height, Crossing Voltage, Contour Eye Height measurements. In Optical mode, choose between μ Watts or dBm.

CONTour:CBPPf <UW | DBM>

CONTour:CBPPf?

Set or retrieve BER Contour Optical Mode Best Point Threshold power format.

Params: <UW> Power value displayed in μ Watts.

< DBM > Power value displayed as dBm.

Returns: < UW | DBM >

CONTour:CEHPf <UW | DBM>

CONTour:CEHPf?

Set or retrieve BER Contour Optical Mode Eye Height power format.

Params: <UW> Power value displayed in μ Watts.

< DBM > Power value displayed as dBm.

Returns: < UW | DBM >

Jitter Peak

JITTER:AScale <LEDGE | TEDGE | CTIME>

Set Jitter Peak Auto Scale parameters.

Params: <LEDGE> Leading Edge

<TEDGE> Trailing Edge

<CTIME> Center Time

JITTer:CLEar

Clear the Jitter Peak image and measurements. Action only.

JITter:CFG?

Retrieve the auto-align results used to automatically align the Jitter Peak. Query only.

Returns: <UI UA CT CV> where “UI” is the Unit Interval in picoseconds, “UA” is amplitude in millivolts, “CT” is center time in picoseconds, and “CV” is center threshold voltage in millivolts.

JITter:DJITter?

Retrieve the Deterministic Jitter. Query only. The return value is a number in the format that is determined by the Deterministic Jitter format of either TIME or %UI. See **JITter:DJFOrmat** command above for querying and changing the format.

JITter:DMODE <COUNT | GRAPH | RDATa>

JITter:DMODE?

Set or retrieve the Jitter Peak display mode.

Params: <COUNT> Counters
 <GRAPH> Graph
 <RDATa> Raw data

Returns: < COUNT | GRAPH | RDATa >

JITter:EGRaticule <bool>

JITter:EGRaticule?

Enable the graticule (grid) on the Jitter Peak display.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable graticule.
 < 0 > Disable graticule.

JITter:ERRThr <double>

JITter:ERRThr?

Set or retrieve Jitter Peak Error Threshold.

Params: <double> Jitter Peak error threshold, a numeric value. Range [1 to 10,000].

Returns: < double >

JITter:IVALue?

Retrieve Jitter Peak Invalid Value. Query only.

JITter:L0Mean?

Retrieve Jitter Peak Leading Edge mean. Query only.

JITter:L0Sigma?

Retrieve Jitter Peak Leading Edge sigma. Query only.

JITter:L0EValue?

Retrieve Jitter Peak Leading Edge error value. Query only.

JITTER:LONPoints?

Retrieve Jitter Peak Leading Edge number of measured points. Query only.

JITTER:L1Mean?

Retrieve Jitter Peak Trailing Edge mean. Query only.

JITTER:L1Sigma?

Retrieve Jitter Peak Trailing Edge sigma. Query only.

JITTER:L1EValue?

Retrieve Jitter Peak Trailing Edge error value. Query only.

JITTER:L1NPoints?

Retrieve Jitter Peak Trailing Edge number of measured points. Query only.

JITTER:LData?

Retrieve the measured points for the left edge of the Jitter Peak display. Query only.

Returns: < N (x1, y1) where N is the number of points, the x-values are delay
(x2, y2) ... values represented in picoseconds, and the y-values are
(xN, yN) > BER measurements.

JITTER:LFit?

Retrieve the extrapolated points for the left edge of the Jitter Peak display. Query only.

Returns: < N (x1, y1) where N is the number of points, the x-values are delay
(x2, y2) ... values represented in picoseconds, and the y-values are
(xN, yN) > BER measurements.

JITTER:MBARsel <OFF | MEASUREMENTS | STRESS | ADVANCED >

JITTER:MBARsel?

Set or retrieve the Jitter Peak Sidebar selection.

Params: <OFF> No Sidebar.
<MEASUREMENTS> Show Measurements.
<STRESS> Show Stress controls. **Note: Applies only to BERTScope with Stress Option turned on.**
<ADVANCED> Show Advanced features.

Returns: < OFF | MEASUREMENTS | STRESS | ADVANCED >

JITTER:MBDepth?

Measure Jitter Peak BER Depth. Query only.

JITTER:OBString?

Retrieve Jitter Peak Optimum BER String. Query only.

JITTer:OLBer?

Retrieve Jitter Peak Optimum Log BER. Query only.

JITTer:OTValue?

Retrieve Optimum Jitter Peak threshold value in millivolts. Query only.

JITTer:PPBER <double>**JITTer:PPBER?**

Set or retrieve the BER where Jitter Peak measurements are made.

Params: <double> Numeric value. Range [1.00E-50 to 1.00E-05].

Returns: < double >

JITTer:RData?

Retrieve the measured points for the right edge of the Jitter Peak display.

Returns: < N (x1, y1) where N is the number of points, the x-values are delay
(x2, y2) ... values represented in picoseconds, and the y-values are
(xN, yN) > BER measurements.

JITTer:REFMode <LIVEdata | DPATtern>**JITTer:REFMode?**

Set or retrieve Jitter Peak Reference mode.

Params: <LIVEdata> Live Data mode
<DPATtern> Detected Pattern mode

Returns: < LIVEdata | DPATtern >

JITTer:REFPattern?

Retrieve Jitter Peak Reference Pattern. Query only.

JITTer:RETime?

Retrieve Jitter Peak Run Elapsed Time in seconds. Query only.

JITTer:RFit?

Retrieve the measured points for the right edge of the Jitter Peak display.

Returns: < N (x1, y1) where N is the number of points, the x-values are delay
(x2, y2) ... values represented in picoseconds, and the y-values are
(xN, yN) > BER measurements.

JITTer:RJITter?

Retrieve the Random Jitter. Query only. The return value is a number in the format that is determined by the Random Jitter format of either TIME or %UI. See the **JITTer:RJFormat** command above for querying or changing the format.

JITTer:RJFormat <TIME | %UI>**JITTer:RJFormat?**

Set or retrieve the Jitter Peak Random Jitter measurement value format.

Params: <TIME> The Random Jitter measurement value is in psec.
<%UI> The Random Jitter measurement value is in %UI.
Returns: < TIME | %UI >

JITter:SCURsors <double,double,double,double>

Set Jitter Peak Cursor positions

Params: <X1> X1 cursor position, double
<X2> X2 cursor position, double
<Y1> Y1 cursor position, double
<Y2> Y2 cursor position, double

Returns: < X1,X2,Y1,Y2 >

JITter:SDATa? <int>

Retrieve Jitter Peak Series Data, binary. Query only.

Returns: <integer> Series data. Range [0 to 14].

JITter:SDEfaults

Set Defaults. Action only.

JITter:STFile <"filename">

Save Jitter Peak results to named file. Action only.

Params: <"filename"> Filename where Jitter Peak results are saved. Filename is enclosed in quotes.

JITter:SUFBits <double>

JITter:SUFBits?

Set or retrieve Jitter Peak Sufficient Bits.

Params: <value> A numeric value. Range [1,000 to 1E+11]. A value of -1 initiates automatic mode.

Returns: < value > Numeric Value or Automatic

JITter:TJITter?

Retrieve the Total Jitter. Query only. The return value is a number in the format that is determined by the Total Jitter format of either TIME or %UI. See **JITter:TJFormat** command above for querying and changing the format.

JITter:TJFormat <TIME | %UI>

JITter:TJFormat?

Set or retrieve the Jitter Peak Total Jitter measurement value format.

Params: <TIME> The Total Jitter measurement value is in psec.
<%UI> The Total Jitter measurement value is in %UI.

Returns: < TIME | %UI >

JITTer:THRMDe <AUTOMATIC | MANual>

JITTer:THRMDe?

Set or retrieve the threshold mode of the Jitter Peak.

Params: <AUTOMATIC> Jitter threshold mode is automatic.
< MANual > Jitter threshold mode is manual.

Returns: < AUTOMATIC | MANual >

JITTer:TStatus?

Retrieve Jitter Peak Status. Query only.

Returns: NOTRUNNING Status codes.
OK
NOCLOCK
LOWCLOCK
NOPATTERN
NOTFOUND
ACQERROR
WAITING

JITTer:TVALue <double>

JITTer:TVALue?

Set or retrieve Jitter Peak Manual Threshold.

Params: <double> Jitter Peak value. Range [–3,000 to +3,000].

Returns: < double >

JITTer:X1Cursor <double>

JITTer:X1Cursor?

Set or retrieve Jitter Peak View's X1 Cursor.

Params: <double> Position of Jitter Peak View's Cursor X1.

Returns: < double >

JITTer:X2Cursor <double>

JITTer:X2Cursor?

Set or retrieve Jitter Peak View's X2 Cursor.

Params: <double> Position of Jitter Peak View's Cursor X2.

Returns: < double >

JITTer:XMAX <double>

JITTer:XMAX?

Set or retrieve Jitter Peak View's X Maximum value.

Params: <double> Jitter Peak View's X Maximum value.

Returns: < double >

JITTer:XMIN <double>

JITTer:XMIN?

Set or retrieve Jitter Peak View's X Minimum value.

Params: <double> Jitter Peak View's X Minimum value.

Returns: < double >

JITTer:Y1Cursor <double>

JITTer:Y1Cursor?

Set or retrieve position of Jitter Peak's Cursor Y1.

Params: <double> Position of Jitter Peak View's Cursor Y1

Returns: < double >

JITTer:Y2Cursor <double>

JITTer:Y2Cursor?

Set or retrieve position of Jitter Peak's Cursor Y2.

Params: <double> Position of Jitter Peak View's Cursor Y2

Returns: < double >

JITTer:YMAX <double>

JITTer:YMAX?

Set or retrieve Jitter Peak View's Y Maximum value.

Params: <double> Jitter Peak View's Y Maximum value.

Returns: < double >

JITTer:YMIN <double>

JITTer:YMIN?

Set or retrieve Jitter Peak View's Y Minimum value.

Params: <double> Jitter Peak View's Y Minimum value.

Returns: < double >

Jitter Tolerance

JTOL:BERThr <double>

JTOL:BERThr?

Set or retrieve BER Threshold.

Params: <double> BER Threshold, a numeric Value. Range [1E-99 to 1E-3]

Returns: <double>

JTOL:CHCOrd <XLOGOFS | XLOGEXT | YLOGOFS | YLOGEXT>?

Query Only. Retrieve the chart coordinates.

Params: <XLOGOFS> Retrieves the X Offset from the chart.
 <XLOGEXT> Retrieves the X Extent from the chart.
 <YLOGOFS> Retrieves the Y Offset from the chart.
 <YLOGEXT> Retrieves the Y Extent from the chart.

Returns: <double>

JTOL:CHRX <double>

JTOL:CHRX?

Set or retrieve Jitter Tolerance Cursor X position.

Params: <double> Position of X Cursor in Chart.

Returns: <double>

JTOL:CHRY <double>

JTOL:CHRY?

Set or retrieve Jitter Tolerance Cursor Y position.

Params: <double> Position of Y Cursor in Chart.

Returns: <double>

JTOL:CONFdet

Query only. Retrieves the configuration parameters of the current Jitter tolerance template.

Returns: <TC(FreqMHz,TemplateUI,Attributes,LimitUI)>

Example: 2(0.1, 0.5, 0, 0) (0.2, 0.5, 0, 0)

JTOL:DIFLg <SJLIMIT|CURSOR, bool>

JTOL:DIFLg<SJLIMIT|CURSOR>?

Shows or hides different cursors on the chart.

Params: <SJLIMIT, bool> Shows the SJ limit in the Chart.
 <CURSOR, bool> Shows the Cursors in the Chart.
Returns: < 1 > SJ Limit/Cursors On
 < 0 > SJ Limit/Cursors Off

JTOL:DIFMt <CHART | TABLE>

JTOL:DIFMt?

Set or retrieve Display Format.

Params: <CHART> Set Display to be Chart
 <TABLE> Set Display to be Table.

Returns: < CHART | TABLE >

JTOL:ELPSt?

Retrieve Elapsed time.

Returns: <double>

JTOL:LDTPI <"filename">

Action only. Load a template file. Full path name should be given.

Params: <"filename"> Template file to be loaded. File name should be in quotes and include full path.

JTOL:MARGui <double>**JTOL:MARGui?**

Set or retrieve Margin UI in percentage.

Params: <double> Margin UI, a numeric Value. Range [-90 to 400]

Returns: <double>

JTOL: MBARsel <OFF | GENERATOR | STRESS | CRU>**JTOL: MBARsel?**

Set or retrieve Jitter Tolerance Side bar selection.

Params: <OFF> No sidebar

<GENERATOR Show Generator controls
>

<STRESS> Show Stress controls. **Note:** Applies only to on BERTScope with Stress Option turned on.

<CRU> Show CRU controls. **Note:** Shows only when a CRU is plugged in.

Returns: < OFF | GENERATOR | STRESS | CRU >

JTOL:PRECui <double>**JTOL:PRECui?**

Set or retrieve Precision UI.

Params: <double> Precision UI, a numeric value. Range[0.005 to 0.05]

Returns: <double>

JTOL:RELSt?

Query Only. Retrieve Relax State.

Returns: < NORELAX | RELAX | NOTRUNNING >

JTOL:RELTime <double>**JTOL:RELTime?**

Set or retrieve Relax Time.

Params: <double> Relax time, a numeric Value. Range [0 to 100]

Returns: <double>

JTOL:RESDet

Query only. Retrieves the Jitter Tolerance test results.

Returns: <TC(AmpUI, Bits, Errors, BER, Status)>

Where Status 0 = Blank
1 = InProgress
2 = Passed
3 = NoSync
4 = BER Failure
5 = Clk Error
6 = Data Error

Example: 2(0.1, 1000, 100, 1) (0.2, 1000, 100, 2)

JTOL:RUNSt?

Query Only. Retrieve Run Status.

Returns: < READY | SWEEPING | TESTING | RELAXING | AUTOALIGNING |
TESTPASS | TESTFAIL >

JTOL:SJBAs <double>

JTOL:SJBAs?

Set or retrieve SJ Baseline Amplitude UI in percentage.

Params: <double> SJ Baseline Amplitude UI, a numeric Value. Range [0 to 100]

Returns: <double>

JTOL:SVTPI <"filename">

Action only. Save the current template in a file. Full path name should be given.

Params: <"filename"> Template file to be saved. File name should be in quotes and include full path.

JTOL:TEND <DURATION | BITSERRS | CONFIDENCE>

JTOL:TEND?

Set or retrieve Test End Mode.

Params: <DURATION> Specify Test end mode in Seconds
<BITSERRS> Specify Test end mode in Bits and Errors.
<CONFIDENCE> Specify Test end mode in Confidence Percentage.

Returns: < DURATION | BITSERRS | CONFIDENCE >

JTOL:TEVAI <DURATION | BITS | ERRORS | CONFIDENCE, double>

JTOL:TEVAI <DURATION | BITS | ERRORS | CONFIDENCE>?

Set or retrieve Test End Value.

Params: <DURATION, double> Set duration in seconds. Range is [0 to 5000]
 <BITS, double> Set bits in numeric. Range is [1E0 to 1E14]
 <ERRORS, double> Set errors in numeric. Range is [0 to 100]
 <CONFIDENCE,
 double> Set confidence in percentage. Range is [0 to
 100]

Returns: < double >

JTOL:TMODe <MARGIN | SEARCH | CONTOUR>

JTOL:TMODe?

Set or retrieve Test mode.

Params: <MARGIN> Margin mode.
 <SEARCH> Search mode.
 <CONTOUR> Contour mode.

Returns: < MARGIN | SEARCH | CONTOUR >

Mask Test

MASK:ATOffset <double>

MASK:ATOffset?

Adjust Mask Test time offset in picoseconds.

Params: <double> Set or retrieve time offset in picoseconds

Returns: < double >

MASK:AVOffset <double>

MASK:AVOffset?

Adjust Mask Test voltage offset in millivolts.

Params: <double> Set or retrieve voltage offset in mV.

Returns: < double >

MASK:CLEAr

Clear Mask. Action only.

MASK:CPERrors?

Retrieve Mask Test Center Polygon Errors. Query only.

MASK:EMLayer:COORDs <bool>**MASK:EMLayer:COORDs?**

Enable the Mask Test Coordinates layer.

Params: <bool> On = 1, Off = 0

Returns: < 1 > The layer is enabled.

< 0 > The layer is disabled.

MASK:EMLayer:LOAD <bool>**MASK:EMLayer:LOAD?**

Enable Mask Test Layer.

Params: <bool> On = 1, Off = 0

Returns: < 1 > The layer is enabled

< 0 > The layer is disabled

MASK:EMLayer:PROGress <bool>**MASK:EMLayer:PROGress?**

Enable the Mask Test Progress layer.

Params: <bool> On = 1, Off = 0

Returns: < 1 > The layer is enabled

< 0 > The layer is disabled

MASK:EMLayer:RESults <bool>**MASK:EMLayer:RESults?**

Enable the Mask Test Results layer.

Params: <bool> On = 1, Off = 0

Returns: < 1 > The layer is enabled

< 0 > The layer is disabled

MASK:IVALue?

Retrieve Mask Test Invalid Value. Query only.

MASK:LMASK

Load Mask. Action only. To specify a filename, see the **MASK:MFName** command.

MASK:LPERrors?

Retrieve Mask Test Lower Polygon Errors. Query only.

MASK:MBARsel <OFF | MEASUREMENTS | STRESS | ADVANCED >

MASK:MBARsel?

Set or retrieve the Mask Test Sidebar selection.

Params: <OFF> No Sidebar
 <MEASUREMENTS> Show measurements
 <STRESS> Show stress controls. **Note: Applies only to BERTScope with Stress Option turned on.**
 <ADVANCED> Show Advanced features.

Returns: < OFF | MEASUREMENTS | STRESS | ADVANCED >

MASK:MFName <"filename">

MASK:MFName?

Set or retrieve Mask Filename.

Params: <"filename"> Mask filename. Filename is enclosed in quotes. To load the mask file, see the **MASK:LMASK** command.

Returns: < "filename" >

MASK:MLCount?

Retrieve Mask Layer Count. Query only.

MASK:MStatus?

Retrieve Mask Test Status. Query only.

Returns: NOTRUNNING Status codes.
 OK
 NOCLOCK
 LOWCLOCK
 DROPCLOCK
 FREQCHANGE
 NOPATTERN

MASK:REFMode <LIVEdata | DPATtern>

MASK:REFMode?

Set or retrieve Mask Reference mode.

Params: <LIVEdata> Live Data mode
 <DPATtern> Detected Pattern mode

Returns: < LIVEdata | DPATtern >

MASK:REFPattern?

Retrieve Mask Test Reference Pattern. Query only.

MASK:RETime?

Retrieve Mask Test Run Elapsed Time in Seconds. Query only.

MASK:RSTate <bool>**MASK:RSTate?**

Set or retrieve Mask Test Run State.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Run

< 0 > Stop

MASK:SCount?

Retrieve Mask Test Sample Count. Query only.

MASK:SDEPth <numeric>**MASK:SDEPth?**

Set or retrieve the Mask test Sample Depth in bits.

Params: <numeric> Mask Sample Depth in bits. Range [2,000 to 10,000,000].
Input out of range will be clipped and recorded in the status queue. A value of -1 runs the Eye diagram in the 'Auto' mode with a sample depth of 10,000 bits.

Setting a value other than -1 runs the Mask test in the Manual mode. Once the specified depth is reached, the Mask testing automatically stops running.

Returns: < numeric >

MASK:SLData? <int>

Retrieve Mask Test Sketch Layer Data (binary)

Params: <integer> Sketch layer data. Range [0 to 5].

MASK:SMWadjustments <"filename">

Save Mask with adjustments. Action only.

Params: <"filename"> Mask filename. Filename is enclosed in quotes.

MASK:STMargin <double>**MASK:STMargin?**

Set or retrieve the Mask Time margin.

Params: <double> Set or retrieve time margin as a percentage of Unit Interval.
Range (-90% to +100%UI)

Returns: < double >

MASK:STVMargin <double>**MASK:STVMargin?**

Set or retrieve Mask Test Time and Voltage margin.

Params: <double> Set or retrieve time margin as a percentage of Unit Interval.
Range (-90% to +100%UI)

Returns: < double >

MASK:SVMArgin <double>**MASK:SVMArgin?**

Set or retrieve Mask Test Voltage margin.

Params: <double> Set or retrieve time margin as a percentage of Unit Interval.
Range (–90% to +100%UI)

Returns: < double >

MASK:TMARgin <double>**MASK:TMARgin?**

Set or retrieve Mask Test Time margin

Params: <double> Set or retrieve time margin as a percentage of Unit Interval.
Range (–90% to +100%UI)

Returns: < double >

MASK:TVMARgin <double>**MASK:TVMARgin?**

Set or retrieve Mask Test Time and Voltage margin

Params: <double> Set or retrieve time and voltage margin as a percentage of
Unit Interval. Range (–90% to +100%UI), default = 0

Returns: < double >

MASK:UAMPlitude <double>**MASK:UAMPlitude?**

Set or retrieve Mask Test Unit Amplitude in millivolts.

Params: <double> Unit Amplitude in mV

Returns: < double >

MASK:UINterval <double>**MASK:UINterval?**

Set or retrieve Mask Test Unit Interval in picoseconds.

Params: <double> Unit Interval in ps

Returns: < double >

MASK:UPERrors?

Retrieve Mask Test Upper Polygon errors. Query only.

MASK:VMARgin <double>**MASK:VMARgin?**

Set or retrieve Mask Test voltage margin a percentage of Unit Amplitude

Params: <double> Set or retrieve voltage margin as a percentage of Unit
Amplitude (–90% to +100%UI)

Returns: < double >

MASK:WFORms

Retrieve the number of waveforms tested in the Mask Test. Query only.

Q-Factor

QFACTOR:ASCALE <COUNT | LEV0 | LEV1 | MIDLEV>

Auto Scale the Q-Factor display to fit data. Action only.

Params: <COUNT> Counters
 <LEV0> 0-Level
 <LEV1> 1-Level
 <MIDLEV> Middle (logic threshold) level

QFACTOR:CFG?

Retrieve the auto-align results used to automatically align the Q-Factor analysis. Query only.

Returns: < UI UA CT CV > where “UI” is the Unit Interval in picoseconds, “UA” is amplitude in millivolts, “CT” is center time in picoseconds, and “CV” is center threshold voltage in mV.

QFACTOR:CLEAR

Clear the Q-Factor image and measurements. Action only.

QFACTOR:DLYMODE <AUTOMATIC | MANUAL>

QFACTOR:DLYMODE?

Set or retrieve the Q-Factor delay mode.

Params: < AUTOMATIC > Q-Factor delay mode is automatic
 < MANUAL > Q-Factor delay mode is manual

Returns: < AUTOMATIC | MANUAL >

QFACTOR:DMODE <COUNT | GRAPH | RDATa>

QFACTOR:DMODE?

Set or retrieve the Q-Factor display mode.

Params: <COUNT> Counters
 <GRAPH> Graph
 <RDATa> Raw data

Returns: < COUNT | GRAPH | RDATa >

QFACTOR:EGRATICULE <bool>

QFACTOR:EGRATICULE?

Enable/disable graticule (grid) on the Q-Factor display.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Enable graticule.
 < 0 > Disable graticule.

QFACTOR:ERRThr <double>**QFACTOR:ERRThr?**

Set or retrieve Jitter Error Threshold from Q-Factor analysis.

Params: <double> Numeric value, range [1 to 10,000]

Returns: < double >

QFACTOR:IVALue?

Retrieve Invalid Value. Query only.

QFACTOR:L0Data?

Retrieve the measured points for the Q-Factor display Level0. Query only.

Returns: < N (x1, y1) where N is the number of points, the x-values are
 (x2, y2) ... threshold values represented in millivolts, and the y-values
 (xN, yN) > are BER measurements.

QFACTOR:L0EValue?

Retrieve Q-Factor Level0 error value. Query only.

QFACTOR:L0Fit?

Retrieve the extrapolated points for the Q-Factor display Level0. Query only.

Returns: < N (x1, y1) where N is the number of points, the x-values are
 (x2, y2) ... threshold values represented in millivolts, and the y-values
 (xN, yN) > are BER measurements.

QFACTOR:L0Mean?

Retrieve Q-Factor Level0 mean. Query only.

QFACTOR:L0NPoints?

Retrieve Q-Factor Level0 number of measured points. Query only.

QFACTOR:L0Sigma?

Retrieve Q-Factor Level0 sigma. Query only.

QFACTOR:L1Data?

Retrieve the measured points for the Q-Factor display Level1. Query only.

Returns: < N (x1, y1) where N is the number of points, the x-values are
 (x2, y2) ... threshold values represented in millivolts, and the y-values
 (xN, yN) > are BER measurements.

QFACTOR:L1EValue?

Retrieve Q-Factor Level1 error value. Query only.

QFACTOR:L1Fit?

Retrieve the extrapolated points for the Q-Factor display Level1. Query only.

Returns: < N (x1, y1) where N is the number of points, the x-values are
 (x2, y2) ... threshold values represented in millivolts, and the y-values
 (xN, yN) > are BER measurements.

QFACTOR:L1Mean?

Retrieve Q-Factor Level1 mean. Query only.

QFACTOR:L1NPoints?

Retrieve Q-Factor Level1 number of measured points

QFACTOR:L1Sigma?

Retrieve Q-Factor Level1 sigma. Query only.

QFACTOR:MBARsel <OFF | MEASUREMENTS | STRESS | ADVANCED>**QFACTOR:MBARsel?**

Set or retrieve the Q-Factor display Sidebar selection.

Params: <OFF> No Sidebar.
 <MEASUREMENTS> Show Measurements.
 <STRESS> Show Stress controls. **Note: Applies only to BERTScope with Stress Option turned on.**
 <ADVANCED> Show Advanced features.

Returns: < OFF | MEASUREMENTS | STRESS | ADVANCED >

QFACTOR:MBDepth?

Measure Q-Factor BER depth. Query only.

QFACTOR:OQ?

Retrieve Q-Factor optimum Q. Query only.

QFACTOR:OTValue?

Retrieve optimum Q-Factor value. Query only.

QFACTOR:OLBer?

Retrieve Q-Factor optimum log BER. Query only.

QFACTOR:OBString?

Retrieve Q-Factor optimum BER string. Query only.

QFACTOR:REFMode <LIVEdata | DPATtern>**QFACTOR:REFMode?**

Set or retrieve Q-Factor reference mode.

Params: <LIVEdata> Live data mode
 <DPATtern> Detected pattern mode

Returns: < LIVEdata | DPATtern >

QFACTOR:REFPattern?

Retrieve Q-Factor reference pattern. Query only.

QFACTOR:RETime?

Retrieve Q-Factor run elapsed time in seconds. Query only.

QFACTOR:SCURsors <double,double,double,double>

Set Q-Factor cursor positions.

Params: <X1> X1 cursor position, double
 <X2> X2 cursor position, double
 <Y1> Y1 cursor position, double
 <Y2> Y2 cursor position, double

Returns: < X1,X2,Y1,Y2 >

QFACTOR:SDATa? <int>

Retrieve Q-Factor series data, binary. Query only.

Returns: <int> Series data. Range [0 to 14].

QFACTOR:SDEFaults

Set Q-Factor Defaults. Action only.

QFACTOR:STFile <"filename" >

Save Q-Factor results to named file. Action only.

Params: <"filename"> File where Q-Factor results are to be saved. Filename is enclosed in quotes.

QFACTOR:SUFBits <double>**QFACTOR:SUFBits?**

Set or retrieve Q-Factor sufficient bits.

Params: <value> A numeric value with range [1,000 to 1E+11], or a value of -1 initiates automatic mode.

Returns: < value > Numeric value or automatic

QFACTOR:SVIew <double,double,double,double>

Set Q-Factor view axes.

Params: <Xmin> X-Axis minimum, double
 <Ymin> Y-Axis minimum, double
 <Xmax> X-Axis maximum, double
 <Ymax> Y-Axis maximum, double

Returns: < Xmin, Ymin, Xmax, Ymax >

QFACTOR:TSTATUS?

Q-Factor analysis status. Query only.

Returns: NOTRUNNING Status codes.
 OK
 NOCLOCK
 LOWCLOCK
 NOPATTERN
 NOTFOUND
 ACQERROR
 WAITING

QFACTOR:TVALUE <double>**QFACTOR:TVALUE?**

Set or retrieve Q-Factor value.

Params: <double> Q-Factor value. Range [0 to 5,000]

Returns: < double >

QFACTOR:X1CURSOR <double>**QFACTOR:X1CURSOR?**

Set or retrieve Q-Factor cursor X1's position.

Params: <double> Position of Q-Factor view's X1 cursor.

Returns: < double >

QFACTOR:X2CURSOR <double>**QFACTOR:X2C?**

Set or retrieve Q-Factor cursor X2's position.

Params: <double> Position of Q-Factor view's X2 cursor.

Returns: < double >

QFACTOR:XMAX <double>**QFACTOR:XMAX?**

Set or retrieve Q-Factor view's X maximum

Params: <double> Q-Factor view's X maximum.

Returns: < double >

QFACTOR:XMIN <double>**QFACTOR:XMIN?**

Set or retrieve Q-Factor view's X minimum

Params: <double> Q-Factor view's X minimum.

Returns: < double >

QFACTOR:Y1Cursor <double>**QFACTOR:Y1Cursor?**

Set or retrieve Q-Factor cursor Y1's position.

Params: <double> Position of Q-Factor view's Y1 cursor.

Returns: < double >

QFACTOR:Y2Cursor <double>**QFACTOR:Y2Cursor?**

Set or retrieve Q-Factor cursor Y2's position.

Params: <double> Position of Q-Factor view's Y2 cursor.

Returns: < double >

QFACTOR:YMAX <double>**QFACTOR:YMAX?**

Set or retrieve Q-Factor view's Y maximum

Params: <double> Q-Factor view's Y maximum.

Returns: < double >

QFACTOR:YMIN <double>**QFACTOR:YMIN?**

Set or retrieve Q-Factor view's Y minimum

Params: <double> Q-Factor view's Y minimum.

Returns: < double >

Mainframe

CardTEMP?

This command is no longer supported. See **SENSor:TEMP?** command below.

DELAY:DETRecal?

Retrieve the information that indicates whether Detector delay needs recalibration. Query only. **Note:** Since monitoring for these calibrations is suspended while Physical Layer tests are running, using this command under those circumstances may not return an accurate result.

Returns: < 1 > Needs delay recalibration
 < 0 > Does not need a delay recalibration

DELAY:GENRecal?

Retrieve the information that indicates whether Generator delay needs recalibration. Query only. **Note:** Since monitoring for these calibrations is suspended while Physical Layer tests are running, using this command under those circumstances may not return an accurate result.

Returns: < 1 > Needs delay recalibration
 < 0 > Does not need a delay recalibration

FAMILY_1500?

Check if the instrument is a BitAlyzer 1500. Query only.

Returns: < 0 > False
 < 1 > True

FAMILY_7500?

Check if the instrument is a BERTScope 7500 (Model A or B). Query only.

Returns: < 0 > False
 < 1 > True

FAMILY_12500?

Check if the instrument is a BERTScope 12500 (Model A or B). Query only.

Returns: < 0 > False
 < 1 > True

GUILockout <bool>

GUILockout?

Set or retrieve the state of the GUI lockout selection. Query only.

Params: <bool> On = 1, Off = 0
Returns: < 1 > GUI lockout is in effect
 < 0 > GUI lockout is not in effect

MODEL_A?

Check if the instrument is a BERTScope Model A (7500 or 12500). Query only.

Returns: < 0 > False
 < 1 > True

MODEL_B?

Check if the instrument is a BERTScope Model B (7500 or 12500). Query only.

Returns: < 0 > False
 < 1 > True

OPT_EA_2D_MAP?

Check if the instrument has 2-D Error Map Analyzer Option enabled. Query only.

Returns: < 0 > False
 < 1 > True

OPT_EA_ECC?

Check if the instrument has FEC Emulation Analyzer Option enabled. Query only.

Returns: < 0 > False
 < 1 > True

OPT_GSM?

Check if the instrument has a Generator Stress Module installed. Query only.

Returns: < 0 > False
 < 1 > True

OPT_JT ?

Check if the instrument has Jitter Tolerance Option enabled. Query only.

Returns: < 0 > False
 < 1 > True

OPT_LIVE_DATA?

Check if the instrument has Live Data Option enabled. Query only.

Returns: < 0 > False
 < 1 > True

OPT_PHY_TEST?

Check if the instrument has Physical Layer Test Option enabled. Query only.

Returns: < 0 > False
 < 1 > True

PTFile <"filename">

Print the current view into a file.

Params: <"filename"> Specify a file where the screen will be printed. Filename is enclosed in quotes.

RCStatus?

Returns the version information of Remote Control. Query only.

RDURation<long>**RDURation?**

Set or retrieve the run duration of the **BERTScope**. Setting to '0' is the equivalent of a GUI 'Clear,' which allows the run (see **RSTate** command, below) to go on 'forever.'

Params: <long> Set system run duration. Range is [1 to 36E6]. Zero (0) sets an infinite duration.

Returns: < long > System run duration

RSTate <bool>**RSTate?**

Set or retrieve the run state of the **BERTScope**.

Params: <bool> On = 1, Off = 0

Returns: < 1 > System is running

< 0 > System is not running

SENSor:TEMP?

Retrieve internal temperature in degrees Celsius. Query only. This measurement is not calibrated, and should only be used as a relative indication of temperature.

Returns: < double > Positive integer, internal temperature (°C)

SENSor:V12?

Retrieve reading of the internal +12 volt register. Query only.

Returns: < double > Interval 12 V register

SENSor:V3P3?

Retrieve reading of the internal +3.3 volt register. Query only.

Returns: < double > Internal 3.3 V register

SENSor:V5?

Retrieve reading of the internal +5 volt register. Query only.

Returns: < double > Internal 5 V register

SENSor:VM12?

Retrieve reading of the internal -12 volt register. Query only.

Returns: < double > Internal -12 V register

SENSor:VM2?

Retrieve reading of the internal –2 volt register. Query only.

Returns: < double > Internal –2 V register

SENSor:VM5P2?

Retrieve reading of the internal –5.2 volt register. Query only.

Returns: < double > Internal –5.2 V register

**VIEW <HOME | GENERator | DETector | EYE | EDITor | SYSTem | BBER | BERRor
| BLENght | CORRelation | EFINterval | PSENSitivity | SCHart | FEC |
EMAP | MASK | CONTOur | JITTER | JTOLerance | QFACTor | LOG |
STRESSedeye>**

VIEW?

Set or retrieve the current view of the **BERTScope**.

Params: <HOME> Home view
<GENERator> Generator view
<DETector> Detector view
<EYE> Eye Diagram view
<EDITor> Editor view
<SYSTem> System view
<BBER> Basic BER view
<BERRor> Block Error view
<BLENght> Burst Length view
<CORRelation> Correlation view
<EFINterval> Error Free Interval view
<PSENSitivity> Pattern Sensitivity view
<SCHart> Strip Chart view
<FEC> FEC Emulation view
<EMAP> Error Map view
<MASK> Mask Test view
<CONTOur> BER Contour view
<JITTER> Jitter Peak view
<JTOLerance> Jitter Tolerance Test view
<QFACTor> Q-Factor view
<LOG> System Event Log view
<STRESSedeye> Stressed Eye View

Returns: < HOME | GENERator | DETector | EYE | EDITor | SYSTem | BBER |
BERRor | BLENght | CORRelation | EFINterval | PSENSitivity | SCHart |
FEC | EMAP | MASK | CONTOur | JITTER | JTOLerance | QFACTor | LOG |
STRESSedeye >

System View

DIALog:CDRam <bool>

DIALog:CDRam?

Enable/disable display of a warning if capturing Detector RAM.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Warn if capturing Detector RAM.

< 0 > Do not warn if capturing Detector RAM.

DIALog:RDCalibration <bool>

DIALog:RDCalibration?

Enable/disable display of "Recommend delay calibration" message.

Params: <bool> On = 1, Off = 0.

Returns: < 1 > Recommend delay calibration.

< 0 > Do not recommend delay calibration.

DIALog:SRFCapture <bool>

DIALog:SRFCapture?

Enable/disable display of a warning if stop running for capture.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Warn if stop running for capture.

< 0 > Do not warn if stop running for capture.

DIALog:SRView <bool>

DIALog:SRView?

Enable/disable display of a warning if switching running view.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Warn if switching running view.

< 0 > Do not warn if switching running view.

STAB <TOOLS | REGistry | SETTings | ABOut | LOG | SelfTEST>

STAB?

Set or retrieve which tab is being displayed on the System view.

Params: <TOOLS> System Tools tab

<REGistry> System Registry tab

<SETTings> System Settings tab

<ABOut> System About tab

<LOG> System Log tab

<SelfTEST> System Self-Test tab

Returns: < TOOLS | REGistry | SETTings| ABOut| LOG | SelfTEST >

RAM Capture

CBLength <numeric> <"filename">

Capture the Detector RAM into a file by the input length. The first parameter is the number of words to capture. The second parameter is a string specifying the filename. The filename should not contain any path and must have a .RAM extension. The captured file is in the D:\<BERTScope | BitAlyzer>\UserPatterns directory. Action only.

Params: <numeric> Number of words to capture into RAM.
 <"filename"> Filename where RAM content is to be saved. Filename is enclosed in quotes, should not contain any path, and must have .RAM as extension. For example: "MyPattern.RAM".

CBTrigger <"filename">

Capture the Detector RAM into a file by trigger. The input parameter is a string specifying the filename. The file name should not contain any path and must have a .RAM extension. The captured file is in the D:\<BERTScope | BitAlyzer>\UserPatterns directory. Action only.

Params: <"filename"> Filename where RAM content is to be saved. Filename is enclosed in quotes, should not contain any path, and must have .RAM as extension. For example: "MyPattern.RAM".

CBTriggerlength <numeric> <"filename">

This command is available to the **BERTScope** only. Capture the Detector RAM into a file by trigger. The first parameter is the number of words to capture; the second parameter is a string specifying the filename. The filename is enclosed in quotes, should not contain any path, and must have a .RAM extension. The captured file is in the D:\BERTScope\UserPatterns directory. Action only.

Params: <numeric> Number of words to capture into RAM.
 <"filename"> Filename where RAM content is to be saved. Filename is enclosed in quotes, should not contain any path, and must have .RAM as extension. For example: "MyPattern.RAM".

RCCancel

Cancel a running Detector RAM capture operation, if capturing was initiated by either CBLength or CBTRIGGER command (see above). Action only.

RCProgress?

Retrieve the percentage completion of the running Detector RAM capture operation. This command should be used *only after* either the **CBLength** or **CBTRIGGER** command (see above). Query only.

Returns: < numeric > Percentage completion value of the capture operation.

System Event Log

SLOG:CFILter:ALL <bool>

Enable/disable all log filters. Action only.

Params: <bool> On = 1, Off = 0.

Returns: < 1 > Log Filters are On
< 0 > Log Filters are Off

SLOG:CFILter:PCHanges <bool>

SLOG:CFILter:PCHanges?

Enable/disable Parameter Changes filter, or retrieve whether filter is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Parameter Changes filter is enabled.
< 0 > Parameter changes filter is not enabled.

SLOG:CFILter:PRECognition <bool>

SLOG:CFILter:PRECognition?

Enable/disable Pattern Recognition filter, or retrieve whether filter is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Pattern Recognition filter is enabled.
< 0 > Pattern Recognition filter is not enabled.

SLOG:CFILter:SEvents <bool>

SLOG:CFILter:SEvents?

Enable/disable System Events filter, or retrieve whether filter is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > System Events filter is enabled.
< 0 > System Events filter is not enabled.

SLOG:CFILter:VCHanges <bool>

SLOG:CFILter:VCHanges?

Enable/disable View Changes filter, or retrieve whether filter is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > View Changes log filter is enabled.
< 0 > View Changes log filter is not enabled.

SLOG:CFILter:BATHreshold <bool>**SLOG:CFILter:BATHreshold?**

Enable/disable BER Above Threshold filter, or retrieve whether filter is enabled.

Params: <bool> On = 1, Off = 0

Returns: < 1 > BER Above Threshold filter is enabled.

< 0 > BER Above Threshold filter is not enabled.

SLOG:CLOG

Clear the log. Action only.

SLOG:ENABle <bool>**SLOG:ENABle?**

Enable/disable logging.

Params: <bool> On = 1, Off = 0

Returns: < 1 > Logging is enabled.

< 0 > Logging is not enabled.

SLOG:LBTHreshold <double>**SLOG:LBTHreshold?**

Set or retrieve the LOG BER Threshold, when BER Above Threshold log filter is enabled.

Params: <double> BER above threshold value, double

SLOG:SLTFile <"filename">

Save log to a file. Action only.

Params: <"filename"> Location where log file will be saved as a "|" (vertical bar) separated text file. Filename is enclosed in quotes.

Configuration

RCONfiguration <"filename">

Restores a pre-saved configuration from a file representing the entire state of the instrument.

Params: <"filename"> Specify the configuration file that will be used to restore. Filename is enclosed in quotes.

SCONfiguration <"filename">

Save the current configuration into a file.

Params: <"filename"> Specify where the configuration file will be saved. Filename is enclosed in quotes.

Status Queries

The following commands retrieve information for each component, such as driver version, H/W availability, and whether a driver is loaded.

The following commands retrieve information for each component, such as driver version, H/W availability, and whether a driver is loaded.

CLKStatus?

Retrieve the CLK driver's information. Query only. This command is supported for backwards compatibility, but has been superseded by the **NDRivers?** and **DVERSION?** commands in this section.

DELAY:DETRecal?

Retrieve the information that indicates whether Detector delay needs recalibration. Query only. **Note:** Since monitoring for these calibrations is suspended while Physical Layer tests are running, using this command under those circumstances may not return an accurate result.

Returns: < 1 > Detector needs delay recalibration
 < 0 > Detector does not need a delay recalibration

DELAY:GENRecal?

Retrieve the information that indicates whether Generator delay needs recalibration. Query only. **Note:** Since monitoring for these calibrations is suspended while Physical Layer tests are running, using this command under those circumstances may not return an accurate result.

Returns: < 1 > Generator needs delay recalibration
 < 0 > Generator does not need a delay recalibration

DIOStatus?

Retrieve the DIO driver's information. Query only. This command is supported for backwards compatibility, but has been superseded by the **NDRivers?** and **DVERSION?** commands in this section.

DLYMstatus?

Retrieve the DLYM driver's information. Query only. This command is supported for backwards compatibility, but has been superseded by the **NDRivers?** and **DVERSION?** commands in this section.

DVERSION? <Int>

Retrieve the <Integer>-th driver version. Query only.

Params: <Integer> <Integer>-th driver. The number is of the range [0 to (N – 1)], where N is the value returned from the **NDRivers?** command, above.

Returns: < Driver name and version number >

EYEStatus?

Retrieve the EYE driver's information. Query only. This command is supported for backwards compatibility, but has been superseded by the **NDRivers?** and **DVERSION?** commands in this section.

GIOStatus?

Retrieve the GIO driver's information. Query only. This command is supported for backwards compatibility, but has been superseded by the **NDRivers?** and **DVERSION?** commands in this section.

HMStatus? < CLK | GIO | DIO | DLYM | SRX | STX >

Retrieve the hardware module information. Query only.

Params: <CLK | GIO | DIO | DLYM | SRX | STX> Hardware module designation. Only one parameter is accepted per query.

Returns: < Hardware module information >

If the command is given a non-applicable parameter, the query returns "Requested hardware module is not supported on the platform".

ISSTatus?

Retrieve the Instrument Server's version info. Query only.

NDRivers?

Retrieve the number sequence of the software drivers. Query only.

SNUMBER?

Retrieve the instrument serial number. Query only.

Returns: < Instrument serial number >

SRXStatus?

Retrieve the SRX driver's information. Query only. This command is supported for backwards compatibility, but has been superseded by the **NDRivers?** and **DVERSION?** commands in this section.

STXStatus?

Retrieve the STX driver's information. Query only. This command is supported for backwards compatibility, but has been superseded by the **NDRivers?** and **DVERSION?** commands in this section.

TREAding? <CAB | GENDELAY | DETDELAY>

Retrieve the internal temperature readings in degrees Celsius. Query only

Params: <CAB | GENDELAY | DETDELAY> Temperature register designation. Only one parameter is accepted per query.

Returns: < Internal temperature reading in °Celsius >

If the command is given a non-applicable parameter, the query returns "Requested temperature reading is not supported on the platform".

VREAding? < M5P2 | M2 | M12 | 3P3 | 5 | 12 >

Retrieve the internal voltage register reading. Query only.

Params: <M5P2 | M2 | 3P3_STBY | 3P3 | 5 | 12 | M12 | 2P5 | 1P5 | M5 | M19 | PGM_3P3 | PGM_M5 | PGM_5 | PGM_M8 | PGM_8 | PGM_M11 | PGM_11 | PGM_M17P5 | PDM_3P3 | PDM_5 | PDM_11 | PDM_M3P3 | PDM_M5 | PDM_M11> Voltage register designation. Only one parameter is accepted per query.

Returns: < Internal voltage register reading >
If the command is given a non-applicable parameter, the query returns "Requested hardware module is not supported on the platform".

Common Commands

***CLS**

Clear the status queue. Action only. This command will not show in the list of Trace messages displayed on the remote control client user interface.

***IDN?**

Retrieve the identification of the device. Query only. This command will not show in the list of Trace messages displayed on the remote control client user interface.

SYSTem:ERRor?

Retrieve items listed in the error status queue. Query only. This command will not show in the list of Trace messages displayed on the remote control client user interface.

The status queue is first in, first out. It can contain up to 100 error messages. If the queue overflows, the last error/event in the queue is replaced with Error -350, "Queue overflow". When all errors/events have been read from the queue, further error/event queries will return 0, "NO error".

Returns: < n, "event/string" >

File Transfer

Transfer files between the BitAlyzer/**BERTScope** and a remote PC. **Note:** File transfer protocol is illustrated in the **Send** and **Get** diagrams, following. File Transfer commands will not show up in the list of Trace messages displayed on the remote control client user interface.

ABORT

Cancels a “Send” or “Get” file operation. This command will not show in the list of Trace messages displayed on the remote control client user interface.

This indicates that the file transfer operation is being discontinued. This command will not show in the list of Trace messages displayed on the remote control client user interface.

BUFFER <Bytes> <CRC>

During “Get” or “Send” file transfer, indicates size of next buffer to be transferred. Once file transfer is initiated, this command precedes a block transfer of the exact number of Bytes. During transfer of these Bytes, no command processing occurs. These Bytes are transferred in binary form.

Params: <Bytes> The number of Bytes in the next block of binary data transfer (unsigned short)

 <CRC> **BA1500:** The 32-bit checksum of the buffer

BERTScope: The 128-bit checksum of the buffer

Returns: Continue or Abort

CONTINUE

Acknowledges that a file transfer operation may proceed. This command will not show in the list of Trace messages displayed on the remote control client user interface.

After each buffer has been transmitted, the receiver replies with this “Continue” message if the transfer may proceed; otherwise, it replies with an “Abort” message.

Returns: binary data or Abort

DONE

Acknowledgement: Tells the file receiver that all the buffers have been sent out. File transfer is completed. This command will not show in the list of Trace messages displayed on the remote control client user interface.

FILE:GET <“filename”>

Get a file from BitAlyzer/**BERTScope**. Action only. This command will not show in the list of Trace messages displayed on the remote control client user interface.

Params: <“filename”> Name of the BitAlyzer/**BERTScope** file to be sent to the PC. Filename is enclosed in quotes.

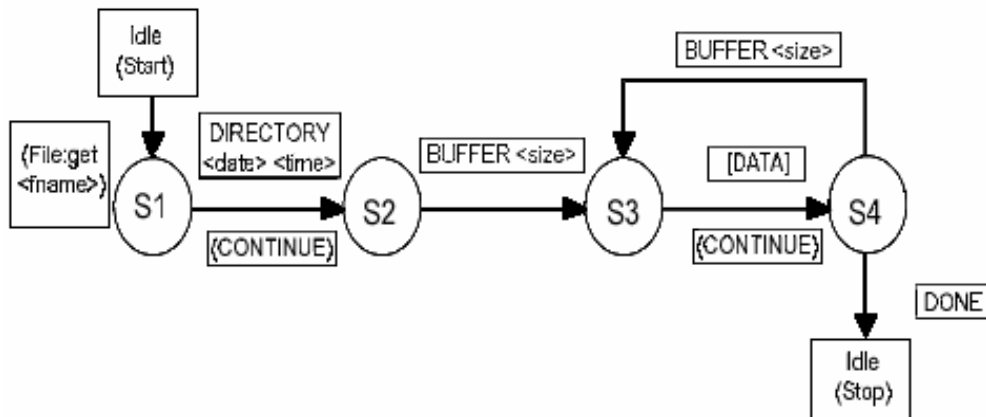
These commands start the file transfer. The Remote Control program needs to follow a specific protocol in order to complete the transfer (see the **GET** diagram, below).

The file is separated into packets of up to 4,090 Bytes. For each packet, a “Buffer <Bytes> <CRC>” command is sent first. The sender should calculate the CRC value for a packet and send it in the buffer acknowledge. The receiver will recalculate and compare the CRC. If the CRC is incorrect, the receiver will request a retry. Remote Service supports retry up to three times, after which it will assume the session of file transfer is impossible to complete correctly and will issue an “Abort”. When it reaches the EOF, the sender should let the receiver know by issuing a “Done”.

The acknowledgement of file transfer should be all uppercase: “CONTINUE”, “ABORT”, “RETRY”, “DONE”, and “BUFFER”.

Get

From BitAlyzer/**BERTScope** to remote PC:



FILE:SEND <“filename”>

Send a file from the remote PC to BitAlyzer/**BERTScope**. Action only. Command will not show in the list of Trace messages displayed on the remote client user interface.

Params: <“filename”> Name of the PC file to be sent to the BitAlyzer/**BERTScope**. Filename is enclosed in quotes.

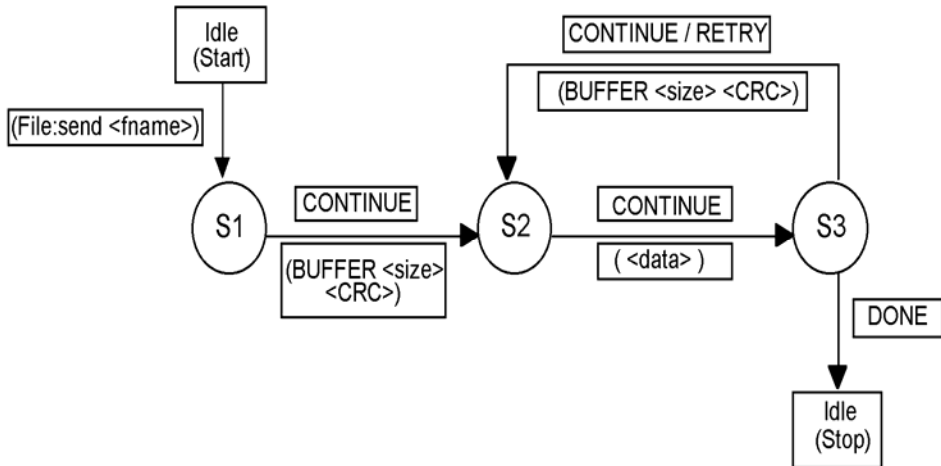
This command starts a file transfer from the remote PC to the BitAlyzer/**BERTScope**. The Remote Control program needs to follow a specific protocol in order to complete the transfer (see the **SEND** diagram, below).

The file is separated into packets of up to 4,090 Bytes. For each packet, a “Buffer <Bytes> <CRC>” command is sent first. The sender should calculate the CRC value for a packet and send it in the buffer acknowledge. The receiver will recalculate and compare the CRC. If the CRC is incorrect, the receiver will request a retry. Remote Service supports retry up to three times, after which it will assume the session of file transfer is impossible to complete correctly and will issue an “Abort”. When it reaches the EOF, the sender should let the receiver know by issuing a “Done”.

The acknowledgement of file transfer should be all uppercase: “CONTINUE”, “ABORT”, “RETRY”, “DONE”, and “BUFFER”.

Send

From remote PC to BitAlyzer/**BERTScope**:



RETRY

Acknowledgement: Requests the file sender to resend the previous buffer. This command will not show in the list of Trace messages displayed on the remote control client user interface.

The **RETRY** command is used when the buffer was not received correctly. Retry is supported for up to three attempts.

Error Messages and Codes

Error Messages

"TOO MANY PARAMETERS"
"UNRECOGNIZED COMMAND"
"WRONG PARAMETER TYPE"
"TOO LITTLE PARAMETERS"
"WRONG PARAMETER FORMAT"
"WRONG PARAMETER NUMBER"
"WRONG ACTION-ONLY"
"WRONG QUERY-ONLY"
"REQUESTED <QUERY PARAMETER> IS NOT SUPPORTED ON THE PLATFORM"

Error Codes

0	"NO ERROR"
-350	"Queue Overflow"
-10	File transfer error
-20	System error or event
-30	Command error, see list of error messages
-40	No software option

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